

Semiotic Consciousness in Education: An Introduction

François Tochon

University of Wisconsin-Madison

In 1994 I was invited to address the issue of semiotic consciousness in education at Princeton University for the creation of the Academy of Consciousness Studies. This Academy was founded in collaboration with the PEAR laboratory, namely Brenda Dunne, its director, and Bob Jahn, then Dean of the School of Engineering. People of all disciplines met and tried to analyze anomalies of consciousness in their own respective fields. Curiously enough, scientists in the humanities and social sciences seemed less advanced in that domain of inquiry than physicists, biochemists, and engineers. I kept thinking for years that semiotics should be the preferred, interdisciplinary seat for such a reflection. But it rarely happened.

This special issue has been produced as the follow up of an interactive symposium that I organized at the American Educational Research Association in Seattle in 2001.¹ The main objective of this issue is to illustrate the active semiotics of consciousness, that is, the meaning-making processes that support the construction of reality in day-to-day learning, teaching, and educational environments. The active relationship of consciousness and signs is defined as mathematically bijective: It goes in both directions. The bidirectional nature of the relationship that consciousness and signs entertain explains anomalies that appear in all kinds of situations where events transcend the rule and generate the active creation of meaning into the phenomenal world.

There is a second, concrete goal to the issue: To gather researchers in applied semiotics who have data to illustrate this bidirectional action from consciousness to signs, to make new advances in the field of active symbolics understood as a physical, mind-reality relationship. This gathering of educational researchers was to demonstrate how consciousness relates to applied semiotics. It illustrates how, in education, signs can become consciously active and get symbolic power, creating anomalies in the usual course of learning and teaching, and educational events. Diverse educational researchers approached this theme from various perspectives, and a debate followed.

The concept of “semiotic consciousness” is not really new. It was first used ten years ago by John Deely, currently president of the Semiotic Soci-

ety of America. Deely wanted to address aspects of semiosis that relate to conscious awareness of meaning making processes. There has been a lot of research on semiotic consciousness and its underlying processes in terms of what semioticians call semiosis and the type of inference named “abduction” that represents “insight.” I proposed the concept of semiotic consciousness as an instrument to study how the variety of signs in the environment of a learning or teaching or an educational task is dynamically recomposed towards representing a flow of meaning that supports a symbolic, interactional process with the world. Consciousness being sensitive to signs, builds insights that have semiotic features: As Papert would put it, they are “microworlds” in coherence with how external reality is perceived. Speaking of “microworld” is to allude to a tridimensional nature of the inner signs that shape our reality.

In this direction, a semiotic theory of consciousness already exists within the Peircean triad. While Saussure’s semiology was language-oriented and dualist, Peircean theories after his Kantian period (1850–1870) propose a definition of the Sign that is based on a dynamic interplay of three poles: The ground that appears to immediate perception, the object to which the sign process refers, and the interpretant that is the function resulting from the semiosis process. The interpretant defines a second state of the sign, a plus. It is in the interpretant that semiotic consciousness is revealed as an active process through creative link-making and the perception of causation. The relationship between conscious insight and the world has been studied in Peircean semiotics as the building of a representamen within a given semiotic triad. Peirce’s theory describes the relationship between the representamen and the object as serial and unidirectional; in the articles presented in this issue of *International Journal of Applied Semiotics* we show that the building of the representamen is a highly parallel process and a dynamic feature of consciousness.

Semiosis is the dynamic of transformation constructing links between objects and grounds ad infinitum. Consciousness is defined within this process of mutation of signs. There are no non-semiotic places for consciousness: Its transformational process is based upon the interpretive reflection of the possible links between grounds and objects. Thus semiotic consciousness is (1) perceptual of diverse grounds, (2) representational of objects, and (3) interpretive of possible causal links between perceptions and representations. In Peirce’s analysis (CP: 6.111), consciousness has a temporal dimension that differentiates between the continuous flow of momentaneous inferences or mediations and the last instant of inference that represents an immediate and objective awareness of the completeness of the time spent within the last inferential moment. It may seem that this theory of consciousness — because it differentiates immediate instants and the mediate duration of inferential moments — distinguishes what we have been used to call short-term memory and long-term memory in cognitive sciences. But Peirce does not relate his theory to the static of memory; rather, the dynamic of inference processes. Also, his representation of consciousness lies on a continuum that resembles the Zeno of Elea analogical representation of time arrows.

