

## Introduction: semiotics, education, philosophy

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The word *semiotics* derives from the ancient Greek words for *sign* and *signal*. In ancient times semiotics was a specific branch of medical science, in which signs were taken to describe symptoms for the purpose of diagnosis. Later it became a branch of philosophy where verbal and non-verbal signs were taken to be representations of the true nature of things. The Scholastic tradition posited a sign to be something that we can not only directly perceive but also connect with something else, by virtue of our or somebody's else experience. A sign not only represents but also causes other signs to come to mind as a consequence of itself: this relation is expressed in the medieval formula *aliquid stat pro aliquo*, which is translated as something *standing for* something else. The word *symbol* is derived from Greek *symbolon*, that is, a token composed of two halves used to verify identity by matching one part to the other. Symbol is usually a concrete sign or image that *stands for* some other, more abstract, entity or idea by virtue of convention, analogy, or metaphor. Semiotics is a study of signs and their signification; as such, it is considered to be of eminent importance to an interdisciplinary research. As a separate science, semiotics studies things that function as signs, and the interpretation of which leads to discovery of meanings. But signs can be polysemic, that is, they may connote more than one meaning. Therefore symbolic meanings may be characterized by their surplus. A symbolic connotation may demonstrate a deeper layer of meanings, sometimes with complex emotional associations, or having a cryptic character as pointing to something beyond itself.

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Human beings are sign-users, and semiotics can also serve as a meta-language the function of which is to describe human action. Semiotics, however, exceeds the science of linguistics, the latter limited to verbal signs of words and sentences, and encompasses both natural and invented signs, such as culturally specific artifacts. Based on their relationship to spoken language, three types of general semiotic systems may be distinguished: (1) language substitutes, such as writing, whistles, and Morse code; (2) language transforms, or formal scientific terminology; and (3) idiomorphic systems, such as music or gestures. According to contemporary cognitive scientist Ray Jackendoff, who holds an ecological perspective on mind, even verbal utterances should be understood semiotically rather than strictly linguistically, that is, in terms of their establishing a *relation* between a conscious mental representation (an *expression*) and an unconscious mental representation (a *message*). American philosopher Charles Sanders Peirce has held a pansemiotic perspective on the whole universe, that is, a view that the universe may be composed exclusively of signs. The whole world thus may be considered to be a semiotic sphere. In contrast to the immediate sense data of the surrounding world, the human mind uses mediation and interpretation when, within experience, it crosses what philosopher Alfred North Whitehead called the semiotic threshold. All thinking proceeds in signs, and the continuous process of *semiosis* can never be stopped; thus human development is potentially unlimited.

Semiosis is a communicative, interactive, relational, and interpretive process. Communication, that is, the flow of information and the mutual transformation of signs that are being translated into other signs, is an important concept in semiotics. Semiotically, communication as information sharing is considered to be a natural organizing principle. However, signs are not only intentionally produced for the purpose of *communication* (as in semiology); the sign-function—or the semiotics of *signification*—is equally important, and the action of signs manifests also in medical symptoms, or in dreams, or in the unconscious in psychoanalysis. Mental images belong to a category of signs, and from a semiotic point of view a mental image is an icon, or representation, of the real world. An internal image serves as a semiotic tool, called the *interpretant*, so as to conceptualize and bring to knowledge something that has been directly perceived. An interpreter of signs connects the antecedent with its consequent by means of a specific inferential sign-relation. An intentional interpretative act gives a sign its meaning: without a lived experience signs remain lifeless and mute. Signs perform an instrumental function: they serve as tools of/for human knowledge, learning, and development. The semiotic dimension is therefore implicit in the philosophy of education, and this special issue comprises seven papers devoted to the exploration of semiotics in educational philosophy, theory and pedagogy, expanding the walls of a generic classroom to the broader, social level of real events and cultural practices.

