

Editorial Preface

The original inspiration for the present issue of *Cognitive Semiotics* derives from a workshop organized by Göran Sonesson that took place at the 9th Congress of the International Association for Semiotic Studies in Helsinki and Imatra in 2007. However, about half of the authors invited at the time could not attend, and since all who were present (except for Frederik Stjernfelt) have participated in this issue, along with one “newcomer”, Stephen Cowley, the real colloquium takes place here. This issue, just as the workshop, was designed to reflect on the present “creative fusion” of semiotics and the cognitive sciences into the new paradigm of cognitive semiotics, with particular regard to the part played by biosemiotics.

It is our belief that if cognitive semiotics is indeed to represent a dialectical synthesis, the relationship between consciousness and meaning, on one hand, and biology, on the other, will need to be at centre-stage (though not necessarily as the sole actor). In cognitive science, the brain, instead of the computer, has already become the leading metaphor (though usually not perceived as such) for the mind. Biosemiotics, in its several different varieties, claims to be operating the reverse reduction: of biology to meaning. However, as long as differences as well as similarities between consciousness/meaning and biology are not accounted for, the two reductions appear to be equally problematic.

In recent decades, biosemiotics, largely based on the inspiration of the *Bedeutungslehre* elaborated by Jakob von Uexküll, in conjunction with Peircean semiotic theory, has appeared to be one of the most vital parts of semiotics, as manifested also by the new journal *Biosemiotics*. The biosemiotic conception of meaning has been projected onto the level of cells as well as manifesting itself on a more traditional ethological, “zoosemiotic”, level. However, if signs appear already in the interaction between cells, then it is not clear in what sense entire organisms differ, or how primates are different from other species, and human beings from other primates. One of the most valuable contributions of biosemiotics to these questions has been the concept of “semiotic threshold”. However, we would claim that for this concept to be conceptually and empirically useful, it has to be made more precise, and to be explicitly related to evolution and ontogenetic development.

Within biosemiotics, classical semiotics has often been described as “anthroposemiotics” and given rather short shrift. From a developmental and evolutionary perspective, however, anthroposemiotics is clearly not completely discontinuous with biosemiotics. This does not only mean that classical issues of anthroposemiotics must be reconsidered from the point of view of biosemiotics, but also that “the difference which makes a difference” in the human species has to be accounted for – which means that biosemiotics itself must be reconceived from a broader cognitive semiotic viewpoint. A central task for cognitive semiotics, as we see it, is therefore to provide a more satisfactory description of (the evolution of) specifically human semiotic activities than those to be found in the currently fashionable “memetics” and Neo-Darwinism.

Interestingly, “the semiotic turn” in the cognitive sciences, taken by scholars such as Merlin Donald, Terrence Deacon and Michael Tomasello, has taken place precisely within the framework of the study of human evolution and development. Both traditions suggest a stage-like unfolding of the human semiotic potential, retaining the capacities of earlier stages. (Bodily) mimesis has been suggested to be a uniquely human capacity, independently of language. It has also been argued that new abilities accrue to the human species once biological change has come to an end, with the emergence of pictures, writing, and theoretical thinking. In these transitions, the specificity of human culture appears to be crucial, first through imitation, leading on to the sign function, and then through external, relatively permanent representations, a kind of “third embodiment”, beyond those of the biological and the phenomenal body. In the end, therefore, it may well be that also classical semiotics could contribute an important perspective to the empirical findings of developmental psychology, evolutionary biology, neuroscience, and other cognitive sciences.

In the original invitation to this issue, we suggested that the interrelations of the semiotic study of human beings, on the one hand, and living matter, and more specifically animals, on the other, could be discussed, using, for instance, the concept of semiotic threshold. We also welcomed attempts to account for the specificity, from a cognitive semiotic point of view, of human beings, in relation to other animals, conceived both on the level of evolution and within history in the strict sense, i.e. within culture. All contributions to this issue can be related, to different degrees, to these two lines of inquiry.

With some simplification, there might be said to be three groups of articles in the present issue: (1) those that defend some version of contemporary

biosemiotics; (2) those that take a more classical semiotic stand; and (3) those that try to go beyond biosemiotics as we know it to a more diversified approach, which integrates findings from the cognitive sciences and all branches of semiotics. The order of the articles in this issue corresponds to this division.