Compared to cognitive science that may be understood as a study of cognitive regularities, semiotics appears as a study of the exceptions within regularities: Anomalies have their place in the meaning-making, semiotic process. If the creation of meaning is a dynamic process with bijective power from and to each of the three poles of each sign (ground, object, and interpretant), then the links created among these poles are creative, for consciousness and for material phenomena. Things can be perceived from inside or from outside. From outside you call them matter, from inside you call them consciousness; but those two ways of knowing are combined and laws of nature are laws of the mind (CP: 6.268; Deledalle, 1987, pp. 84–87). Peirce's synechism, or the doctrine explaining the continuity that governs thirdness (the highest level of abstraction) in the universe, appears quite close to the Jungian theory of synchronicity (1964). It is interesting to see how both theories are complementary as they support the a-theoretical emergence of anomalies, which I describe hereafter. In Jungian psychology, a conversational relation is maintained between consciousness and reality through the so-called collective unconscious which has a consciousness on its own. This explains anomalies in cause-effect relationships, anomalies which transcend the boundary of time and space. Jung (1962) explains these anomalies in terms of the synchronicity that exists between consciousness and its objects. As is shown, one of the implications underlying this feature is that the link between consciousness and its objects is bijective. It is made of dynamic consciousness and that bidirectional relationship can become creative. Representations would not only be affected by the world, they would affect the world in return. This effect, named the Schrodinger effect in Physics, has been studied also in the Sciences of Engineering and Applied Sciences. There is enough evidence in the "hard sciences" to wonder why this effect was not studied in the field of education as well, where the role of the observer (and evaluator) appears crucial in building the reality of the represented, and vice versa. For sure, the role of the observer was studied in large Pygmalion studies² (did we really take it into account?) but the reversibility of the consciousness effect has been ignored by educational researchers.

In this special issue, various researchers present some of the ways in which semiotic consciousness plays a role in education. They show how semiotic consciousness appears fundamental in the construction of contextualized meaning and in the analysis of full-fledged situations. First, Howard A. Smith (Queen's University, Canada) discusses abduction and the semiotic (non)conscious. The objective of his article is to describe some major features of abduction and its association with psychosemiotic consciousness or, more aptly, nonconsciousness. To this end, he describes major attributes of abduction for their relationship to insight, intuition, perception, and the nonrational mind. He uses instances of abduction in both formal and informal settings to illustrate the importance of the concept to educational theory and practice. Smith demonstrates that Peirce suggested that every new conception has its origin in perception, as perceptual judgments and abduction are inseparably linked. Although abduction is usually described in philosophy as the logic of discovery, the concept is also of enduring psychological and semiotic interest. Accordingly, against

the backdrop of both conscious and nonconscious semiotic processes, the article addresses such questions as: How does abduction begin? Where do hypotheses come from? Are hypotheses created or selected? Examples highlight achievements from highly skilled performers in different fields.

Deborah L. Smith-Shank (Northern Illinois University) is concerned by the roles that the arts play in the consciousness of contemporary society and education. She focuses on art and social contexts of art: Cultural habitual parameters tend to bind what is labeled “art” to inherently dualistic, reductionist, modern, and structural contexts. Smith-Shank identifies and critiques some parameters that serve modernist dualism such as labeling arts high or low, visual or verbal, conceptual or concrete, which contributes to the isolation of art from daily living. She highlights the destructive forces which are unleashed when the arts are only housed in antiseptic museum, performance, and higher education spaces which effectively function as barriers to community and ultimately to semiosis. While pointing to the flaws of a modernist conception of the arts, she also identifies limitations of a post-structuralist and post-modernist use and critique of arts, especially the reliance on a linguistic model for the analysis, construction, and deconstruction of non-linguistic arts.

Don Cunningham (Indiana University) and associates analyze the role of semiotic consciousness in educational technology. One of the concepts that has developed within an educational semiotic is reflexivity, an awareness of one’s own and one’s culture’s meaning making processes. Humans can engage in meaning making practices but also become aware that they engage in these processes. With awareness comes the ability to intervene (control, manage, choose) by self monitoring. Of course, awareness is a hypothesis, at best a theory of how our mind works and how other minds work. Don Cunningham and associates explore how the work of Freire, Giddens, and Bruner provide insights into this conception of reflexivity as our intuitive “theory of mind.” They explore the role of new technologies in the promotion of reflexivity. Throughout our lives we structure our interactions in accord with our personal theories of how our mind works and how other minds work. We all agree that it is important for teachers to understand their students’ thinking, but of course the students are making many assumptions about the teacher’s thinking as well. The recent upswing in web-based distance education will call for new attempts to understand this process.

Noel Gough (Deakin University, Australia) deals with fictions that represent and generate semiotic consciousness in education. This article examines the work of fiction in both representing and generating semiotic consciousness in education. Fiction is understood here as any mode, medium or genre of storytelling that is not (usually) construed as reporting only “facts” (where “facts” are interpreted as testimonies to “real” experience). However, while fictional narratives do not necessarily represent (or claim to represent) “reality,” they are capable (in the terms provided by the objectives of this issue) of illustrating “the active semiotics of consciousness,” and are among the many “meaning making processes that support the construction of reality in day-to-day learning, teaching, and educational

environments.” By connecting possibilities as well as “actualities,” fiction distinctively enacts semiosis rather than mimesis. Gough first explores some of the ways in which different fictional modes and genres represent semiotic consciousness in education. For example, epistemologically-oriented storytelling (such as detective fiction) exemplifies the investigatory hermeneutics that characterize much educational research. Second, his article explores some of the ways in which fictional narratives work as “actants” (in Bruno Latour’s sense) in the semiotic systems of education. Thus, Gough uses specific examples of intertextual relations between fictional narratives and accounts of educational research to elucidate how particular fictions might operate within the “machineries” of semiotic consciousness to produce meaningful educational discourse.

Serge Testevuide works at the Department of Training and Research in the Science and Techniques of Physical and Sports Activity of Nantes (France). He studies semiotics and consciousness as applied to the study of motor behavior, and analyzes the “map reading” activity of an orienteer during a race through Peirce’s semiotics. The orienteer’s activity is characterized as a semiotic activity, product of a circular transaction between two triadic signs and countryside imagined, encountered countryside. The task required the orienteer to follow a predefined and highlighted itinerary in an unknown environment with the sole aid of a map. The four volunteer participants were sports students. The video recording of the race enabled an analysis of the facts and a self-confrontation of the actor during the interview. The phaneroscopic categories of Peirce made it possible to pick out six semiotic registers used by the orienteer to interpret space and the orienteer’s activity during route mistakes was described as two parallel lines of triadic signs.

Lastly, Inna Semetsky (Teachers College, Columbia University) considers intuition as a pragmatic approach to reality. Peirce’s pragmatic maxim already established the criterion for meaning as production of real effects: “Consider what effects, that might conceivably have practical bearing, we conceive the object of our conception to have. Then our conception of these effects is the whole of our conception of the object” (CP: 5.402). Semetsky addresses intuition as a pragmatic search from the perspective of educational philosophy. She revisits Noddings’s monumental work on intuition in education, expands the boundaries of the concept by drawing from selected excerpts in the works of Dewey and Deleuze, finally focusing on the Peircean notion of abductive inference. By offering a novel model of abduction, she connects it with the concept of intuition for the purpose of exploring the possible educational implications of both “Firstnesses.”

Notes

1. There will be a second, special issue of the *International Journal of Applied Semiotics* on the topic of semiotic consciousness. That issue will include articles written by Maria Mendel (University of Gdansk, Poland), Linda Rogers (University of California, Monterey Bay), Caroline Gwyn (Université de Sherbrooke, Canada), Nancy Stockall (Bowling Green State University),

Jennifer Rowsell (King's College London, Canada), and François Tochon (University of Wisconsin, Madison) within a more social orientation.

2. Pygmalion studies bear on the way teacher's perceptions of students influence their results.