In the article, “Learning from people, things, and signs,” Michael Hoffmann (Georgia Institute of Technology, USA) focuses on what he describes as the lifeworld dependency of cognition. Positing human cognitive systems as semiotic, that is sign-using, systems; Hoffmann starts from an empirical observation that small children can count more objects than numbers and proceeds to explain learning as a developmental process, which incorporates both individual and social forms of knowledge, that is, other people, things, and signs. Hoffmann traces two directions in his article, first: how the external world constrains and promotes the development of cognitive abilities, and second: how people move from cognitive abilities that are necessarily connected with concrete situations to abstract knowledge, utilizing signs and representations as mediators so that signs serve the fundamental function of constituting what Tomasello called “shared intentionality.”

Hoffmann presents semiotics as a common theoretical framework in addressing diverse concepts of educational importance such as cognitive apprenticeship and scaffolding inspired by Lev Vygotsky; Charles Sanders Peirce's pragmatism and his diagrammatic reasoning; distributed and situated cognition; implicit, collateral and cognitive knowledge; and Goleman's *Social Intelligence*.

In her paper, "Signs and the Process of interpretation: Sign as an object and as a process," Adalira Sáenz-Ludlow (University of North Carolina at Charlotte, USA) first presents an extensive analysis of what the words "representation" and "symbol" mean and argues that historically the role played by the "interpreter" has been disregarded. She explicitly focuses on Peirce's philosophy and his semiotics as the only theory of signs that accounts for all three categories, and draws our attention to both the static and dynamic nature of signs. The interpretation of signs can be viewed as a continuous dynamic and evolving process. Positing the teaching-learning activity as an interpretive process that involves both a teacher and a student, Sáenz-Ludlow formulates interpretation in terms of the development of generalizing tendency in the mind of the interpreter. Sáenz-Ludlow presents an extensive analysis of Peirce's various trichotomies of signs and, using typical algebraic rules as some concrete examples in mathematics, she traces the evolution of signs in the learner's conceptualizations when a mathematical concept becomes filtered through the learner's gradual process of interpretation. Sáenz-Ludlow concludes her article by stating that the static-dynamic duality of a Peircean sign provides the teacher with a road map both for facilitating the students' processes of interpretation and generalization and for understanding the continuous and evolutionary process of students' conceptualizations.

The philosophy of mathematics education from a semiotic perspective is also a topic of the article titled "A Conceptual Metaphor Framework for the Teaching of Mathematics" by Marcel Danesi (University of Toronto, Canada). Using recent empirical data, Danesi presents mathematical problem-solving as a task identified by teachers as not only difficult for students but also a *de facto* semiotic one, that is, the one in which sign-based conceptualizations, language, and the acquisition of skills are intrinsically intertwined processes. Stating that metaphor has always been one of the central areas of interest and research in semiotics, Danesi refers to the theoretical work by Lakoff and Nuñez on the role of conceptual metaphors embedded in the mathematical language of abstract concepts. Danesi suggests that the semiotic analysis of the metaphorical expressions allows learners to overcome typical difficulties in word problem-solving by teaching them how to flesh out the underlying concepts and convert them into appropriate representations. The philosophical significance lies in the fact that the Conceptual Metaphor Theory tends to provide relevant insights on how to render seemingly difficult abstract tasks into concrete ones by means of deciphering the semiotic code of the language in which they are framed.

Tomasz Szkudlarek (University of Gdańsk, Poland) sets the task of investigating the knowledge economy of contemporary society in his article "Empty signifiers, education and politics." Referring to the concept of "void," Szkudlarek cites Laclau, Derrida and Eco who addressed the absence of "the" central structure in semantic systems while simultaneously stressing its strategic position in the process of meaning making. He carries Laclau's theory of ontological impossibility over to the level of educational discourse that indeed has those signifiers as empty spaces within its own semantic structures. Szkudlarek's central question focuses on how educational theories, by way of construing emptiness, operate in the area of political identities formation. Particular attention to the problematic "excluded" element (also addressed, even if in a different context, in Semetsky's article; see below) is imperative as both necessary and impossible for the constitution of identity. Using Rousseau as a historical example, as well as Bernadette

Baker's critique, Szkudlarek claims that empty signifiers are discursively produced in pedagogical debates and points to the repressive and productive political power implicit in the "nature of culture." The culture of education *per se*, for Szkudlarek, is a symptom (that is, also a sign) of the lack of overt domination in social relations.

Inna Semetsky (Monash University, Australia), in her essay "Sem-analysing events: towards a cultural pedagogy of hope" suggests that the concept of learning should not be confined merely to the environment of a generic classroom. Rather, it should be re-conceptualized and extended to cover real life human experiences from which we can, and should, learn. Experiential events can embody significant meanings. Functioning as a sign, a meaningful event can be understood in terms of a cultural extra-linguistic "text." Cultural artifacts are capable of communicative, or semiotic, potential, that is, different objects and events in our life may carry cultural and psychological significance. Reading and interpreting diverse cultural "texts" are equivalent to constructing and learning critical symbolic lessons embedded in a continuous process of our experiential, both intellectual and ethical, growth. The paper employs Julia Kristeva's theory of the abjection and her method of semanalysis as a synthesis of philosophy, psychoanalysis and semiotics. The paper, however, extends the semiotic analysis to the level of experiential education and unorthodox pedagogy. Real-life events, such as the destruction of the Twin Towers on September 11, become a means towards constructing the cultural pedagogy of hope paramount to sustaining our diverse global society.

In "The Aesthetics of Textual Production: Reading and Writing with Umberto Eco," Peter Trifonas (Ontario Institute for Studies in Education, University of Toronto, Canada) argues that Eco, in his exemplary novel *The Name of the Rose*, presents an educative vision of some basic semiotic principles that infuse the textual form of a popular fictional genre, namely: the detective story. In effect, it characterizes the postmodernization of the traditional "whodunnit" moving the genre from the realm of "the real" or the plausible into the realm of "the metaphysical" or the unthinkable. Trifonas considers *The Name of the Rose* to be a practical application in/of semiotics. The semiotic twists and turns of the detective story facilitate this educational function and the purposeful transformation of the reader into an individual capable of appreciating and grasping the conflicting ideological viewpoints expressed through the story's dialogical structure. The aesthetics of textual production, as generated through lexical signs and codes, manifest the discursive text of a novel work. Commenting on a realist/nominalist debate, Trifonas brings abduction (and meta-abduction) into the conversation and notices Eco's move from the dyadic signifier-signified, fixed, correlation to the triadic sign-relation constituting the fluid, rhizomatic, structure of cognition. Trifonas concludes his essay by asserting that the detective genre enables Umberto Eco to produce an educational narrative via the intricacies of the plot while simultaneously educating the reader in the main aspects of semiotic theory.

The fiction genre is also addressed by Noel Gough (La Trobe University, Australia) in his artful essay "Changing planes: rhizosemiotic play in transnational curriculum inquiry." Gough draws from Gilles Deleuze and Felix Guattari in their approach to philosophy as a kind of science fiction and constructs what he calls a narrative experiment, which is designed to juxtapose philosophical concepts with realities imagined by Ursula Le Guin in her science fiction stories. Gough performs a "rhizosemiotic play" that explores some possible ways of sustaining the complicated conversation, which was started by William Pinar, within the diverse regimes of signs constituting an increasingly internationalized curriculum field. For Deleuze and Guattari, every mode of intellectual inquiry needs to account for the *plane of immanence* upon which it operates, or the preconceptual field always already presupposed by the concepts that this very inquiry creates. Noticing

that curriculum inquiry currently operates on numerous nationally distinctive planes of immanence, Gough argues that the internationalization of curriculum studies should not presume a singular transnational plane of immanence but, rather, envisage a process performed by curriculum scholars with the capacities and competencies to *change planes*, that is, to move between one plane of immanence and another and/or to transform their own planes. Gough's rhizosemiotic approach generates productive and disruptive transnational agendas in curriculum inquiry.

The semiotic tropes, such as interpretation, development and evolution; dialogic structures and processes; metaphor and metonymy, are beginning to enter educational discourse, manifesting a move away from the prevailing model of social sciences in education. What first started as the doctrine of signs, introduced by John Locke in his *Essay Concerning Human Understanding*, became over the centuries, in the words of great contemporary semiotician John Deely, the new intellectual movement. Should this special issue of *Studies in Philosophy and Education* create a new meaning in the minds of its readers (and interpreters), the semiotic significance of this particular text will have been validated.

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