The most “prototypical” representative of biosemiotics present here is Kalevi Kull. In his essay, he tries to make up for the inevitable reductionism resulting from calling everything a sign by characterising different semiotic thresholds between the vegetative, animal, and cultural realms. At the same time, however, he claims that these limits are not absolute, but rather constitute transitory zones. In a parallel fashion, Søren Brier argues for the existence of different levels of signification, going from the processes internal to the body, those that occur at the psychic level, and finally those characterizing the communication between several individuals. Unlike Brier and Kull, who derive much of their biosemiotic inspiration from Jesper Hoffmeyer, and ultimately from Peirce, Stephen Cowley claims adherence to M. Barbieri. Although more exclusively concerned with language, Cowley interprets the latter very broadly, maintaining that language consists in a series of “organic codings” and of their “interactional counterparts”.

In his contribution, Alf Hornborg argues for the necessity of retaining a clear (analytical) distinction between Culture and Nature, against attempts to reduce the former to the latter. Although in a rather different vein, Barend van Heusden also claims that meaning as found in human beings, although based on Darwinian evolution, is of a quite different order.

In his paper, Göran Sonesson proposes a detailed analysis of a number of different manifestations of meaning, from features, percepts, and affordances, towards one end, to markers, surrogates, true signs, and sign systems, towards the other, each time pondering to which extent these kinds of meaning can be expected to be present in animals other than human beings. The analysis proposed by Jordan Zlatev overlaps somewhat with that of Sonesson, to the extent that it centres on the sign function, but it is broader in scope. Zlatev’s “semiotic hierarchy” attempts to relate, on the evolutionary scale, the organism, the minimal self, the enculturated self, and the linguistic self to their respective value systems, which are claimed to be fundamentally biological, phenomenal, significative, and normative, respectively.

We wish to thank the main editors for the opportunity to organize this issue, and the authors for their interesting contributions, not to forget their

patient work with all the comments on multiple drafts, from us and from the reviewers. We also wish to express our gratitude to Kalevi Kull, Søren Brier, and Barend van Heusden, as well as to Chris Sinha and Peer Bundgaard for their valuable assistance in preparing this issue.

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Göran Sonesson and Jordan Zlatev

For more information on upcoming issues, calls for submissions, etc., please visit our website at <http://www.cognitivesemiotics.com>.

Kalevi Kull

Vegetative, Animal, and Cultural Semiosis: The semiotic threshold zones

The paper develops the concept of a “semiotic threshold zone” and a classification of major levels of semiotic systems, looking at this as both a theoretical and an empirical problem. The concept of a semiotic threshold zone both specifies and generalizes the notion of a semiotic threshold and is necessary in order to describe and understand the events that enable a system in its evolution to cross the threshold between the levels, and also at the same time to maintain it. The existence of systems based on different types of semiosis leads to secondary and tertiary semiotic threshold zones, in addition to the lower (primary) one that distinguishes semiotic and non-semiotic systems. We argue for the secondary threshold zones being the indexical and symbolic ones, which correspondingly separate the vegetative and animal semiosis (at the indexical threshold zone), and animal and cultural semiosis (at the symbolic threshold zone). We also argue that indexical semiosis is responsible for spatial representations and symbolic semiosis for temporal representations, which means that the vegetative *umwelten* are both non-spatial and non-temporal, the animal *umwelten* being spatial but non-temporal, and the cultural *umwelten* (*Lebenswelten*) being both spatial and temporal. Within these types of semiosis, the tertiary threshold zones could be found.

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1. Introduction: The birth of the concept

Despite the fruitful development, and the already quite extensive bibliography of biosemiotics, there is no general agreement yet among semioticians themselves on the scope of applicability of semiotics, or, in other words, on the placement of the lower semiotic threshold (e.g., Short 2007, Deely 2008, Nöth 2001).¹ The basic features which go together with semiosis include the possibility to make mistakes (or fallibility), and an intentionality in a very broad

¹ See also discussion in Nöth (2000), Santaella (2001), Schonauer (1998), Ljungberg (2001), and the thematic section on “Semiotic thresholds” in *Sign Systems Studies* 34 (1), 2006.

Søren Brier

Levels of Cybersemiotics: Possible ontologies of signification

In this article, it is argued that, in the making of a transdisciplinary theory of signification and communication for living, human, social and technological systems, C. S. Peirce's semiotics is the only one that deals systematically in an evolutionary perspective with non-conscious intentional signs of the body as well as with language. Thus – in competition with the information processing paradigm of cognitive science – this conception naturally gives rise to biosemiotics. This development has also spawned an interest in the possibility of defining levels of signification. The Cybersemiotic approach proposed in the present article integrates Luhmann's triple autopoietic theory of communication with pragmatic theories of levels and types of semiosis such as Intrasemiotics (between the psychic system and the biological self) and Thought-semiotics: the linguistic creation of a systematic and generative classification of the phenomenological, "silent" sign world. Finally a model of phenomenological reflection over "the hard problem of consciousness" called The Semiotic Star is suggested.

