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Table of contents

Jaan Valsiner

The semiotic construction of solitude:	
Processes of internalization and externalization	9
Семиотическое образование одиночества:	
процессы интернализации и экстернализации. <i>Резюме</i>	34
Üksilduse semiootiline kujunemine: internalisatsiooni ja	
eksternalisatsiooni protsessid. <i>Kokkuvõte</i>	35

João Queiroz, Floyd Merrell

Semiosis and pragmatism: Toward a dynamic concept of	
meaning	37
Семиозис и прагматизм: к динамическому понятию значения.	
<i>Резюме</i>	64
Semioos ja pragmatism: Tähenduse dünaamilise mõiste suunas.	
<i>Kokkuvõte</i>	65

Andres Luure

The duality of understanding and the understanding of duality	
in semiotics	67
Дуальность понимания и понимание дуальности в семиотике.	
<i>Резюме</i>	81
Mõistmise duaalsus ja duaalsuse mõistmine semiootikas. <i>Kokkuvõte</i>	81

The semiotic thresholds

Guido Ipsen

From environment to culture: Aspects of continuity	83
От окружающей среды до культуры: аспекты непрерывности.	
<i>Резюме</i>	103
Keskonnast kultuurini: Pidevuse tähud. <i>Kokkuvõte</i>	104

Louis Armand

From materiality to system	105
Из материальности в систему. Резюме	119
Materiaalsusest süsteemiks. Kokkuvõte	119

Andrew Stables

From semiosis to social policy: The less trodden path	121
От семиозиса к социальной политике: непроторенный путь. Резюме	133
Märgiprotsessist sotsiaalpoliitikani: vähetalutatud rada. Kokkuvõte	134

Göran Sonesson

The meaning of meaning in biology and cognitive science: A semiotic reconstruction	135
Значение значения в биологии и когнитивных науках: семиотическая реконструкция. Резюме	211
Tähenäse tähendus bioloogias ja kognitiivteadustes: semiootiline rekonstruktsioon. Kokkuvõte	212

Semiotics of disaster and explosion

Han-liang Chang

Disaster semiotics: An alternative 'global semiotics'?	215
Семиотика бедствия — альтернатива "глобальной семиотике"? Резюме	229
Õnnetuse semiootika: Alternatiiv 'globaalsemiootikale'? Kokkuvõte	230

Sungdo Kim

Semiotics of natural disaster discourse in post-tsunami world: A theoretical framework	231
Семиотика природных катастроф: теоретическое оформление. Резюме	243
Looduskatastroofi semiootika tsunamijärgses maailmas: teoreetiline raamistik. Kokkuvõte	244

Irene Machado

Impact or explosion? Technological culture and the ballistic metaphor	245
Столкновение или взрыв? Технологическая культура и баллистическая метафора. <i>Резюме</i>	259
Kokkupõrge või plahvatus? Tehnoloogiline kultuur ja ballistiline metafoor. <i>Kokkuvõte</i>	260

Semiotics of the end**Олег Борисович Заславский**

Структурные парадоксы русской литературы и поэтика псевдооборванного текста	261
Structural paradoxes of Russian literature and poetics of pseudobroken text. <i>Summary</i>	261
Struktuursed paradoksid vene kirjanduses ja pseudokatkestatud teksti poetika. <i>Kokkuvõte</i>	269

The semiotic construction of solitude: Processes of internalization and externalization

Jaan Valsiner

Department of Psychology, Clark University
Worcester, Ma. 01610, USA
jvalsiner@clarku.edu

Abstract. Human beings create their private worlds of feelings and thoughts through immersion in the semiosphere created through situated activity contexts. Processes of internalization/externalization are at the center of development of human beings through the whole of their life courses. We consider the contexts of schooling as organized through Semiotic Demand Settings (SDS) for development of intrinsic motivation of the students. Intrinsic motivation is a process mechanism that operates as internalized and hyper-generalized feeling at the most central layer of internalization. It is a result of integration of social suggestions, hyper-generalized as an affective field, and turned into a value that directs future actions.

We are alone — even in the middle of the most crowded social settings. Or — maybe we become especially alone under the conditions of such social interaction overdose? At the same time — we can be alone only thanks to that social embedding. It is through semiotic self-regulatory mechanisms that persons can overcome their immersion in the field of social relations (Gertz *et al.* 2006), and develop their own private worlds in the middle of the public ones. As Georg Simmel has pointed out,

[...] historical development brings out the deeper real significance: that which in its nature is public, which in its content concerns all, becomes also externally, in its sociological form, more and more public; while that which in its inmost nature refers to the self alone — that is, the centripetal affairs of the individual — must also gain in sociological position a more and more private character, a more decisive possibility of remaining secret. (Simmel 1906: 469)

Education is a form of socializing the developing person into the semiotic texture of the given society — and to his or her private construction of personal subjectivity. As pointed out elsewhere (Valsiner 2003b) any educational situated activity context is inherently ambiguous. It constrains the learner — and by precisely that — enables to develop new ways of knowing. Thus we can think of creativity as an act of constructive destruction. In education, support for construction of novel forms of mental functioning (Luria 1974; Serpell 1993; Tulviste 1991) is intricately linked with destruction of old forms. Some of this destruction is total and pre-planned (e.g., boarding school education introduced to destroy the link of new generation with their parents' ways of being — Jones 1925). Aside from outright destruction of “the old”, schooling also guarantees proliferation of ignorance. This is inevitable since concentration on the mastery of new knowledge leaves out of focus the mastery of many other everyday life skills.

The specific arena for this destruction and construction is the classroom — but not only that. It is the whole social setting that is localized in some geographical location (territory) with marked boundaries (and limits on who, when, and under what circumstances can cross those) that creates the unity of the process of educating. My goal here is to outline processes that are involved in the social act of guiding internalization (and externalization) in any social setting. Classroom may be a contemporary preferred place for it — yet it is a relatively new cultural place. Guidance of internalization has been taking place in situated activities in the streets, marketplaces, places for worship and war arenas. The general structure of such guidance is robust — *people are forced to act in the given context in socially prescribed directions* (cf. Milgram 1974) together with *socially suggested ways of creating meanings* — deeply “felt-through” personal senses — that provide personal and social stability through affective saturation of the actions (Valsiner 2005a). So both — *how to act* and *how to feel about* doing so — are socially guided (Capezza, Valsiner 2007). Personal uniqueness of internalized re-constructions of affective thinking is the result of social suggestions.

Semiotic demand settings (SDS)

Human life proceeds through negotiation between the perception and action that unite the actor and context, and the suggestions for feeling, thinking and acting that are proliferated through communication. Semiotic Demand Settings (SDS) are human-made structures of everyday life settings where the social boundaries of talk are set (Valsiner 2000: 125).

Figure 1 describes a case relation between the two opposing opinions within the field of promoted talking. By engaging persons within that sub-field — and encouraging opposing viewpoints — the SDS guarantees that through hyper-talk in this domain the attention is not taken to “side stories” (the maybe-talk zone) and is prevented from touching upon the “taboo zone”. It is obvious that here the real differences between “open” and “closed” societies disappear — both kinds of societies disallow talking about “taboo zones”, but the “open” ones guide people to hyper-talk in some area of meaning construction (while the “closed” ones have no promoted talking zones).

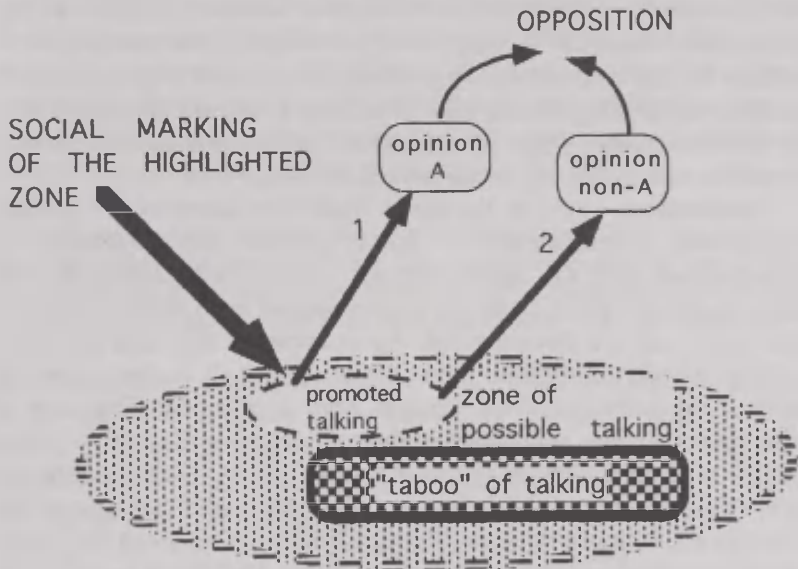


Figure 1. Semiotic Demand Setting (from Valsiner 2000: 125).

Any human life context — including that of school — becomes culturally guided by some socio-institutional focusing of the person's attention to it in three ways. First, there is the realm of *no-talk* — the sub-field of personal experiences that are excluded. The rest of the field is the *maybe-talk*. Experiences within that field can be talked about — but ordinarily are not, as long as there is no special goal that makes that talking necessary. Most of human experiences belong to *maybe-talk*. The third domain of talking — the *hyper-talk* — is the socially (and personally) highlighted part of *maybe-talk* that is turned from a state of “ordinary” talking to that of *obsessive* talking.

How is the *hyper-talk* domain created? It starts from the social marking of the highlighted zone. The suggested focus (see Fig. 1) can operate in two ways. First, it guides the person to reflect upon the focused experience — the zone of “promoted talking”. Secondly, it provides the blueprint for talking in socially legitimized ways (Discourse ways marked by numbers 1 and 2, leading to Opinion *A* and Opinion non-*A*, respectively). The acceptability (or non-acceptability) of opposition is thus enabled. In our everyday life contexts, this is the key to multi-voiced discourses in the contexts we easily call “the civil society” (for further analysis, see Valsiner 2005b). In the educational contexts — such as classrooms — the promotion of talking for the sake of self-expressions may create a basis for both thinking and talking for the sake of talking. Creative acts may emerge in such discourse — or be completely dis-allowed by the intense repetitive use of existing social representations.

Furthermore, each of the three discursive domains — *no-talk*, *maybe-talk*, and *hyper-talk* — are in parallel either connected or disconnected with the action domain. The *no-talk* domain is most likely to remain connected with action domain even if the *maybe-talk* and *hyper-talk* are disconnected. An example of that case may be a society where individuals “step in” to “correct” — by action — anybody's violation of the *no-talk* zone boundaries. The state of disconnection from action makes these topics open for talk — as the reality of ordinary living is not threatened by it. Furthermore, the symbolic resources of the collective culture may guide persons to talk about one's affective domains (Zittoun 2006), or feel about the “taboo zones” as ruled out from the talking fields (Salvatore *et al.* 2006; Valsiner 2005b; 2006a)

Such socially guided feeling and talking (as well as non-feeling and not talking) leads the processes of internalization and externalization. In order to consider these processes as theoretically relevant we need to assume that there is basic difference between the person and the social context. We consider this difference to be *inclusively separating* the two — the person *is distinct from* the social context *while being a part of it*. This — separate-yet-nonseparate — state of affairs allows for any Subject-Object distinction to be made, which in its turn can lead to reflection upon the relationship of the two. Thus, a person completely immersed in the social context — be it by trance, dance, or complete devotion — cannot reflect upon oneself in that context. Likewise, a person completely (exclusively) separated from the context has no basis for viewing one's relationship with that context (e.g., consider the topic of "my life on the Moon") — other than through projecting imagined scenarios onto the issue, i.e., *creating a relationship in order to reflect upon it* (see Valsiner 1999, on how such relations are created).

The capacity to construct imaginary worlds proves the centrality of person in any social setting. The person is both part of the here-and-now setting (as it exists) and outside of that setting (as it is re-thought through importing imaginary scenarios, daydreams, new meanings). Creativity becomes possible thanks to such duality of contrast between the "as-is" and "as-if" fields that the person lives through in each setting. It is made possible by the openness of metaphoric construction (Johansen 2006). Metaphors

[...] are not based upon pre-existing similarities in reality: they *constitute* similarities where there were none. The meaning of a metaphor is not the sum of meanings of the related components: it is an untranslatable and irreducible surplus that exists *only* in relating, in the transference. (Vervaeck 1984: 49)

Such metaphoric synthesis is the result of human *psyche* as it operates at the intersection of the here-and-now and wherever-and-whenever fields of meaning construction. The opposition is filled with tension — the here-and-now may seem peaceful at the moment — but the person feels it can change any time. Or the most turbulent social settings can lead to the creation of idyllic images of idealized worlds — gardens, happy ways of life, beliefs in fairies, miracles, and in Harry Potter. The person-in-context is constantly internalizing and externalizing one's meaningful life experiences.

The process of internalization/externalization

There is no need to enter into the dispute that has been going on among socio-cultural researchers of whether the notion of internalization is usable as a viable human phenomenon. I take it for granted — as long as we take for granted that active, meaning-making human beings exist — that internalization is a useful concept to look at the person \leftrightarrow social world relationships. It is here axiomatically assumed that all human meaning construction takes place within the internalization/externalization process that has a structure of layers (Valsiner 1997, ch. 9 — see Fig. 2). We do not need to prove the viability of this axiomatic stand. Instead, we need to elaborate the specific mechanisms of that process, and find empirical access routes to show the reality of such processes.

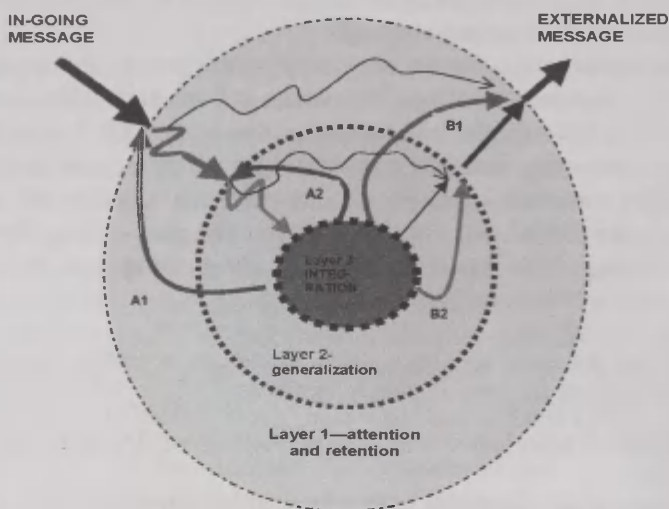


Figure 2. A multilayer model of internalization/externalization (modified, after Valsiner 1997: 305).

Figure 2 outlines a hypothetical model of the internalization/ externalization process where reconstruction of the in-coming (and in-taken) message becomes modified at each of the boundary crossings between

layers. Many (most) socially input messages become attenuated in Layer 1 — there, the attention processes sieve out non-noticed suggestions, and forgetting mechanisms eliminate the ones that fail to penetrate through the Layer 1/Layer 2 boundary. The regulation of incoming messages takes place through boundary buffering signals that emanate from Layer 3 (A1, A2). Similar boundary buffering signals are assumed to operate at the output (externalization) — B1 and B2. (Lawrence, Valsiner 2003), aside from the direct links within each layer to the externalization line.

It is theoretically irrelevant to discuss how many layers there may exist in the multi-layer model — the critical point in this construction is that this number is greater than one. In other terms — the boundary field of the “inside” and “outside” of the human psychological system is extended (i.e., not assumed to be unitary, all-or-none — phenomenon) and resistant to incoming social suggestions at each boundary.

Focus on the boundaries

The model of internalization/externalization focuses our attention at the *boundary crossings* between layers. The boundaries of each of the layers are *selectively buffered* against occasional passing through of extra-psychological symbolic material (Lawrence, Valsiner 1993; 2003). So we have a depiction of a process where, on the one hand, the incoming social suggestions have to “fight for entrance” through a complex semi-permeable boundary system. On the other hand — the person sets the conditions under which the message can succeed from one layer to the next (Fig. 3).

The boundary is structured — some parts of it are permeable, others — not. The inner core of the boundary contains a landscape of obstacles that the two vectors encounter, and “bounce off” from. These are kind of “semiotic fortifications” — outposts to protect the inner core of the self against the “assaults” of the messages from the outer layers. They are “deposited” on the boundary — maintain themselves at the boundary itself. These are examples of localized up-conscious (see Valsiner 2003a) semiotic organizers — in place without the intentional efforts by the person. In contrast — the intentional boundary regulating signs (A2) are counter-signs to the “invading” message. They are set up to “meet” the incoming message with special

function of linking with it and acting accordingly — neutralizing, repulsing, or letting these pass as given, or amplifying them. The laminal model of internalization/externalization is based on the assumption that the processes become observable at the “bottlenecks” of semi-permeable boundary transitions, rather than within the fields of affective ideation that constitutes the “stream of consciousness” within each layer.

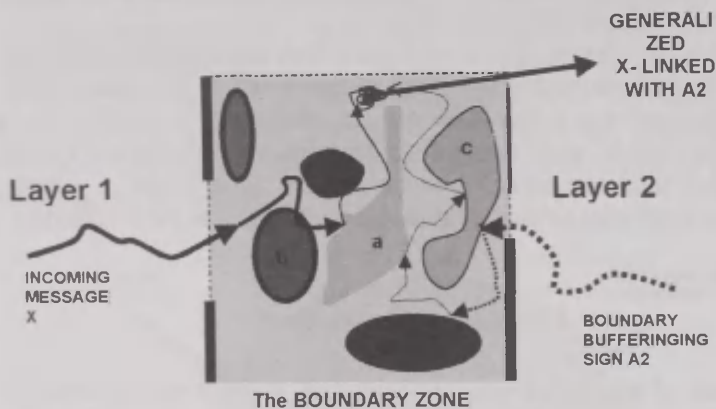


Figure 3. What happens at the boundary of internalization layers?

If the structure of the obstacles affords it, the two vectors do meet (and create a new synthetic meaning that traverses further in Layer 2. But that is not a taken-for-granted result — in most of our meaning construction efforts we may “get stuck”. Most of our meaning-making efforts are failures — only some become consolidated and arrive at a clear final form in Layer 3. It can be said that the human mind functions “wastefully” — it produces many versions of subjective reflections in (and in-between) the layers of internalization. Only some of them survive the sequential selection and reconstruction system.

What is the empirical evidence for such claims? The hyperproductivity of the “stream of consciousness” has been described already by William James. Such hyper-productivity of human mental ideation has been demonstrated well in the microgenetic studies of thinking.¹

¹ For overview — Valsiner, Veer (2000: ch. 7).

In settings of constant uncertainty of the impending future, the best adaptation strategy is abundant production of generative materials under the established expectation that the overwhelming manifold of those is shared by biological evolution and psychological development.

What follows from the laminal internalization model is the imperative for social control — the social immersion of persons in interaction contexts (such as classrooms) works with “surplus”. It is to be irrationally hyperproductive in its creation of social suggestions — varied by different forms of iconicity of signs and by intensity of their entrance into the internalization system². The developing child lives in the environment of episodic “symbolic attacks” on the internalization system of the self. These “attacks” are highly redundant in space and time (cf. Obeyesekere 1990 — on human over-determination by meaning), and basically successful (Hess, Torney 1967; Singh 1981). That success, however, is an integrative result of a myriad of small and highly varied encounters with the culturally organized world. In our contemporary social lives of children many of these encounters take place in the school context — and are set up particularly standardized ways in the classroom.

Social interaction — What kind of reality is it?

We take the phenomenon of social interaction for granted — and attribute causal powers to its role in human development. Yet we rarely stop to think what the reality of social interaction is like. A person navigates through enormous variety of social settings — school classrooms, cocktail parties, political rallies, intimate candlelight dinners, discussion groups (“koosolekud”), occasional interactions with strangers at bus-stops, and so on. Each episode of interaction produces a hyper-rich variety of different socially suggestive symbolic forms. However, the selecting agent who makes these “semiotic inputs” available to the internalization/externalization system is the person him or herself. What we call “the role of social interaction” is a

² Cf. Valsiner, Hill (1989) — social suggestions to toddlers to “say by-bye” to a departing visitor were found to be varied over time by intensity. At the limited “time window” of the departure setting the intensity grew instantly, and to heightened level of social pressure.

actually person's boundary-regulatory semiotic act (Valsiner 1999; 2004). The person opens (and closes) oneself to the varied forms of "social influence" — through semiotic self-regulation.

Such episodic and self-regulated openness of the person to social input sets the task for educators and other agents with goals of social guidance of persons up in a complex way. It is not that of transfer of social suggestions and knowledge, or even as persuasion — but rather as a strategic process of locating the moments of relative openness of the person. Different rituals in schooling practices and in public conduct (e.g., public political or religious manifestations, or executions) have historically been aimed at overcoming the resistance by the person to social suggestions. Most of these borrow from the history of religious practices — of which prayer is an appropriate example. Schools may include rituals akin to prayer in recurrent efforts to enhance the identity formation (e.g., "pledge of allegiance" in U.S. schools, or "sunset ceremony" in Krishnamurti schools — Thapan 1986). Such rituals can creatively combine seemingly opposite general social representation fields (Valsiner 2003c; 2003d) such as competition and caring (Lesko 1986: 31–33). Opposites are constantly present in seemingly univocal meanings (Gupta, Valsiner 2003), hence the role of ritualization of school practices is to establish a desired relationship between them. The second curriculum is set up to work out a socially fitting set of relations between the opposites — it is the relation between them (Sinha, Tripathi 2001), rather than dominance of one over the other — that enables human psychological functioning.

Educational practitioners often complain about the apparent downfall of intrinsic motivation of pupils in classrooms. At the same time, it is exactly school-aged youngsters who can be found spending their time in "cracking the codes" of sophisticated computer systems, establishing new music bands, and falling in love with film stars. Maybe the locus of where intrinsic motivation develops is moving out of regular schooling contexts. Surely that worries the adults who are the makers of such contexts. Promotion of the establishment of intrinsic motivation is the goal of most social systems that attempt to captivate the minds of human beings, and school institutions may be reluctant to lose control over that function to MTV or commercial promotions at shopping malls.

Intrinsic motivation

[...] comprises both behavioral and psychological activities that do not require external prompts or reinforcement contingencies. These are activities that people do freely and for which the only "rewards" are the inherent satisfactions that accompany them. (Grolnick *et al.* 1997: 137)

I here consider intrinsic motivation to be a state of hyper-generalized feeling — that becomes describable as value — which is orienting the person to move ahead towards the future. Such state is a result³ of the ontogenetic internalization/externalization processes and cannot develop outside of semiotic pre-orientation (by promoter signs — Valsiner 2004).

Yet the crucial creator of the state of being 'intrinsically motivated' is the person. It is the person's internalization process — resulting in Layer 3 integration and hyper-generalization of the affective meanings — that makes the establishment of such motivation possible (or, alternatively, blocks it). The whole educational system is in a precarious state, trying to guide that process — yet being buffered and altered in that effort by the person's counter-actions and selective mechanisms at the boundary crossings (refer back to Fig. 2 and Fig. 3).

Thus, children are not "taught" prejudices by their parental environments where such prejudices exist, but it is the children themselves who create their novel prejudices observing the conduct of adults in different real-life settings, and building it in children's own peer group interaction. Even if the family environment is free of promoted prejudices, the wider social world beyond the family is filled with them. Even as teachers may be treating all pupils in an egalitarian way, the children themselves establish their socially differentiated "class societies" in the school classroom, creating prejudices to establish and maintain the group boundaries.

The complex task for any educational system is the *coordination* of external (to the pupils) action limitations and the promotion of their internalizing of socially desired symbolic materials. If an educational system relies only on one of these two mechanisms — limiting *or* (exclusive 'or' here) promotion — it necessarily fails. Gordon Allport years ago expressed his criticism of the U.S. educational system:

³ This perspective differs from the Self-Determination Theory (that considers internalization unnecessary for intrinsic motivation — Grolnick *et al.* 1997: 137). Intrinsic motivation is here viewed as the ultimate result of socialization processes (internalization/externalization) that has lost the link with the personal-cultural history of its emergence. Even if intrinsic motivation may look ontologically individual-focused, it is ontogenetically socio-cultural.

The problem, as I see it, is one of interiorizing motivation. To put it in a student's words: "I am fed up with having everybody else cheer me on. I want to work to please myself rather than others, but I don't know how to do it". [...] In school, the child is rewarded and punished by good grades and bad grades. Even in college, As and Bs are pats on the back, Ds and Fs are punishments. To gain love, the student must read books and toe the academic line. Finally he obtains his degree (which is a symbol of academic love) and is freed from his external form of motivation. What then happens?

We know that a shockingly high percentage of college graduates rarely or never read another book after receiving their bachelor's degree. Why should they? Their love now comes from their employer, their wife, their children, not from the approval of parents and teachers. For them, intellectual curiosity never became a motive in its own right. External rewards are appropriate props in early childhood. But we educators, being limited by our current inadequate theories of learning, do not know how to help the student free himself from the props of reward and develop a functionally autonomous zeal for learning. With our slavish dependence on reinforcement theory, I think it surprising that we arouse as much internal motivation as we do. (Allport 1968: 177–178)

Writing on education surely brings out the necessary recognition of the role of the socio-cultural guidance of human development. Education is our contemporary version of a social institution that has been the greatest controller of human minds (Luria 1974). It has historically grown out of ideologically framed contexts — mostly religious ones. It has thus features of both religious and secular worlds — as it stays in between these, organizing the migration of young people between the home and non-home territories.

Socio-cultural activity settings in place: Confession and prayer

Lives of people in any social institutional framework are organized by sets of local everyday rituals. These are regular — sometimes barely noticeable — activities that nevertheless act as cultural organizers of the self. Different religions of the World have been prolific in establishing such events — yet these have remained out of focus of study for the social sciences, despite clear historical and cross-religions' proof (see Río, Alvarez 1995) that socio-cultural sciences have much to learn from them.

Confession in context

Social institutions attempt to predict the unpredictable — person's conduct in the future — through the control of the uncontrollable — person's conduct here-and-now. Religious institutions have created (and used) settings that socio-cultural researchers have nicely labeled *situated activity settings* for their ideological purposes over centuries. The form for such settings can be encoded in specific design of functional furniture (see Fig. 4).

The use of such furniture is clearly circumscribed — Catholic confession entails the positioning of the body in a sub-dominant (kneeling) position (although on the right hand side of Figure 4 it is possible to see a seating option). Setting the body up in particular position is a powerful antecedent condition for feeling in a certain way (Laird 2006). The anonymity of the priest is guaranteed by the curtain that only he can remove. The identity of the confessor is quasi-private — facing the priest (behind the wall), yet visible for others in the church.

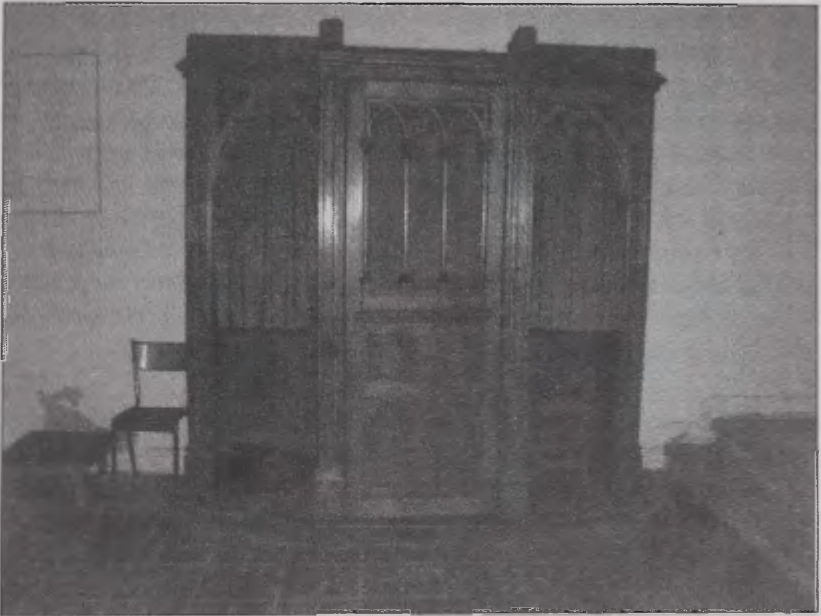


Figure 4. Furniture as cultural guidance: A confessional (Sierck-les-Bains; author's photo).

What kinds of functions do confessions perform? They can be viewed as historical antecedents of psychotherapy — albeit one on client-*uncentered* kind. The religious institution within which the confession takes place retains the power control over its outcomes (forgiving the person the “confessed sins”). Different aspects of everyday reality may be fitted differently into the definition of what is forgiven or punished. While mediaeval inquisition in Europe was hunting down the worried women who had had dreams of intercourse with the Devil (Stephens 2002: ch. 4), its counterpart in colonial Mexico was by far more realistically lenient (Behar 1987). The confessional in the Middle Ages operated as an analogue to our contemporary psychoanalysts’ couch (see Flandrin 1985) — yet with less comfort and unwavering demand for full submission of the self to the authority. What happens in this specifically furnished situated activity context was put into place in year 1215 by the Fourth Lateran Council that re-directed the act of persons’ relating with the deity from performing publicly visible acts of penance to the verbal act of confession (and its corresponding speech act of absolution — Brooks 2000: 90–96). The focus on acting out was replaced by acting-out-while turning inwards in the confessional. The reforms brought in by the Fourth Lateran Council were aimed at maintaining social control — the local church institutions were strengthened (by giving the local priests the role of absolving the parishioners’ sins in the confession) while the local priests themselves were brought under further control by the church (by way of requiring their own regular confessions — Tambling 1990: 38). Not surprisingly the focus on intra-psychological “sin-searching” proliferated in the European societies after the 13th Century — guided by the social institution of the Inquisition to evaluate different kinds of “sins” and punish them.

Negotiating private and public domains: sermon and prayer

Religions invent contexts in which the ultimate fears of the person about future happenings are consoled through luring the person’s affective domain into the social influence sphere of the social institution. The mechanism here is creating either a context for the *direct submission* of the person to the institution (e.g., as is well

known from European Catholic traditions of pre-Reformation times, paralleled by Muslim traditions over time until ours), or its parallel form of *indirect submission*. The latter was brought into European cultural history by the Protestant reformation in the 16th century, and proliferated through its secularization in conjunction with the invention of the representation of the 'civil society' (Valsiner 2005b). The indirect form of submission relies on the delegation of the feeling of control into the individual psyche — together with mechanisms that would bind the person to the given belief system through one's internalized and hyper-generalized feeling systems. Thus, the person is expected to act in ways expected by the institution believing one does it on one's own 'free will' — yet in ways expected by the institution.

The contrast between the two forms of submission have been clearly demonstrated in different studies conducted in educational settings. While Western middle-class children in "open classrooms" are queried about which class task they *want* to do (Smollett 1975), the children in a Moroccan (Qur'anic) classroom are set up to act in unison in relation to tasks that *must be* done (Miller 1977).

The whole issue of different forms of submission is worked out on the basis of bodily actions. Different traditions of voluntary bodily mutilations in order to gain 'salvation' have been documented in Mediaeval Europe (flagellants) and elsewhere (Obeyesekere 1981). All of the process of participation in a context of sermons, prayers, and confessions is carefully regulated through normative bodily activity.

What is prayer?

Prayer is a form of petition — by the person to an imaginary interlocutor. It is an ancient cultural creation, as it

[...] began probably with the man himself. It is perhaps the only common trait of all religions, their very heart, and the most universal expression of piety. It is always optative or expressive of some wish, either to obtain some good or avoid some evil. It is often accompanied by rites and ceremonies, or reinforced by magic spells, or perhaps by the mimetic acts suggestive or symbolic of the desire, while the speech forms are often stereotyped, and potent phrases or incantations. (Hall 1917: 488–489)

The petitions of prayer may be embedded in the social framework of sermons. Different symbolic objects — including written resources — may be present in the context of sermons. Consider a glimpse into the hinterland of the Islamic schooling (Comoro Islands), where

The concept of the sacred text presupposes a particular notion of “reading”. [...] For the most sacred texts signifiers and signified are one, and thus, in a sense, not “writing” at all. “Reading” is then merely the following of the written lines in order to produce the texts in sound — that is, recitation. Each reading is actually a reproduction. This effect is heightened by the fact that most villagers do not understand Arabic, but in fact the Western concept of “translation” has no meaning here — texts must be enunciated in their original dialect — and decoding is largely beside the point. (Lambek 1990: 26)

Precisely similar was the setting of sermons in Mediaeval Catholicism — where the performative side of the ritual — including the sequential task of Bible reading — was meaningful for the followers precisely because it was meaningless as to its contents. Instead, the very act of recital of long sequences of non-understandable text by the priest guaranteed the desired social effect. That effect entailed two components — the external publicly visible ritual (performed by the priest) and internal private devotional dialogue. Thus, it is not surprising that a Catholic English bishop from mid-16th century suggested that

[...] it is much better for them [the participants] not to understand the common service of the church *because when they hear others praying in a loud voice, in the language they understand, they are letted from prayer themselves*, and so come they to such a sickness and negligence in praying, that at length as we have well seen in these late days, in manner pray not at all. (Quoted via Targoff 2001: 15, added emphasis)

Obviously, knowledge of contents — as well as social comparison — was seen as an obstacle to the control of the souls through the sermon. The Catholic rituals were based on the dramatization of the whole context of sermon — so it was imperative that all the congregation maintained their full attention on the performance (including the reading of non-understandable texts). The full attention was supposed to lead to internalized attachment to the teaching through the collective social contagion. Hence the persons were kept “in the field” through the dramatic events of the sermon.

The Reformation changed the modality — from the primacy of visual attention (with the additional hearing of melodic and foreign incantations) to that of auditory attention — the participants now were expected to hear — and actively listen⁴ to — the meanings of the words in their native tongue. Priests who previously could “mumble and tumble” Latin sermons without devotion, were now — in the Protestant mode of mid-16th century — to read sermons in English with “due and distinct pronunciation, whereby all the people may have true knowledge” (Targoff 2001: 23).

The change in the strategies of the Church was of course not meant for the benefit of the people. This was evident from prohibitions against participants who gave up listening (and hearing) in favor of their own individual reading of the newly introduced Prayer Book (in English in 1549). The congregation was led by the new kinds of priests to become submissive through their meaning-making activity under the guidance of the “more knowledgeable other”⁵ — the priest. The persons were expected to be submissive through their own will. Yet there were limits to the use of that individual will — numerous cases of punishments in late 16th century⁶ indicated that the next step of creative reading of the texts — solely by oneself and for oneself — was not socially tolerable.

Interestingly, the move from foreign language (Latin) to local languages did not diminish the role of Latin as a symbolic marker of

⁴ The Protestant Reformation did not liberate the persons from their religious affiliations (as we know, secular ideologies developed slowly in Europe and in some countries in the Western hemisphere have failed to develop in full up to today — see Mernissi 2002: 101–103. In the 16th century one form of religious “capture of the mind” was replaced by a new one — that worked on the directly opposite psychological basis — that of understanding of meanings and their internalized re-organization. Yet that understanding was meant to be affectively hyper-generalized to capture the whole of the person.

⁵ I use this terminology pointedly — to show a parallel with our contemporary use of Vygotsky’s notion of “zone of proximal development” in very similar ways — in blatant overlook of the person-centered notion of teaching <=> learning (*obuchenie*) that Vygotsky had in mind — Valsiner, Veer 1993; Veer, Valsiner 1991.)

⁶ For example, a blacksmith in Durham was persecuted by court in 1570 “[...] for reading of an English book, or primer, while as the priest was saying of his service, not minding what the priest read, but tending his own book and prayer” (Targoff 2001: 26).

the elite classes. It turns out it found its way from the church to school classroom:

One consequence of this was that schooling came to be separated even further from life in general, because there were no other contexts in which this language could be used for communicative purposes. Learning Latin, even more clearly than before, became an end in itself and an important element in the career of the chosen few who went on to study. But what was said and done during these lessons had very little relevance to the younger boys of the time. Students read texts in Latin over and over again during lessons, and they practiced grammar and regurgitated quotations and long excerpts. But, very likely, they were not able to connect this activity to their social life in general; the ritual was itself means and ends. (Säljö 2004: 182)

There is some social role that means which become ends-in-themselves play in any society. Obviously one of the major functions is the making of social class distinctions. The learned people from the Middle Ages up to almost end of 20th Century needed to have learned Latin to distinguish themselves from the common people. In the 19th century, Russian aristocracy learned French before mastering Russian for the same purpose. In our contemporary psychology we hear complaints by non-native English speakers that their papers are ruthlessly rejected by native English speaking reviewers for “poor language”. Even if this power-negotiation arena were to be reversed now and all psychology become published in Latin, the competitive class distinction making would remain the same⁷. Socio-cultural researchers have naively assumed that elimination of barriers between people, social groups, communities, and societies leads to the blissful and openly democratic communion with others. But at the demise of any “Berlin wall” in between divided cities, countries, or people are new walls that are in the process of construction. The assumption of “boundaries-free sharing” is appealing — yet unrealistic — human beings live on the basis of distinctions they constantly make (and re-make).

This process of re-making boundaries is well visible in the 16th century Europe where the Protestant Reformation took place. European societies were undergoing political and social changes that forced the religious institutions to undergo change. As any social

⁷ In the beginning of the 20th century efforts were made to establish Esperanto as the standard international language of psychology.

change it entailed bouts of violence — directed at the symbolic religious objects of central relevance for the sermons. Crowds of iconoclasts raided churches to destroy sculpted and painted images, and altars — or at least verbally dishonor them (Wandel 1995). The submission context had given rise to its opposition — revolt against the symbols used to regulate people's conduct before.

A Meadian look at prayer

Prayer has features that are similar to psychotherapeutic techniques (Valsil'yuk 2005). From a researcher's perspective, prayer is a form of self-dialogue that is oriented upon the opening of the resistance boundaries of internalization/externalization through dynamic rituals, thus constituting a situated activity setting that directs the development of hyper-generalized affective fields of meaning. Such fields guide all of human conduct (Valsiner 2005a). The act of prayer can be analyzed as a special case of a Meadian scheme of double function of the self-generated message (see Fig. 5).

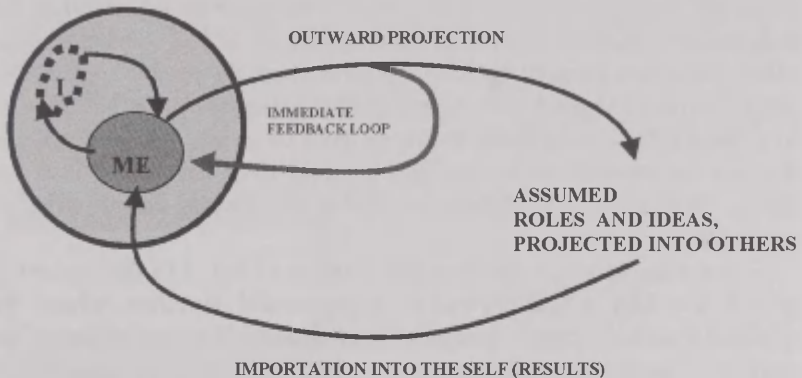


Figure 5. Microgenesis of the future: two feedback loops (after G. H. Mead).

The making of the future entails inherent and inevitable duality. This is captured in Fig. 5 that represents the basic notion of “self’s otherness” that G. H. Mead formulated in early 20th century (Mead

1912; 1913). Mead's idea is very parallel to the person \diamond setting duality notion that is the root of this exposition. In order to create oneself one has to create "the other" — both inside the self (*I* \diamond *me* linked opposition) and extra-personally (*myself* \diamond *others* linked opposition). Mead's perspective is based on the recognition that feedback from one's own outward actions to the intra-self system is inevitable. A person says something to another and in the process of doing so hears oneself doing it before the other responds. So — the first response to the self's efforts to express oneself is by the self (the *immediate feedback loop* in Fig. 5), and it is only after that that the other may respond.

It becomes evident from Figure 5 that two primary alterity relations — *I* \diamond *me* and *outward projection* \diamond *immediate feedback* — constitute the domains where the person's Self \diamond Other relations are being worked out in the course of everyday living. In some sense, the self contains one's own "other" — a point made axiomatically by Dialogical Self theorists (Salgado 2006). Thus, the person is social through treating one's own self as "the other", in addition to the obvious importation of the social input from other human beings, in the communicative act. If we add to this one's own assuming social roles and its feed-forward onto the *I* \diamond *me* system we can see the redundancy of communication and action in Mead's scheme. The other important feature in Mead's scheme is its open-endedness in both internal (*I* \diamond *me* relations) and external (person \diamond "other") loops. The latter of course guarantees uncertainty of living, yet the former is the key for innovation in case the external loop becomes "fixed" or stable. Hence the self-system is inherently novelty-constructive on both sides.

If we were to apply the Meadian scheme of Fig. 5 to the context of prayer we find a self-organized experimental situation where the external feedback loop is temporarily eliminated (i.e., the object of the prayers actually does not respond — *and in fact is not expected to respond* — see Fig. 6). The regular process of prayer is an act of externalization that is feeding back into the internalization line as soon as it is being created.

ONLINE CONFESSION AND ABSOLUTION OF SINS



In this section, you are given the opportunity to receive forgiveness for your sins, if this concept is in your belief system.

You can be certain that we are sincere in this offer and that you are worthy to receive it.

If you do believe this concept, you can receive forgiveness for your sins immediately. Doing this here online is a way of relieving yourself of your burden in a private, yet significant way. You can tell everything that is troubling your mind, get it out of your system and ask God for help.

Through this action, you are inviting God into your heart to lift your burden from you and give you peace. You are putting your request out into the universe where you can receive the love and guidance you are seeking.

This act of confession is not required by the Universal Life Church, or its Seminary, but we are offering it here for those to whom it can bring some peace of mind. **You can confess your sins in writing below or you can do it in your own mind and just press the button.**

Please know that we don't read those emails. They are destroyed as soon as they arrive because we feel that your confession is between yourself and your God. By destroying them, we set them free to travel the universe and find their destination.

ABSOLUTION OF SINS APPLICATION FORM

By filling out this form to confess your sin, you are requesting absolution - forgiveness of sin - and you acknowledge that you have considered your actions, are sorry for what you have done and sincerely desire to improve in the future.

All fields are required

Your Name:

Optional Text:

ABSOLUTION

clear

Please click "ABSOLUTION" only once

Figure 6. A contemporary web-based confession system (added emphasis by underlining and boldface — J.V.; from <http://www.ulcseminary.org/absolutionofsins.php>).

General conclusions

Human subjectivity is socially guided by promoter signs (Valsiner 2004) — semiotic fields if forward-oriented function to guide the person towards socially desirable outcomes. Yet the history of how such outcomes themselves are socially constructed as desirable remains outside of consideration. By inventing hyper-generalized signs like “creativity”, or “justice”, or “sin” — human beings set up a guidance for their own actions and feelings (Valsiner 1999).

Different interaction settings feed into the internalization processes — yet they cannot determine the latter. There are many public places — classrooms, public rituals, cinemas, etc. — where over-production of meanings (Obeyesekere 1990) is given a socially oriented structure. People’s activities in such settings lead to new forms of “boundary action”. Persons who participate in social settings become separate from the settings through that very participation. While being embedded in the “here-and-now” setting, their semiotic construction leads them to create an ideational, “there-and-then” setting. The two worlds of meanings — “here-and-now” and “there-and-then” — constitute the partners of the constant internal dialogue of the person. The human *psyche* is constantly in tension about the internal movement from “here and now” to somewhere else — not specifying, most of the time, where that “somewhere else” is and what it entails (Boesch 1997; Valsiner 2006b).

All social development is based on the united opposition of *Self* \diamond *Other*, acted out in constant relating by the Self with the Other. The profoundly social experience — made possible through semiotic mediation — becomes deeply private one, as

Man is the only being who knows he is alone, and the only one who seeks out another. His nature — if that word can be used in reference to man, who has “invented” himself by saying “No” to the nature — consists of his longing to realize himself in another. Man is nostalgia and a search for communion. Therefore, when he is aware of himself he is aware of his lack of another, that is, of his solitude. (Paz 1985: 195)

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Семиотическое образование одиночества: процессы интернализации и экстернализации

Люди создают себе личное окружение, где чувства и мысли проявляются через семиосферу, созданную ситуационными контекстами действий. Центральным звеном человеческого развития являются интернализация и экстернализация — процессы, которые действуют в течении всей жизни. Контексты обучения организованы посредством *семиотических ситуаций запроса* (*Semiotic Demand Setting*) и направляют развитие внутренней мотивации обучаемых.

⁹ Available at <http://www.semioticon.com/virtuals/risk/distrust.pdf>.

Внутренняя мотивация является процессом, который действует через обобщенные семиотические поля эмоций в наиболее центральных слоях интернализации. Это результат социального внушения — внушение обозначено как аффективное семиотическое поле, которое становится ценностью и начинает направлять последующие действия.

**Üksilduse semiootiline kujunemine:
internalisatsiooni ja eksternalisatsiooni protsessid**

Inimesed loovad endale isikliku keskkonna, kus tunded ja mõtted tekivad läbi tegevuslikult seostatud semiosfääri. Inimese arengu keskprotsessiks on internaliseerumine ja eksternaliseerumine, mis kestavad läbi kogu elu. Koolituskontekstid on organiseeritud *semiootiliste nõudetingimuste kontekstide* (*Semiotic Demand Setting*) poolt ning nad suunavad õpilaste sisemise motivatsiooni arengut. Sisemine motivatsioon on protsess, mis toimib läbi internaliseerunud üldistatud semiootiliste tundeväljade — just nimelt internaliseerumise keskseimas kihis. See on sotsiaalse sugereerimise tulemus — sugestioon on üldistatud kui afektiivne väli, mis muutub väärtuseks ning hakkab tegutsema kui järgnevate tegevuste suunaja.

Semiosis and pragmatism: Toward a dynamic concept of meaning

João Queiroz, Floyd Merrell

Research Group on History, Philosophy, and Biology Teaching,
Institute of Biology, Universidade Federal da Bahia (UFBA), Brazil¹
e-mail: queiroz@gmail.com

Department of Foreign Languages and Literature
Purdue University, West Lafayette, IN, USA
e-mail: fmerrell@purdue.edu

Abstract: Philosophers and social scientists of diverse orientations have suggested that the pragmatics of *semiosis* is germane to a dynamic account of meaning as process. Semiosis, the central focus of C. S. Peirce's pragmatic philosophy, may hold a key to perennial problems regarding meaning. Indeed, Peirce's thought should be deemed seminal when placed within the cognitive sciences, especially with respect to his concept of the sign. According to Peirce's pragmatic model, semiosis is a triadic, time-bound, context-sensitive, interpreter-dependent, materially extended dynamic process. Semiosis involves inter-relatedness and inter-action between signs, their objects, acts and events in the world, and the semiotic agents who are in the process of making and taking them.

Pragmatism², in its original formulation, can be defined as a theory of meaning.³ At first developed by C. S. Peirce, in the 1870s, in the ambience of a series of informal meetings under the guise of the *Meta-*

¹ Also: Department of Computer Engineering and Industrial Automation, FEEC; University of Campinas, Campinas-SP, Brazil.

² We have decided to use the more general term 'pragmatism', instead of the more specific, Peircean based term, 'pragmaticism', since our discussion includes 'pragmatic' philosophers other than Peirce.

³ We write 'original formulation' in order to differentiate between the strain of pragmatism that will be the focus of this inquiry and the more recent strain, often going by the name of 'neopragmatism', among the most notable proponents of which are Richard Rorty (1979; 1982) and Donald Davidson (1984).

physical Club at Harvard (see Fisch 1986), the theory is publicly presented by William James in 1898 (*Philosophical Conceptions and Practical Results*), and thereafter formulated by John Dewey and F. C. S. Schiller. Despite the fact that Peirce continued to refer to pragmatism as an 'old idea', and include, among its precursors, Socrates, Aristotle, Spinoza, and Kant, John Locke was in fact the first philosopher to precisely formulate a semiotic (pragmatic) theory of meaning (Waal 2001: 24).

Conceived as strictly a 'logical principle', Peirce is against the transformation of pragmatism into a speculative philosophical attitude (Hookway 2004). At the same time, Peirce's pragmatism bears affinity with Ludwig Wittgenstein's later philosophy as a means of clarifying philosophical problems — most of which are pseudo-problems — and of ignoring genuine problems or paradoxes that allow for no apparent solution, at least with respect to pragmatism's 'logical principles'. As a matter of fact, scholars of pragmatism and Wittgenstein orientation tend to oscillate between what they consider 'logical principles', 'methods', and 'rules'. Their philosophical thrust is 'therapeutic' rather than 'doctrinaire', and if the pragmatic philosopher is an architectonic system builder, he nevertheless concedes that an absolutely final product, complete and free of all inconsistencies, can hardly be at hand, given (1) the concrete, practical affairs of pragmatism, and (2) our human fallibilism (Chisholm 1952).

Introduced in 1878 in 'How to make our ideas clear', Peirce defines pragmatism as a rule to clarify ideas, concepts, and propositions. In a latter essay published almost thirty years later in *The Nation* (1907), Peirce describes the central core of pragmatism in these conditional terms: 'The full meaning of a conceptually grounded predicate implies certain types of events that would likely occur during the course of experience, according to a certain set of antecedent conditions' (CSP-MS 318; CP 5.468).⁴ What, in this vein, is the most appropriate means of introducing pragmatism? In his Harvard Lectures

⁴ Following the scholarly tradition, Peirce's work will be referred to as CP (followed by volume and paragraph number for quotes from *The Collected Papers of Charles S. Peirce*, Peirce 1866–1913), EP (followed by volume and page number for quotes from *The Essential Peirce*, Peirce 1893–1913), MS (followed by reference number in accordance to Peirce 1967 for quotes from Peirce's manuscripts), and W (followed by volume and page number for quotes from *Writings of Charles S. Peirce*, Peirce 1839–1914).

of 1903 Peirce chose to introduce his philosophical posture through examples from what he called 'normative science'. He based the organization of these examples on the what we will label the concepts of inter-relatedness and inter-action between signs, the world, and interpreters.

Semiosis implies process. In this regard, we follow Rescher in his definition of a process as "[...] a coordinated group of changes in the complex of reality, an organized family of occurrences that are systematically linked to one another either causally or functionally" (Rescher 1996: 38). Semiotics entails the project of 'cutting' minute portions of the process and actualizing them as signs for observation, formal study, analysis, and synthesis. The result, historically, brought about the spectrum of human intellectual endeavors including mathematics, logic, the physical and biological sciences, the social sciences, and philosophy and the 'normative sciences' (aesthetics, ethics, logic) (see Parker 1998; Potter 1997). The entire range of these intellectual semiotic endeavors, as well as the semiotics of everyday life including feelings, emotions, and concepts, make up the whole of human semiotics, carved out of the semiotic continuum.

1. Peirce's concept of semiotics

Peirce's concept of Semiotics as the 'formal science of signs', and the pragmatic notion of *meaning* as the 'action of signs' (semiosis), have had a deep impact in philosophy, psychology, theoretical biology, and cognitive sciences (see Jakobson 1960; Thom 1975; Prigogine, Stengers 1983; Freeman 1983; Fetzer 1988; 1997; Colapietro 1989; Tiercelin 1995; Hoffmeyer 1996; Houser *et al.* 1997; Brunning, Forster 1997; Deacon 1997; Freadman 2004; Hookway 2002; 2004; Misak 2004; Pietarinen 2005; Magnani 2007; Stjernfelt forthcoming). First and foremost, Peirce's semiotics is grounded on a list of categories — Firstness, Secondness, Thirdness — which corresponds to an exhaustive system of hierarchically organized classes of relations (Houser *et al.* 1997). This system makes up the formal foundation of his philosophy (Parker 1998) and of his model of semiotic action (Murphey 1993: 303–306).

In brief, the categories can be defined as: (1) *Firstness*: what is such as it is, without reference to anything else; (2) *Secondness*: what

is such as it is, in relation with something else, but without relation with any third entity; (3) *Thirdness*: what is such as it is, insofar as it is capable of bringing a second entity into relation with a first one in the same way that it brings itself into relation with the first and the second entities. Firstness is the category of vagueness, freedom, novelty and originality — ‘firstness is the mode of being which consists in its subject’s being positively such as it is regardless of anything else. That can only be a possibility’ (CP 1.25). Secondness is the category of reaction, opposition, differentiation, existence — ‘generally speaking genuine secondness consists in one thing acting upon another, — brute action’ [...] ‘I consider the idea of any dyadic relation not involving any third as an idea of secondness’ (CP 8.330). Thirdness is the category of mediation, habit, generality, growth, and conceptualization or cognition (CP 1.340). In another way of putting the categories: Firstness is possibility, what *might become*, Secondness is what is taken to be what *is* within some particular context, and Thirdness is what in all probability *would be*, given a certain set of conditions (for further on categories, see Hookway 1985; Murphey 1993; Potter 1997).

1.1. The Peircean sign

Peirce defined semiosis as an irreducible triadic relation between a Sign, its Object (the object, act or event with which it inter-relates) and its Interpretant (that which is becoming interpreted through its inter-action with its interpreter) — we will hereafter refer to this sign triad as *S*, *O*, and *I* (CP 2.171, CP 2.274). That is, according to Peirce, any description of semiosis involves a relation constituted by three irreducibly connected terms, which are its minimal constitutive elements (MS 318:81; CP 2.242). In Peirce’s words:

My definition of a sign is: A Sign is a Cognizable that, on the one hand, is so determined (i.e., specialized, *bestimmt*) by something *other than itself*, called its Object, while, on the other hand, it so determines some actual or potential Mind, the determination whereof I term the Interpretant created by the Sign, that that Interpreting Mind is therein determined mediately by the Object. (CP 8.177; emphasis in the original)

Peirce conceives a 'Sign' or 'Representamen' as a 'First' (*S*) which stands in a *genuine triadic relation* with a 'Second', called its 'Object' (*O*), which is in the process of 'determining a Third', called its 'Interpretant' (*I*), which assumes the same triadic relation with that Object (CP 2.274). The triadic relation between *S*, *O* and *I* is regarded by Peirce as *irreducible*, in the sense that it is not decomposable into any simpler relation. Thus the term 'sign' was used by Peirce to designate the irreducible triadic process between *S*, *O* and *I* as well as to refer to the first term of the triad. Some commentators proposed that we should distinguish between the 'sign in this strict sense' and the 'sign in a broad sense' (e.g., Johansen 1993: 62). Signs, conceived in the broad sense, are never alone. The triadic process of sign making and sign taking is just that: process.

1.2. The sign process

As Savan (1986: 134) argues, an interpretant is both the third term of a given triadic relation and the first term (sign) of a subsequent triadic relation. This is the reason why semiosis cannot be defined as an isolated triad; it necessarily involves the continuous development of triads actualized from semiosis (see Merrell 1995). In Savan's (1987–1988: 43) words, the terms interpretant, sign and object compose a triad whose definition can only be circular; each one of the three terms is defined by the other two. The only properties to be found in *S*, *O* and *I* are in the functional role; there is no distinct essential or substantive property, for at any given instant what was an *S* can become an *O* or an *I*, and the same can be said of *O* and *I* (Tienne 1992).

Indeed, one of the most remarkable characteristics of Peirce's theory of signs is its dynamical nature. The complex (*S–O–I*) is the focal-factor of a dynamical process (Hausman 1993: 72). As a truly process thinker, it was quite natural that Peirce conceived semiosis as basically a process in which triads are systematically linked to one another so as to form a web. Sign processes are inter-relatedly extended within the spatiotemporal dimension, so that something physical has to instantiate or realize them. This means that signs cannot act unless they are spatiotemporally realized (see Emmeche 2003; Deacon 1999). If a sign is to have any active mode of being, it must be materially embodied.

1.3. Meaning and semiosis

Peirce defined *meaning* as the consequence of triadic inter-relations of *S–O–I* as a whole (EP 2:429), as well through differential correlates among the sign, the object (MS 11, EP 2:274), and the interpretant (EP 2:496, EP 2:499; CP 4:536) (see Fitzgerald 1966: 84; Bergman 2000). This notion of meaning is derived from his definition of the sign as a medium for the communication of a *form* or a *habit* embodied in the object to the interpretant, so as to determine the interpreter's behavior through inter-related inter-action with the sign (see Tienne 2003; Hulswitt 2001; Bergman 2000). Peirce spoke of the sign as a 'conveyer', as a 'medium' (MS 793), as 'embodying meaning'.

A Sign may be defined as a Medium for the communication of a Form. [...] As a medium, the Sign is essentially in a triadic relation, to its Object which determines it, and to its Interpretant which it determines. [...] That which is communicated from the Object through the Sign to the Interpretant is a Form; that is to say, it is nothing like an existent, but is a power, is the fact that something would happen under certain conditions. (MS 793: 1–3; EP2, p. 544, n. 22)

In short, for Peirce a sign is both 'a Medium for the communication of a Form' and 'a triadic relation, to its Object which determines it, and to its Interpretant which it determines'. If we consider both definitions of a sign, we can say that semiosis is a triadic process of communication of a *form* from the object to the interpretant by the sign mediation.

1.4. Form communication

Form is defined as having the 'being of predicate' (EP 2.544) and it is also pragmatically formulated as a 'conditional proposition' stating that certain things would happen under specific circumstances (EP 2.388). But for Peirce, form is nothing like a 'thing' (Tienne 2003), but something that is embodied in the object (EP 2.544, n. 22) as a habit, a 'rule of action' (CP 5.397, CP 2.643), a 'disposition' (CP 5.495, CP 2.170), a 'real potential' (EP 2.388) or, simply, a 'permanence of some relation' (CP 1.415).

Form can also be defined as *potentiality* ('real potential', EP 2.388). If we consider this definition, we will also come to the conclu-

sion that form can show the nature of both firstness and thirdness. Consider that potentiality is not the same as mere *possibility*. For the sake of our argument, consider Peirce's treatment of Quality as a 'mere abstract potentiality' (CP 1.422). It is abstraction not in the sense of a reduction of complexity to formal simplicity, but in the sense that the quality in question has been 'abstracted' ('cut') from the continuum of possibilities.

Quality, then, has the nature of Firstness, being essentially indeterminate and vague. But we can also talk about a generality of Quality. In this case, we are beyond the domain of pure Firstness, since generality refers to some law-like tendency. Peirce works in this case with a merging of Firstness and Thirdness. As an abstract potentiality, Quality is closer to a blend of Firstness and Thirdness, than to pure Firstness. Such a treatment seems to be compatible with Peirce's categorical scheme, since, as Potter (1997: 94) stresses, the categorical structure which Peirce uses is 'highly subtle and complex, admitting of various combinations'.

For Murphey, there is a transition from the notion of *meaning* as a qualitative conception carried by a sign to a relational notion according to which the meaning of a concept consists in a 'law relating operations performed upon the object or conditions of perceptions to perceived effects' (Flower, Murphey 1977: 589). The qualitative conception involves reference to the sign's *ground*, while the 'law' or necessary conditions of perception are relational rather than qualitative — 'If the meaning of a concept of an object is to consist in the conditionals relating operations on the object to perceived effects, these conditionals will in fact be habits' (Flower, Murphey 1977: 590).

This brings about a constrained set of effects of the Object on the interpreter through the mediation of the Sign. In short, Peirce defines a Sign both as 'a Medium for the communication of a Form' and as 'a triadic relation, to its Object which determines it, and to its Interpretant which it determines'. If we consider both definitions of a Sign, we can say that *semiosis* is a triadic process of communication of a *form* from the Object to the Interpretant by the Sign mediation.

1.5. The emerging process as form-becoming

Meaning can also be conceived as the emergence of a process involving *S*, *O* and *I* through mediation of *I*. It can be seen as a process working as a constraining factor of possible patterns of interpretative behaviors. Taking the notion of a form into account, an understanding of meaning becomes a dynamic, processual inter-action by the interpreter of a sign through co-participation between that sign and the interpreter. A possible form emerges through this mutual co-participation. In this manner a genuine sign without a co-participant is meaningless. Since the sign maker and taker as interpreter emerges out of co-participation with the sign, the existence of a possible form is embodied in *S*, *O* and *I*, and a habit is intrinsic to the sign and the interpreter acting on the sign. This entails a constrained set of effects on the interpreter that can be fruitfully connected to Rosenthal's (1994) pragmatic approach to *meaning* as an emergent relational pattern of behavior.⁵

The form-becoming is the realization of a habit of inter-action embodied in the Object to the interpreter so as to constrain its behavior. This brings about a constrained set of effects of the Object on the interpreter through the mediation of the Sign.

2. Habit forming

It is well known among Peirce scholars that *habit* occupies a central position in Peirce's pragmatism (for a summary see Almeder 1980; Hookway 1985). Peirce's *habit* entails a disposition to act in a certain ways under certain circumstances, especially when the carrier of the habit is stimulated, animated, or guided by certain motives (CP 5.480). The meaning of a Peircean sign is most adequately understood through the habits of action, reaction, and thought they provoke, sustain, and modify in the event that the habit carrier wishes to bring about a change of the customary response to a given sign. When

⁵ The term 'emergence' has both an ordinary use, in which people employ the expression 'the emergence of x' just to mean that 'x has appeared', and a technical use. Stephan (1998: 639) writes that 'in most technical uses, "emergent" denotes a second order property of certain first order properties (or structures), namely, the first order properties that are emergent' (see Queiroz, El-Hani 2006).

somebody says a diamond is 'hard', that person means that a diamond's nature includes the ability to cut glass and other substances. That person's disposition to conceive of a diamond in this way — rather than simply conceiving it for ornamental purposes — constitutes, pragmatically, what 'hardness' means, and 'diamond' means in terms of its characteristics and its nature. In this manner, a sign (triadically) communicates a *habit* (potentiality, disposition) embodied in the object to its interpretant. If this person in question had once considered diamonds strictly in terms of rare gems, and ornamentation, then the characteristics and nature of diamonds were previously something other than they now are. Consequently, the meaning of 'diamond', and the habit of deriving such meaning, changed when a diamond became a means for qualifying 'hardness'. This is to say that the notion of semiosis as form communicated from *S* to *O* to *I* through mediation allows us to conceive of semiosis, and meaning and meaning change, in a non-substantive, processual way, as a constraining factor of possible patterns of interpretative behavior through habit and change of habit.

3. Distinguishing Peirce from other theories of signs and their meaning

3.1. Frege's legacy

Classical theories of reference assume a strong connection between a *sign*, its *meaning*, and its *reference*. Knowing the meaning of a sign is knowing how it refers. Gottlob Frege simplified this formula (Frege 1970; Dummett 1972). He drew a distinction between 'sense' (*Sinn*) and 'reference' (*Bedeutung*). 'Sense' is grasped when a sign is understood, and this 'sense' determines its 'reference'. Frege is often regarded as the prime initiator of 'logicism' — the wedding of logic and mathematics, with the former hopefully becoming the repository of all thought and the latter the queen of the sciences. According to Frege, if language could be liberated from vagueness and ambiguity, it could become a respectable instrument of unequivocal meaning and thought. In other words, by 'logicizing' language, its weaknesses could be strengthened, its blemishes could be erased, and future mistakes could be avoided. From the Olympian reaches of the highest rooftops the world could eventually be seen from a detached God's-eye view.

The task Frege set for himself by way of this 'sense/reference' distinction was monumental: to establish a method for determining linkages between the objective world and its representation in signs. Equality of meaning of different signs referring to the same object became the watchword. The dilemma was that Frege's grand game plan involved rendering two virtually incompatible domains virtually equivalent: language on the one hand, and the furniture of the world on the other. Frege argued that while two signs with the same 'reference' — *Venus*, for example — could have two senses — the 'morning star' and the 'evening star' — two signs with the same sense could not enjoy the luxury of different 'reference'. By way of definitions, the *intension* (*sense*) of a sign consists of the conception of the sign, irrespective of that to which it refers. *Extension* (*reference*) consists of the things to which that conception refers. *Intension* used in this context must be distinguished from *intension* (of *intensionality*), a phenomenological term entailing the property of consciousness whereby it refers to or *intends* an object. The *intensional* object is not necessarily existent, but can be merely what the mental act is about, whereas *extension* presumably involves the 'real' furniture of the objective world (Avni 1990).

Thus, 'Venus is Venus' is a tautology. In contrast, 'That star up there in the dark expanse is Venus' is not. It bears reference, *extension*. 'The evening star is Venus' has both reference and sense, *intension*. But 'The morning star is Venus' also spots reference and sense. Reference is one ('Venus') but sense is two ('evening star', and 'morning star'). However, Frege assures us that no problem exists inasmuch as we specify 'reference' to objects in the physical world, so it is still smooth sailing toward clear and distinct thinking and meaning. Apparently the relations between Frege's signs and the world is not that of *symmetry*, but *asymmetry*. However, this problem was in a manner of speaking pushed under the rug, for the sign's *intensionality* (*sense*) was highlighted somewhat at the expense of *extensionality* (*reference*), and language itself, that apparently ubiquitous partner to mind, held the trump card. Which is what we might have expected, since Frege stacked the deck from the beginning.

But more questions arise: Do sentences impart any information regarding their presumed objects of 'reference' (*Venus*, *morning star*, *evening star*), or simply about the signs themselves ('Venus', 'morning star', 'evening star')? If the latter is the case, then how comes it

that we would like to be comforted by the soothing idea that 'reference' is fixed, while meanings may suffer alterations? If meanings change, how can signs actually 'refer to' the same things in the world? If signs do not necessarily 'refer to' the same things but to variable 'semiotic entities', then do the 'real' things of the world actually make much difference regarding the engendering of meaning? Can meanings be something found in things 'referred to', or are meanings embodied within their respective signs? Or in the final analysis, do words hook onto world.

3.2. Saussure

The Swiss linguist whose life parallels that of Peirce eschews diachrony and develops a tunnel-minded obsession with synchrony. Language, at a particular synchronic slice, is conceived to be virtually immutable; it is for the purpose of analytic practice a bedrock of order and stability. According to this notion, meaning remains fundamentally the same independently of any and all individual sign users with specific contexts; language is no slave to the wishes and whims of the individual; if change there be, it comes about through the linguistic practices of the entire community. Language is ultimately grounded in rock-solid objectivity. It must exist outside all individual consciousness in order that there might be communication at all; yet at the same time it must be ready and available to any and all speakers, who in the beginning internalized it, and as individuals, are now slaves to language, unlike Humpty-Dumpty whose words mean exactly what he wants them to mean (Saussure 1966).

Language study in terms of a static, autonomous synchronic slice divorced of the evolutionary history of language carries the implication that: (1) there is little to no consideration of time, (2) language is self-sufficient and has no need of the physical world and lines of correspondence between signs and objects, (3) meaning is constructed exclusively within language, (4) meaning, derived from a signifier/signified binary relationship, is in the brain-mind of the speaker and hearer, and to the entire speech community to which they belong, (5) consequently there is no legitimate appreciation of the process of sign development and evolution of signs (Harris 1987).

In sum, if we take Saussure at face value, we have hardly more recourse than to toss time, process, change, history, and the idea of contextuality, in the trash heap. Understandably, Saussure has come under attack in recent decades from a variety of views (Derrida 1974; Harris 2002; Thibault 1996).

3.3. Information theory

The mathematical theory of communication is a branch of mathematics that arose out of communication theory. As Shannon and Weaver defined it, '[t]he fundamental problem of communication is that of reproducing at one point either exactly or approximately a message selected at another point' (Shannon, Weaver 1949: 31). According to Adams (2003: 472), 'at the foundation of information theory is the development of methods to measure the amount of information generated by an event or events, and mathematical treatments of the transmission characteristics of communication channels'. It relies on the theory of probability to model information sources, flow, and communication channels. Information is measured in terms of the *unexpectedness* of the sequence of signals, written $H = \sum p_i \log (1/p_i)$, where p_i is the probability of the i th form of signal.

This theory allows one to define information as the measure of the probability of selection of a particular message among the set of all possible messages. The probabilistic measure of information provided by this theory is non-semantic, indifferent to meaning (Shannon, Weaver 1949: 31).

A sign is decoded by the emitter and transmitted through a medium, then encoded by the receiver. The medium can be compact and diffuse air patterns between speaker and listener, black marks on paper between writer and reader, or electrical impulses between telephone messages sent and messages received. Francisco Varela calls this the 'conduit tube' theory (1979). It is as if the emitter sent signs through a conduit tube and they are received by the receiver, and, if by some miracle the receiver takes in an exact replication of those signs, meaning is preserved. But actually, there virtually no regard for meaning in information theory. Rather, information theory is based on the statistical probability of a set of signs creating an intelligible combination, a relatively intelligible combination in spite of some back-

ground noise, or of the set become a mere scramble, noise. Meaning is by and large ignored.

3.4. Kripke

Kripke generally follows the 'causal theory' of reference according to which the object 'causes' particular mental events that then call up meaning (Kripke 1972; 1977; 1980). In some way, 'the referent must be historically, or, we might say, causally connected to the speech act' (Donnellan 1972: 377). The causal theory explains the power of words in their referring to objects in terms of causal chains that include the objects of signs and the speaker's and hearer's representations of them. A singular sign 'rigidly designates' a particular object; this designation is a matter of the appropriate causal links holding between the object and the sign's use. This theory 'seems to promise not only a unified treatment of the various object-involving phenomena [by way of knowledge, memory, belief, empirical evidence], but a naturalistic and possibly even physicalist one as well' (Stampe 1979: 87).

This is an 'objectivist-realist' view (in this regard see Kripke's (1982) reaction to Wittgenstein's skeptical argument). Consequently, imaginary signs, or fictions, cannot work like objectivist linguistic constructions. If they did, there would be no knowing whether or not life is just a dream. But it is not a dream, according to the objectivist-realist, for the world is real. And this reality is accessible, if we could just get things right by correctly hooking worlds onto the furniture of the world. Representation, reference, and meaning, then, are quite legitimate. There is according to this theory definitely a correspondence between language and objects, acts, and events. The upshot is that meaning is derived from this dualistic combination of sign and thing. Context is consequently given little consideration (Hacking 1993).

3.5. Lakoff and Johnson

Understanding entails the world we made, our semiotic world, and the way we experience it. Such understanding involves body and mind as a whole, as *bodymind*, and our capacities and skills, values, moods and attitudes, within our entire cultural tradition. Meaning as a *body-*

mind process is a matter of creating 'schemes' as models of knowing and meaning making (Johnson 1987; Lakoff 1987). 'Schemes' involve the way we are bound up within a linguistic community, our aesthetic sensibilities, logical and rational modes of comprehending out world, and our ethical standards.

Understanding entails, in this manner, and to use the terms of our argument, our inter-active, inter-relatedness with and from within our world, our cultural institutions, our linguistic tradition, and our historicized context. It is our concretely sensed world as well as our world of abstractions. The whole of our contextualized understanding comes to bear on the meaning we arrive at with respect to each and every sign (Lakoff, Johnson 1999). We would tend to concur at least with this aspect of Lakoff and Johnson's general view of meaning, and it is by and large commensurate with Peirce's thought.

4. In capsule form

Table 1 offers a schematic picture of the diverse concepts of meaning since Frege's time. A study of the similarities and contrasts among the capsules making up the scheme leads one to the observation that solely the Peircean Mode, (1) adequately accounts for semiosis-semiotic processes in time in terms of past-present-future, (2) correlates time with three forms of *semiosis* according to the nature of the categories, (3) considers differences (a) between the components of the sign, (b) between signs and other signs, (c) between the categories, (d) between mind, body and world, and (e) 'in here' and 'out there' and empirical and non-empirical, as a matter of degree rather than kind, dynamic potential continuity rather than static discontinuity, process rather than product, (4) embodies the mind, and the embodied mind is involved to a greater or lesser degree according to the sign type and the category or categories in question, and (5) genuinely includes context dependency of signs, their objects, their interpretation, and their interpreters — since those interpreters are, themselves, signs among signs. The five non-Peircean theories encapsulated in Table 1 account for at least one or more of the five qualifications, but only Peirce's concept of the sign and meaning includes all of them.

Table 1. A comparison of some concepts of meaning.

Saussure	Frege	Peirce	Information theory	Kripke	Lakoff and Johnson	Mode (Peircean)
Atemporal synchronic field	<i>Vorstellung</i> , but it is ignored	Static possibilities of becoming Co-participation	Statistical probabilities Medium of communication only	Fundamentally linguistic practices	The embodied mind: bodymind and its feelings and sensations	Firstness Present oriented Image Imagination Firstness Possibly <i>is</i> <i>What might be</i>
Object ignored Object in the head-sign	<i>Bedeutung</i> Reference Relatively stable	Actual signs Interactive with 'semoitic objects' Particularity Co-participation	Mathematically determinable In the medium	Causal theory of reference (the object of the sign motivates meaning)	Interaction between bodymind, signs, and world	Secondness 'Empirical in here' or 'out there' <i>What is</i> From memory bank and expectations
Signifier/signified In the head-sign (deposited or internalized)	<i>Sinn</i> Determines <i>Bedeutung</i>	By convention Mediation Interdependency Co-participation Relatively unstable	Medium only, as statistical probabilities of occurrence Meaning ignored	Causally determined reference determines meaning through linguistic practices	Interdependency between bodymind, signs, and world	Thirdness Future oriented Potential for alternatives to what <i>has been</i> → <i>what will have been</i>
Context free Stability of binary signs within synchrony	<i>Sinn</i> determines <i>Bedeutung</i> within context Change of sense generates dualistic instability	Context is all-important (signs becoming other than what they were becoming) Processual, triadic instability	Context free The message is statistically generated	Causally determined reference and meaning within linguistic practices (relatively context free, objective, and stable)	Context is all-important Bodymind, signs, and world are stabilizing, but with shifting contexts, an unstabilizing factor is introduced	Context (freedom or dependency) as stabilizing factor or processual feature)

5. On the pragmatic maxim

From 1878 until the end of his life, Peirce made various attempts at establishing a general principle to account for meaning. He called that principle the 'pragmatic maxim'. The maxim is the means for constructing the meaning of a sign as a consequence of practical validation of the sign put in the form of a proposition whose nature is that of: (1) a conjecture as to the *possible meaning* of the sign (Firstness), (3) the conjecture formulated as a hypothesis — what would likely result and *render the possible meaning likely*, if certain conditions inhere (Thirdness), and (2) the hypothesis put to the test in order to ascertain whether or not the *possible meaning is acceptable* (Secondness).

Priority is placed on: (1) imagining what might transpire regarding the sign in question when put within the contexts of other signs, (2) conceiving of a viable hypothesis that might be the consequence of the sign's inter-action within that context, and (3) determining the consequences of such practical inter-action. Experience, or sensibility, is the chief watchword: 'Our idea of anything is our idea of its sensible effects'. And the consequence of experience yields a tentative answer to the problem of meaning: 'The possible practical consequences of a concept constitute the sum total of the concept' (EP 2: 139). For Hookway (2004: 121), the maxim must prove the consequence of 'identifying and describing these sensible effects' of the sign — Peirce emphasizes this *verificationist* theme in his pragmatism when he writes that he only desires

to point out how impossible it is that we have an idea in our minds which relates to anything but conceived sensible effects of things. Our idea of anything *is* our idea of its sensible effects. (W3: 266)

This is to imply that just as signs become other signs in the continuous semiosis-semiotic process, so also meanings are always becoming something other than what they were becoming, and this becoming is the consequence of a set of initial conditions that are acted on by a potential knower. In Peirce's words:

In general, we may say that meanings are inexhaustible. We are too apt to think that what one means to do and the meaning of a word are quite unrelated meanings of the word 'meaning', or that they are only connected by both referring to some actual operation of the mind. Professor Royce especially in his

great work *The World and the Individual* has done much to break up this mistake. In truth the only difference is that when a person means to do anything he is in some state in consequence of which the brute reactions between things will be moulded [in] to conformity to the form to which the man's mind is itself moulded, while the meaning of a word really lies in the way in which it might, in a proper position in a proposition believed, tend to mould the conduct of a person into conformity to that to which it is itself moulded. Not only will meaning always, more or less, in the long run, mould reactions to itself, but it is only in doing so that its own being consists. For this reason I call this element of the phenomenon or object of thought the element of Thirdness. It is that which is what it is by virtue of imparting a quality to reactions in the future. (CP 1.343)

5.1. How the maxim works

In Peirce's first rendition of the maxim in 1878, which is the most commonly cited, we have the following:

Consider what effects, that might conceivably have practical bearings, 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; also 5.2, 5.9, 5.18, 5.427, and MS 327)

Notice how a combination of Firstness, Secondness, and Thirdness is implied in the maxim. We are asked to consider the practical bearings of the effects (Secondness) that whatever is under consideration might conceivably have (Firstness) given certain prevailing conditions (Thirdness). Then, we will have what we conceive *would be* result if the perceived world were of such-and-such a nature, according to what we imagine might possibly be the case (Nesher 1983).

However, since what emerges out of our imaginative faculties is not only unpredictable but virtually without definite limits, the nature of what we would expect will ensue according to the myriad ways our world *would be* perceived and conceived would be equally unlimited, given all possible times and places, here and there and in the past, present, and future. The maxim, in this regard, plays on our imagining what might possibly be the case in one of an unlimited number of contexts. So there can be no closure, since tomorrow might usher in some unforeseen possibilities of the imagination or of the perceived and conceived world that might end in new probabilities (of Thirdness) of actualization in the world (of Secondness).

The maxim has to do with the semiotic subject's construction of her world. It is a matter of her making what appears to be the case the case, at least for her at a given space-time juncture. It is a method not for determining whether a set of signs, characteristically in the form of a sentence or set of sentences, is timelessly and undeniably 'true'. Rather, it is an indeterminately variable method for inter-acting with signs in such a way that the 'semiotic world' with which they inter-relate appears to be the case. And in the process their meaning emerges: the maxim enables signs — including the semiotic agents, ourselves — to lift themselves up by their own bootstraps.

This is to say that the maxim essentially stipulates that the meaning of a sign regarding what appears to be the case is the product of all conceivable consequences presented by other sentences — and their own consequences — engendered from the original sentence. This product of all conceivable consequences entails the translation of the initial sign or sentence into a series of conditional sentences the antecedents of each of which prescribe certain interactions between the interpreter and the signs in question. The consequences, ideally, consist of observable sign phenomena that should or would make themselves manifest in the event that the original signs or sentences are indeed 'true'.

But 'truth', we repeat, is not the specific goal when applying the pragmatic maxim. The specific task at hand is to draw meaning from the signs being processed by way of their interactive interrelations. The interpreter takes the initial signs and creates a hypothetical situation by imagining what would most likely ensue. Then he puts his hypothetical signs to the test in terms of a thought experiment 'in here' or by interacting with the signs' objects 'out there' in order to see if he was right. If his hypothesis turns out to appear correct for the time being, the possibility nonetheless remains that other hypotheticals may at future moments present themselves, compelling her to repeat the operation. If his initial hypothesis is found deficient, then back to the drawing board for an alternative hypothetical, in which case she repeats the operation. And so on.

5.2. The maxim is never infallible

We should by no means take the maxim as a method to 'perfect clearness', as Peirce's long-time friend, William James put it (James 1920: 411–412; Potter 1996: 94). The maxim is capable of putting us on the road toward clarity, but never perfect clarity. Perfect clarity does not exist for us, since all signs according to Peirce and as we have observed, given their nature as signs, are to a greater or lesser degree caught up in vagueness, for, fallible as we are, there is always some degree of uncertainty in our sign interpretations.

What the maxim does is put us on the track toward some future time when we will hopefully know more than we now know (in other words, our knowing will hopefully be less vague). It tells us to entertain our imagination that so-and-so might be the case of the object, act, or event in questions if certain conditions are in place. The object, act, or event possesses certain characteristics, but at this point they are no more than that: possibilities (Firstness) as far as our awareness goes. None of these possibilities has yet become actual (Secondness) for the sign maker and taker. If and when it is actualized for us, then, and only then, can we properly conceptualize it as a sign (interpretant, Thirdness). In the sense of the futurity of the maxim, then, we have the possibility that, along with our imaginary conception of the matter at hand, we should by the maxim be able to get an idea in terms of what most likely would happen in the event that certain circumstances would be actualized.

In the final analysis, a Peircean meaning of the sign is not a thing or an entity. It is an emergent process resulting from the inter-action between *S-O-I* within particular contexts. This is to say that a sign's meaning emerges through realizing the consequences of certain inter-action between the sign and other signs brought about by the seeker of that sign's meaning. In this manner, it cannot be said that meaning is in the sign, in some talking and thinking head, in the referent of the sign, or in the medium by which the sign is transported to its potential receiver and interpreter. This point was very emphatically made by Hilary Putnam (1975; 1988).

But that is not all. Just as a given interpreter has acquired habits of feeling and sensing and thought within a social context that includes the community to which the interpreter belongs, so also meaning is by no means exclusively an individual affair. Anybody who interprets a

sign bring the baggage of the entire life of the social conventions by means of which he learned what he knows through habituation of his social practices. This includes past experiences and present experiences that collaborate to create expectations regarding what the future holds in store. Sign meaning, then, also integrates other signs and their own interpreters — since any and all interpreters are signs among signs. It includes the entire community of semiotic agents.

The focus, then rests chiefly on the interpretant (*I*) of the sign. In principle, it could imply an infinite regress were it not for the interpreter putting a stop to the process by 'cutting' out an *I* that, in collaboration with *S* and *O* that had previously been 'cut' out, produces an effect on the interpreter himself. When the interpreter has interacted with the *S*, *O* and *I*, as a result of this effect, he then creates another *S*. This *I* includes the original sign's meaning, which has become in essence another sign 'cut' from the continuum within this altered context of the interpreter, now having constructed the original sign's interpretation. Since every context of an emergent sign is comparable — but never identical — to past contexts, the sign's interpretation creates a new context in the virtually immediate future, and hence the *S* becomes something other than what it was in the process of becoming, and so also the *O*, both of which call for mediation by a potentially different *I*. And the triadic process begins anew. In this manner it can be said that Peircean signs are self-correcting (see Ransdell 1977: 162).

6.1. Meaning in the making within a human context — *meaning as form becoming*

As an illustration of meaning change within altering contexts that give rise to the emergence of signs becoming other signs, consider the case of the term 'atom'. 'Atoms' were according to the Greek Democritus minuscule 'solid, indivisible spheres'. This is spacetime slice₁ out of the continuum of *semiosis* possibilities. During John Dalton's days at the beginning stages of the scientific revolution, when 'atoms' of one substance were conceived to combine with 'atoms' of another substance to form conglomerates or 'molecules', 'atoms' were conceived as solid spheres with minute 'hooks' that could attach one 'atom' with another 'atom' to form a new substance. This is spacetime slice₂.

During the later half of the nineteenth century under the influence of Maxwell-Faraday 'field theory', 'atoms' were conceived as microscopic spatial 'vortices': spacetime slice₃. After John Rutherford discovered in the early years of the twentieth century that 'atoms' actually consisted of collections of 'subatomic' entities, he created the visual image of an 'atom' as akin to a plum pudding, with the 'subatomic' entities embedded in the 'atomic' medium: spacetime slice₄. Shortly thereafter, Niels Bohr created the picture of an 'atom' as a 'nucleus' surrounded by gyrating 'subatomic' entities, somewhat like a tiny solar system. An 'atom' is in this sense largely 'vacuous': spacetime slice₅. In the 1920s Werner Heisenberg proposed that an 'atom' is describable as an abstract mathematical 'matrix', thus doing away with picture theories altogether: spacetime slice₆. A short time later, the de Broglie-Schrödinger interpretation had it that an 'atom' is a 'wave amplitude'. It becomes substantive only after inter-action with some co-participant entity, which could be the observer through his detecting instrument. In this interpretation, an 'atom' is picturable, if at all, as a hazy cloud of possibilities: spacetime slice.

What, then, is the meaning of 'atom'? If we consider each spacetime slice as a 'world' in and of itself, then each 'world' is a static increment followed by a successive and equally static 'world'. This is the equivalent of McTaggart's (McTaggart, McTaggart 1927) atemporal *B*-series. There is a 'world' *before*, and a 'world' *after*. But there is no flow of time. There is no temporal *present* sliding along the knife edge of time becoming something other than what it was becoming in the *past* and becoming something that will have been becoming in the *future*. This temporality would be McTaggart's *A*-series. A Saussurean conception would be akin to the *B*-series. Kripke's 'causal' theory of meaning also ignores process, as does information theory, that focuses on decoding and recoding messages that remain intact when transferred through the sign medium. Frege's concept of meaning renders an account of different interpretations, through time, of *sense* regarding the same *reference*, but it does not account for any change of reference as it is conceived within varying contexts. Only the Peircean processual approach to the sign adequately includes the equivalent of McTaggart's *A*-series time.

Peircean meaning, in the final analysis, is indeterminately variable. It is a triadic, context-sensitive, interpreter-dependent, materially extended and embodied dynamic process. As such, it involves inter-

relatedness and inter-action between signs, their objects, acts and events in the world, and the semiotic agents who are in the process of making and taking them.

6.2. Implications of the Peircean theory of meaning

Peirce's theory, outlined in this essay, is of the nature of processual becoming, from possibility (Firstness) to actuality (Secondness) to potentiality (Thirdness in mediation with Firstness and Secondness) as one of the indeterminate number of possibilities, any of which could have been actualized in place of what was selected for actualization). In this sense, account is given of genuine triadic *semiosis*. *Semiosis* includes not merely signs of intellection (thought-signs) but also signs of feeling, and inter-related inter-action (*bodymind*-signs). In this respect, Lakoff and Johnson warrant a favorable nod.

But there is more to this story. It bears on the notion that whatever logic there may be, it cannot be other than multi-valued. And above all, as illustrated in the previous paragraphs, it must include time. The notion of meaning must be non-linearly applied, and change must be allowed. What is meaningful in one spacetime slice can *become* meaningless in another one, and what is meaningful within one space-time slice can have emerged from what was meaningful within a previous spacetime slice but has *become* meaningless within the present spacetime slice. Hence the notion of *becoming* is all-important. What *is becoming* does so in the process of present *becoming*, which was past *becoming* and will have been future *becoming*. 'Atoms' as 'solid spheres' eventually *became* 'atoms' as 'largely vacuous', and those in their own turn *became* 'cloud-like wave amplitudes'. The concept of *becoming* is imperative, because all that is semiosis, is *flux*.

6.3. Peirce, and the others

Peirce's view of meaning complements Putnam's (1975; 1981; 1988). Putnam refuses to compromise on his reservations regarding traditional theories of meaning. He emphasizes time and time again that there is no 'God's-eye view' of the world. There is no omniscient grasp of the whole context within which meaning emerges, in all its

possible ramifications. The world is simply too rich for the poverty of our interpretive capacity. Consequently: (1) Meaning is *neither in any correspondence between a sign and its reference*, nor is it the case that meaning or sense (*Sinn*) determines reference (*Bedeutung*) (contra Frege); (2) Meaning is *neither in the brain-mind as an autonomous organism, nor is it in a synchronic slice of language as an autonomous entity* (contra Saussure); (3) Meaning is *not in the referent that 'causes' stimulation within the brain-mind evoking a certain response to a sign* (contra Kripke); (4) Meaning is in the entirety of contextualized *bodymind inter-action*, but it is *not in the solicitation of relatively static schemes* (contra Lakoff and Johnson).

The Peircean notion of meaning, in short, can be described as a matter of form-becoming emerging from *S* to *O* and from *S* to *I* through mediation. This allows us to conceive meaning as a non-substantive, co-participatory fluctuating and flowing processual manner. Meaning as form-becoming is an emergent inter-active, inter-relational pattern of behavior.

Conclusion

Thus:

- (1) the meaning of a sign depends upon comparable past contexts of what is taken to be the same sign, in the present context, and in imagined, conjectured, or hypothetical future contexts; sign meaning is a time-bound process;
- (2) meaning bears on regularity of inter-related inter-action in the form of general modes of behavior guided by habit;
- (3) meaning entails a process of imagination, consideration of possible consequences, and inter-action with particular aspects of the physical world — or mental worlds in terms of purely 'thought-signs' — in this sense it is most fundamental to Peirce's 'realist' philosophy;⁶
- (4) just as for Peirce it is impossible to think without signs, so also thought itself is impossible without the material incorporation of some

⁶ It bears mentioning that Peirce labels his philosophical posture 'objective idealism'. 'Idealism' in view of the input of imagination as described above, and 'objective' in terms of the sign's, interpretant's and interpreter's inter-action with the object and the object reciprocally with them.

aspect of the world, and meaning is impossible without co-participation of *S*, *O*, and *I* (CP 1.538, 2.253, 5.265, 5.314, 5.470).

When applying this general semiotic approach to biological and social systems, meaning will most often be an interpreter-dependent objective process. It cannot be dissociated from the notion of a situated (and actively distributed) communicational agent (potential or effective). It is both interpreter-dependent and objective because information triadically connects *S*, *O*, and an effect (*I*) on the interpreter.

In sum, according to Peirce's pragmatic model, semiosis, is a triadic, dynamic, context-dependent (situated), interpreter-dependent (dialogic), materially extended (embodied) dynamic process. It is a social-cognitive process, not merely a static, symbolic system. It emphasizes *process* rather than *product*, *development* rather than *finality*. Peirce's emphasis rests not on content, essence, or substance, but, more properly, on *dynamics inter-relations*.

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⁸ See also footnote 4.

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Семиозис и прагматизм: к динамическому понятию значения

Философы и представители социальных наук различных ориентаций сошлись во мнении о том, что прагматика *семиозиса* подходит для динамического описания значения как процесса. Семиозис как центральное понятие прагматической философии Чарльза Сандерса Пирса может стать ключом к давним проблемам, связанным со значением. Действительно, идеи Пирса можно считать плодотворными, если их поместить в рамки когнитивных наук (особенно в связи с его понятием знака). Согласно пирсовской прагматической модели семиозис является триадическим, связанным со временем, чувствительным к контексту, зависимым от интерпретатора, материально протяженным динамическим процессом. Семиозис привносит взаимозависимость и взаимодействие между знаками, их объектами, действиями и событиями, происходящими в мире, и семиотическими агентами, которые являются их отправителями и получателями.

Semioos ja pragmatism: Tähenduse dünaamilise mõiste suunas

Erineva orientatsiooniga filosoofid ja sotsiaalteadlased on esile toonud, et *semioosi* pragmaatika on kohane kirjeldamaks dünaamiliselt tähendust kui protsessi. Semioos kui C. S. Peirce'i pragmaatilise filosoofia kese võib olla võtmeks tähendusega seotud kauastele probleemidele. Tõepoolest, Peirce'i ideid tuleb pidada viljakaiks, kui need paigutada kognitiivteadustesse, eriti seoses tema märgi mõistega. Peirce'i pragmaatilise mudeli kohaselt on semioos triaadne, ajaseoseline, kontekstitundlik, interpreteerijast sõltuv, materiaalse ulatuvusega dünaamiline protsess. Semioos toob kaasa vastastikuse suhestatuse ja vastastikuse toime märkide, nende objektide, tegude ja sündmuste ning semiootiliste toimijate vahel, kes on nende allikaks ja vastuvõtjaks.

The duality of understanding and the understanding of duality in semiotics

Andres Luure

The Estonian College of Humanities, Tallinn University
Uus-Sadama 5, 10120 Tallinn, Estonia¹
e-mail: andresluure@hotmail.ee

Abstract. In the view of the author, the main problem of semiotics is the understanding and advancing of understanding. To contribute to the solution of this problem, a distinction is suggested between two types of understanding: enlogy and empathy. The subject of enlogy reduces what he understands to himself as a code: he hears only what he is himself. The subject of empathy reduces what she understands to herself as a text: she sees only what she is striving to become. Enlogy is possible due to the identity of the communicants as a present unified code. Empathy is possible due to the identity of the communicants as a future common text. Mastering the code is a by-product of empathy; the texts rests on the enlogy that already is possible. Enlogy and empathy do not perceive each other as understanding. Therefore their mutual understanding remains the hardest problem of understanding. To fulfil its task, semiotics has to address this problem.

In this paper, I am concerned with semiotics as a study of the possibility of understanding and a striving for understanding.

The word 'understanding' has, of course, been construed in many different ways. A relevant distinction will emerge here.

A scene from family life

In order to introduce the problem let me cite a scene from family life.

"You don't understand me."

"I do!"

"Your saying so shows you don't."

¹ Also: Department of Semiotics, University of Tartu.

Are we to take this seriously? Can understanding be an obstacle to understanding? It seems that it can — and so understanding reveals its self-contradictoriness. Let us have a closer look.

If I am able to parse your sentences and to identify your words, then I understand what you are saying, and so I understand you. I understand you as using a grammatical sentence of a language I understand. Whenever you say something I understand, you are picking out one of the sentences the language allows to form and to understand. I understand you precisely because I share your language. I understand you before you ever say anything — because I understand whatever you could say — provided you follow the rules of a language common to us. By understanding whatever you say I understand you — as you *are* what you could say; *you are the language*, you always were. I understand you as long as I am the same language.

However, is what I am understanding really *you*? You would say: of course not. You are not your language. A language could never have enough room for you. Your language is just a means for you. You *are* what you are telling me. However, what you are saying is never *you*. I have to understand you from your messages though you never are present in them. I have to understand you though you are *unsayable*. In order to do so I have to find you in myself, or rather, I have to become you. This is possible since we are just becoming what we *are*. So, understanding involves being aware that understanding is still not there. I can understand you due to my producing and operating on a common ground which is conceived as both you and me.

Meaning as sense and significance

Let me explain this in other words. We distinguish between different ways of having meaning for us, namely, making sense and having significance.

What makes sense for me is what can be embraced by my codes or stereotypes that are ready already. What makes sense is what doesn't force or expect me to change myself.

By contrast, what has significance for me is what shows me something outside of me and is telling me something.

In communication, people usually have expectations concerning both sense and significance. A message is expected to be clear and

understandable: it is supposed to make sense. On the other hand, it is not expected to be trivial, it should be telling, it should be understandable why it was sent us: it is supposed to have significance. These two expectations have different, even opposite directions. In order to be meaningful for us, a message shouldn't be new, or else it wouldn't make sense and so it wouldn't be understandable; and in order to be significant for us, it should be new, or else it wouldn't have significance and so it wouldn't be understandable.

Here we can see that understanding can be construed in two ways: understanding consists either in detecting sense or in detecting significance.

Lotman on the paradox of communication

Juri Lotman in his work addresses issues similar to what has been noted in the previous section. Throughout his lectures, Lotman has cited the following paradox:

If two individuals are absolutely different from each other, if they do not have anything in common, then meaningful communication between them is impossible. But if two individuals are absolutely identical, then, also, communication is impossible — actually, it is possible, but they just do not have anything to tell each other. (Kull 2005: 176)

In the terms of the previous section, the missing 'meaning' is construed either as 'sense' (common codes) or as 'significance' (having something to tell each other).

If we imagine a sender and a receiver with the same codes and entirely lacking memory then the understanding between them will be ideal but the value of the information transferred will be minimal, and the information itself will be strictly limited. [...] It can be said that the sender and the receiver which are ideally similar will understand each other ideally but they won't have anything to talk about [...].

In normal human communication, and what is more, in the normal functioning of the language, an original lack of identity between the speaker and the hearer is assumed.

Under these conditions, the situation of an intersection between the linguistic spaces of the speaker and the hearer becomes normal [...].

In the situation of the lack of intersection, communication is assumed to be impossible, the complete intersection (identity of [the linguistic spaces —

A. L.] *A* and *B*) deprives the communication of content. So, a certain intersection of the spaces and, at the same time, an intersection of two mutually fighting tendencies: the striving to facilitate the understanding, which will continually try to enlarge the domain of intersection, and the striving to increase the value of the message, which is connected with the tendency maximally to increase the difference between *A* and *B*. [...]

The space of intersection between *A* and *B* becomes the natural base for communication. And the non-intersecting parts of the spaces seem to be excluded from the dialogue. However, here we meet one more contradiction: the exchange of information within the intersecting part of the sense space suffers from the same vice of triviality. The value of the dialogue turns out to be connected not with the intersecting space but with the information transfer between the non-intersecting parts. This renders us faced with an unsolvable contradiction: we are interested in communication with namely the sphere that makes communication more difficult, and, in the limit — renders it impossible.² (Lotman 1992: 15–16, translation mine — *A. L.*)

² “Если мы представим себе передающего и принимающего с одинаковыми кодами и полностью лишенными памяти, то понимание между ними будет идеальным, но ценность передаваемой информации минимальной, а сама информация — строго ограниченной. [...] Можно сказать, что идеально одинаковые передающий и принимающий хорошо будут понимать друг друга, но им не о чем будет говорить. [...]

В нормальном человеческом общении и, более того, в нормальном функционировании языка заложено предположение об исходной неидентичности говорящего и слушающего.

В этих условиях нормальной становится ситуация пересечения языкового пространства говорящего и слушающего [...].

В ситуации непересечения общение предполагается невозможным, полное пересечение (идентичность *A* и *B*) делает общение бессодержательным. Таким образом, допускается определенное пересечение этих пространств и одновременно пересечение двух противоборствующих тенденций: стремление к облегчению понимания, которое будет постоянно пытаться расширить область пересечения, и стремление к увеличению ценности сообщения, что связано с тенденцией максимально увеличить различие между *A* и *B*. [...]

Пространство пересечения *A* и *B* становится естественной базой для общения. Между тем как непересекающиеся части этих пространств, казалось бы, из диалога исключены. Однако мы здесь оказываемся еще перед одним противоречием: обмен информацией в пределах пересекающейся части смыслового пространства страдает все тем же пороком тривийности. Ценность диалога оказывается связанной не с той пересекающейся частью, а с передачей информации между непересекающимися частями. Это ставит нас лицом к лицу с неразрешимым противоречием: мы заинтересованы в общении именно с той сферой, которая затрудняет общение, а в пределе — делает его невозможным.”

What did Peirce not understand

Charles Sanders Peirce did not understand the laws of nature. In his paper "The Architecture of Theories" he wrote:

To suppose universal laws of nature capable of being apprehended by the mind and yet having no reason for their special forms, but standing inexplicable and irrational, is hardly a justifiable position. Uniformities are precisely the sort of facts that need to be accounted for. That a pitched coin should sometimes turn up heads and sometimes tails calls for no particular explanation; but if it shows heads every time, we wish to know how this result has been brought about. Law is *par excellence* the thing that wants a reason.

Now the only possible way of accounting for the laws of nature and for uniformity in general is to suppose them results of evolution. (Peirce 1992: 288)

I take '*inexclipable*' to mean 'ununderstandable' in a sense, since a thing is made understandable by explanation. So, in a sense, Peirce does not understand laws of nature. Nor the exact formulation of a law neither subsuming it under a more general law renders it understandable. For Peirce, understanding seems to involve affinity with the understander, a common history and participation in a common process. The process in question is habit taking. A natural law is to be conceived to be a habit of nature, and understanding it is taking a habit as well:

The one intelligible theory of the universe is that of objective idealism, that matter is effete mind, inveterate habits becoming physical laws. (Peirce 1992: 293)

Empathy and enlogy

As the short names of the different conceptions of understanding I want to distinguish between, I propose '*empathy*' and '*enlogy*'.

'Empathy' is a common word, meaning 'putting oneself into another's shoes'³. It origins from the Greek words *en* 'in, inside' and

³ The word has been coined after the Greek word *empathēia* 'physical affection; passion; partiality' (Liddell, Scott 1940: sub *empathēia*) but it has a new meaning following the German word *Einfühlung* (literally: 'feeling into') intro-

pathos (multiple meanings, among them 'what happens to or in someone or someone' and 'what one feels like').⁴ So, empathy can be conceived as: what is happening (as if) to me or inside of me.

I propose to broaden this concept, having in view the examples above — understanding that requires not understanding, and the understanding Peirce sought after. The empathic understander models on herself what is to be understood. She understands anything only by understanding herself. She understands herself as evolving from a long history, and anything else is understandable as far as it has common roots with herself. Understanding is part of that history, or better, all of her history is understanding. Her history can't take end. While she is understanding, she doesn't understand.

In contrast, I use the word '*enlogy*'⁵ by analogy to '*empathy*', evoking the Greek word '*logos*' that has notoriously numerous meanings, including '*law*', '*rule*' and '*reason*' (Liddell, Scott 1940: sub *logos*, 2006/06/04). Reminding our examples, *enlogy* is meant to be understanding by rules of language and the kind of understanding Peirce denied. By understanding the laws of nature one understands nature. This is all one needs. *Enlogic* understanding has no history, and every *enlogy* is complete, non-processual.

Meaning transmission and meaning generation

Texts are products of two kinds of semiotic processes: meaning transmission and meaning generation.

In the general system of culture, the texts fulfil at least two main functions: adequate transmission of meanings and generation of new meanings.⁶ (Lotman 1992 [1981]: 150)

duced by Rudolf Lotze in 1858 (Harper, Douglas 2001. *Online Etymology Dictionary*, sub *empathy*, <http://www.etymonline.com>, 2006/06/02).

⁴ The meanings include: 'that which happens to a person or thing', 'good or bad experience', 'calamity, misfortune', 'emotion, passion', 'state, condition', 'happenings or changes in things', 'properties, qualities of things' partiality' (Liddell, Scott 1940: sub *pathos*).

⁵ The word *enlogy* (in Russian: энлогия) in a different though close meaning was introduced by Dvorkin 1983 and later widely used by Chebanov (e.g., Chebanov 1995).

⁶ 'В общей системе культуры тексты выполняют по крайней мере две основные функции: адекватную передачу значений и порождение новых смыслов.'

In order to understand a text enlogically, we are to recognize it as a variant of a paradigm, a textual instance of a sign system (code or language). A sign system provides the possible meaningful ('senseful') syntagmata in the framework of that system. The paradigm also can be a text-code ('an intermediate link between language and texts',⁷ Lotman 1992 [1981]: 150).

[The function of adequate transmission of meanings] is best fulfilled in the case of the fullest coincidence of the codes of the speaker and the hearer and, consequently, in the case of the maximum unambiguity of the text.⁸ (Lotman 1992 [1981]: 150)

The core of enlogic understanding is reducing texts to variants of paradigms. A sign system is a paradigm providing the possible texts in that sign system. A text-code can be conceived as a single sign occurring in different variants.

Enlogy isn't limited to subsuming under a single, known code. The enlogic striving of understanding is at work even when a text is encoded by several codes which still might only be sought after. Lotman seems to identify the key of the ability of texts to generate new senses in the plurality of codes:

Culture is, in principle, polyglottic, and texts always are realized in the space of at least two semiotic systems. [...] being encoded by many codes is a law for an overwhelming number of texts of culture [...].⁹ (Lotman 1992: 143)

[...] the text itself, being semiotically heterogeneous, enters the game with the codes decoding it and influences it in a deforming way. In result, in the process of the advance of the text from the addresser to the addressee, a shift of sense and its increase takes places. Therefore, this function [of the text] can be called *creative*. [...] the text is heterogenous and heterostructural, it is a manifestation of several languages at the same time. The complex relationships of dialogue and play between the text's manifold substructures constituting its

⁷ "[...] между языком и текстами промежуточного звена [...]."

⁸ "[...] выполняется наилучшим образом при наиболее полном совпадении кодов говорящего и слушающего и, следовательно, при максимальной однозначности текста."

⁹ "Культура в принципе полиглотична, и тексты ее всегда реализуются в пространстве как минимум двух семиотических систем. [...] зашифрованность многими кодами есть закон для подавляющего числа текстов культуры [...]."

inward polyglottism, are mechanisms to generate senses.¹⁰ (Lotman 1992: 145)

The text [...] doesn't stand before us as a manifestation of some one language: to constitute it, at least two languages are needed. [...] the text in its second function is not a passive receptacle, a bearer of content that has been put into it from outside, but a generator.¹¹ (Lotman 1992 [1981]: 151–152)

The two functions of texts roughly correspond to enlogy and empathy as two functions or two strategies or two ideals of understanding.

Enlogy is finding you in myself, whereas empathy is my becoming you. In enlogy, you are the code of your text(s) in me; in empathy, you are the ideal end of the evolution of your text while my understanding. Enlogy is every time complete since understanding a code is understanding a whole; empathy is never at end because you always stay beyond your text.

Lotman suggests that meanings (senses) constitute no fixed stock. They can be generated, that is, newly created. In terms of enlogy, this would mean that I am not just finding myself as you but I am becoming a new self. That would be a contradiction. So, Lotman points to the limits to enlogy. The process he describes has an empathic character. However, he does not leave the point of view of enlogy and continues to use the concept of code. So, empathy shows itself in another perspective.

¹⁰ “[...] сам текст, будучи семиотически неоднородным, вступает в игру с дешифрующими его кодами и оказывает на них деформирующее воздействие. В результате в процессе продвижения текста от адресанта к адресату происходит сдвиг смысла и его приращение. Поэтому данную функцию можно назвать *творческой*. [...] текст гетерогенен и гетероструктурен, он есть манифестация одновременно нескольких языков. Сложные диалогические и игровые соотношения между разнообразными подструктурами текста, образующими его внутренний полиглottизм, являются механизмами смыслообразования.”

¹¹ “Текст [...] предстает перед нами не как манифестация какого-либо одного языка — для его образования требуются как минимум два языка. [...] текст во второй своей функции является не пассивным вместилищем, носителем извне вложенного в него содержания, а генератором.”

Complexity

It seems to be natural to conceive the complexity of a text as the difficulty of its understanding. So, we should distinguish between enlogic and empathic complexity.

In enlogy, the more complex is the text the more simple must be the code, and vice versa. It is obvious to distinguish between two levels of text complexity and code simplicity. First, it might be that every text type is encoded apart so that the text is not analyzable by means of the code but simply is to be recognized as a certain type text. Then the texts are simple (unanalyzable!) but the code is complex as it must enlist all possible text types. Second, it might be that the code provides a grammar allowing to parse a huge, maybe endless amount of different text types. Then the code is simpler as it charges memory at a lesser amount and the texts are more complex since they have analyzable structure.

Now I propose to interpolate this scale of complexity in both directions. First, let us see how texts could be even simpler. Take a sentence in a foreign language. If you know the language you can parse the sentence and understand it. If you only start learning the language it might be that you understand the sentence as a whole though you cannot parse it. At that level of understanding you should know all sentences by heart to understand them. Can it be anything still more primitive? Certainly! Imagine that you understand no sentence itself but can repeat any sentence in order to ask what it means. And finally, maybe you are even not able to repeat sentences, and so you should point to each token sentence in order to learn its meaning. In those cases, respectively, you can identify type sentences only in a chain of repeating, or you can identify only tokens. So, in order to know the language at those levels, memory should have room for all chains of repeating or even for every token sentence! Normally, those levels are perceived as pre-code levels.

Code is what enables us to recognize the sense of a text. The simpler is the code the more difficult task is the recognition since the code is the less similar to the text. We have to recognize a token text, then a chain of token texts, then a type text and then the linguistic form of the text. In each case, the new level of code is impossible in terms of the previous level. The unity is constituted according to a new princi-

ple. For example, the grammar of a language cannot be mastered simply by memorizing the senses of words, sentences or texts.

Further we move as if to the post-code level. Suppose we have to understand poetry that creatively uses language. It contains words and patterns not provided by language codes, and it allows different variants of decoding even where the codes are still at work. How then is understanding possible? Is the concept of code still somehow extrapolatable here? Understanding poetry *is* possible, and this is due to the level of language mastering exceeding the following of grammatical models. And here, the language mastering is mastering the language itself rather than mastering its grammar, or in the other words, the codes in the usual sense. The language itself is a code (a post-code). We can't describe this code and we don't understand it in terms of (usual) codes exactly because it is a code of a higher level and the way of understanding depends on the level of code.

Enlogy can be conceived as clarity about the sense of the text. The requirements for clarity depend on the level of enlogic understanding. Enlogy is accomplished by subsuming the text under a code. However, enlogy can also be conceived as a permanent ability to understand the senses of a variety of texts.

By contrast, empathy involves generating new texts in order indefinitely to approximate understanding the significance of the text. Each text produced by the process of understanding is an intermediate step of understanding and non-understanding. This process is what Peirce called *semiosis*.¹² Interpretants are newly produced texts as expressions of understanding, and at the same time, in their quality of representamina (or 'signs') in new semioses, they are sources of non-understanding.

Each text in the chain of interpretation is understandable in the framework of *some* enlogy. On the other hand, for empathy this understanding of sense is trivial, as significance manifests itself only in the choice of the variant envisaged by a certain code. For enlogy, this choice is irrelevant. The choice is a by-product of instantiating a code.

¹² Peirce uses the word *semiosis* in a manuscript titled as "Pragmatism": "[...] by 'semiosis' I mean [...] an action, or influence, which is, or involves, a cooperation of *three* subjects, such as a sign, its object, and its interpretant, this tri-relative influence not being in any ways resolvable into actions between pairs" (Peirce 1998: 411).

The code, in its turn, is a by-product of the chain of interpretation.¹³ Complexity in terms of empathy increases along with decrease of complexity in terms of enlogy. On each level of code complexity, the process of interpretation is working towards the next level. As the next level is not present, it is compensated by code changes. As there is no envisaged text variant, significance is expressed by combining codes. Lotman describes this process as dialogue and sense-generating creativity of texts (see above).

Understanding: discrepancy of expectations

Lotman's presentation of the communication in "the situation of an intersection between the linguistic spaces of the speaker and the hearer" (cited above) refers to a scale where significance is increased on account of the diversification of the stock of codes (which eventually is to yield a new level of code).

Is it here the case that "lack of intersection" means the absolute difference of the communicants, and the "complete intersection" means their absolute identity? Both identity and difference can be meant in substantially different ways. Lotman thematises "linguistic spaces" as the criterion of identity and difference (intersection). That amounts to code mastering as the criterion of similarity of communicants. Communicants similar in that way produce texts (messages) making sense to each other exactly due to this similarity. Further, we can't literally say that communicants similar in this aspect have nothing to tell each other. Obviously, significance need not and typically doesn't lie in codes. It turns out that the character of the troubles at the two ends of the scale lies in two different dimensions: communicants identical in terms of significant content cannot communicate in a significant way, and communicants entirely different in terms of codes cannot communicate in a way making sense. The expectations in the two cases are totally different! And if we look for the conditions of the possibility of communication then we don't look just for a middle ground between two extremes but we combine two types of expectations.

¹³ Peirce describes this process as habit-taking, habits being final interpretants (e.g., Peirce 1998: 412–418).

We are used to think that codes are *mere* means of conveying and receiving messages. However, the two types of expectations are not only different but incommensurable and even antagonistic. The expectations are either enlogic or empathic. Understanding sense and understanding significance are different interests. The texts make sense when the communicants have a common "linguistic space". And the texts have significance when the content to communicate is different between the communicants.

Different expectations in terms of understanding lead to different communicative behaviour as in our family scene above. There is a sort of lack of understanding that has its source precisely in the difference of expectations in two types of communicative agents. Of course, usually both attitudes are combined in one and the same agent. Nevertheless, modelling communication in terms of types of agents might be a useful method of analysis. It seems that the existing semiotic theories pay little or no attention to the distinction in question.

Meno's paradox

In the context of the semiotic paradoxes, Kull (2005) mentions Meno's paradox:

It has been formulated in the Platonic dialogue *Meno*, and it states that one cannot search for what one does not know and does not need to search for what one already knows. If so, then learning turns out to be impossible. Learning as acquiring knowledge of something else is essentially a sign process, and in this sense it requires an embeddedness into the sphere of signs. (Kull 2005: 176)

However, Plato's (or Socrates') solution to that problem raised by Meno seems to be different. The problem is raised by Meno as follows:

Meno: How will you look for it, Socrates, when you do not know at all what it is? How will you aim to search for something you do not know at all? If you should meet with it, how will you know that this is the thing you did not know?

Socrates: I know what you want to say, Meno. Do you realize what a debater's argument you are bringing up, that a man cannot search either for what he knows or for what he does not know? He cannot search for what he knows —

since he knows it, there is no need to search — nor for what he does not know, for he does not know what to look for. (80d–e; Plato 1997: 880, translated by B. M. A. Grube)

Plato's (Socrates') solution is that learning is recollection:

Socrates: Then if the truth about reality is always in our soul, the soul would be immortal so that you should always confidently try to seek out and recollect what you do not know at present — that is, what you do not recollect?

Meno: Somehow, Socrates, I think that what you say is right. (86b; Plato 1997: 886)

Of course, what Plato (Socrates) says should not be taken literally. But what is the lesson? We should find an analogy with the situation of incommunicability as cited above.

The specific thing Meno and Socrates were searching for was the definition of virtue. If we conceive learning as communication with reality then the definition of virtue both conveys us a certain code for understanding (the sense of) our experience and mediates (significant) knowledge about reality. When we know the definition we have nothing to search for as empathy has come to an end. When we don't know the definition we lack the crucial code to learn it.

My interpretation of Plato's (Socrates') purport is as follows. We can't acquire new codes immediately by means of our old codes. The new codes are generated as by-products of empathy. This is what Plato (Socrates) means by 'recollection'. There are two sources of the possibility of understanding. First, the communicants share 'linguistic spaces' (in Plato's example, we know something we still have to recollect). Second, they share a common striving (amounting to a striving to learn) that makes understanding possible even when there is no language mastering.

Understanding: a challenge for semiotics

We started from an example from everyday life where it became manifest that lack of understanding can be due to different models of understanding at work. So we need one more concept of understanding besides enlogy and empathy: understanding between enlogy and empathy.

Mastering this concept requires overcoming one-sided orientation towards either enlogy or empathy in semiotics. To avoid reduction, the interdependence between enlogy and empathy (as sketched above) should be addressed. Further, an adequate approach to the real problem of understanding needs a positive conception of understanding between enlogy and empathy.

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¹⁴ Available at <http://www.perseus.tufts.edu/cgi-bin/resolveform>.

¹⁵ Available at <http://yanko.lib.ru/books/cultur/lotman-selection.htm>.

¹⁶ Available at <http://yanko.lib.ru/books/cultur/lotman-selection.htm>.

¹⁷ Available at http://yanko.lib.ru/books/cultur/lotman_semiosphera.htm.

Дуальность понимания и понимание дуальности в семиотике

В качестве основной проблемы семиотики автор видит понимание понимания и содействие пониманию. К решению этой проблемы в статье предлагается различить две формы понимания — энлогию и эмпатию. Субъект энлогии сводит понимаемое к самому себе как коду: он слышит в понимаемом только то, чем он сам является. Субъект эмпатии сводит понимаемое к самому себе как тексту: он видит в понимаемом только то, чем он сам стремится стать. Энлогия возможна благодаря тождественности коммуникантов в качестве наличного единого кода. Эмпатия возможна благодаря тождественности коммуникантов в качестве будущего общего текста. Владение кодом является побочным продуктом эмпатии; текст опирается на ту энлогию, которая уже возможна. Энлогия и эмпатия не воспринимают друг друга как понимание. Поэтому самой трудной проблемой понимания останется их взаимопонимание. Чтобы выполнить свою задачу, семиотика должна заняться этой проблемой.

Mõistmise duaalsus ja duaalsuse mõistmine semiootikas

Autor näeb semiootika põhiprobleemina mõistmise mõistmist ja mõistmise edendamist. Et selle probleemi lahendamisele kaasa aidata, pakutakse artiklis välja eristus kahe mõistmise vormi (arusaamine ehk enloogiline mõistmine ja mõistmine kitsamas mõttes ehk empaatiline mõistmine) vahel. Arusaaja taandab arusaadava iseendale kui koodile, kuuldes arusaadavas ainult seda, mis ta ise on. Mõistja taandab mõistetava iseendale kui tekstile, nähes mõistetavas ainult seda, milleks ta ise püüab saada. Enloogia on võimalik tänu kommunikantide samasusele olemasoleva ühtse koodina. Empaatia on võimalik tänu kommunikantide samasusele tulevase ühise tekstina. Koodi valdamine on empaatia kõrvalsaadus; tekst tugineb enloogiale, mis on juba võimalik. Enloogiline ja empaatiline mõistja ei mõista teineteisele omast mõistmist mõistmisena. Seetõttu jääb raskeimaks mõistmisprobleemiks nende omavaheline mõistmine. Et oma ülesannet täita, peab semiootika selle probleemiga tegelema.

From environment to culture: Aspects of continuity

Guido Ipsen

Faculty of Cultural Studies, University of Dortmund
Emil-Figge-Str. 50, D-44221 Dortmund, Germany
e-mail: guido.ipsen@uni-dortmund.de

Abstract. The conceptualization of the lifeworld of any species includes a reformation of the matter found in the environment into concepts which make up the species-specific *Umwelt*. This paper argues that the human agency in conceptualising the *Umwelt* necessarily transforms what we usually call “nature” into so-called “culture”. Ultimately, this human activity has two consequences which we cannot escape, but which have an influence not only on our perception of the environment, but also on our theorising about what has been called the “nature-culture divide”, the “semiotic threshold” respectively: First, any environmental perception is at once conceived of in cultural terms. Second, whatever “nature” may be, our including it into the cultural discourse removes it from our immediate cognition.

1. Some fundamental thoughts about the nature of nature

There are various ways in which the human species connects what it calls nature with what is termed culture. In our everyday lives we are pretty sure where to find nature and where to detect culture. Two extreme oppositions are, e.g., an untended wild patch of forest, which is located towards the nature pole, versus a building constructed from glass, metal, and shining marble, which is a highly sophisticated cultural artefact. Doubtlessly, it is this open distinction; the experiential, i.e., the visual, tactile, acoustic, and other perceptible signs, which in the first case seem to come into being without human interference, and in the latter case are exclusively human in origin, which lead us to make a distinction between nature and culture also on higher, scien-

tific levels. At the same time, we cannot but accept the fact that all materials that we use to create cultural artefacts do come from a “natural sphere”. Still, in order to show that there is no divide between nature and culture, it is not enough to insist that the stuff culture is made of is natural. The ultimate bridge between the two realms is conceptual, and it is rooted in the very practice by which we transform our environment into our species-specific *Umwelt*.

In order to show the mechanics of conceptual transformation of nature into culture, I shall make use of Jakob von Uexküll’s theory of the functional circle. Admittedly, in doing so I avoid the nature-culture divide only seemingly. As we will see later, a divide between nature and culture that was existent for us as a species must exist inside our *Umwelt*. Following John Deely (2001), I suggest that there is a threefold division of “spheres” in our universe. First, there is the environment, from which we draw the raw matter which we later transform into signs. Of the environment, we cannot be sure. We shall never know in how far the environment is factual or not. There are, however, two spheres of which we are at least conscious and from which we derive our reflections. These are the spheres of the objective and the subjective. I do not want to go into detail concerning the divisions between subject world and object world here. Suffice it to say in the context of this paper that both the objective and the subjective play out by making use of signs. This means that both are already situated inside the human *Umwelt*. The *Umwelt* is cognitively separated from the environment. I suggest that any of the nature concepts that we encounter in popular or scientific discourse is already a transformation of matter from the environment into our *Umwelt*. Hence, these nature concepts are part of culture indeed, as all of our concepts are governed by our species-specific traits, which are naturally cultural.

As mentioned above, recognising our nature concepts as being part of culture only seemingly bridges the divide between nature and culture. “Real”, or “true” nature must be situated where culture has no rule, which ultimatively means that nature should be completely detached from culture. In my reasoning, culture is the one force that enables us to chart our *Umwelt*, meaning that “true” nature can only exist where culture does not execute this force. Nature, if we insist on using this term for something non-cultural, would hence logically be removed to the general sphere of the environment. For purposes of investigating objects or species that are different from humans, it may

be useful to employ the term nature also as part of our *Umwelt*. Still, we must be conscious of the fact that any concept we use for said objects or species is already cultural. This is the ultimate deconstruction of the nature-culture divide.

At the same time, this conception of nature as something being part of the general environment allows us to define an individual semiotic sphere for any species, equalling their species-specific *Umwelt*. Insofar, the environment, or nature for that matter, are resources for semiosis not only for humans, but also for other species. Again, Jakob von Uexküll's functional circle allows us to define such individual spheres of semiosis. As you will notice, in this line of thinking it seems that, e.g., the *Umwelt* of a tiger would be removed from nature as is the human's. From our perspective, this seems ridiculous, as we consider tigers to be part of nature. In exemplifying my above ideas, let me rephrase the relations as follows: The human agent takes the tiger for something "natural". By attributing the term "tiger" to the animal, the latter is, however, at once culturalised. The term tiger, its connotations, denotations, and any further acts of semiosis where it is included play out on the cultural level. For the tiger, however, different acts of semiosis are important in order to construct his *Umwelt*. For him, nature or culture as terms are completely irrelevant. Still, his conceiving of other animals, e.g., a human, as prey, is already a species-specific reinterpretation of the environment. Hence, the same principles apply to human or tiger perception of the environment. Let us now take a closer look on how our conception of nature being separated from culture is structured.

2. The semiotic paradox of divides

The habit of taking on material from natural resources to the human body in order to produce clothing for shelter, accessories for decorative purposes, tools, or weapons, is as old as human *culture*. But does this practice indeed make up a divide between this so-called exclusive human domain and *nature*? Is there really a dividing line between semioticised material within culture and the unused matter beyond? An argument in favour of this divide was that the said materials only gain the value of signs as soon as they are being used by the standards of cultural signification (Eco 1976: 21). The whole argument ulti-

mately boils down to the question of whether a nonsemiotic world exists, by its very existence defining the more sophisticated, however somewhat smaller cultural domain. This question can be pursued in two ways. First, we could try to prove that there is a nonsemiotic world by finding something that has yet not gathered the value of a sign. The second way of defining the nonsemiotic is to state that there are beings in a biological world whose perceptions, communication, and lives are not meeting the standards of semiosis as we find it in humans. Let us explore these two lines of reasoning first.

2.1. The nonsemiotic world of items

Instead of item, we may also use the terms “thing”, “object”, or “material”. Nearly all terms, however, have been introduced to one cosmological model or another. Appropriate terminology therefore is difficult to approach. What here is called items is that which is defined as “not (yet) being a sign”. What are “non-signs”? I admit that this paper challenges the existence of non-signs altogether. I suspect that they are a theoretical construction to introduce yet another negative definition of what signs are. According to Saussure, e.g., the nonsemiotic world is an “uncharted nebula” (1916: 111–112). This is a negative definition par excellence, and also a genial delimitation of theorizing: It defines everything known as signs, and at the same time spares Saussure to actually name something which is not a sign. As we will see later, Saussure’s approach bears some similarity to this paper’s arguments, as there clearly are areas and things in the world which are not known to us. We know of the unknown and if only for the reason that our measuring apparatus has been able to penetrate some of the vast unknown of the universe, leaving yet uncharted areas behind the final frontier. Still, the postulation that whatever matter is unknown remains in a “nebula” of non-signs is a hypothesis only serving for reassuring us of the significant value of our knowledge. Moreover, it reduces semiotic theory to mere anthropocentrism.

For another example, St. Augustine (397: 624–625; cf. Nöth 1990: 82) gives a more clear account of what non-signs are. He makes a difference between “signs” and “things”. Keeping close to the definition of a sign as *something which stands for something else*, i.e., *aliquid pro aliquo*, he lists items such as “wood, stone, cattle or other things

of that kind" as non-signs. Nöth calls this approach "naïve realism". Indeed, here the question must be raised again if a sign will only be a sign if it will be sorted with other, similar signs, in a system appropriate to human understanding. Also, does the sign cease to be a sign if appearing out of this systemic context? Clearly, wood, stone and cattle can take on most diverse sign values. We will discuss the case of living creatures later on. Concentrating here on the examples of wood and stone suffice it to say that they already gained sign value as soon as St. Augustine listed them as specimen of non-signs: Wood or stone standing for non-signs, they paradoxically become *signs for non-signs*.

Another well-known approach, which has also been employed for dividing the cosmos into the spheres dominated by humans and other creatures, is the one devising the so-called *semiotic thresholds*. Umberto Eco (1976: 16–28) employed the term of the threshold to delimit the semiotic field. The interesting aspect here is that it is the methodological and disciplinary perspective of a semiotic science which governs the view of the cosmos. Below the lower semiotic threshold, there are those phenomena not guided by social convention, delimiting the semiotic field to the socio-cultural sphere. Beyond the upper semiotic threshold, according to Eco, there are those phenomena studied by other sciences than semiotic. Most interestingly, Eco sees any possible object as attached with semiotic as well as nonsemiotic value. As soon as something is studied as a sign, it becomes subjected to the semiotic field. If the same item is then studied as, say, a tool, it drifts from the semiotic field and is confined to the sphere beyond the upper semiotic threshold. Concerning Eco's semiotic thresholds, it is most noteworthy that his third threshold is neglected in all reflection on the subject matter. Eco calls this third threshold the epistemological, and as I take it, this is the inspiring force behind all threshold thinking. The first and the second threshold explain how the semiotic field may be delimited. These limits seem to originate from an intrinsic semiotic reflection. The third threshold, however, explains that there is in truth an extrinsic reason for delimitating the semiotic field in the first place. Semioticians seem to be afraid to admit that semiotic has no field except maybe the realm of pure thought, as Peirce sometimes reflects (cf. CP 4.6). Indeed, as soon as we apply semiotic theory to any subject matter, semiotic becomes involved with other disciplines. So it must be, as beyond their mental nature, signs do signify perceptions that are usually investigated by said other disciplines. This makes se-

miotic a transdiscipline as such, but yields the disadvantage of attributing no specific field to it. It is therefore understandable that Eco feared to admit the true nature of semiotic and confined it to the study of culture instead. This is indeed a political decision, not a semiotic one.

While it is only obvious to acknowledge that the field of, e.g., physics, sports, mathematics, etc. is separated from the semiotic field if seen from the perspectives of the monodisciplinary physicist, sportsman, or mathematician (these not calling themselves semioticians¹), I should argue that the schizophrenic nature of items as Eco sees them is not given. As soon as semiotic puts itself to the task of examining *anything* according to its sign value, this item cannot ever again disappear from the semiotic field. Neither can the semioticians see an item oscillating between the semiotic and the non-semiotic, or else they were disregarding their own discipline. In other words: Whereas any other (possibly merely ignorant) person may not see things as semiotic, they must be so for the semiotician. In any other case, semiotic would be reduced to an alternative science that had not even the field of thought for its own.

While I do not only embrace but admit the possible accusation of pansemiotism here, my main objection against the upper semiotic threshold is especially nurtured by Eco drawing disciplinary borders. His division between semiotic and nonsemiotic remains artificial and is already guided by cultural propositions, for clearly the concept of disciplinary fields is not inspired by nature as such. Semiotic, however, should be seen as a transdiscipline *par excellence*, as such busy-ing itself with signs from any field of human knowledge.

¹ Note, however, that the point has been made that there are not only *explicit* studies of semiotic, which would cover the theories of the sign proper, but also *implicit* semiotic, which “covers the many semioticians *avant la lettre* who have contributed to the theory of signs since Plato and Aristotle but also includes semiotically relevant current studies in the many neighboring fields of semiotics”, as Nöth (1990: 4) remarks. In accordance with Peirce, I hold the limits of these neighboring fields as virtually nonexistent. In this judgment I follow his intention to “outline a theory so comprehensive that [...] the entire work of human reason [...] shall appear as filling up of its details”. In this regard, physics, sports, and mathematics *are* fields of semiotic. For the example of sports, see e.g., Hildenbrandt (1997), Bockrath (2001), Friedrich (2001) and the special issue of the *Zeitschrift für Semiotik* 19(4), 1997, on the topic.

2.2. The nonsemiotic world of beings

In the realm beneath the lower semiotic threshold, we find the processes of communication in animals and plants. While the upper threshold of Eco's is a rather disciplinary border, as mentioned above, the lower one definitely separates biological life from the human sphere of signification. This second divide hence does not yet separate the body from its environment, but the cultural from the natural sphere. Everything above that threshold, according to Eco, in the realm of culture, is coded in a specific, cultural way. Naturally, the question is what "culturally coded" means. The point has been made that by discovering more and more sophisticated sign systems in the realm of animals, or even plants, the semiotic threshold has been lowered and is being lowered still. I do not wish to go into the question of whether animals are capable of producing signs and to observe signifying actions in a way comparable to human custom. This would be a completely different endeavor beyond the scope of this paper (but compare Martinelli 2002, for a detailed analysis of this subject matter).

More detailed work on the delimitations of the cultural has been done by Lotman, who admittedly was not so much interested in *excluding* animal and plant life from human culture rather than *defining* the possible limitations of the latter. We must, in contemplating these differences, keep in mind the binary, or dyadic, fundament of Russian semiotic. A thorough study of Lotman's work therefore will reveal that the limitations of culture also comprise the limits between various strands of culture, and most notably those between the own and the foreign, thus creating structural dichotomies as models. The space of culture in Lotman's theory is called the *semiosphere*, contrasting the *biosphere* of biological life (Lotman 1990: 125). The important features of culture are communication, language, and the intricate means of using these to trade culture to following generations (Lotman 1990: 124; see also Lotman 1981: 125; and cf. Nöth 2000: 133).

The borders between the semiosphere and the non-semiotic may, however, also be understood as the borders between the signs already culturally coded and those not yet culturally coded. Such a division would render the *entire* universe semiotic, true to Peircean theory, and would hence differentiate only between certain types of coding: Cul-

tural and non-cultural.² The possibility of dividing the world into these domains must remain questionable, however (cf. Nöth, Kull 2001).

Another point made by Lotman (1981: 26–27) concerns the rules and methods of how information is stored and communicated by culture. Certainly there are distinct differences here between “culture” and “mere biological life”. I do not wish to argue against it. However, sign processes will transcend the borders, and culture, too, depends on the biological processes which support cognition and mental activity. There is not possibly any culture without biological life, and in order to function properly and interact with the surrounding world, a culture will have to incorporate biological life from the so-called non-semiotic world substantially. The process of semiosis therefore transcends the nature-culture divide and requires a redefinition of the various semiotic spheres which constitute the universe.

The semiosphere is externally constituted by that which is not in agreement with the coded structures within (Lotman 1990: 131–142). Nöth (2000: 133) explains that there can be semiotic space within and without the semiosphere; however, it seems that the emphasis on culture denies that there are semiospheres to be assumed in nature, hence the contrasting term biosphere. In the biosphere, we may assume by negating Lotman’s characteristics of the semiosphere, there is no information not inherited, there are no specialised means to organise information, and there are no rules to determine the overall system of information communication (cf. Lotman 1981: 26–27). It is exactly this terminological emphasis on communication which renders the biosphere so obscure, as “language” is the basis for cultural action, and the “social conflicts” and the “semiotic systems” located in the semiosphere are the cultural “messages” which are formulated in “texts” (cf. Lotman 1981: 27–29), so leaving the seemingly non-linguistic biosphere behind. This logocentrist view on culture has the unfortunate effect that it draws a definite border which is difficult to overcome. Following these lines of argumentation, a linguistic basis

² I prefer to avoid the term “natural” here, as this would imply that there be a coding system of nature similar to a coding system of culture. Truly, there are many other coding systems; either they should be summarized under the label “nature”, including culture, or the term nature should be avoided. As this paper argues, there can be no nature-culture dyad. Both are intertwined and form the unity of the cosmos.

of coding would have to be found in the biosphere so to qualify it for semiotic consideration.³

2.3. Dissolutions of the semiotic-nonsemiotic divide?

There are several semiotic approaches that may serve to either weaken or even overcome the divides between the semiotic and the non-semiotic. One of the more traditional approaches to this aim is Greimas' text semiotic. He undertakes to give a possible definition of what "natural signs" (Greimas 1987: 20) could be. However, from the outset, Greimas does not move from the cultural sphere in his argumentation. His examples are strictly culture-governed: First, he mentions examples illustrating "cause and effect", such as a cloud signifying rain, rain in the cause signifying autumn and so forth, or the knee-jerk reflex signifying good health. Admittedly, Greimas agrees that these interpretations are bound to peculiar cultural spheres (Greimas 1987: 21). Still, he does not go so far as to admit that any phenomena may also attain sign value beyond culture whatsoever, hence a cloud resembling a physicosemiotic body in itself, or the knee-jerk reflex being a biosemiotic sign signifying a chain of sign events in the body without so much as a cultural interpretation being necessary in the first place. Greimas' approach may be acknowledged as a "bridge spacing the gap" between pansemiotism and anthroposemiotism, but it must be admitted that the semiotisation of the natural environment takes place in a "semiotics of nature based on cultural codes of interpretation of this environment" (Nöth 2000). This means the "natural world is only significant in a human-made way. Natural semiotic is

³ It should be pointed out here that the metaphor of the "text" that has been favored throughout the twentieth century by semioticians indeed lacks some qualities which are necessary to illustrate transcending sign systems. Texts are human artifacts, they are two-dimensional, they consist of one material only, namely whatever substance the threads of code consist of. The metaphor of the forest seems more appropriate. It shows many qualities of the view on sign systems used in this paper: Forests are natural, or they can be planted and hence be human made. The forest is made up by many different species, and even more interactions between them. Also, the forest consists of prominent signs and hidden signs. It is a mesh of signs much more complicated than a text, governed by a multitude of rules, and, last but not least, it will always transcend the cultural sphere into nature.

rendered an exclusive result of the human codification of nature" (Nöth 2000; all quotes my translation, *G. I.*). Nöth calls this perspective "intersemiotic"; it should be pointed out, however, that the perspective remains anthropocentric, as Greimas himself declares: "A *human world* is detached from the totality of the "natural" world, which is what is specific to each cultural community. Only those events of the world which have people as *subjects* are part of such a semiotic; natural events (e.g., earthquakes) are excluded" (Greimas 1987: 30). Greimas "natural semiotics" therefore is less a bridge between the semiotic spheres than a proof of the thesis of this paper, namely that any contemplation of the natural world, regardless of its independent semiotic value, must result in a culturalisation of the natural.

A theory truly dissolving the semiotic-nonsemiotic divide is Peirce's approach. He claims that "all this universe is perfused with signs, if it is not composed exclusively of signs" (CP 5.448 fn). This remark has been widely disputed, especially in regard of the question whether everything really *can be* a sign. Again, I shall not venture into this discussion here. It is, however, fundamental that by the process of signification, where from firstness via secondness to thirdness all sign-forms may appear, the variety of signs reaches far beyond those bound to convention. The latter, in Peircean terminology symbols, or leg-signs, are just one of the many classes of signs he devises in his system.⁴

2.4. Hybridization and the pansemiotic bridge

Even if we pursue a course that clearly divides *culture* from *nature*, as, e.g., Umberto Eco did, we have to accept that a basic tendency of, e.g., using tools, is also existent in the world of animals. Otters use stones for breaking shells, chimpanzees "fish" ants by use of sticks, and many animals build shelters.

In these examples, we may see how the nature-culture divide is being weakened from below. At the same time, humans have continu-

⁴ From the many varying approaches Peirce takes to this subject matter, I may be so bold as to propose here that the Peircean classification of signs in itself is merely an artificial system devised by the great scholar in order to metaphorize his theory, which in itself is rather processual than class- or system-oriented.

ously been extending the variety of resources nature offers. This inclusion of as yet protosemiotic⁵ matter into the process of cultural development produces *hybrid artefacts*. They are hybrid because they consist of so-called “natural” material — i.e., material that does not originally have cultural value or purpose — and a cultural concept of how to use the item. We must understand that this process started at the most archaic levels of evolution. Culture — in whatever terms we may define it — always carries a basic function. It helps the human being understand the cosmos by “humanizing” it. By this I mean that the items and material found in the cosmos are evaluated according to their uses and functions to the human being.⁶ They hence have a double sign value. First, the natural signs — which, I argue, do exist beyond the confines of our mind — interact on the foundations of natural laws, or relations beyond the obvious to the human mind. Second, items and materials gain a second sign value by their being taken on to human culture. This distinction being only existent in theory but both sign spheres occupying the same physical world, it is obvious that these signs must become hybridized.

From these preliminary thoughts it becomes clear that in discussing hybridity, the material form of items must not be the focus of investigation. Indeed, matter and concept together form a hybrid artefact. Hence, a stone in the field neglected by any passers-by is not a culturally hybrid item; still it has its proper place in the sign systems of minerals. It evinces form, radiation, and constituents which terminate its place in the cosmic evolution. However, as soon as somebody

⁵ Protosemiotic here refers to possible-signs that are as yet non-signs only in regard to purely human signification. Indeed, for the human being — as I may add here for emphasis — signification is not only a possibility, it is a must, perhaps even a “curse”. Humans will never be able to fully understand nonhuman signification, as they can not leave the cognitive apparatus of their species behind. Also, meaning for us is always given; even in producing new meaning, we must refer to existing ones (cf. Greimas 1966). The transformation of the protosemiotic to the semiotic adheres to the same principles, governed, however, by the rules of human signification alone. I should also like to agree with Nöth (2001: 14–15), who emphasizes that the acknowledgement of semiosis processes beyond the confines of culture goes along with the rediscovery of Peirce’s concept of semiosis, a concept large enough to cover for much more than cultural signification.

⁶ Taking this argument literally, it follows that God was wrong when he asked Adam to give everything its proper name. He should rather have said that Adam was to give every item on earth its *most appropriate* name according to Adam’s subjective view of the universe, so to conceptualize the world by human terms.

picks up the stone for *any* purpose, the stone is immersed in human culture. Its pure "naturalness", if you allow for such a term, is ultimately lost. Its colour may now be regarded as beautiful, its mineral contents as valuable. Its form may appear useful as a wedge or a doorstopper or its heaviness as a weight. In this way, any item, material, or appearance in the universe may eventually become "culturalized".

The most prominent hybrid artefact in this sense is the human body itself. Hybridisation of the body is usually conceived of as being directed towards the appearance or composition of the body. Hybridization in these terms means taking on material to the body in order to intensify its beauty, to give it shelter, or to replace lost organs or limbs, i.e., replace them by prostheses, in order to maintain the functionality of the human body. All of these meanings of hybrid bodies are true of course. Nevertheless, hybridization of the body also involves the amalgamation of material and concept. The application of paint to the face does not produce beauty or significance automatically. Those colours, powders, and fragrances are culturally coded, as is the way the make-up is applied to eyelids, cheeks, or lips. In this example, we find hybridity in the *appearance* of the body.

As soon as it comes to more complicated examples such as *sheltering* the body, we find that concept and material are actually gradually moving away from the body into the semiotic sphere surrounding it. Shelter for the body may well mean clothing — something that indeed still changes appearance and composition of the body itself — but it can also refer to a cave, or a house. In both cases, something is coded with a bodily function — namely, maintenance of temperature, protection from rain, etc. — yet not directly connected with the body. The bricks, beams, and tiles of the house are not a part of the body, neither is the rocky surface of the cave. Still, both are *immersed* into the bodily coded culture. The materials have been *reimbodied* in cultural contexts. In other words: Beyond their possible semiotic qualities in a hypothetically nonsemiotic nature, rock, wood, and stone are now part of the culturally coded interpretant.⁷

From this semiotic process of immersing nature into culture, two statements follow: First, hybridization of the body only begins with

⁷ This argument challenges the notion that a difference exists between *usage* and *meaning*; the point, however, already has been made by semiotic studies of commodities. Cf. Douglas, Isherwood (1979: 62); Csikszentmihalyi, Rochberg-Halton (1981); or Appadurai (1986).

using stones as tools, or animal fur as clothing. Any habit, technology, or other cultural practice results in hybridization of the body and its *Umwelt*. In modernity, it has reached the level of melting metal from ore and refining plastics from oil, using sophisticated machines for calculation, firing rockets to the end of destruction, etc. Humans are thus able to produce prostheses for a large variety of uses in the human body. In this variety, both special cases, such as medical applications and everyday usage of materials in fashion or other fields are included. The consequence is the extension of the culture into nature, a result which makes it easier to understand the *Umwelt*, and at the same time reduces it, since the *Umwelt* becomes itself a part of the semiotic process *within* the interpreter.

The second statement follows from the first. If anything used by humans, if everything conceptualised, graded, considered, or calculated becomes part of the human culture, there is virtually nothing "purely natural" left in the universe, save for objects or concepts as yet unknown to humankind (and I do not refer here to, e.g., as yet unseen doors). For any theory depending on a nature-culture divide, this is an ultimate problem. Nature in itself, as long as it is by definition demanded to exist completely unattained by culture, would remain unobservable. This phenomenon may be described as the *ecological paradox*. Peircean semiotic, however, offers a valid solution to this problem, which I will try to sketch. The second statement draws on the fundamental notion of how the universe must be designed. Obviously, the universe is divided into those objects which are culturally coded and those which are not (and rendered unknown). In the process of human semiosis, the extensions of the human body have reduced those areas on the planet Earth which are excluded from that cultural coding to a little number, now comprising only the deepest depths of the oceans, several happy species of insects and plants, and the tiniest spaces of the microcosm. Man strives to also extend his sphere of knowledge to these. Nature has thus almost entirely been conquered by culture. This makes it hard to define the confines of "real" nature in the ecological or semiotic discourse. Whatever we speak of when referring to *nature* has long since been made part of our culture. Animals and plants, ores and minerals have acquired cultural value, indeed any attempt at excluding animals or plants from what is frequently called cultural behaviour can only result in paradoxically including, rebodying, immersing these same animals and plants into

culture, as necessarily they must be culturally coded — and graded — before being able to serve as counterexamples.

The result of these thoughts is that we need to establish a pansemiotic view in order to understand the effects of cultural signification in the larger semiotic sphere which comprises the cosmos. Pansemiotism has been condemned by more conservative semioticians (cf. Nöth 2001: 15). Pansemiotism has thus almost become an accusation close to an insult.⁸ Nöth prefers to use it cautiously with a question mark. He argues that

to describe Peirce's universal semiotics as a pansemiotic theory is a gross simplification. Semiosis, in the framework of Peirce's theory, presupposes thirdness, but the world does not only consist of phenomena of thirdness, but also of phenomena of firstness and secondness, which are not yet semiotic phenomena, although they may have 'quasi-semiotic' characteristics, since Peirce's theory of continuity does not establish a mere dichotomy between semiosis and nonsemiosis, but distinguishes many transitions between genuine and degenerate quasi-semiosis. (Nöth 2001: 15)

I should like to focus on the point of continuity here. Indeed Peirce's thorough system of categories of signs and semiotic processes allows for two interpretations, the first of which would suit those semioticians who prefer to draw borders between nature and culture, semiotic and nonsemiotic and so forth. This interpretation would locate definitely quasi-semiotic processes below said semiotic thresholds, so to be neglected by semiotic. The second interpretation, which is preferable, should emphasize the continuous nature of Peirce's theory and allow us to neglect the existence of thresholds in the first place. We may thus create a pansemiotic bridge covering the gap between nature and culture which is the vehicle for an understanding of the transcendence of sign processes in the cosmos.

⁸ Some semioticians also despise the pansemiotic view for the same reasons Eco introduced his threshold: They require the concept of *difference* in order to specify semiotic. A colleague of mine once argued that "if everything is semiotic, semiotic does not exist", hence falling for the old trap of negative dyads. However, such thinking leads to unwelcome and inappropriate constructivism. For example, we do accept the existence of the universe although we know of nothing that is *not* the universe. Also, definition along the lines of Peircean thought should result in an additive reasoning, not a negative. Difference in Peirce is only located at the root of semiosis, not in its interpretative result.

3. The transformation of nature into culture

We have seen that the concepts of division that are still existent in semiotic theory may be overcome by applying a theory of continuity. In the following, I should like to make use of two theorems that exemplify how we culturalise, i.e., make part of our *Umwelt* the sign resources of nature. The first is the cosmological dimension of the theory of semiosis by Peirce, the second is the functional circle by von Uexküll.

3.1. Sign formation on a cosmological scale: Peirce

In the process of semiosis, Peirce well defines a process where the semiotic world cannibalises the non-semiotic world. Semiosis started from the point of utter chaos and will (ultimately but still hypothetically) result in a universe governed by the rule of thirdness. Peirce, however, does not speak of the universe as only consisting of signs if chartered by human thought. According to Peirce, as mentioned above, the entire universe is composed of signs.⁹

It is plural, not monadic systems which govern the universe and, following from that, human cognition. This is not a new insight, but has long been observed by the pragmatist tradition. Note, however, that "pluralism" does not exclusively focus on concepts such as difference.¹⁰ Rather, plurality is conceived of as a logical concept at the root of any cognition. The minimal form of plurality, namely binarity, is contained in any thought, as Peirce emphasizes. Each meaning is already a form of reaction:

⁹ Hence, a distinct and fundamental division has to be made between Peircean and Saussurean views of the universe. In the latter's conception, anything not coded by cultural signs remains vague and uncharted — virtually nonexistent. From Peirce's point of view, also forces of nature are in itself semiotic. He devised a complex variety of sign types for any possible phenomenon. Hence, if there was something nonsemiotic, according to Peirce such a thing or concept should not only be beyond our knowing of it, but also beyond any possibility of hypothetical existence.

¹⁰ Difference in plurality and hybridity does play a role in structuralist and/or poststructuralist theory, where the essence of sign relations will always depend on the exclusive position of a sign in a system which constitutes itself in difference to other signs in the system.

We can make no effort where we experience no resistance, no reaction. The sense of effort is a two-sided sense, revealing at once a something within and another something without. There is binarity in the idea of brute force; it is its principal ingredient. For the idea of brute force is little more than that of reaction; and this is pure binarity. Imagine two objects which are not merely thought as two, but of which something is true such that neither could be removed without destroying the fact supposed true of the other. Take, for example, a husband and wife. Here there is nothing but a real twoness; but it constitutes a reaction, in the sense that the husband makes the wife a wife in fact (not merely in some comparing thought); while the wife makes the husband a husband. (CP 2.84)

The result of binarity, namely the relation between elements, naturally belongs to the category of secondness. It connects the phenomena of firstness (mere feelings yet bearing no true meaning), as without secondness nothing could be experienced:

The world would be reduced to a quality of unanalyzed feeling. Here would be an utter absence of binarity. I cannot call it unity; for even unity supposes plurality. I may call its form Firstness, Orienice, or Originality. (CP 2.85)

This plurality inherent to the signs results from the process of semiosis, the principally endless chain of experiences leading to ever new signs which will again be incorporated into the process. Experience requires continuity, and continuity is a projection on the past: Experience is “esse in praeterito” (CP 2.84). As experience — as a result of semiosis — is found in the interpretant, or effect of the sign, plurality is an important criteria for thirdness: “The general idea of plurality is involved in the fundamental concept of thirdness, a concept without which there can be no suggestion of such a thing as logic, or such a character as truth” (CP 4.332). Hence, plurality means multitude in signs and thus in the cognisable world (“variety of nature”, cf. CP 1.160; 8.307). The universe in itself *is* plural, its singular appearances are our own constructs. They do not lie in the nature of the universe itself:

In the little bit that you or I can make out of this huge demonstration [of the universe], our perceptual judgments are the premisses for us and these perceptual judgments have icons as their predicates, in which icons qualities are immediately presented. But what is first for us is not first in nature. The premisses of nature's own process are all the independent uncaused elements of facts that go to make up the variety of nature. (CP 5.119)

In the words of this paper: Experience in essence is continuous. The “internal” and the “external” of the mind flow together in the signs; representamina of manifold kind, be they acoustic, pictorial, tactile, olfactory, etc., together form new interpretants.

If this plurality is active in all the universe, then the human mind is an agent of transformation. The relations between the elements of experience are established by the interpreters. Whatever becomes part of the human *Umwelt* must pass this agency. There cannot be an *Umwelt* without a mind, or an *Umwelt* without the environment.

3.2. The construction of the *Umwelt*: von Uexküll

Jakob von Uexküll devised a most comprehensive model of how a subject by receiving perceptions from the diverse environment constructs its own *Umwelt*. In his biological foundation of the model, he shows how the perceptual and effector organs are connecting the interior, subjective realm of the perceiver with the exterior environment. Uexküll's first aim is to show how the action and reaction of a subject in the environment is governed and at the same time restricted by its organic delimitations. Or, in other words, the organic setup of the subject meets its requirements to survive in the environment (Uexküll, Kriszat 1970: 6–14).

The object world in the functional circle makes itself “known” to the subject by the stimuli that may be perceived by the organism's receptors. The perceptual organ then processes the stimuli. As a result, the perceptual organ (in other words, the brain) returns a perspective on the environment that in due course causes a reaction, i.e., a species-specific action that fits the environmental setup. By reacting, the organism will also have an effect on the environment which is therefore changed and will henceforth be perceived differently (see Fig. 1).

Uexküll uses the very simple example of the tick in order to illustrate the various components of the functional circle. I should like to paraphrase here his terminology to the end of showing how humans reconstruct nature by means of culture. First, we must note that the receptors, the perceptual and effector organ, and the effector are each species-specific. This means that any species gains its own view on the environment that we may be able to reflect, but which we will never be able to fully comprehend or reconstruct (cf. Martinelli 2002).

I argue that the human species-specific perspective is the cultural one. This means that any perception of the environment is turned into something cultural by the perceptual organ. The *Umwelt* of humans consists of elements that are part of our conceptual framework. Hence, we cannot see, e.g., trees as trees, or cattle as cattle. Even if we do not choose to perceive the former as the resource of wood and the latter as food, we cannot help but accept that both trees and cattle are part of classifying systems which are human in origin and do not stem from the possible environmental sign value these objects may exhibit. Any perception is conceptualised according to the pre-existing conceptual frameworks that have evolved in the human mental traditions over the millennia.

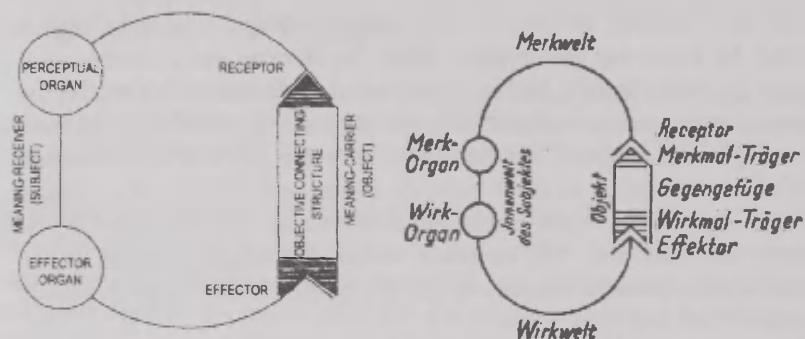


Figure 1. Uexküll's functional circle (*Funktionskreis*).

This process has various consequences. First, what for the “value” of nature in the context of our *Umwelt*? Kalevi Kull approaches the question from the perspective of biosemiotics (Kull 2001: 353–365). Naturally, all questions of value stem from a cultural ground. Here, we can clearly perceive how it is an exclusively cultural framework by which environmental issues are decided. From the perspective of the human, the question of value of nature is in truth the question of a part of his *Umwelt*, which turns out to be culture. The factual value of nature is in consequence removed to the sphere of the environment and cannot be judged as of the environment we only get a subjective impression. Second, as the mechanics of von Uexküll's functional circle show, each act of perception is followed by an act of effectation on the

environment. I should like to use this principle in my theory as follows: Since we strive for ever deeper knowledge of the environment, we turn more and more details of it into cultural concepts. Hence, by mere existing, but also by scientific reflection and investigation we are virtually "consuming" the environment, even if not exhausting it physically. The conceptualisation of nature reduces it to which is not yet known, as only the latter cannot yet be part of our conceptualised *Umwelt*. Third, the question of responsibility towards the environment/nature must be redefined. The ecological discourse has produced an awareness about protecting and saving the environment. This is essentially mistaken for nature. The ecologists cannot escape their cultural grounding: Responsibility for nature is connected with cultural concepts such as value, resources, rarities, etc. Hence, protection of the environment turns out to be a self-protective tendency of the human being in its *Umwelt*.

4. Résumé: The ecological paradox

I have seemingly arrived at a dead end: If everything is nature, and everything at the same time is culture, then where is the point of making a difference between the two in the first place? I should like to point out here that it is not the purpose of this paper to avoid terminological differences. The study of writing, of sports, and of architecture is different from the study of whales, of flowers, or of the planets. The former may clearly be attributed to culture, the latter to nature.

Still, we have come to think of whales as something "valuable", "precious". We have come to think of planets as something "worth to study", and flowers may represent "love", as the rose does, or mourning, or a thousand other sentiments. Anything can become a sign; any "natural" thing may become "culturalized". Hence, the natural resources may dwindle in substance, but they have long ceased to exist as a sign resource in themselves: They have become included in human culture.

The only true paradox is hence human beings engaging in a discourse on nature. As soon as nature becomes a topic of discourse, it is not nature any more, but a part of culture. This fact has been ignored by Lotman and others because they do not acknowledge the sign value of things *beyond* human signification. But the tree is worth while as a

tree, as the growing thing which does not even bear a name. In Peircean terms: There is a natural thirdness of nature which enters our perception only by way of cultural firstness. Cultural thirdness then is the alienation of these sign values. The tree as the oak, birch, etc. in our biological sign systems has nothing to do whatsoever with that "tree" which is natural in itself.

I name this the ecological paradox. Even by discussing the measures to protect nature, we are diminishing it. We cannot escape it; the way of human signification dictates that semiosis results in symbols, or thirdness. However, by acknowledging this process, and possibly deconstructing it, we may be able to go beyond the nature of our culture and see that there is a different, alien, but quite real culture of nature. Both form the unity of the universe, and nurture each other. Let us appreciate this holistic perspective, to which semiotic opens a door. The necessity of abandoning old notions such as the threshold thinking, as well as reconsidering our notion of what nature, culture, and the environment truly are, lies only at the beginning of that process. Uexküll and Peirce offer us tools to chart anew our semiotic sphere and gain a better perspective. The two key concepts are continuity of semiosis and semiotisation of the environment.

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От окружающей среды до культуры: аспекты непрерывности

Концептуализация жизненного мира любого вида содержит в себе преобразование материи его окружения в категории, составляющие характерный для этого вида умwelt. В статье утверждается, что свойственное человеку стремление концептуализовать умwelt ведет к трансформации “природы” в “культуру”. Такая человеческая активность имеет как минимум два последствия, которых мы не можем избежать и которые влияют не только на наше восприятие окружающей среды, но и на наш способ теоретизировать о границе между природой и культурой или о так наз. семиотическом пороге.

Во-первых, любое восприятие окружающей среды сразу “переводится” в терминах культуры. Во-вторых, какой бы ни была “природа”, включение ее в дискурс культуры отгораживает ее от наших непосредственных ощущений.

Keskkonnast kultuurini: Pidevuse tahud

Mistahes liigi eluilm kontseptualiseerimine sisaldab tema keskkonnas leiduva aine ümberkujundamise kategooriaiks, mis moodustavad ta liigiomase omailma. Käesolev artikkel väidab, et inimlik taotlus kontseptualiseerida omailm ühtlasi tingimata transformeerib nn. looduse nn. kultuuriks. See inimlik aktiivsus omab mõõdapääsmatult kaht tagajärge, mida ei saa vältida, kuid mis omavad mõju mitte üksnes meie keskkonnatajule, vaid ka meie viisile teoretiseerida looduse ja kultuuri piiri ehk semiootilise läve üle. Esiteks, iga keskkonnataju saab otsemaid vaadeldavaks kultuurilistes terminites. Teiseks, milline iganes ka “loodus” pole, selle liitmine kultuuridiskursusesse lahutab ta vahetust tunnetusest.

From materiality to system

Louis Armand

Department of English and American Studies, Charles University,
Nam. J. Palacha 2, 116 38 Praha 1, Czech Republic.
e-mail: lazarus@praha1.ff.cuni.cz

Abstract. This paper seeks to address the relation of materiality to structure and phenomena of signification or semiosis. It examines the logical consequences of several major lines of argument concerning the status of semiosis with regards to the human or broadly “organic” life-world and to the “zero degree” of base materiality — from Peirce to Lotman and Sebeok — and questions the classificatory rationale that delimits semiosis to the exclusion of a general treatment of dynamic systems. Recent investigations into neuro-semiotics have provided salient arguments for the need to treat semiosis as a characteristic of systems in general, and to establish a more transverse understanding of signifiability upon the basis of what makes dynamic structures, *as such*, possible.

Introduction: Why is there structure rather than chaos?

Such questions bring into view a certain habit of reason which has accustomed us to regard the world in terms of a conceptual division — between the inert and the animate, matter and mind, substance and form — indeed, to regard it as something like a Byzantine vista of categories, types, and classes, whose bifurcations and taxonomies appear, from moment to moment, as seemingly real and incontestable as the “great chain of being” on the eve of the Lamarckian revolution, while any perceived ambivalence to rigid denomination has routinely been suppressed “for the sake of meaning”. As various commentators have noted, “humans seem equipped by the structure of the brain to perceive patterns, and the trick has survival value, but this does not prove that all the patterns we perceive are really there” (Everdell 1997: 346), nor does it prove that those inimical to particular modes of

theorisation do not, therefore, exist. Categories, types and classes are themselves derived statistical descriptions of stochastic processes whose "emergent" regularities or patterns have too often been mistaken for an *order of things* or immutable schema. Their symmetry has, up until recent times, defined the limiting epistemological criteria both of philosophical and scientific discourse, whose character (dialectic, dualistic, oppositional) can more properly be described as metaphorical or analogical.

While a great deal has been written about dialectics, dualism and binary opposition, there still remains the task of accounting for the inaugurating *metaphoricity* that can be said to condition each of these modes of thought. By metaphoricity it is meant a certain "mechanism" of equivalence, vested in an otherwise arbitrary relation invoked between "unlike" and "uncommunicating" terms, and therefore formally paratactic or discontinuous. This mechanism may be said to be founded upon a predisposition of metaphor towards a delineation of its objects in terms of structural equivalence and inequivalence (and only *consequently* semantic equivalence). That is to say, along an axis of suppressed *ambivalence*. The ambivalent quality of this axis comes more clearly into view once we recognise its ostensibly arbitrary function in defining an "oppositional" relationship between paired terms, and a "homological" one between terms arranged on either side of it. Such ambivalence, in light of the metaphorical schema organised around it, acquires the appearance of something like a metonymic recursion, in that it describes a certain *asymmetrical* relation across contiguity. That is to say, the so-called oppositional terms are either mutually determinate or partial — meaning that the one inclines to an "excluded" or "detached" characteristic of the other.

It is precisely in the co-implicit structures of metaphor and metonymy — of implication and co-implication — that we encounter ambivalence as an *engine of possibility*, by means of which supposedly inert matter assumes the characteristic of a sign, such that — for example — we may consider signification not as a process that is retrospectively projected upon the universe — i.e. as a rationalistic mirror-fantasy — or "modelled" in our own image (vis-à-vis the symmetry or synonymy of *likeness*), but rather as a process that necessarily accompanies the most elementary material relations which, posed as "oppositional", "correlative", or "complementary", imply some aspect of formal communication. Such communication, however, must be dis-

tinguished from the assumptions of “analogical” correspondence (similarity, likeness, resemblance), so that when we speak of possibility we mean something contingent upon ostensibly material and probabilistic constraints, but which also exceeds and envelopes those constraints (metaphor, metonymy); indeed, which would in fact constitute their very *condition*. Consequently, our initial question may be reformulated as: *How is it, that even at the most basic level, matter appears to be bound up with the very nature of structure, of structurality and of structure’s immanent possibility?*

This question, or series of questions, has given rise within the study of sign systems to analogous questions which, on the surface at least, approach the problem from the opposite side, in terms such as: “Can the essence of life — or, at least, our concept of life — be understood in a semiotic framework?” (Luire 2002: 315). On the one hand, a base, inert materiality; while on the other, life-processes, dynamic systems, or mechanisms of reflection; posed against an axis of structuration which, both nominally and yet in some sense equally “essentially,” is *therefore* also an axis of signification, or of what we might call “sign operations” or *semiosis*. This apparent opposition — sketched here in a merely provisional, though also conventional, outline — is itself a characteristic of a certain axial mode of thinking (symmetrical, asymmetrical) which, even if not in purely “value” terms, obtains its impetus by arranging its objects across a differential gradient — according to which certain *tendencies* are schematised in relational or transferential terms (as a movement, for example, *from* materiality *to* systematicity) describing what we might call a formal *immanence*.

To *tend*, however, will have always implied a movement of continuity versus discontinuity; such as is implied in a system of arbitrarily defined difference, for example, or as represented in the paratactic structures of metaphor and metonymy, and which is effectively masked by the assumption — retrospectively supplied — of a latent similarity, synonymy or formal “symmetry”. This quasi-progressivist notion, with its neo-Platonistic undertones of an “en te physei” (the immanence attributed to *paradeigmata* as the “future forms of things” latent within any process of structuration, including the naturalisation of forms into species in Aristotle’s schema) — or equally of a transmutation of base matter into *something like* a consciousness (however necessarily conjectural its character) — ought not, however, to be per-

ceived as merely a doctrinal or ideological caprice. Insofar as we may say that “binary structures” obtain within material relations — that materiality *tends* to structurality — or that material relations are themselves fundamentally axial or “ambivalent,” only presupposes an *opposition* or value-relation *on the basis of a “signifying” function* (and not of a “representation” or “model-image” as such), and it would therefore seem that the overriding concern to which our initial questions refer is how we are to “locate” a signifying function within, or across, an “originary” binary relation, *in advance* of any semantic schematisation. That is to say, in advance of any assumption of meaning *other* than the fact of this relation itself. But is such a thing possible?

1

In *Global Semiotics* (2001), Thomas Sebeok attempts to frame this problem in terms of a globalised view of material structures that, to a limited extent, re-echoes Gregory Bateson’s ecologies of mind and parallels Juri Lotman’s theory of semiospheres, in attempting to “extend” semiotic concepts into the ‘vitalistic’ or biological realm. The logical implications of Sebeok’s thesis, however, can be seen as countering Sebeok’s own assumption that a discourse of biosemiotics can only be founded upon a metaphorical approximation of sign structures to living systems. The structural logic of biosemiotic systems nevertheless directly implies structural logics characteristic of non-organic “dynamic systems” (or what might equally be termed dissipative systems, according to which entropy would describe a common characteristic of both so-called life systems and non-organic dynamic systems) and thus points us towards a “literalised” understanding of semiotics in its global implications. One of these implications being that, founded upon a purely *material* basis, semiosis, or *sign operations*, ultimately presuppose what we call a phenomenon of consciousness, and hence of agency — and consequently that agency must be vested first and foremost in the very materiality of structure, and thus also be considered immanent to it, rather than representing a quality externally derived or somehow instantiated by way of external processes — i.e. *applied to it* — or derived from some autonomous model-image. Likewise, the concept of dynamic sign systems, organ-

ised around an “axis of ambiguity” or structural recursion, cannot simply be reduced to an externally supplied impetus (vis-à-vis Newton’s law). As with physical systems, the recursive mechanisms to which we assign the term *agency* remain ambiguous with regard to the distinction, for example, between “energy” and “matter” (*energeia* and *prāgmata*), even if such mechanisms remain subject to the tendency of all closed systems to dissipate. It remains that the “communication” of the energy-matter relation (or ratio) requires a prior structural possibility, such that we can speak of a system as such and not merely of an “isolated effect”.

Interpreting along similar but restricted lines, according to the limited case-model of biosemiotics, Sebeok postulates that “two cardinal and reciprocal axioms of semiotics” must therefore be:

(1a) The criterial mark of all life is semiosis; and (1b) Semiosis presupposes life [...]. Further semiotic unfoldings — such as the genesis of ordered oppositions like self/other, inside/outside, and so forth — derive from, or are corollaries of, the above pair of universal laws. (Sebeok 2001: 10–11)

Drawing upon the biological theories of Jakob von Uexküll, the life-world is described by Sebeok as a type of biotext, not simply in the sense that living systems are *affective* of signification, but rather that they devolve — *as systems* — upon a processual network of sign operations. Sebeok argues:

The aim of biosemiotics is to extend the notions of general semiotics to encompass the study of semiosis and modeling in all species. The premise which guides biosemiotics is, in fact, that the forms produced by a specific species are constrained by the *modeling system(s)* which has evolved from its anatomical constitution. The aim of biosemiotics is to study not only the species belonging to one of the five kingdoms, *Monera*, *Protocista*, *Animalia*, *Plantae*, and *Fungi*, but also their hierarchically developed component parts, beginning with the cell, the minimal semiotic unit [...]. In a phrase, the target of biosemiotics is the semiotic behaviour of all living things. (Sebeok, Danesi 2000: 15)

Once again the concept of structural agency emerges here as an instrumental action in the tendency from “anatomical constraint” to “modelling system” to “semiosis”. The question remains as to how it is possible to abstract semiosis from this evolutionary process? Equally, if semiosis is to be conditioned by an effect or phenomenon of agency, how is an assumption of agency to take place other than as

an evolution *within* and *as* this functional, constitutive anatomy — i.e. describing “emergent” regularities — such that its “constraints” remain immanent, rather than as an autonomous set of codes or paradeigmata upon which a semiotic condition may be *modelled* or according to which its “form” may be said to be *determined*. Distinguishing between latency and immanence, the complementarity of constraint and structurality (“anatomic constitution”) are what define semiosis as the very condition and possibility of agency, and not vice versa as the organicist argument would suggest.

2

If we are to speak of agency as a non-linear, “causal circuit” of material constraints upon which “cognitive action” devolves — vis-à-vis the trope of semiosis — and not the contrary, then it is a matter of re-orientating Sebeok’s biosemiotic model towards a properly global semiotics founded upon a concept of *discursive materiality*, in its literal and no longer “metaphorical” sense. This requires that we examine the implications of C. S. Peirce’s contention that the universe as such is characterised (though not exclusively) by sign operations, and Margaret Mead’s re-definition of semiotics in 1962 as “patterned communication in all its modalities”. This would require that we firstly arrive at an understanding of what such concepts as “universal,” “sign operation” and “communication” might require by way of reformulation if we are to pose them in *strictly* material terms — that is to say, in terms independent of assumptions of human agency or of biological vitalism (zoösemiotics, anthroposemiotics and phytosemiotics). And this would mean accounting for the operations of signs *as such* — an accounting which would necessarily draw into question Sebeok’s insistence that Saussure’s “linguistic paradigm” represents a *distortion of natural signifying*.

John Deely paraphrases Sebeok’s argument as being founded upon a distinction “between *language*, as having in itself nothing to do with communication but which, through exaptation, gives rise to linguistic communication as species-specifically human, and *communication*, which is a universal phenomenon of nature” (Deely 2004). In this way Sebeok is seen to reject the notion that animal species other than humans may be possessed of language, or at least of “linguistic commu-

nication". Yet insofar as communication presupposes something other than random, singular events of "transmission" — although this in itself would require elaborate definition — the question remains as to what "linguistic communication" could entail in distinction from *communication* in its universal sense, since any form of structuration or sign operation must be given to require, for example, some type of syntactic and broadly signifying "function," and that such functions must be generalisable (as a function of the possible) across an arbitrarily defined field of potential "signs". And if "universal" conditions are to obtain vis-à-vis *communication*, from where do such conditions arise if they are not also to be attributed to "linguistic communication," on the one hand, and to the material states of dynamic (non-life) systems on the other?

Indeed, the opposition here between "*communication*, which is a universal phenomenon of nature" and "linguistic communication", reveals itself to be nothing other than a restatement of the nature-artifice (*physis-technē*) dualism that has reasserted itself at different points in the history of Western thought, and which more recently has manifested itself in terms of natural and artificial languages, and natural and artificial intelligence. As a sub-class of *communication*, "linguistic communication" is presented as a mere "species-specifically human" *prosthesis*. In other words, a *supplementary* mode or model of communication, vested in a formal definition of language as artefactual (the specifically human techniques or technologies of speech and writing, for example, as opposed to a species-aspecific "semiosis"). The distinction is based in part upon the assumption of agency, such that "language" is defined as a particular *use* to which the phenomenon of communication is put: that it is a utility, an addition or extension, and thus bears no relation to ("has nothing to do with") the underwriting conditions of communication in its universal aspect.

The question immediately arises as to how language, as a *prosthesis of communication*, is possible if its operations are not somehow vested already in those of communication as such. By implication, this question extends also to the limiting claims of biosemiotics that communication be viewed as "a universal phenomenon of nature" solely to the extent that it relates to the operations of life-systems. Simplifying, this question becomes: upon what are the operations of life-systems founded if not upon a general condition of materiality, upon which the possibility of sign operations must also devolve? In other words, are

not the assumptions about “nature” and natural communication in fact already presupposed in a generalised *technē* — what we might go so far as to characterise as the very *technē* of possibility itself — as a function not of *derivation* from “anatomical constraints” (or “modeling systems,” which by definition already function semio-mimetically), but of an *architectonics* of constraint (material, probabilistic), which thereby is regarded as programming the general semiotic apparatus?

If so, the “basic unit” of semiotic systems cannot, contrary to Sebeok’s insistence, be meaningfully defined (analogically or otherwise) in terms of the biological “cell,” which in itself — even as the ultimate element of organic structures — is already a complex of micro- and macro-scale molecular events. The “agency” (or bio-technics) of cell division or propagation is already prefigured in the “agency” of dynamic systems contained within it, and indeed sustaining and superseding it — whether these involve enzymic transcriptions or atomic states. If we assume a literal significance to Peirce’s threefold condition of semiosis (that any sign operation presupposes a relation of two elements to a third element) (Peirce 1955: 99–100), then we may posit the “basic unit” of semiotics as any *mediated binary relation* — i.e. satisfying the minimal conditions for a dynamic system. Negatively defined, semiosis is thus a measure of *entropy*, insofar as it implies even the most rudimentary and minimal of system dynamics — as in Bateson’s “difference that makes a difference” (Bateson 1973: 428). Hence, in place of the limiting sense of semiosis presupposing “life,” it is necessary to posit a more general notion of semiosis — one properly consistent with the logic of a “*communication*, which is a universal phenomenon” — describing material, and fundamentally technical, processes of transmission, propagation and dissipation.

3

The dilation of materiality in the “figure” of communication, language or sign systems, brings into view a fundamental incongruity in the logic of biosemiotics in the assumption of a life-principle or biological agency as the determining condition of semiosis. Sebeok’s two “cardinal and reciprocal axioms of semiotics” reflect the tendency of a *closed* semiotic system towards what we might call the vertigo of self-

representation, according to which semiosis is “constrained” by its own “*modelling system*”, thus succumbing to a *reductio ad infinitum*. Moreover, the arbitrary distinction between the sign-mechanics of organic systems and the signifying possibility of material relations *per se*, implies a logic of exceptions whereby biosemiotics merely re-inscribes a certain analogical privilege — i.e. that the figure of agency must in all accounts remain distinguishable from the “condition” of base matter, as in fact the determining limit of that class of entity that culminates in man.

The genesis of “ordered oppositions” underwriting Sebeok’s claim to certain “universal laws” of semiotics is thus not universal at all but based upon a foundation of behavioural and bio-mimetic assumptions. By behavioural and bio-mimetic it is above all meant *analogical*, in the sense that the genesis of “ordered oppositions” is said to resemble the formal structurality innate to semiotic systems as such. Hence, that the discourse of semiotics is effectively *modelled upon the organisation of its primary objects*, thereby acquiring an aura of scientific validity. Such claims to validation, however, belie a particular asymmetry in the relation between biosemiotics and its object, on the one hand, and the general discursiveness of sign structures on the other. An asymmetry, moreover, reflected in the very discourse of biosemiotics which both characterises the very impetus of semiosis defined within that discourse, but also — and of necessity — points beyond its limiting criteria towards a *general condition* of semiosis (implied by Lotman’s semiosphere); one which is radically non-analogical, but which describes the prior possibility of analogical structures; one which is not representable within the discourse of biosemiotics, but which rather describes an horizon of representability. In this we may recognise a fundamental dependency upon a *technē* of metaphoric substitution and metonymic forethrow, or of what we call “equivalence across contiguity”.

Re-echoing Claude Lévi-Strauss’ studies in structural anthropology, Lotman (like Sebeok) derives a logic of “ordered opposition” on an analogical rather than properly structural or material basis, founded upon culturally (or “ideologically”) articulated assumptions about signifiability. This points to both an explicit and hidden anthropomorphism within the discourse of biosemiotics, which — despite its universalism — posits the “asymmetry” of semiotic systems (what we

might call their dynamic gradient) in species-specific — and hence analogical — terms. According to Lotman:

The asymmetry of the human body is the anthropological basis for its semiotisation: the semiotics of *right* and *left* are found just as universal in all human cultures as the opposition *top* and *bottom*. And the fundamental asymmetry of *male* and *female*, *living* and *dead*, are just as widespread. The *living/dead* opposition involves the opposition of something moving, warm, breathing, to something immobile, cold, not breathing (the belief that cold and death are synonyms is supported by an enormous number of texts from different cultures, and just as common is the identification of death with turning to stone [...]) (Lotman 1990: 133)

This preoccupation with the “orientational” logic of ordered opposition — or of oppositional pairs (or binaries) — founded here upon a process of textual induction with its appeals to cultural and empirical facticity, belies a systematic dependence upon an oppositional logic that is purely formal, normative, and metaphysically “grounded”. It is in accordance with such a logic that we encounter the continuing distinction between such terms as animate-inanimate, nature-artifice, body-mind, sensible-intelligible, and so on, not to speak of the endless series of cognate oppositions between purely qualitative terms, defining a network of associated values from which the discourse of bio-semiotics is in no way exempt.

4

Disagreement with this tendency to a limited, doctrinal approach to semiotic phenomena, has provoked a number of corrective hypotheses. One such is represented by the emergent discourse of neurosemiotics, which focuses upon the material, neurological conditions of what we call communication, affected not on biologically causal grounds, but rather in terms of a general state of probabilistic inter-mediation. According to this view:

If we understand *semiosis* to be an organising principle of *all* manner of sign-exchange, then the operational processes enabling *signification* from receptor cell to interneuron to effector cell and the processes enabling signification across the meta-systems of biological organisation (cell, pathway, network, organ, system, body proper) and across levels of awareness (network signification, body signification, mental signification) reveal themselves as systemic

parts in a lawful, interactive continuum — a view of mind and body that allows us to transcend the intransigent dualism of contemporary neuroscience [...]. (Favareau 2002: 80)

In contrast to the analogical “modelling systems” characteristic of Sebeok’s “global semiotics”, the enquiry into semiosis as an “organising principle of *all* manner of sign-exchange” — but above all concerned with the “principles by which the emergence of mental representation from neuronal electro-chemical signal transduction is even *possible*” (Favareau 2002: 66) — points to the necessity of a fundamentally material understanding of the mechanisms of reflexivity, representability, and mechanical agency as a basis for defining cognitive processes (or, equally, “organic” processes).

The mediational aspect of all signifying structures — with its analogies to mind, consciousness or thought — has tended to become obscured in the investigation of what might be called signifying materiality and those processes by which, to reformulate Donald Favareau’s expression, the apparent “emergence” of sign structures from base matter is deemed *possible*. The problem here, however, is not to do with the “advent” of semiosis, but with its possibility in the first place. In other words, how it is that what we call “base matter” appears to be already inscribed within a field of signifying possibility — in which semiotic system-effects are determined probabilistically — according to a transverse relation between local events and global states, and vice-versa (where “system” implies a continuity *effect* underwritten by networks of micro-macro *dis*-continuity)? Such transverse relations or “non-linear circuits” (as between and across Favareau’s “meta-systems”) affect a refiguration of what we have already referred to as an axis of ambivalence: an axial relation that obtains across all scales of (semio-technical) (inter)relation — micro-medio-macro — and within the mediated structure of any binary (ternary, quaternary, ...) relations whatsoever. And insofar as this transverse relation assumes the function within any structure of an “organising principle,” then it is to this relation that we must firstly attribute the mechanical, “reflexive” function of agency.

As with Lévi-Strauss’s “Totemic Operator” (Lévi-Strauss 1968: 152–153) — which describes the underwriting mechanism of totemic classification in so-called primitive societies (a generalised network of transverse relations between subject-object, species-genera, concept and representation, etc.) — transversality implies a broadly cybernetic

conception of signifying structures, which posits the relativised organisation and interrelational event-states of "sign constellations" as a form of *global agency*. In other words, agency is thus situated not as an epiphenomenon of neuro-biological or other analogous processes, but a mechanism inherent to structuration that both "constitutes" and *operates the relations* in a network of potential signs, constellated around an *axis of ambivalence* that is also an "horizon" of signifying possibility.

Such constellational functions have been referred to by Gerald Edelman and Giulio Tononi (2000) as "dynamic functional clusters", and have been described in terms of recursive or dynamic systems generally, including the dissipative electrochemical activity of intercommunicating neurons in the human brain. Transversality has for a long time characterised investigations into some branches of neuroscience and artificial intelligence, as well as information technology, systems theory and hypertext. As a "means" of describing cognitive event-states, the virtue of transversality lies in the necessity of accounting for the materiality of any "phenomenon of consciousness" based upon a structural understanding of how the "signs" of the neuronal semiosphere relate to each other as well as to signs "apprehended" in the otherwise external world; i.e. between so-called "mental events" and "experienced events." The statistically overwhelming character of interactional possibilities represented by the transverse structures of neurological activity, with its assumed mind-orientated teleologies, suggests stochastically patterned "emergent" regularities which in turn point towards a *generalised probability*, affective of complex structural dynamics, and hence of the "anatomical constraints", upon which *semiosis* is said to be "modelled". In other words, it is precisely the "semiotic effect" of transversality upon which the assumed paradigmatic model-image of semiosis devolves: not as a first principle revealed through a process of derivation, but as the recursion of an *archē*-technics or ambivalence at the "origin" of the phenomenon of consciousness.

According to Favareau, the number of possible interactive connections between neurons in a human brain is estimated to exceed 10^{79} . "Of these interactional possibilities", he points out, "the ratio between the statistically average 1 million motor neurons, 10 million sensory neurons, and 100 billion interneurons is a mediation-heavy 1:100,000:10" (Favareau 2002: 64). It is not a matter, however, of viewing this ratio as

marking an empirical limit to, for example, a reduction to an “object-state” of the neural network (as though it were a *cause* in its own right), but rather of recognising that the ratio of interactional possibilities is instead a *characteristic* of a generalisable event-state that necessarily remains in no way “ontologically ‘fixed’” (Favareau 2002: 81). For Floyd Merrell, the transverse relation multiplied across the constellation of neurological micro- and macro-events, may be “represented” in the ambivalent figure of a signifiatory *vortex*, as a metaphor of agency or “dynamic mediation” inscribing a probabilistic network of sign operations whose structure may be broadly defined as *semio-textual*. “The ‘vortex’,” Merrell suggests, “is the composite of all unactualised signs. It is, so to speak, the ‘emptiness’, the sheer possibility of anything and everything” (Merrell 2001: 394). The universal characteristic of possibility alluded to here simultaneously inscribes itself as a “zero-dimensionality”, whereby the “vortex” mediates any relation whatsoever, as the figure of an *archē*-technics in advance of all *signifying* relations. But the dynamic interval represented by this “zero dimensionality” can also be regarded as a gradient of dissipation, or entropic spiral, in the sense that the vortex describes an engine of possibilities — i.e. it constitutes a mechanism of systemic *ambivalence*. This zero dimensionality “generalises” the axial relation outlined previously, with regard to the quasi-unicity of binary sign structures. As the locus of a differential interstice, it is taken to represent an “‘emptiness’ giving rise to the emergence of the sign, of all signs, of all that is becoming” (Merrell 2001: 395) — approximating one aspect of what, elsewhere, we have already termed *vortex* (as a generalised *technē* of semiosis).

This complex of discursive relations — here between ambivalence, interstice, constellation, transversal, vortex — may be said to describe a generalised movement of “equivalence across contiguity” of the type $S = P$ (subject, predicate), or S/s (according to the Saussurean algorithm of the signifier/signified relation), whereby the advent of semiosis remains both *topical* and above all *tropic* (metaphor, metonymy) — a movement of periodicity across a non-periodic interval. As Norbert Wiener notes, recursive phenomena are “characterised by an invariance with respect to a shift of origin in time” (Wiener 1961: viii–ix), and in this sense, any properly “binary relation” whatsoever may be said to be affective of “communication” (with-out *correspondence*). Only in this way can the semiosphere “be regarded as a gen-

erator of information" (Lotman 1990: 127) (rather than as a mere epiphenomenon, e.g. of semiotic "*paradeigmata*") — congruent on the macro-scale with the micro-scale operations of a *sign generative of signs*; Bateson's "difference that makes a difference" — wherein material effects of transmission accede to systematisation on the basis of a generalised *technē* of possibility, or techno-genesis, rather than describing a mere formalism from which "consequences" and "predictions" of various kinds might be deduced. Moreover, it is necessary to recognise that such mechanistic configurations and processes — including all forms of transduction, mediation or "communication" (as a phenomenon of ambivalence) — are therefore *conditional* for any assumption of semiotic possibility tending towards an event-state of *semiosis*.

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Из материальности в систему

В статье рассматривается соотношение материальности (предметности) со структурой и с явлениями обозначения (или с семиозисом). Исследуются как статус семиозиса по отношению к человеку (или — шире — “органическому умвельту”) и к “нулевой степени” материальности, так и связанные с этой проблемой точки зрения и выводы (на основе текстов Пирса, Лотмана и Себеока). Подвергается сомнению классификация, очерчивающая семиозис без учета динамических систем. Исходя из постулатов нейросемиотики обосновывается необходимость рассматривать семиозис как общую характеристику систем и развивать понятие обозначения как основу, делающую возможными динамические структуры.

Materiaalsusest süsteemiks

Artikkel üritab käsitleda materiaalsuse suhet struktuuriga ja tähendustumise (semioosi) nähtustega. Vaadeldakse semioosi staatust inimese (või laiemalt orgaanilise eluilm) ning ainelise “null-astme” suhtes, sellega seotud põhjenduskäike ja järeldusi (C. Peirce'i, J. Lotmani ja T. Sebeoki põhjal). Seatakse kahtluse alla klassifikatsioon, mis piiritleb semioosi, arvestamata seejuures dünaamilisi süsteeme. Neurosemiootikast lähtuvalt põhjendatakse vajadust käsitleda semioosi kui süsteemidele üldist omadust ning arendada tähendustumise mõistet kui alust, mis teeb dünaamilised struktuurid kui sellised võimalikuks.

From semiosis to social policy: The less trodden path

Andrew Stables

Department of Education, University of Bath
Bath, BA2 7AY, United Kingdom
e-mail: a.w.g.stables@bath.ac.uk

Abstract. The argument moves through three stages. In the first, the case is made for accepting 'living is semiotic engagement' as 'a foundational statement for a postfoundational age'. This requires a thoroughgoing rejection of mind-body substance dualism, and a problematisation of humanism. In the second, the hazardous endeavour of applying the above perspective to social policy begins with a consideration of the *sine qua non*(s) underpinning such an application. These are posited as unpredictability of outcomes and blurring of the human/non-human boundary. In the third stage, the case is developed for a policy orientation that is both liberal-pragmatic (with some caveats relating to 'liberal') and post-humanist, and the paper concludes with some speculation concerning the precise policy outcomes of such an orientation.

1. A fully semiotic perspective

Most work in cultural and social semiotics examines existing practices through a semiotic lens. It is a strategy less often attempted to start from a perspective of practice as 'semiotic' (or 'semiosis') and to extrapolate from this to real-world application. As a philosopher of education, I have attempted to do this in a series of recent publications (Stables 2006a; 2006b; Stables, Gough 2006). In this paper, I shall attempt to answer the question, 'What implications does a fully semiotic view of living have for the development of social policy?' However, I must begin by justifying the assertion that 'living is semiotic engagement', and attempt to clarify where such an assertion sits in relation to existing biosemiotic and pansemiotic perspectives.

The term 'semiotic' is a little problematic here, in two respects. Firstly, it relates both to *semiosis* (the act of responding to signs) and to 'semiotics' (implying, in some cases, but not others, meta-awareness of sign use — as in the work of Maran, e.g. 2003). I intend the first of these uses, aware that the more rarely used term 'semiosic' has been adopted by some commentators for this purpose (e.g., Hoffmeyer 1995b).

Whatever meta-awareness actually is (for it has certain connotations of 'mind' that I shall challenge below), I can neither prove nor disprove that it is a propensity common to anything beyond the human (cf. Nöth's distinction between *homo semioticus* and *organismus semioticus* in Nöth 1998: 332). However, this issue becomes redundant if the second problem is addressed satisfactorily. This (the second problem, though related to the first) is that the *semeion* — the sign — is traditionally reckoned to be something transmitted by a purposive meaning-maker; this despite extensive Twentieth Century debunking of the assumption that a 'text' is simply the product of an 'author' (e.g., Eagleton 1983, for an overview of the arguments, and Barthes 1977). On this assumption of purposive meaning-making, the view that this paper develops of all living as semiotic engagement would be the kind of pansemiotic view suggested by Nöth (1998), in which all life is construed as a series of divinely inspired messages, but this is not the line I shall be taking as I do not accept this author-dependent view of the sign. (This is not to preclude the possibility that people will interpret all they perceive as messages from God, of course, or even that such an interpretation is necessarily invalid.)

Rather, my use of 'semiotic' here is one that interprets the *semeion* as both 'sign' (intended or otherwise, and evidently value-laden), and as 'signal' (as morally, or evolutionarily neutral 'prompt').¹ In other words, I do not distinguish between signs and signals on the basis of a commonly discredited Cartesian substance dualism that unjustifiably divides 'mind', conscious or otherwise, from 'matter', or that merely chooses one over the other: a solution that fails adequately to dissolve

¹ In Stables 2006a; 2006b; Stables, Gough 2006, I have employed the term 'sign(al)' to this end. (For a biosemiotic perspective according to which DNA carries survival messages of evolutionary value, see Sharov 1998; Sharov's perspective is explicitly biosemiotic rather than pansemiotic, however: on Sharov's view, the DNA carries messages of survival value that distinguish the living from the non-living.)

the dualism since it continues to beg interpretation of each term in light of its opposite (i.e. matter as mindless; mind as supernatural). By implication, therefore, mine is a pansemiotic perspective in the broader sense suggested by commentators on Peirce (as contrasted with anthroposemiotic and biosemiotic perspectives by — for example — Emmeche 1999) rather than in the narrower sense alluded to above: it is possible to see all activity semiotically/semiosically and impossible ever to be sure what, if anything, precedes the sign. It differs from a biosemiotic view such as Sharov's (1998) in begging the problematisation of the living vs. non-living divide as well as that between the human and the non-human; it makes no prior ontological assumptions. Maran (2006), for example, cites Hoffmeyer (1995a) stating 'that the simplest entity with full semiotic competence is a single cell'. On my account, while cells can indeed be construed as acting semiotically (see below), this may not be the end of the story. However, for the purposes of the present argument, with its focus on social policy implications, it is necessary merely to acknowledge that a 'fully semiotic' perspective deconstructs the boundaries of the human — a point that will be developed in a later section.

In a recent article, I summarised my argument as follows:

If there is body and soul — mind and matter — then the difference between 'signs' and 'signals' [...] is a crucial one. Mental, spiritual, conscious human beings communicate *via* signs, as uniquely gifted symbol users; other animals, even cells and genes emit and respond to signals.

We [...] live by emitting and responding to either signs or signals — and, as we cannot be sure about whether mind and matter are really separate, we cannot be sure of the validity of dividing signs from signals, hence my rather clumsy neologism, the sign(al) — and, if this makes sense, then the statement 'living is semiotic engagement' is, potentially, a foundational statement for a post-foundational age. That is to say, we could usefully begin our studies of all sorts of things in the human sphere with a realization that messages — be they laws, political ideologies, teachers' explanations or even medicines or physical punishments — are received and acted upon differently by people and are always understood in the light of their previous experience. (Stables 2006b: 374–375)

All living, therefore, can be understood as semiotic engagement, provided: (1) we do not distinguish between signs and signals, (2) we do not regard all sign(al)s as consciously transmitted, and (3) we do not differentiate between a 'mind' that processes 'signs' and a body (in the broadest sense) that responds unthinkingly to 'signals'. These

criteria can be met if we do not distinguish between mind-substance and body-substance: in other words, if we reject Cartesian dualism.

On this account, thought, feeling and action are all forms of human behaviour; perhaps non-human also. Reasoning is one of the things we do; sleeping is another. Human fulfilment entails enjoyment of each of these kinds of activity, and of many more beside. We do not need an unsustainable concept of dualism to work on this basis.

Of course, 'semiotic engagement' is one of several possible descriptors for human life (putting aside the non-human issues for a moment). It is also possible to construe living as a Darwinian fight for survival, an essentially meaningless state for which we have to invent a meaning, after Nietzsche, Sartre and the existentialists, or as the working out of a divine plan. Each of these perspectives, too, can be used as a basis for social policy. However, as such a basis, all three demand that each citizen 'buy in' to the prevailing view to some extent. A construal of living as semiotic engagement has as its starting point that everybody will see the world to some extent differently; it can incorporate the other views, acknowledging, *inter alia*, both competition and co-operation as essential elements of our *Umwelten* (Uexküll 1982), accepting a notion of life as narrative without assuming that any narrative is simply the product of an author, and allowing for both religious and secular interpretations (provided one does not attempt to preclude the other). On this view, outcomes are uncertain, but they will certainly be arrived at through a process that can validly be described as semiotic, or semiosic, in the terms given above.

2. Semiotic engagement as reading and writing: Implications for policy

The question arises as to whether this 'foundational statement for a post-foundational age' is any more than a truism. To examine its implications for social policy broadly, it may be helpful to return to a context in which people are used and content to take a semiotic perspective: that of response to literature, film and works of art.

Reading a book involves responding, half-consciously, to a complex, evolving series of signs, in terms both of their incontrovertible denotations and their endlessly varied connotations (though

note that the distinction between denotation and connotation is problematised outside a realist epistemology, where no sign either simply 'stands for' something nor does anything other than evoke something that it is not). Texts operate on a spectrum characterised by Barthes as from 'readerly' to 'writerly' according to how open they are to multiple interpretation. However, when the response to text is taken to include subsequent action, it becomes clear that no text, however simple and apparently ambiguous, is closed to interpretation; it is impossible to prescribe how people will respond to any text. (Consider the variety of responses to a speed restriction sign on a road, for example.)

Insofar as living is both textual and intertextual, therefore — as a fully semiotic perspective takes it to be — human responses, on all fronts, are always somewhat unpredictable. Signs are received in context, and context always varies; thus response to signs and combinations of signs always varies. Interpretation is inevitable, therefore, even without any conception of autonomous human 'mind'. This is the first major implication of a fully semiotic view of living for social policy: outcomes are unpredictable. By further implication, rational social planning is an inexact and potentially hazardous art, since the outcome of any social policy is also unpredictable.²

The second, related implication is that all systems are open systems, just as all texts are intertextual. Any institution, for instance, understood fully semiotically, is a network of meanings, an 'imagined community' in 'discursive space' (Stables 2003a; 2003b), a complex and evolving text constantly countersigned (e.g., Derrida 1992) and modified by the behaviour of those relating to it. Thus there are no firm boundaries to any institution or other form of social system; even outsiders are effectively insiders since, by merely knowing about any institution (in any way at all), they affect it through their actions, words and attitudes. Thus what everybody thinks and does changes the world, albeit there are no grounds for claiming that each person's actions do so 'equally'.

If there are no firm boundaries to anything, there are no firm boundaries to humanity: a fully semiotic perspective blurs the human-nonhuman divide (and may also blur the life-nonlife divide, and thus

² Students never learn quite what teachers teach; no form of social provision ever quite delivers the goods it was intended to deliver; aims are expressions of wishes but are not precisely achievable.

the tensions between biosemiotic and pansemiotic perspectives, though that is not the direct concern of this paper). In relation to this, it can no longer remain tenable to define the human condition by a series of exclusive attributions, including those of 'language' and 'feelings'. This is not tantamount to claiming that sheep speak English (as Sebeok, 1995, has pointed out, there is no evidence of anything beyond the human using syntactic structures, as we understand them), but amounts simply to a claim that the general kinds of behaviour, including mental operations relating to spatial awareness, recognition, tool use and memory, that classical humanists and many of a religious persuasion have been used to seeing as unique to the human species, can be found in other life forms. What it means to be human is thus problematised by a fully semiotic conception of living.

The *sine qua non*(s) of social policy from a view of living as semiotic engagement would seem to be, therefore, that policy-makers have power to affect what happens, but not to predict it (so social policy should be limited and pragmatic in its aspirations), and that human interests cannot be firmly demarcated from non-human interests. These are bases for social policy that take a strongly relational view, and are therefore necessarily ecosemiotic (Kull 1998; Nöth 1998), but that also discourage social engineering. For these two reasons, I refer to my political position as one of post-humanist liberal pragmatism.³

My position is post-humanist insofar as it both builds on and moves beyond humanism, as postmodernism both builds on and moves beyond modernism. Indeed, as postmodernism rejects a simple historical view of history, but rather sees the postmodern as a recurrent voice within the discourse of modernity (Lyotard 1984; 1988), so post-humanism can be understood as immanent critique of humanism, finding its voice in aspects of, for example, Romanticism and deep ecology. It relates to conceptions of narrowness in humanist conceptions of flourishing.

³ I am aware of the irony of this in the context of the indebtedness of the development of semiotics to cultural Marxism, and even their mutual independence. I look forward to a Marxist critique of my argument.

3. Beyond both humanism and cyborg posthumanism

Contemporary 'Western' culture is essentially humanistic. Both the Renaissance and the Enlightenment were driven by a belief in human potential and the specialness (even the divinity) of the human condition. Human life has been endowed with a value (a preciousness, some might say) that justifies the subservience of the rest of nature to human needs. Thus human beings must be fed, clothed, housed, educated and supported at all costs, and human life must be preserved at all costs. This worldview is still critiqued more for its failure to achieve these objectives than for its treatment of non-human life in pursuing them. So deep-rooted is this belief system that we are all — myself included — loath to depart from it lest we open the door to indiscriminate cruelty, neglect and barbarism. Even 'sustainable development' is largely conceptualised as 'social development' despite its genesis in the ecological movement; humanism has largely triumphed over environmentalism, perhaps.

Nevertheless, this pursuit of (short-term) human flourishing at any cost is clearly limiting. Increasing the wealth, warmth and health of a burgeoning human population entails — or has tended to entail — the depletion of natural resources, the reduction of biodiversity, the pollution of non-human places, and the possible destruction of the entire ecosystem as a result of increased and no-longer-controllable global warming caused by greenhouse gas (especially carbon dioxide) emissions. Already the tropical rain forest (that which remains of it) is becoming subject to fire and the ice caps are beginning to melt. I read in a newspaper recently that each square mile of ocean contains tens of thousands of items of human rubbish, and that chemicals in arctic waters are causing medical and genetic problems for a range of species. There are two possible responses to this: either to seek a non-humanistic, anti-humanistic values base, with all the attendant dangers of deciding that human life is not (effectively) sacrosanct — which, after a century of ethnic cleansing, would be as sensible as jumping into a pond full of crocodiles — or to adapt humanistic values to a situation in which human wellbeing is never considered apart from non-human thriving, and the endless relations of the human to the non-human are never disregarded. This is the harder path to follow, but surely the only one that holds any real hope for the future. It is this

kind of posthumanism, entailing an extension, rather than a curtailment of humanist values, that I propose.

Ironically, however, much of the existing literature sometimes considered posthumanist pays little or no heed to the non-human *per se*, but rather focuses largely on problematising the human condition *via* the implications of (human) technology: considering, for example, the 'cyborg' nature of the human, dependent largely on the machine (Haraway 1991; Hughes 2004 — though Haraway also considers the human-animal interface), sometimes substituting 'transhuman' for 'posthuman'. Such perspectives are of considerable interest to both philosophers and casual conversationalists (for instance, how much of yourself could be replaced by artificial organs before you stopped being human, or having human rights? Is your humanity enhanced by hearing aids or spectacles?) as they are of perennial fascination to writers of science fiction, but they are not primarily focused on the issue of human survival in the context of global survival, albeit they contain many relevant and important insights. The ecosystem is greater than the human system, however defined.

Thus it is not enough to blur the boundaries of what it means to be human, if by doing so we are concerned merely with redefining what it means to be human, though this is part of what any useful post-humanism must entail. The human relationship with the (utterly) non-human is also very important. Implicit in any blurring is the issue of manifold relatedness, and implicit in issues of relatedness are issues of ethics. Ethical issues are certainly human issues, but they cannot be resolved by examining human issues in isolation. This is a lesson we are beginning to learn, but slowly. A fully semiotic view of living renders the necessary move a little easier by undermining some assumptions of qualitative difference between human and non-human.

4. From theory to policy

Detailed discussion of specific policy areas is not possible here (though see Stables 2003a; 2006a for examples relating to education). However, it may be instructive to consider one case of almost universal interest in which humanist assumptions could be both adopted and extended: that of the provision of housing. In countries such as England, there has been significant immigration in certain

areas, while other social factors such as family breakdown have also increased demands for housing. The South-East of England (the London area) now faces pressure for a huge increase in housing stock at the same time as increasing water shortages and other environmental and infrastructural problems (e.g. traffic congestion). The traditional, humanist response has been to argue that more homes must be built, positing human need as the sole, rather than the greatest priority. A post-humanist response might be that people must be housed but only in the context of an improved (as opposed to depleted) natural environment. Development plans must therefore aim to reduce the 'carbon footprints' of communities, increase biodiversity and reduce the risks of either drought or flooding. This is a demanding aim but not an impossible one: over time, existing settlements could conceivably be replaced by those that were much more ecologically sensitive, just as transport can be made much more environmentally friendly than at present. There are, of course, costs, but they pale into insignificance against the potential costs of continuing the current, narrowly humanist agenda.

Note that my argument is unusual among environmentalists — and perhaps among semioticians — in focusing on humanism rather than capitalism as the major cause of the environmental crisis. This is because humanist values underpin the principal economic systems we recognise: capitalism and socialism. Each exists to maximise human wealth; they differ only over matters of production and distribution. Any post-humanist settlement will be some sort of capitalist-socialist hybrid, but operating on an altered values base. Without that altered values base, both capitalism and socialism will continue to deplete natural resources in the pursuit of increased human wealth. It is not capitalism *per se* that is to blame for the ecological crisis, but rather human greed and narrow-mindedness. It would, for example, be conceivably possible to operate a capitalist system in which wealth was not taxed at all, but energy use was. Under such an arrangement wealth creation would be valorised but not at the cost of environmental degradation.

There exists the temptation of a relatively easy way to bring such changes about: by reducing individual freedom. Indeed, many environmentalists argue for severe restrictions on (or even reversal of) economic growth, the freedom to travel and live where one chooses, and so on. Luckily (for many environmentalists' ideal communities

would, I fear, be hells on earth), such prescriptions fall foul of the other tenet of the fully semiotic perspective developed here: outcomes are unpredictable. People will interpret laws and circumstances in different and unexpected ways whether policy-makers want them to or not. Strict social planning does not work. Rather, the more informed the populace is about the complexity of issues, the more chance there is of informed and sensitive private and public action. On this view, the traditional liberal freedoms of travel, assembly, association, belief and speech serve a post-humanist emphasis better than would their restriction (even if we no longer see individuals as autonomous rational agents in the Eighteenth Century manner), since they encourage problematisation, and the challenge for social development is to understand human issues from a more complex set of considerations than hitherto.

This may seem a tentative and highly risky basis on which to construct any policy — yet the management of risk is central to all human endeavour. If policy is to be constructed to further humanistic aspirations while also improving the condition of the biosphere, it will need to respect human life (including human freedom), respect non-human life and generally allow for diversity. Thus it is important that policy-makers play their parts in both developing the debate at the highest level (as opposed to ‘spinning’ themselves away from controversy) and providing the conditions in which that debate can thrive, and actions that might further a posthumanist agenda can be expedited: fiscal conditions, for example, that encourage the development of cleaner technologies and energy conservation, and planning regulations that take more account of general environmental, resource and biodiversity effects (for example, in the current UK context, changing gardens of existing properties from the status of ‘brown field’ [i.e. developed and easily developable, where applications to build are generally to be allowed] to ‘green field’ sites [where applications to build are more often to be rejected]).

5. Concluding remarks

Have I wandered too far from my starting point? Do the above conjectures and suggestions about policy really derive so self-evidently from a view of living as semiotic engagement? Certainly, many

semioticians regard themselves as neither liberal nor environmentalist. The line I have taken is entirely dependent on the acceptance that, as Maran and others have suggested, *semiosis* is a valid construct in relation to the non-human. I suggest that such an acceptance involves a thorough-going rejection of Cartesian dualism that goes further than most existing models. Often, materialist explanations view the universe as mechanical and 'mindless', while panpsychic and certain biosemiotic and pansemiotic explanations regard it as 'minded' in the sense of human, or at least humanly recognisable rational agency. Each of these perspectives is a reaction against mind-body substance dualism, but neither is a complete departure from it. The fully semiotic view I propose seeks to accept that 'what happens happens' without attempting to differentiate between the mental and the physical on a substantive basis. Rather, 'mental' and 'physical' are categories of the same qualitative status as 'oral' (or 'aural') and 'visual'.

The path from such a fully semiotic perspective to the policy debate is one little followed as yet, as there has so far been little detailed application of (other) biosemiotic, ecosemiotic and pansemiotic approaches, and there may be a series of possible alternative routes. In this paper, I have attempted simply to explore the implications of a view of life in which everybody is constantly re-reading and re-writing the world, and in which the idea of semiotic engagement is not merely applicable to humans. This leads me to a set of policy-related conclusions based on the two premises of (1) the inevitable unpredictability of outcomes, and (2) the continuous dependence of the human on the non-human.

From his biosemiotic perspective, Sharov states:

Biosemiotics brings a new understanding of hierarchies: it does not imply the superiority of a system over its subsystems [...] Human society was definitely evolving from strong systems (monarchies) to weak systems (democracies). (Sharov 1997⁴)

While the present argument is not explicitly biosemiotic in Sharov's terms, the view he appears to be expressing here tallies with my own in construing agents not merely as systems-driven, but rather viewing systems as identifiable abstractions: as relations of agents, who are

⁴ Sharov, Alexei 1997. Towards the semiotic paradigm in biology. Retrieved from www.gypsioth.ento.vt.edu/~sharov/biosem/txt/tosemiot.html 05/07/2006.

themselves relational entities. Thus society does not precede the individual any more than the reverse; each is in flux, subject to multiple agency. This seems to me to ally strongly a semiotic/semiotic view of living with a political commitment away from state control and pre-specification and towards personal, interpersonal and other forms of interrelational empowerment, and a concomitant emphasis on procedural rather than either retributive or distributive justice, in terms of the reinforcement of those human rights associated with political (not outcome) equality, such as freedoms of conscience and association: in other words, a commitment to political liberalism with a more-than-humanist scope.

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⁶ An updated version see at <http://www.molbio.ku.dk/MolBioPages/abk/PersonalPages/Jesper/Semiotic.html>.

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От семиозиса к социальной политике: непроторенный путь

Аргументация трехступенчатая. На первой ступени обосновывается положение, согласно которому “жизнь является семиотической связностью” как “базовое утверждение в постбазовую эпоху”. Для этого нужно полностью отвергнуть субстанциональный дуализм между телом и душой и поставить под сомнение гуманизм. Предпринятая на второй ступени рискованная попытка применить данное положение в области социальной политики начинается с подчеркивания необходимости укрепления основ такого применения. Такими основами будут непредсказуемость результатов и стирание грани между человеческим и нечеловеческим. На третьей ступени развивается политическая ориентация, которая одновременно является либерально-прагматической (вместе с некоторыми предупреждениями по поводу либеральности) и постгуманистической. Статья заканчивается размышлениями о реальных политических последствиях подобной ориентации.

Märgiprotsessist sotsiaalpoliitikani: vähetallatud rada

Argumentatsioon on kolmeastmeline. Esimesel astmel arendatakse vaadet, mis tunnistaks, et 'elamine on semiootiline seostumus', kui 'alusväide alustejärgses ajastus'. Selleks on vaja läbinisti hüljata substantiline dualism keha ja vaimu vahel, ning seada kahtluse alla humanism. Teisel astmel tehtav riskantne katse rakendada ülalmainitud vaadet sotsiaalpoliitikale algab säärase rakenduse aluste tugevdamise vajaduse rõhutamisest. Neiks alusteks oleksid tulemuste ennustamatus ja piiri ähmastumine inimeseliku ja mitteinimeseliku vahel. Kolmandal astmel arendatakse poliitilist orientatsiooni, mis on ühtaegu liberaal-pragmaatiline (koos mõningate hoiatustega liberaalsuse suhtes) ja posthumanistlik. Artikkel lõpeb mõtisklustega säärase orientatsiooni tegelike poliitiliste väljundite üle.

The meaning of meaning in biology and cognitive science: A semiotic reconstruction

Göran Sonesson

Department of Semiotics, Lund University
Box 117, S-221 00 Lund, Sweden
e-mail: goran.sonesson@semiotik.lu.se

Abstract. The present essay aims at integrating different concepts of meaning developed in semiotics, biology, and cognitive science, in a way that permits the formulation of issues involving evolution and development. The concept of sign in semiotics, just like the notion of representation in cognitive science, have either been used too broadly, or outright rejected. My earlier work on the notions of iconicity and pictoriality has forced me to spell out the taken-for-granted meaning of the sign concept, both in the Saussurean and the Peircean tradition. My work with the evolution and development of semiotic resources such as language, gesture, and pictures has proved the need of having recourse to a more specified concept of sign. To define the sign, I take as point of departure the notion of semiotic function (by Piaget), and the notion of appresentation (by Husserl). In the first part of this essay, I compare cognitive science and semiotics, in particular as far as the parallel concepts of representation and sign are concerned. The second part is concerned with what is probably the most important attempt to integrate cognitive science and semiotics that has been presented so far, *The Symbolic Species*, by Terrence Deacon. I criticize Deacon's use of notions such as iconicity, indexicality, and symbolicity. I choose to separate the sign concept from the notions of iconicity, indexicality, and symbolicity, which only in combination with the sign give rise to icons, indices, and symbols, but which, beyond that, have other, more elemental, uses in the world of perception. In the third part, I discuss some ideas about meaning in biosemiotics, which I show not to involve signs in the sense characterised earlier in the essay. Instead, they use meaning in the general sense of selection and organisation, which is a more elementary sense of meaning. Although I admit that there is a possible interpretation of Peirce, which could be taken to correspond to Uexküll's idea of functional circle, and to meaning as function described by Emmeche and Hoffmeyer, I claim that this is a different sense of meaning than the one embodied in the sign concept. Finally, I suggest that more thresholds of meaning than proposed, for instance by Kull, are necessary to accommodate the differences between meaning (in the broad sense) and sign (as specified in the Piaget–Husserl tradition).

Often conceived as interdisciplinary perspectives that have in some places gained the position of independent disciplines, cognitive science and semiotics seem to cover more or less the same domain of knowledge. This in itself is controversial, since semiotics and cognitive science offer very different characterisations of their domain. In some sense, however, both are concerned with the way in which the world described by the natural sciences appears to human beings and perhaps also to other animals and some robots. Cognitive science puts the emphasis on the place of the appearance of this world, the mental domain,¹ and its characteristic operation, cognition; and semiotics insists on the transformations that the physical world suffers by being endowed with meaning.

The disciplinary history of these approaches has been very different. Cognitive science is often described as the result of joining together the knowledge base of rather disparate empirical disciplines such as linguistics, cognitive psychology, philosophy, biology, and computer science. Semiotics has, in a more classical way, developed out of the amorphous mass of philosophy, and still has some problems encountering its empirical basis. This difference in background partly may explain why semiotics and cognitive science rarely are on speaking terms with each other.

In this essay, I will start out by investigating a case that in some respects go counter to these generalisations. Terrence Deacon (1997) is a researcher in neuroscience whose work has been particularly acclaimed within cognitive science. Yet he has chosen to express some of his main arguments in a terminology taken over from Charles Sanders Peirce, who is perhaps the principal cultural hero of semiotics. Without trying in any way to diminish Deacon's contribution — in fact, I find him very convincing whenever he is not having recourse to semiotic terminology —, I would like to express certain misgivings about his way of using Peircean terms. I do not do so in order to defend Peircean orthodoxy (which is a task very far from my mind), but because I think a rigorous use of these terms can throw more light on the issues at stake, and may thus contribute to a more relevant confluence of the two sciences involved. Indeed, I can generally accept the idea, expressed by Bouissac

¹ A better description of what is involved would be "the field of consciousness", a term used in phenomenology (cf. Gurwitsch 1957), but many representatives of cognitive science would of course not want to use any term referring to consciousness.

(2000: 326), that even if Deacon's usage is not accurate from a Peircean point of view, there is no good reason for rejecting his terms considered as "conceptual facilitators in order to formulate his own evolutionary semiotic theory"; but I think, like Lumsden (2002) that, in this particular case, the Peircean paraphernalia serve to obscure Deacon's own theory, and, unlike Lumsden, I think it is worthwhile to integrate Deacon's problematics with a revised Peircean theory, instead of simple putting it to aside. Rather than taking Deacon to task for not following Peirce strictly, I would like to offer a framework in which both Deacon's problem and that of Peirce may be discussed.

In so doing, I will propose two different interpretations of Peirce, one which I have found necessary in my own work in order to redeem the concept of iconic sign (part 2), and another one which would seem to be common in, among others places, biosemiotics (part 3). However, I will suggest that Deacon's theory is not congruent with any of these interpretations. At the same time, I will try to show that both these concepts of meaning serve to specify Deacon's proposal and place it into a more comprehensive framework.

1. Introduction: Beyond "representation" in cognitive science

Before proceeding to our discussion of Deacon's central thesis concerning the nature of symbolism, I would like to delineate the general context within which this discussion will take place. If, as has been suggested above, semiotics and cognitive science have a lot in common, it would be interesting to find out what keeps them apart, and if there is some worth-while manner of overcoming this separation. As a first approximation, it might be suggested that the basic concept of semiotics is the sign, whereas that of cognitive science is representation. From the point of view of methods, semiotics is generally speaking stuck between the analysis of single "texts" and theory construction, whereas cognitive science is closer to relying on experimental methods (including, of course, computer simulation).

In a sense, semiotics keeps making overtures to cognitive science. Even since the demise of the linguistic model, according to which all semiotic systems are constructed more or less in the same way as verbal

language² (in particular as the latter was conceived in the tradition of structuralism, inspired by Saussure), semioticians have repeatedly stated their ambition of going cognitive. On the whole, it seems to me, there has been little substance to such expressions of intent. Within visual semiotics, my own work aiming to refute the conventionalist theories of pictorial signification developed by, among others, Eco and Goodman (cf. Sonesson 1989a), has relied heavily on findings and concepts taken over from cognitive psychology, notably the work of Rosch (1975a; 1975b; 1975c) and Tversky (1977; Tversky, Gati 1978), but it is, I am afraid, rather unique in this respect. While this work absorbs certain concepts from cognitive science, it also gives more prominence than earlier to the concept of sign. It is more empirical, only in the sense of trying to supply the theory needed to explain experimental findings (which is of course also often true of cognitive science). In a recent anthology bearing the title "cognitive semiotics", Bundgård (*et al.* 2003), as he notes in the introduction, actually only provides a collection of texts written within the framework of cognitive science which he judges to be relevant to semiotics, which includes the work of cognitive linguists such as Langacker and Fauconnier, and of "catastrophe theorists" such as Thom and Petitot. The latter tradition, which may really qualify as being some kind of hybrid of semiotics and cognitive science, is difficult to situate within both paradigms. In any case, it is not clear that at any given point it has become more cognitive and less semiotical.³

On the other hand, there have recently been some encouraging developments within cognitive science which, no doubt with some exaggeration, may be qualified as a "semiotic turn": an interest in meaning as such, in particular as it has developed, ontogenetically and, in particular, phylogenetically, in the human species and, to some extent, in other animals and animal-like machines. Not only Deacon, but other scholars interested in the specificity of human nature now put their emphasis on the concept of sign (which they normally term "symbol", using this word in a sense in which we will not employ it here). This is

² As used here and in the following, the term "verbal language" includes gesture systems and the like, which are formally equivalent to spoken and written language. In a semiotic context, the label "verbal" is necessary in order to exclude more metaphoric uses of the term "language".

³ Catastrophe theory has certainly become less involved with Greimasian semiotics, but the latter cannot be identified with semiotics *tout court*, as Bundgård seems to think.

true, in a very general sense, of Donald's (1991) stages of episodic, mimetic, mythic and theoretical culture. It seems to apply even more to Tomasello (1999), less, in the end, because of his epigraphs taken from classical semioticians such as Peirce and Mead as well as Bakhtin and Vygotsky, than because of the general thrust of his analysis, which consists in separating true instances of interpreting actions as intentional from those which may merely appear to be such. Building on the aforementioned works, Jordan Zlatev (2002; 2003) is explicitly concerned with the conditions for the emergence of higher levels of meaning involving "mimesis" and language, from more basic ones, characteristic of all biological systems (life forms), such as "cues" and "associations".⁴ Although he has not proposed any complete scheme for developmental semiotics, Tom Ziemke (Ziemke, Sharkey 2001; Lindblom, Ziemke 2003) no doubt must be said to participate in the suggested "semiotic turn" already because he has had recourse to the concepts of Uexküll and Vygotsky in order to separate living beings from robots.

The distinction between cognitive science and semiotics involves much more than the concepts of representation and sign, as was suggested above. Indeed, much of recent cognitive science has taken the form of a rejection of the very notion of representation (notably the influential work of Lakoff and Johnson; cf. Lakoff, Johnson 1999; Johnson 2005), just as some traditions in semiotics, from Eco to Greimas, early on rejected the notion of sign. In both cases, as we shall see, the problem is how one can reject a notion which is not even defined, but simply taken for granted. However, in this article, the relationship between the two disciplines will be discussed exclusively in these terms. To a representative of cognitive science, it may seem that "sign" and "representation" stand for the same thing. If so, it is difficult to see in which way the work of Deacon, Donald, Tomasello, Ziemke, and Zlatev constitutes a kind of "semiotic turn".

In cognitive science, terms like "representation", "symbol", and even "sign", are used in a vastly more comprehensive sense than the one favoured here. The contents of consciousness are said to be "symbols", and so on, of things in the "real" world (see Johnson-Laird 1988). Even

⁴ Zlatev (2003) now distinguishes "signs", as the general term, from "symbols", which are truly conventional, systematic and possibly arbitrary signs. His terminological usage is thus intermediate between that of Deacon and that of Peirce (employed here).

in a recent textbook (Eysenck, Keane 1995: 203ff), representations are only distinguished into those that are external, such as pictures and language, and those that are internal, such as propositions and mental models. Interestingly, this is an employment of the terms "sign" and "representation" found also in John Locke, one of the first explicit semioticians, at the beginning of the 18th century. Indeed, Locke's (1965 [1706]: 309) definition of semiotics may actually sound more like a characterisation of cognitive science: it is, together with physics and ethics, a third part of all human knowledge, the business of which is "to consider the nature of signs the mind makes use of for the understanding of things, or conveying its knowledge to others."

Even before that, however, Pedro Fonseca, in his treatise on signs from 1564, distinguished two types of signs: "formal signs", by means of which we know the outside world, and "instrumental signs", which lead to the cognition of something else, like the tracks of an animal, smoke, a statue, and the like (cf. Deely 1982; 1994; 2001). This distinction could perhaps be taken to correspond to that between "internal" and "external representations". However, it seems more akin to a distinction between "direct" and "indirect perception", as suggested by the psychologist of perception James Gibson, in his discussion of the differences between the environment and those kinds of surfaces that we call pictures. As recognised in the ecological psychology of Gibson, and before that in the philosophical phenomenology of Edmund Husserl, we do not ordinarily perceive signs of the world, but the world itself; and thus, if indeed meaning is involved, this must be in some wider sense of the term. Both Husserl and Gibson point out that we do not perceive "this flurry collection of surfaces seen from above right", but a dog, even if the former expression may better describe the collection of light rays which hit the eye.⁵ More generally, Peirce and Vygotsky alike introduced the term "mediation" to describe the way in which reality is imbued with meaning. At least, as we shall see, this is one possible interpretation of what their intentions were.⁶

⁵ Although Gibson (1966; 1982) never quotes Husserl, the similarity between the two thinkers extends onto their very formulations. Apparently, he was less taciturn about his sources during his lectures, as suggested by the fact that his students point to Husserl's influence (cf. Lombardo 1987; Reed 1988: 45).

⁶ In spite of the suggestion made by several authors in Mertz, Parmentier (eds. 1985), mediation did not mean the same thing to Vygotsky and to Peirce. In particular, it may appear from certain passages in Peirce's work that there is nothing that is not mediated, that is, nothing that is opposed to mediation. However, this

What is interesting about Deacon, Donald, and Tomasello from a semiotic point of view is that they do appear to talk about signs (or “symbols”) in the sense of mediation. But this concept is not spelled out, nor clearly distinguished from other concepts of meaning.⁷ This is the task I have set myself in the present essay.

Just as cognitive science has absorbed the themes of embodiment and situatedness from phenomenological philosophy (notably in Varela *et al.* 1991), it needs to take over the concept of semiotic function, which, as I have reconstructed it in my own work, stems in part from phenomenology, and in part from the cognitive psychology of Jean Piaget. Indeed, as we shall see, much of semiotics, too, is content to use the concept of sign or mediation, without asking itself what criteria serve to define it. Be that as it may, it will be suggested in the following that, in important respects, the “semiotic turn” to which the work of Deacon and others testify does not go far enough.

2. In defence of the sign: A critical reading of Deacon’s use of Peircean terminology

Although I intend to show, in the following, that Deacon’s use of Peirce’s concepts is not consistent with a natural interpretation of Peirce, and therefore is seriously misleading, I am not out to defend Peircean orthodoxy as such. It is important to point this out, since there certainly are semioticians who look upon Peirce’s writings the way many Christians conceive of the Bible, as Divine revelation. In contrast, in my view it is not interesting to find out “what Peirce really thought”, except perhaps as a kind of preparation for our own analysis. Peirce was no doubt an exceptional thinker, who, moreover, consecrated most of his life to reflecting on the nature of meaning. There is therefore every

interpretation fails to account for the notion of iconicity, to which we will turn below. To Vygotsky (1962; 1978), however, mediation basically seems to involve language, in the strict sense of the term (although there are references to other semiotic resources which are not properly taken into account).

⁷ Zlatev certainly focuses on different concepts of meaning, and, in his latest paper (Zlatev 2003), even distinguishes signs and symbols, but not quite in the way it is done here, although I pride myself of being at least one of the causes for the introduction of this distinction. I cannot further discuss this terminology here. As for Ziemke’s use of the term “sign”, which derives from Uexküll, I will touch on it in the third part of this essay.

reason to take his opinions into account, even if, in the end, we decide to revise them.

2.1. How to make Deacon's (and Peirce's) ideas clear

Peirce famously pinpointed the importance of having a correct terminology for making our ideas clear. It can be observed with some justification that, in this task, Peirce himself failed miserably. Few things have turned out to be more open to misapprehension than Peirce's own terminology. Yet I think the injunction as such should be taken seriously. There are at least three reasons for pointing to the discrepancy between Deacon's and Peirce's employment of the same terms. First, using terms already having a more or less established signification within Peirce scholarship in other meanings breeds confusion. Second, it tends to obscure the basic issues of Peirce's theory. Third, it renders Deacon's own problem difficult to grasp. Indeed, I will argue that Deacon has no use whatsoever for Peircean terms, since he is concerned with different issues. And yet both Deacon's and Peirce's problems are important. And, within a more comprehensive theory, they should be connected.⁸

There are different possible formulations for what we have so far called Deacon's problem: how it is possible for the child to learn a language, without having a Chomskyan Language Acquisition Device; how human intelligence can be so special if, within the brain, only a quantitative difference to other species can be found; how the difference can be so important, if the human brain is not even the biggest of any species, whether in absolute terms, or in relation to body mass; and so on. But there is yet another formulation, which will serve as my point of departure here: why there are no "simple languages", that is, nothing which is similar to (verbal) language, but containing fewer signs and/or less complex rules (Deacon 1997: 39ff). Or, as Deacon himself puts it:

Imagine a greatly simplified language, not a child's language that is a fragment of a more complicated adult language, but a language that is logically complete in itself, but with a very limited vocabulary and syntax, perhaps sufficient for only a very narrow range of activities. [...] Even under these loos-

⁸ I will be mostly concerned here with chapter 3 of Deacon's book, to which will be added some earlier and later passages. This essay thus covers a very small part of Deacon's theory, but one that is essential for preparing an encounter between cognitive science and semiotics.

ened criteria, there are no simple languages used among other species, though there are many other equally or more complicated modes of communication. (Deacon 1997: 40f)⁹

Deacon here presupposes a certain concept of language, which is spelled out a little later: it is “a mode of communication based upon symbolic reference (the way words refer to things) and involving combinatorial rules that comprise a system for representing synthetic logical relationships among these symbols” (Deacon 1997: 41). He goes on to say that this concept extends beyond verbal language to include such things as “manual signing, mathematics, computer ‘languages’, musical compositions, religious ceremonies, systems of etiquette, and many rule-governed games” (Deacon 1997: 41). Even so, he contends, language is not found in other species. To refute this argument, it should be sufficient to discover language-like systems having reduced complexity and/or a smaller quantity of units, comparable to what we find in children. According to Deacon, however, nothing like this can be found, not even in the case of animals that, with extraordinary efforts, have been explicitly taught to use some units derived from language. The animals fail to use these units as part of a language system. This is true also of animals that are able to learn other complex behaviour patterns and to remember extensive sets of associations. Thus, their inability to learn language does not derive from a general incapacity to handle complexity as such or to sustain an important memory load.

It is misleading, Deacon (1997: 52ff) goes on to say, to use language (which he here identifies with “vocal communication”) as a model for analysing other forms of communication, such as those found in ani-

⁹ Although Deacon initially appears to claim that what he calls “simple languages” do not exist, what he really wants to say is that they only exist in human beings (as mentioned in the very quotation to which this note refers: “no simple languages used *among other species*” (my italics). As noted already in the passage quoted, children’s language really is a case in point. This becomes even clearer in chapter four (in particular 122ff), where Deacon suggests language learning is possible because the child starts out ignoring the more complex aspects of language. Even if we take into account the restriction to “a language which is logically complete in itself”, simple languages will not disappear from the world, because they reappear in human evolution, if Deacon (1997: 340) is right in positing a mutual development of language and the brain. As mentioned below in the text, Deacon’s exclusion of “simple languages” in animals only applies “in the wild”, as testified by laboratory cases such as Kanzi and others.

mals. Language is exceptional, and has been around for a much shorter time than other kinds of communication. When we teach a dog to obey a command in verbal language, we understand what it means, but the dog learns it "by rote". What for us depends on language, involves another kind of communication system for the dog.

In spite of the attempt at a definition, it cannot be said that Deacon's concept of language becomes particularly clear. Sometimes, it seems to involve only "vocal communication", but at other occasions it appears to be very extensive indeed. When Deacon mentions "religious ceremonies, systems of etiquette, and many rule-governed games", it is difficult not to see this as an echo of Saussure's very tentative characterisation of the subject matter of "semiology", which includes at least the first two, and perhaps also the third, instantiated by the game of chess. Other semioticians, even a close follower of Saussure such as Hjelmslev, would have excluded these cases from the domain of true signs, because, in his view, they lack "double articulation".¹⁰ Today we also have a speciality that is called semiotics of music, but not all semioticians are sure whether there can be such a domain of study. Indeed, one may wonder whether Deacon himself (no doubt in very good company) does not himself extend the language metaphor excessively.

In contrast with this pansemioticism, and no doubt much to the chagrin of biosemioticians, Deacon denies any kind of semiotic character to the kind of communication processes occurring in the world of animals.¹¹ He would deny that the relationships between cells is a process of interpretation (a Peircean semiosis) as Hoffmeyer would have it; nor would he discover any "symbolic reference" in the genetic code, contrary to what was famously suggested by Roman Jakobson. In fact, he does not even discuss what, in Sebeok's parlance, is called "endosemiotic" processes (sign processes occurring within the body). What is at stake is the domain of zoosemiotics as originally characterised by Sebeok, that is, those overt stretches of behaviour which serve to convey meaning, in some sense or other, from one animal to another, e.g. the

¹⁰ That is, once they have been separated into signs with expression and content, there is no point continuing to analyse expression and content separately, into smaller units that do not coincide on the two levels. See my discussion of the semiotic function below.

¹¹ I here suppose that, if Deacon had used the term, he would define semiotics as the domain of "symbolic reference". It is of course possible that Deacon would instead oppose symbolic semiosis to other kinds of semiosis, such as that found in animal communication systems.

cry of the wolf, the calls of vervet monkeys, the dance of the bees, and so on.

As will be seen later, I think Deacon is quite right in excluding such phenomena as these, if not from the domain of semiosis generally, at least from that characterised by the concept of sign. The trouble is that these distinctions appear to be quite arbitrary, as long as the notion of "symbol" (that is, in my terminology, the sign) is not defined. To characterise it as "the way words refer to things" begs the question, to say the least. This is also true of the opposition between "this unique human mode of reference" and "forms of nonsymbolic reference that are found in all nonhuman communication (and in many other forms of human communication as well)" (Deacon 1997: 43).

However, in the same context, Deacon points out that the problem for the animals is "the simple problem of figuring out how combinations of words refer to things", and he goes on to argue that grammatical rules and categories are only physical regularities if they are considered independently of symbolic operations. This is an important factor, as we shall see later, which has to do with the systematicity of verbal language and some other semiotic systems, but it is not in any direct way connected with symbolicity, in Peirce's sense of the term.

It is difficult to see how etiquette rules, games (such as chess) and music would have "symbolic reference", in a way in which animal communication systems fail to have it. In fact, if we suppose "symbolic reference" to convey the general idea of something being "about" something else, or, equivalently, to stand for something else, then it makes much more sense attributing it to at least some instances of animal communication than to such things as etiquette, games, and music.¹² Etiquette rules and the rules defining games are not "about" anything at all: they impose restrictions on the behaviour allowed. As Deacon (1997: 61) claims about laughter, it is certainly odd to say that etiquette has a meaning, at least in the sense of reference. Indeed it might be argued (and we will return to this later) that to the extent that there is something semiotical about these phenomena, it is found at a level comparable to endosemiotics.

¹² As becomes clear at least in the discussion of the Williams syndrome, Deacon (1997: 270) would associate such "aboutness" with indexicality, not symbolicity. This is a serious error, because it amounts to confusion between indices and indexicality. As we will see later, it is not an accident that Deacon has recourse to the same examples as Saussure.

What is even more curious is that, when Deacon (1997: 59ff) later returns to "the reference problem", he opposes "the way words refer to things" to "a vervet monkey alarm call, a laugh, or a portrait". No matter what features we attend to, the portrait, just as any other picture, undoubtedly refers in a way much more similar to words, than does either a laugh or a rule of etiquette. Indeed, Deacon would seem to agree with this. Later on in the text, Deacon (1997: 365f) talks about "external *symbolization* in the form of paintings, carvings, or just highly conventional doodlings" which are "the first concrete evidence of the storage of such *symbolic* information outside of the human brain" (Deacon (1997: 374, my italics). We will return to this issue when discussing the concept of semiotic function.¹³

Deacon does not give any further justification for classifying games, etiquette, and music with language, while excluding pictures, but it might be argued that, although games and etiquette rules (and perhaps even music) are not prototypical signs, such as verbal language and pictures, they are still "about" something in some more general sense.¹⁴ To shake hands (in a given context) means that you greet somebody; to move a particular chessman means that the queen takes up a new position causing perhaps a checkmate. As I understand the term "etiquette rules" (but Deacon gives us no clue) it does not involve something like shaking hands. I would describe this as an interactive gesture carrying a meaning just as any other sign. Etiquette rules, however, are those that tell us under which circumstances it is appropriate to shake hands, and when it is not. In this sense, they impose restrictions on the behaviour allowed.¹⁵

The case of chess, however, is more difficult to deal with. What makes some pieces of wood or other material and a board into a game of chess are the restrictions imposed on the permitted movements of the chessmen and the consequences of certain chessmen taking up particular positions. Saussure would seem to use the example of chess as an

¹³ The passage quoted introduces a section that is concerned to show that there is more to the purported difference than conventionality. So perhaps Deacon would say that etiquette, just as language, is part of a system, whereas neither laughs nor pictures are. But this only shows that his terms and his criteria are unclear.

¹⁴ I owe these objections, as well as the examples quoted in the sequel, to Jordan Zlatev.

¹⁵ This is equivalent to the "display rules", which, according to Ekman and Friesen (1969), are applied differently in different cultures to the universal facial expressions for emotions.

analogue to phonology rather than semantics: anything is a queen, as long as it is permitted to move it in the ways a queen moves, just as anything (with some exaggeration, no doubt) may be an /a/, as long as it functions as an /a/ in the vowel system. Hjelmslev, however, claims that chess is a “symbol system”, in the sense of permitting no distinction between expression and content, itself a result of both having the same structure (i.e. of not being doubly articulated).¹⁶ As we will see below (in 2.2), this is not, in my view, a valid argument for abandoning the difference between expression and content. In fact, as Searle has observed, the rules of chess are not like traffic regulations, applying to movements on a board which were hitherto unregulated: the restrictions on movement create chess, but traffic regulations do not create traffic.¹⁷ Clearly, it could be argued that the queen means “able to move in any straight direction as far as desired”, in a sense in which /a/ does not mean “low, frontal, sonorous”. However, it does not seem that each movement of the queen could be a kind of “chess act”, comparable to a speech act, in case of which chess would be a highly repetitive type of discourse. It might be admitted, therefore, that chess is in some way intermediate. But this does not change the fact that pictures are much more similar to language, in this respect, than chess is.

Apart from having language, human beings retain some elements of a communication system comparable to that found in animals. It is wrong, Deacon (1997: 53f) thinks, to see these systems as partial languages, or precursors to language, because they are in fact self-sufficient and independent of language, even in man. Language, on the other hand, needs the support of these systems, because “we make extensive use of prosody, pointing, gesturing, and interactions with objects and other people to disambiguate our spoken messages”. It would be absurd, in Deacon’s opinion, to see smiles, grimaces, laughs, sobs, hugs, kisses, and the like, as “words without syntax”. Without bothering to do the latter, I still find Deacon’s idea of a “special kind of reference” difficult to grasp. Most instances of pointing and many instances of gesturing and interactions with objects seems to me to have something akin to “symbolic reference” (cf. Kendon 2004; Kita 2003), whereas one would be hard pressed to find something of the kind in sobs, hugs and

¹⁶ This is of course a sense of symbol that has nothing to do with the use of the term neither in Peirce, Saussure, or Deacon.

¹⁷ In the Pufendorf lectures, given at Lund University, May 30 to June 2, 2006. This is an example of his old distinction between constitutive and regulative rules.

kisses — none if which serves to suggest that the latter are not meaningful.

However, the example of the vervet monkey alarm calls may contribute to a clarification of the issue. Seyfarth, Cheney *et al.* (as reported in Deacon 1997: 54ff; also cf. Hauser 1997) tell us that these monkeys produce different calls to warn troop members of the presence of either eagles, leopards, or snakes. The calls have the effect of making the troop members race out of threes, climb into the trees, or just rise up to peer into the bushes around them. These calls therefore do not simply refer to states of mind (fear in all cases) but to different predators.¹⁸ According to the authors, the calls are analogous to names, or to the way we use the exclamation “Fire!”, and thus they make up a simple language. However, they also point out that the calls are different from language in being contagious. At the same time as they behave in the adequate way, the monkeys repeat the calls. This is more similar to our way of laughing, as Deacon points out. To laugh at something is quite different from saying “I just heard a great joke”. There is a sense, Deacon (1997: 57) admits, in which a laugh may be said to refer to “a definite class of experiences which are deemed funny”. Analogously, the vervet monkey calls refer to classes of predators. But this is not the same sense in which words refer.¹⁹

Later on, when opposing “sense” and “reference” in the Fregean sense, Deacon (1997: 62) seems to say that laughs and vervet monkey alarm calls, contrary to words, do not need any “sense” to determine the “reference”. Yet he already appears to have admitted the opposite when claiming that there is a sense in which laughs refer to a class of laughable objects. This would seem to be analogous to the way in which words which change their meaning (or reference) each time they are used (Husserl’s “*okkasionelle Bedeutungen*”, Jespersen’s and Jakobson’s “shifters”, etc.) are said to signify “the class of all persons referring to themselves”, “the class of all present moments”, etc. In both cases, only

¹⁸ In fact, they could also be said to refer to different behaviour patterns, that is, as Peirce would have said, to different energetic interpretants.

¹⁹ Another criterion quoted here by Deacon (1997: 58f) is the hierarchy of intentions according to Grice. I will ignore it here, because it certainly does not put pictures or any kinds of gesture in a different class from verbal language. Cf. Sonesson 1999, 2001a, 2002. In fact, I suspect most instances of kissing, embracing and even prosody must be deemed to be hierarchically intentional.

one of those objects is picked up in the moment of realisation.²⁰ It is true, however, that Deacon says laughing and alarm calls fail to have any "*conscious* concept of meaning" (my italics). Perhaps this should be understood in the sense in which Deacon (1997: 63) goes on to say that the difference between a dog's and a human being's way to get to the reference is "something additional that is produced in the head". But, again, this is a claim in need of further elucidation.

Deacon then introduces the Peircean concept of interpretant to take care of this mental residue. This is rather unfortunate, for, if anything, the interpretant is not characterised as being mental. The different behaviour sequences provoked in the troop by the various vervet alarm calls would be ideal cases of Peircean interpretants. It is true that Deacon later notes that there are different kinds of interpretants in Peirce's theory. But he then goes on to talk as if only words had interpretants. However, Peirce's original point was quite the opposite one: that meaning is not necessarily "in the head". It is no accident that Morris could reinterpret Peirce using the tenets of behaviourist psychology. It is not even true that the chain of interpretants, where one instance leads on to another, and so on (for instance one word to another), is characteristic of language, as Deacon seems to think. In Peirce's view, it would apply to all signs (including "non-symbolic communication"). Nor is Peirce interested in distinguishing interpretants in a way that would be useful to Deacon. His taxonomy obeys different criteria that do not pertain to the distinction between language and other communication forms, nor to the difference between mental phenomena and others. As Peirce never tires of explaining, the mind is simply a possible instance among others of an interpretant.

According to Deacon (1997: 63), "an interpretant is whatever enables one to infer the reference from some sign or signs and their context". This is perhaps not wrong, but it is misleading. Rather, the interpretant is any consequence the sign may have for somebody doing the interpreting. The distinction between interpretant and object has nothing to do with the Fregean opposition between sense and reference, contrary to the impression one may get from reading Deacon (and of course from the classical model of Ogden and Richards). If anything, Frege's terms

²⁰ I am of course not claiming any further analogy, but it would seem that Deacon would have to do so. Both cases are indexical to him, as we will see later, whereas I would insist on the difference between a mere indexical relation (an indexicality) and an indexical sign (an index).

would rather correspond to the distinction between the immediate object (that which is directly presented through the sign) and the dynamical object (that which we may learn by other means about the thing presented by the sign). Everything really tends to suggest that, to Peirce, the object is that which incites someone to create a sign; and the interpretant is something which the sign gives rise to in the one being presented with the sign. We will see this more in detail in a later section of this essay.

For the moment, however, I think we need to introduce a clear concept of what a sign (in some respects equivalent to Deacon's "symbol") is. Then we shall see that the sign, rather than being identified with one of Peirce's categories, must be cross-classified with iconicity, indexicality and symbolicity. And finally we shall see that even symbols in our sense, which combine the semiotic function with symbolicity, are not confined to verbal language. Something else must be added, which Deacon fails to distinguish clearly.

I will start out from a definition of the semiotic function that I found necessary to introduce, in order to salvage the notion of iconicity from the conventionalist critique of Eco and Goodman (cf. Sonesson 1989a, etc.).

2.2. Stone for candy and feathers for a chicken.

On the concept of semiotic function

Even though semiotics is not exclusively concerned with signs, but is also required to attend to meanings of other kinds, the concept of sign remains crucial, and semiotic inquiry still has to start out from a distinction between signs and other meanings (cf. Sonesson 1989a; 1992a; 1992b; 1998a). Indeed, many semiotic studies (those of Lévi-Strauss, Barthes, the Greimas school, and, most notably perhaps, those forming part of biosemiotics), will recover their validity, once it is realised that they are concerned with meanings, in a much wider sense than that of the sign, better paraphrased perhaps in terms of wholes, connections, or schemes. Building their models of the sign, both Peirce and Saussure made a set of fundamental conceptual distinctions, which are in part complementary, yet both of them took it for granted that we would all understand the import of such terms as "signifier" and "signified", or the equivalent. A basic understanding of the sign function may however

be gained from an interpretation of Piaget's important attempt to define the *semiotic function* (which, in the early writings, was less adequately termed the symbolic function), and from Husserl's definition of the notion of *appresentation*.

According to Piaget, the semiotic function is a capacity acquired by the child at an age of around 18 to 24 months, which enables him or her to imitate something or somebody outside the direct presence of the model, to use language, make drawings, play "symbolically", and have access to mental imagery and memory. The common factor underlying all these phenomena, according to Piaget, is the ability to represent reality by means of a signifier that is distinct from the signified.²¹ Indeed, Piaget argues that the child's experience of meaning antedates the semiotic function, but that at this stage it does not suppose a differentiation of signifier and signified in the sign (see Piaget 1945; 1967; 1970).²² Even from a cursory interpretation of these terms, it seems clear that pictures as well as linguistic signs, some kinds of play (but not games such as chess) and certainly some gestures depend on the semiotic function; but etiquette rules and most instances of music do not.

In several of the passages in which he makes use of this notion of semiotic function, Piaget goes on to point out that "indices" and "signals" are possible long before the age of 18 months, but only because they do not suppose any differentiation between expression and content. The signifier of the index is, