Mind, Cognition, Semiosis: Ways to Cognitive Semiotics

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PART III. COGNITION

Introduction: How to Approach Meaning?

When the child was a child
It didn't know that it was a child,
Everything was full of life,
And all life was one.

When the child was a child,
It had no opinion about anything,
Had no habits,
It often sat cross-legged,
Took off running,
Had a cowlick in its hair,
and made no faces when photographed.

When the child was a child
It was the time for these questions:
Why am I me, and why not you?
Why am I here and why not there?
When did time begin and where the space ends?
Is life under the sun not just a dream?
Is what I see and hear and smell
Not just illusion of a world before the world?

Peter Handke, *Song of Childhood* [excerpt]
From: Wim Wenders, *Der Himmel über Berlin*

When a child is born, something remarkable happens. A parent or a caretaker can observe how new domains of meanings emerge in the course of child's development. The child seeks for the warmness of her mother's body, she reacts to sound and light, she instinctively begins sucking when her mouth is touched. Selected environmental factors are transformed by the child's body in the processes of self-

regulation and self-sustaining. This is the moment when meaning-making (or in Evan Thompson's words: sense-making) starts: a child makes sense of environmental factors at the *biological* level. She creates her own *Umwelt* – the domain of environmental factors important for preservation and development of an organism. Simultaneously, the child experiences the world. The mother's body is experienced as warm, father's voice as pleasant, milk as sweet. The child experiences herself and she experiences being with the other. Being with the other, in turn, crucially involves emotions. One particularly unforgettable moment in the life of a parent is an illustration of this fact: when an infant starts to *share* her emotions in face-to-face interactions. When mother smiles, the child smiles back. Embodied emotions of the parent become meaningful to the child due to the process of affective attunement (Stern, 1985). These experiences give rise to child's world of meaningful phenomena, or *Lifeworld*. The emergence of a Lifeworld is tantamount to the emergence of the second level of meaning: the level of consciousness. Around the first year of life a widespread meaningful behavioral pattern emerges: the child starts to point intentionally (cf. Tomasello, 2008, Chapter 4). Either she wants her caretakers to do something (imperative pointing) or she shares experiences and emotions (declarative pointing). Simultaneously, the child is able to make sense of an adult's pointing and the adults' gaze. In this context, a new scope of meaningful phenomena emerges: pointing gestures. The child starts her second year of life with the capacity for understanding and producing different type of gestures – *pantomime* or *iconic gestures*. She can recognize an adult's behavior as pantomime – she is able to imagine what is *in the gesture*. On the other hand, she bites, tilts her head, waves her hands and expects her caretaker to do the same. In this way the child enters the third level of meaning: signs. With time, a child's gestures become conventionalized – she starts to adjust her gestures to her parents' ones. Soon, iconic gestures lose their role in communication in favor of language. Namely, shortly after learning to use iconic and conventional gestures, the child starts to distinguish linguistic behavior and comprehend linguistic conventions: yet another (fourth) domain of meaningful phenomena.

The specificity of child meaning-making – poetically described by Handke and more strictly characterized in terms of developmental psychology – delivers a partial answer to the first of the questions addressed by cognitive semiotics: *what is meaning*. Meaning – in the context of cognitive semiotics – is characterized at the four levels exemplified above: the level of life, levels of consciousness, signs and language.

One should not be misled by the above developmental description. The problem of meaning can be addressed also from an evolutionary perspective. Are great apes capable of meaning-making? What about dogs? Parrots? Dolphins? Can we – in any way – relate their functioning and behavior to a child's? In other words, studies on meaning include research on various non-human meaning-making activities. For

instance, we observe various living creatures: earthworms and mosquitos, pigeons and sparrows, cats and dogs – each of these beings seeks for favorable conditions to survive and create its *Umwelt*. In this context one may ask (as biosemioticians do) if the establishment of an *Umwelt* is tantamount to meaning-making? If it is, what about the capacity for meaning-making at higher levels?

The above issues and questions motivated the emergence of *cognitive semiotics* as a discipline devoted to theoretical and empirical studies on meaning and meaning-making processes. I encountered the label "cognitive semiotics" for the first time in 2011, submitting a paper for the 7th conference of the Nordic Association for Semiotic Studies. The leading topic of the conference was "Towards Cognitive Semiotics. A semiotic perspective on cognition – A cognitive perspective on semiosis." The label was new, but not the key issues discussed. As the title of the conference suggests, cognitive semiotics was initially seen as a discipline combining research in semiotics (focusing on signs and sign-systems as meaningful entities) and in cognitive science (with particular emphasis on models of cognitive processes responsible for meaning-making activities). Such a combination was supposed to overcome the limitations of these two disciplines. Cognitive science – as seen by semioticians – lacked a proper conception of meaning. In addition, it ignored the specificity of various kinds of sign-vehicles. The task of semiotics was to provide a relevant notion of meaning and deliver conceptual tools for analyses of meanings. Semiotics, in turn, was considered a primarily theoretical discipline: autonomous in regard to other empirical fields of study. Accordingly, cognitive science was expected to supplement semiotic theories with empirical findings. Mutual cooperation between semioticians and cognitive scientists with particular emphasis on phenomenological issues promised to provide an appropriate account of meaning. I must note at this point that cognitive semioticians referred to a non-standard view of cognitive science. Specifically, they stressed the role of direct experience present in perception and action, simultaneously rejecting the standard view on representations as amodal symbols.

The above initial remarks allow for the formulation of the main aim of the book: the presentation of the relatively new discipline of cognitive semiotics in its complexity and richness. First, I present – as faithfully as possible – the institutionalized approach initiated by researchers of the so-called Lund school in cognitive semiotics. Cognitive semiotics, in this view, is seen as a transdisciplinary approach, taking a dynamic perspective on meaning, acknowledging validity of first-, second- and third-person approaches to meaning-making. In addition, the Lund school is strongly influenced by the phenomenological approach to mind, Gibsonian psychology and the idea of embodiment as presented by Francesco Varela, Thompson and Eleanor Rosch (1991).

Such an approach to studies on meaning-making rests on a number of assumptions concerning the nature of mind (with particular emphasis on consciousness

and subjectivity), understanding of cognition, essence of signs and language. In the following chapters (Chapter 4, 6 and 7) I strive to elicit these assumptions and I assess their role in cognitive semiotic enterprise. This aim corresponds to the presentation of the first of the "ways to cognitive semiotics" mentioned in the title of the book. I use the label "phenomenologically-oriented path" in reference to this approach.

Handke's poem running through Wenders's movie *Himmel über Berlin* as well as the movie itself ideally illustrate the development of a child's meaning-making. The spectator of the movie can observe the emergence of a rich *Lifeworld* of the child, specifically in contrast to adults' (and angels') *Lifeworlds*. Watching this movie (or rather relishing it), one appreciates the phenomenological dimension of studies on mind, cognition and meaning-making. However, just like one cannot exclusively focus on poetic descriptions of a childhood, one cannot also base studies on meanings exclusively on the phenomenological perspective. Realizing this, I partially depart from the view on cognitive semiotics presented above. I stress the fact that our activity in the world, our engagements with objects and other subjects also have their *functional aspects*. For instance, adults' gestures are meaningful to a child since they have certain functions: they are performed to draw the child's attention, they are intended to evoke a response, their task is to inform the child. Parents' gestures are meaningful to the child as far as she can imagine what she is supposed to do. Consequently, the second aim of the book is to validate the role of a functionalist, standard ("cognitivist") cognitive science in studies on meaning and meaning-making. This approach to meaning is considered the other "way to cognitive semiotics". I call this approach "functionalist-cognitivist path" in cognitive semiotics.

Cognitive semiotics in its early years – as mentioned above – has been developed in explicit contraposition to standard cognitive science. First, cognitive semioticians stressed the role of subjectivity and consciousness in accounts of cognition. Cognition – in their view – should be seen as processes emerging in interactions between the brain, body and an environment. The body – it must be stressed – is not treated as an external tool of cognition, but as indispensable participant of cognitive processes. In this context analyses of the *lived body* crucially contribute to research on cognition. The initial reference to an enactive view on cognition – characteristic of early cognitive semiotics – has been replaced by commitment to an approach to cognition which is known as *4e cognitive science*, combining elements of the *enactive* approach, *embodied* and *embedded* views on cognition, as well as an interpretation of the *extended* approach. This tension between standard cognitive science and non-standard approaches is present in discussions within the cognitive semiotic community. Although this tension also has its reflection in this book, I do not intend to stress differences between the approaches or to argue for one of the parties of the dispute. On the contrary, I attempt to relieve this tension. Although I have written the book from the cognitivist perspective, I try to convince

a cognitivist reader (and to a degree myself as well) that researchers working within the functionalist view on mind and standard cognitive science must accept the limitations of their own approach. Specifically, I argue that they should admit the necessity of complementary, non-functionalist approaches to the meaning-making mind. To achieve this goal, I elaborate in detail the phenomenological approach to mind. For the same reasons, I discuss the non-standard approaches to cognition thoroughly. On the other hand, I attempt to show that standard cognitive science constantly changes and develops. In particular, cognitive scientists became aware that inclusion of the body in considerations on cognition and appreciation of the role of specific environmental factors are necessary. The picture of cognitive science as a discipline exclusively occupied with computational operations on amodal symbolic representations is no longer valid and reference to such a picture of cognitive science may be treated as a straw-man argument. Ultimately, my final conclusion is that researchers should seek conciliatory solutions combining elements of standard cognitive science and non-standard approaches to cognition. Mark Rowlands' (2010) idea of the amalgamated mind can be considered as such a unifying approach. In this context, I would like to see cognitive semiotics as a possible platform for the rapprochement of standard and non-standard cognitive science in studies on meaning-making.

The presentation of cognitive semiotics would not be complete without reference to empirical studies on meaning-making activities. In addressing this empirical facet of cognitive semiotics, I focus and draw the reader's attention primarily to one of the levels of meaning, namely the level of signs.[1] In line with the so-called "conceptual-empirical loop" or "conceptual-empirical spiral" (Zlatev, 2011; Zlatev et al., 2016) I consider selected theories of signs as possible conceptual backgrounds of empirical research on semiosis. In particular, Charles S. Peirce's and Göran Sonesson's theoretical findings are applied in empirical (primarily psychological and comparative) studies on the semiotic capacities of children and chimpanzees, as well as on the emergence and development of communication. While the combination of theory and empirical studies is widely accepted within cognitive semiotics, cognitive modeling is unusual or uncommon. The novelty of my approach consists in the application of cognitivist methods and, in particular, cognitive (computational) modeling in cognitive semiotics.[2] Specifically, I use the Peircean triadic view on semiosis as the conceptual background for my model.

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[1] Other levels are represented – to a degree – in the book as well. The empirical aspect of the *level of life* is partially characterized in the context of the enactivist approach to cognition (Chapter 6), empirical studies in connection with the *level of consciousness* are partially addressed in Chapter 3 and Chapter 4.

[2] The only explicit attempt to combine cognitive semiotics and cognitivism I am aware of has been presented by Joel Parthemore (e.g. 2016). Specifically, he justifies – at the theoretical level – the role of GOFAI (good, old-fashioned Artificial Intelligence) in cognitive semiotics.

Elaboration of the level of signs closes the presentation of cognitive semiotics. The detailed and systematic characteristics of the fourth level of meaning, the level of language – as characterized by normativity and conventionality (cf. section 2.2.6 in Chapter 2) – is beyond the scope of this book.

The book may seem a bit eclectic to the reader. While attempting to show various credentials of cognitive semiotics I discuss highly abstract problems of philosophy of mind and simultaneously present results of very specific experiments on picture recognition. On the one hand, I elaborate intentional acts involved in semiotic activity; on the other, I describe a computational system capable of a limited interpretation of excerpts from *Through the Looking-Glass* novel. I look for meaning-making in the behavior of *E. coli* bacteria and I characterize it in terms of Peircean categories of Firstness, Secondness and Thirdness. However, this diversity of issues, topics and approaches reflects the nature of the discipline (cognitive semiotics) and its subject-matter (meaning-making). As a transdisciplinary approach to meaning and meaning-making, it necessarily draws on different disciplines: starting with philosophy of mind, via semiotics and linguistics, cognitive science(s), neuroanthropology, developmental and evolutionary psychology, comparative studies, and ending with robotics. What is more, I suggest including cognitive modeling in the list of disciplines. I am convinced that this list is not closed, and recent cognitive semiotic conferences confirm this observation. I can only hope that the reader will be able to find a consistent line of thought behind all these miscellaneous phenomena, approaches and theories. To minimize the reader's feeling of perplexity, I present "the roadmap" in the organization of the book.

The book is organized into four parts, as they are summarized below. In general, each of the parts (apart from the first one) characterizes a level of discussions on meaning: mind as a meaning-making system, meaning-making as a cognitive process and finally, meaning-making as a semiotic[3] phenomenon. Furthermore, each of these parts splits into two chapters: each of these chapters, roughly, presents one of the two *ways to cognitive semiotics*, either functional-cognitivist (Chapters 3, 5, 8) or phenomenologically-oriented (Chapters 4, 6, 7).

Part I presents cognitive semiotics as a consciously developed discipline focusing on the phenomenon of meaning and meaning-making processes. Chapter 1 summarizes initial attempts to define cognitive semiotics as well as its background and related work. I enumerate key features of the discipline and discuss controversial assumptions (the leading role of phenomenology and the commitment to enactive cognitive science). Chapter 2 clarifies the subject-matter of cognitive semiotics, namely the notion of meaning. Specifically, I present the Semiotic Hierarchy framework discussing the notion of meaning in both evolutionary and developmental perspectives. The Semiotic Hierarchy is seen as a uniform framework facilitating the

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[3] "Semiotic" in traditional or narrow sense of this term, i.e. sign-based. Cf. section 1.2, below.

defragmentation (to use Zlatev's phrase) and unification of the notion of meaning. The chapter closes with suggestions concerning revisions of the Semiotic Hierarchy.

Part II is devoted to the philosophical background of cognitive semiotics and can be seen as addressing the question: what is the *meaning-making mind*. From Chapter 3, the cognitive semiotic story splits into two seemingly unrelated, but actually overlapping plots: functionally- and phenomenologically-oriented. In Chapter 3 I consider the "analytic" philosophy of mind as a foundation of cognitivist studies on meaning. The label "analytic" is taken broadly[4] and embraces both the functionalist approach as well as Nagel's view on the subjective mind. The description of the functional approach to mind is preceded by a presentation of the theoretical ancestors of functionalism, namely behaviorism and identity theory. The detailed presentation of behaviorism is not accidental as the enactive approach to cognition is sometimes referred to as a neobehavioristic approach. Chapter 4, in turn, characterizes phenomenology as a first step on the non-cognitivist way to cognitive semiotics. Phenomenology is shown as providing tools for analyses of meaningful phenomena and delivering crucial notions for studies on meanings (intentionality, embodiment, *Lifeworld*, among others). Specifically, I elaborate the role of phenomenology in studies on perceptual, sign-based and linguistic meaning-making. In line with the postulate to combine conceptual and empirical approaches, example applications of phenomenology in empirical studies on meanings are presented as well.

Part III attempts to answer the question: *how to account for cognition*. As I mentioned above, cognitive science is considered one of the disciplines contributing to cognitive semiotics. It is understandable in the context of the commitment to the claim that meaning-making is treated as an instance of cognitive processes. The objections formulated in reference to standard cognitive science raise the question of possible alternative approaches to cognition. As the view on cognition depends on the view on mind, the "split story" of cognitive semiotics continues. Chapter 5 should be read in connection with Chapter 3: the standard, functional view on cognition is presented and discussed. I focus on these aspects of standard cognitive science which give rise to objections in the context of cognitive semiotics; namely the notions of representation, brain-boundedness, and computation. Simultaneously, I attempt to suggest the possible role of standard cognitive science in research on meanings. This chapter closes with a presentation of the putative third stage in the development of cognitive science (Thompson, 2007a), namely the dynamic systems theory.

Chapter 6, in turn, should be seen – to a degree – as a continuation of issues presented in Chapter 4: various non-standard approaches to cognition are discussed.

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[4] In fact, I use the term in the manner in which phenomenologically-oriented cognitive semioticians do. "Analytic" in this context means "non-phenomenological."

In subsequent sections I present enactive, embodied, embedded and extended approaches, simultaneously discussing their phenomenological leanings and putative role in cognitive semiotics. Specifically, I focus on mind–body–environment interactions, the scope of cognitive processes to be accounted for and on the role of representations in meaning-making activities. This chapter closes with two sections summarizing discussions on cognition. Section 6.6 suggests a conciliatory approach to cognition. The idea of the *amalgamated mind* is intended to unify representationalist and computational approaches to cognition on the one hand, and phenomenologically motivated stances on the other hand. Section 6.8, in turn, attempts to comparatively assess standard cognitive science and non-standard approaches in the context of cognitive semiotics.

Part IV of the book delves into one, specific level of meaning; namely the third level in the Semiotic Hierarchy, the level of signs. Accordingly, Chapter 7 introduces the very notion of a sign (in terms of the Stoics theory of *semeia*). Since cognitive semiotics focuses on dynamic meaning-making and relationships between semiosis and cognition, I introduce the Peircean theory of signs. Finally, the phenomenologically and empirically motivated Sonesson's theory (I dubbed it "semiotics for cognitive semiotics") is presented. In this context, the affinities between semiotics and phenomenology are discussed. The second part of Chapter 7 presents "the conceptual-empirical spiral" in action; namely I show how semiotic studies on the one hand, and empirical research on the emergence of "semiotic function," the emergence of communication and sensitivity to various kinds of sign-vehicles on the other, are combined.

Chapter 8 can be seen as the continuation of Chapter 5 as it introduces a specific methodology developed within standard cognitive science, namely cognitive modeling. I elaborate the features of cognitive models and the criteria of their assessment. The notion of cognitive architecture as a framework facilitating the design of cognitive models is presented as well. In the second part of Chapter 8, I refer to results of my own research in cognitive semiotics. I elaborate my model of semiosis which draws on the Peircean theory of signs. I also argue that such an approach complements first-person methods and I speculate that it can be combined with results of phenomenological studies. Chapter 8 closes the "functional-cognitivist" path to cognitive semiotics.

In the final, concluding part, I return to the initial characteristics of cognitive semiotics and I attempt to assess it in the light of contemporary studies on meaning-making. I take the bird's eye view of the two ways to cognitive semiotics and their interrelations. Finally, I speculate about possible future tenets of cognitive semiotic research with particular emphasis on the putative role of computational modeling in studies on semiosis.

Acknowledgements

Books are usually treated as a result of the work of an individual (an author) or group of individuals. Although the person who has written this book is known, the content of the book, the ideas presented, doubts and convictions expressed here can hardly be ascribed to a single person. In a sense, this book reflects the work of the whole field of cognitive semiotics. Specifically, this book grew out of ideas discussed in the cognitive semiotic community during a number of seminars, conferences, my fellowship at Lund University and other official or less official meetings. Over the past 10 years or so I witnessed the emergence of cognitive semiotics and I (actively) observed changes (it was *participant observation*). Therefore, I owe special thanks to Jordan Zlatev and Göran Sonesson for our multidimensional cooperation during these years.

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PART I

Cognitive Semiotics: The Basics

CHAPTER 1

Introducing Cognitive Semiotics

1.1 The beginnings

In 2016 (Zlatev, Sonesson & Konderak, 2016, p. 9), we optimistically announced: "Cognitive semiotics can hardly be characterized as an 'emerging' discipline anymore. It is already here." Looking at the discipline from an institutional point of view it is hard to deny it: cognitive semioticians can join an association (International Association for Cognitive Semiotics, IACS, founded 2013), they can meet during international conferences of the association (two of them took place in 2014 in Lund and in 2016 in Lublin, the next one will take place in Toronto, in 2018), they can publish in a dedicated journal (*Cognitive Semiotics* published by de Gruyter Mouton). Cognitive semiotics is also an established field of studies at the University of Aarhus, University of Lund as well as Maria Curie-Skłodowska University in Lublin and University of Białystok. Leaving the above institutional criteria aside, I wish to answer the question: what is cognitive semiotics as a scientific discipline?

Let us start with the origins of this discipline. Historically, cognitive semiotics emerged as a research program bringing together research results of semiotics, linguistics and cognitive science(s). The basic idea behind the program was to integrate humanities, social sciences and natural sciences in their efforts to describe properly and explain the phenomenon of meaning and meaning-making processes. Meaning seems to be (regardless its particular definition) a phenomenon that is present in multiple areas of study. Three disciplines are particularly interested in the phenomenon: philosophy (especially philosophy of language and mind) with Fregean notions of *sense* and *reference* or the Putnamian problem of *the meaning of meaning* (1975), semiotics (with meaning of signs) and linguistics (with semantics and pragmatics of linguistic units). Consequently, meaning has been extensively studied in the humanities and these disciplines have provided a solid conceptual basis for a theory of meaning. However, meaning is not (only) an abstract concept or idea – human beings in their everyday functioning treat various aspects of their world as meaningful: they make sense of their surroundings (in interpreting various objects and phenomena), they also communicate about these meaningful

aspects. Interpretation and communication may be successful or may fail – for different reasons. To identify some of these reasons it is necessary to enrich the area of humanities and approach human beings as subjects of experimental studies. Accordingly, psychology and neuroscience enter the stage: studies on meanings and meaning-making gained their empirical dimension.

In the late 1950s, a new discipline, cognitive science, emerged and provided a (more-less) uniform framework for studies on human cognition. Although it would be an overstatement to claim that cognitive science integrated the mentioned above disciplines *in studies of meaning*, one can safely state that cognitive science – interested in communication, language use and understanding – also provided a kind of ground for studies on meaning-making activities.[5] However, cognitive science, at least in its cognitivist form,[6] dissatisfied researchers interested in meanings. As Sonesson (2009, p. 28) states: "cognitive science – as a study of mind – either ignored the phenomenon of meaning or described it improperly." Specifically, cognitive science – in the eyes of the early cognitive semioticians – misses one crucial aspect of our mentality and cognition, namely consciousness (understood as experience). Regardless of the validity of the accusation (cf. Chapter 5), the motivation for such a complaint is obvious: researchers initiating studies on meaning consider consciousness "as the primary source of meaning" (Chalmers as quoted by Gallagher and Zahavi, 2008, p. 108, cf. also: Chalmers, 1997, p. 21). This conviction directed the attention of researchers toward consciousness studies on the one hand, and alternative approaches to cognition (enactive, embodied, embedded and extended) on the other hand.

As mentioned above, it is natural to look for meanings in a discipline concerned with signs, in semiotics. Semioticians offered various explanations of meaningfulness, based on, e.g. proximity, similarity, conventions (to use the currently most popular distinction). The problem was that semiotic theories became "stuck between the analysis of single texts and theory construction" (Sonesson, 2009, p. 36) and they ignored results of empirical research. Cognitive semiotics is seen as a remedy to the situation: it is intended to combine theory construction and experimental work characteristic for studies on cognition. In addition, the subject of cognitive semiotics research started to be analyzed in evolutionary as well as developmental perspectives (Donald, 1991; Christiansen and Kirby 2003b; Tomasello et al., 2003; Tomasello, 2008).

The very idea of cognitive semiotics, understood as a research project combining research in semiotics and in cognitive science, emerged in the nineties of the twen-

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[5] I take cognitive science to be interested primarily in cognitive processes, hence reference to meaning-making (understood as a process) rather than to, e.g. meaning structures (implying a rather static dimension).

[6] I use the label "cognitivist" in reference to the standard, representationalist and computationalist: symbolic and connectionist cognitive science. The distinction between "Cartesian," "cognitivist" cognitive science and "non-Cartesian" approaches to cognition will be elaborated in Chapters 5 and 6.

tieth century. It was Thomas Daddesio (1995) who suggested "a cognitive theory of symbols" and opted for "a cognitive approach to semiosis." Daddesio postulates an integration of traditional semiotics – understood as the study of the relationship between signs ("symbols" in Daddesio's words) and their meanings on the one hand, and cognitive science – understood in this context as an empirical study on cognitive processes responsible for access to such signs on the other. Especially, Daddesio is interested in the way in which signs became available for consciousness. The approach – initially sketched by Daddesio – evolved and crystallized during the years of intellectual activity of researchers at end of the 20th and the beginning of the 21st century.

The name of the discipline is somewhat misleading, as it suggests that it deals with a combination of research on cognition and semiotic-related problems. The grammatical construction of the label "cognitive semiotics", in turn, may suggest that the field of study constitutes one more sub-discipline within cognitive science (by analogy to: cognitive psychology, cognitive neuroscience or cognitive anthropology). It is Umberto Eco, who noticed such possibility in his paper "Semiotics in the Next Millennium" (1999):

> No one in the United States has ever claimed that the cognitive sciences are a single science, and everyone is in agreement about maintaining them as a sort of interdisciplinary aggregate with a common nucleus. And it does not displease me that semiotics has come to be included in this confederation, independently of the question (still debated) whether semiotics is a cognitive science or cognitive sciences are a branch of semiotics.

On the other hand, the label may suggest that cognitive semiotics should be treated as a new "branch" in semiotics – on a par with, e.g. "anthroposemiotics," "semiotics of culture," or particular semiotic theory, e.g. "Peircean semiotics" (Zlatev, 2012, p. 2). None of these interpretations gives justice to contemporary studies on meanings, to cognitive semiotics. The idea behind the label is a bit more complex and requires more detailed elaboration.

Jordan Zlatev (2011; 2012; 2015) attempted to formulate a definition of cognitive semiotics. There are two oft-quoted characteristics of the discipline, the first one referring primarily to the subject-matter of the discipline, the second one characterizing cognitive semiotics in terms of contributing disciplines, namely:

> Cognitive semiotics can be defined as an interdisciplinary matrix of (sub-parts of) disciplines and methods, focused on the multifaceted phenomenon of *meaning*. (Zlatev, 2011)

> Cognitive semiotics aims at "integrating methods and theories developed in the disciplines of *cognitive science* with methods and theories developed in *semiotics* and the *humanities*, with the ultimate aim of providing new insights into the realm of human signification and its manifestation in cultural practices." (Editorial Preface, *Cognitive Semiotics* Issue 0 (2007) quoted by Zlatev, (2012, p. 2))

The two definitions, taken together, indicate the subject matter of cognitive semiotics (meaning), its methodology (result of integration methodologies of sciences and humanities) and highlight the transdisciplinarity of the field of study. In the following sections, I initially present the subject-matter of cognitive semiotics (a more detailed presentation is forthcoming in the second chapter), methodology and "matrix of disciplines" contributing cognitive semiotics.

1.2 Extension of the term "semiotics"

The reader may be familiar with some definitions of semiotics where the notions of a sign and a sign system play a crucial role. Semiotics is usually defined as "a theory of signs" (Żegleń, 2000, p. 13) or as a discipline which studies various sign systems (Żegleń, 2000, p. 18). In a similar vein, Daniel Chandler (2007, p. 1) writes: "The shortest definition is that it is *the study of signs.*" Even if we admit that the actual meanings of the above definitions ultimately depend on understanding of the notion of "sign,"[7] we still discuss a discipline limited to a particular (although broad[8]) class of entities called signs and understood as "anything which stands for something else."

To understand the subject matter of cognitive semiotics, the reader has to realize that the meaning of the term "semiotics" in the name of the discipline has been significantly broadened. Cognitive semioticians focus on meanings and meaning-making in general and define semiotics accordingly. Signs are considered just a sub-class of all possible meaningful phenomena; the usage and interpretation of signs are just one of possible kinds of meaning-making activity. In line with these considerations, Lorraine McCune (2016, p. 127) writes: "Under [the extended definition of semiotics – P.K.], favored by many in cognitive semiotics, all experience of meaning (even sensation) can be considered semiotic (i.e. meaningful), but only some special kinds of meanings are signs." To illustrate the above statement let us have a look at some examples of meaningful phenomena and meaning-making activities. When *E. coli* bacteria moves in water environment towards sugar-rich region, it *makes sense* of its environment. In other words, sugar-rich water is *meaningful* for the bacteria. When an animal avoids too hot (or sunny) regions, it *makes sense* of the perceived stimuli. In other words, temperature (as experienced by the animal) is *meaningful* for this animal. If a toddler reacts to eye movement of her parent or caretaker and follows the gaze, she makes sense of bodily actions. The

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[7] Sonesson sees here the main problem of traditional semiotics: there is no specific definition of the sign which would allow to "separate meanings which are signs from other meanings" (Sonesson, 2007, p. 92).

[8] In line with Eco (1976, p. 7), echoing Peirce, writing: "everything can be taken as a sign."

gaze is *meaningful* for her. If a driver stops at the red light at a junction, he makes sense of a (conventional) sign, this sign is *meaningful* for him. Finally, the reader of this book tries to make sense of the words printed on the sheet of paper. These words, sentences, paragraphs are *meaningful* to the reader. All the examples show diversity of possible meaning-making activities and different ways to understand the phenomenon of meaning. Cognitive semioticians argue that one cannot limit the class of meaningful phenomena just to signs and language – the scope of meaning is much broader. One of the goals of cognitive semiotics is to identify classes of possible meanings, characterize them and put them in evolutionary and developmental frameworks. In particular, the so-called Lund school in semiotics accepts the hypothesis concerning hierarchy of meanings, the Semiotic Hierarchy framework (Zlatev, 2009). This proposal is a subject of the next chapter. Simultaneously, cognitive semiotics avoids (over-)using the term "sign" in reference to all the above phenomena. A sign exemplifies just one kind of meaning and cannot be equated with meaning. Presence or concentration of sucrose is not a sign, although it is meaningful. In sum, cognitive semioticians suggest that it is necessary to focus on meaning and meaning-making activities in general (i.e. semiosis) rather than exclusively on signs and sign systems.

What distinguishes cognitive semiotics from (at least some) approaches within traditionally understood semiotics is focus on the meaning dynamism. It means that meaning is seen not as a static phenomenon (e.g. a fixed result of the process of interpretation), but as a process (e.g. of constant reinterpretation). "Dynamic" means that researchers are interested in change of meaning rather than in some "snapshot," particular meaning at particular time. Language, for instance, is not seen as ready-to-analyze complete phenomenon, but rather as a process, where semantics, pragmatics as well as grammatical structures change due to various individual, social and environmental factors. Dynamicity of meaning can be considered at different time-scales – in dependence of the phenomenon discussed. On the one hand, our perceptual meaningful experiences may change in (mili) seconds (and that fact is reflected in relevant neuroscientific research techniques), on the other hand, language change may require years or even centuries. One of the leading ideas of cognitive semiotics is to describe and explain this dynamicity. Dynamicity of meanings is also a consequence of a specific approach to a meaning-making subject. Cognitive semiotics is interested in subjects active in their respective environments (*Umwelt*, *Lifeworld*: cf. Chapter 2). In this view, meaning-making subject cannot be considered a passive information-receiver, but an active information-seeker. The feature is stressed in enactive approach to cognition and elaborated in Chapter 6.