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Introduction

The goal of this article is to analyze the problems that our conceptions of science, up until the present, have raised for a natural evolutionary theory of signification involving levels of semiosis up to full language capacity. Furthermore, I will suggest solutions to these problems within the framework of Cybersemiotics, which combines Luhmann's autopoietic system theory with a Peircean biosemiotics, and with aspects of "embodied" cognitive semantics and ethology. I will draw heavily on the arguments presented by Brier (2008a) and use some of the models developed there. Still, the argument here is more focused on the question of how to develop a transdisciplinary framework where a scientific theory of nature and a phenomenological-hermeneutic theory of interpretation and meaning can be integrated with an evolutionary theory of levels of semiosis.

Stephen J. Cowley

Language Flow: Opening the subject

Analysis of linguistic forms does not clarify *experience* of language. Pursuing this, the paper turns to dynamics and, using examples, introduces language *flow*. It is suggested that sensory perception uses movement that can be independently described (from different perspectives). Next, using Barbieri's model of protein synthesis, attention turns to how experience is possible. It is suggested that, in principle, the operations of *organic coding* may have interactional counterparts. By analogy, prosodic 'contextualization' becomes felt reaction that influences real-time response. This parallels how anticipatory gaze is used to generate reading aloud. Finally, using neuroscientific work on intersubjectivity, it is suggested that norms and rewards may reconfigure neural processes that use experience of perception-action in sensing what is meant. On this view, *language* identifies how we use collective practices to integrate verbal patterns, the events of *flow*, and lived experience.

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There is nothing that stands to language in the relation that language stands to everything else (Love 2007: 705).

1. The problem with language

There are many ways of applying *language*. With some trepidation, therefore, I begin with a view that may seem radical. To understand how people interpret and make linguistic signs, it is argued, we need to scrutinise the events of language *flow*. These result from *the time evolution of physical processes* and are thus literally *dynamic*.¹ In language, physical events link chronological structure with experience. Talking and reading (or writing) give us a *sense* of (kairos) time. For

1 Applied to language, *dynamics* refers, in the first instance, to continuous articulatory and visible movements. We examine not 'pure' dynamics (physics) but real-time biomechanics (viz. how physics constrains biology) and, specifically, how this operates under functional constraints.

Alf Hornborg

In Defence of the Nature/Culture Distinction: Why anthropology can neither dispense with, nor be reduced to, semiotics¹

This paper argues against the grain of much recent work in environmental anthropology and related disciplines by pleading for a resurrection of the widely rejected distinction between Nature and Culture. In dialogue with Tim Ingold's 'relational-ecological-developmental' approach to human-environmental relations, the author discusses the role of culture and semiotic systems in two classical but very different problems of human ecology and human biology. The first concerns ecological explanations of food taboos in indigenous Amazonia, the second biological explanations of social differences in identity and behaviour. Both cases represent attempts to exclude the symbolic or cultural dimension from explanations of human behaviour, in the former case by arguing that it is macro-determined by ecosystems, and in the latter that it is micro-determined by genes. Finally, the paper suggests an analytical framework for more differentiated distinctions between those aspects of human bodies and landscapes that require semiotic or symbolic explanations and those that do not.

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Introduction

A number of recent contributions to environmental anthropology and related disciplines have focused on deconstructing the 'Western' or 'modernist' distinction between Nature and Culture, or Nature and Society (cf. Latour 1993 [1991], Croll & Parkin 1992, Hirsch & O'Hanlon 1995, Descola & Pálsson 1996, Ellen & Fukui 1996, Ingold 2000a). Particularly prominent in this

1 I thank the Bank of Sweden Tercentenary Foundation for supporting the project 'Native American Ecocosmologies and Environmental Ethics: Animism, Modernity, and the Cultural Phenomenology of Human-Environmental Relations'. Parts of this paper were originally presented in the panel 'Beyond universalism and relativism', organized by Tim Ingold at the Ninth International Conference on Hunting and Gathering Societies, Edinburgh, September 9–13, 2002.

Barend van Heusden

Dealing with Difference: From cognition to semiotic cognition¹

In this paper, it will be argued that semiotic cognition can be conceived as a distinctive form of cognition, which evolved out of earlier forms of non-semiotic cognition. Semiotic cognition depends on the use of signs and it will be shown that a sign is not a ‘thing’, but rather the name given to a specific organization, or structure, of the cognitive process. Once semiotic cognition was available to humans, its structure may have provided the ground for an evolutionary development that was no longer strictly Darwinian, but followed its own semiotic logic. Semiotic cognition confronts humans with a difference that cannot be eliminated, and it is in the ways in which this difference is dealt with that we may discover a logic of cultural evolution that determines the course of long term cultural change.

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“(…) Felt an emptiness inside to which he just could not relate
Brought on by a simple twist of fate.”
(Bob Dylan, ‘Simple twist of fate’, *Blood on the tracks* (1975))

1. Meaning?

Some time ago, I attended a lecture by a colleague from the department of Kinetic Studies on James Gibson’s theory of affordances (Gibson 1979). My colleague very convincingly argued that, according to Gibson, animals live in meaningful environments. The meaning the environment has for an animal depends on its bodily anatomy and behavioural patterns. This view of the animal environment as a world full of meaning can be traced back at least to the work of Jakob von Uexküll (1920, 1940, cf. also Clark 1997: 23ff.). From a humanities perspective, however, such a view on animal cognitive behaviour is

¹ I am grateful to Göran Sonesson and Jordan Zlatev, as well as to an anonymous reviewer, for their critical comments on earlier versions of this paper.

Göran Sonesson

New Considerations on the Proper Study of Man – and, marginally, some other animals

In order to differentiate the semiotic capacities of animals and human beings we need to understand more exactly what these properties are. Instead of identifying all vehicles of meaning with signs, we certainly have to specify the notion of sign, but it will also be necessary to provide an inventory of other kinds of meaning, starting out from perception, and going through a number of intermediate notions such as affordances, markers, and surrogates before reaching signs and sign systems. This essay proposes a phenomenological description of a few kinds of meaning, which is not meant to be exhaustive, but still should give an idea of the complexity of the task. It suggests that not only the setting up of semiotic levels and hierarchies of evolution and development, but even, to some extent, the comparison of the capacities of animals and human beings must go hand in hand with advances in phenomenological observations.

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Introduction

All human beings are (at least also) animals. In this sense, they are objects of the study called biosemiotics. In some respects (of which many are as yet rather unspecified), however, human beings are different from other animals. I hesitate to say that, in this sense, human beings are studied by anthroposemiotics, because I take the latter term to be a straw-man set up by practitioners of biosemiotics as we know it.¹ Elsewhere, I have claimed that the main interest of semiotics as a discipline consists in enabling the comparing and contrasting of different semiotic resources, instead of splitting up the study of linguistic, pictorial, and other artefacts, as is done in the traditional humanities (Sonesson 1989, etc.). In the same way, we have to posit one single and comprehensive

¹ Or as I know it: I do not claim extensive knowledge of any other tradition than that inspired by Jesper Hoffmeyer.

Jordan Zlatev

The Semiotic Hierarchy: Life, consciousness, signs and language

This article outlines a general theory of meaning, *The Semiotic Hierarchy*, which distinguishes between four major levels in the organization of meaning: *life*, *consciousness*, *sign function* and *language*, where each of these, in this order, both rests on the previous level, and makes possible the attainment of the next. This is shown to be one possible instantiation of the Cognitive Semiotics program, with influences from phenomenology, Popper's tripartite ontology, semiotics, linguistics, enactive cognitive science and evolutionary biology. Key concepts such as "language" and "sign" are defined, as well as the four levels of The Semiotic Hierarchy, on the basis of the type of (a) subject, (b) value-system and (c) world in which the subject is embedded. Finally, it is suggested how the levels can be united in an evolutionary framework, assuming a strong form of emergence giving rise to "ontologically" new properties: consciousness, signs and languages, on the basis of a semiotic, though not standardly biosemiotic, understanding of life.

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Introduction

The goal of this article is to outline a general theory of meaning that I will refer to as *The Semiotic Hierarchy*. It distinguishes between four (macro) evolutionary levels in the organization of meaning: *life*, *consciousness*, *sign function* and *language*, where each of these, in this order, both rests on the previous level, and makes possible the attainment of the next. Thus, as a matter of logic the theory implies (what typological linguists call) an "implication hierarchy": life < consciousness < sign function < language. In other words, some of the claims of the theory are that consciousness presupposes life, that sign use presupposes consciousness, and that language presupposes the sign function – but e.g. not vice versa. As can be surmised even from these rather terse formulations, the theory shares some of the concerns of *biosemiotics* (Hoffmeyer 1996, Emmeche 2007, Brier 2008, this volume, Kull this volume): above all, the need to find a place for meaning in nature, and in effect to *relativize* the nature-culture distinction within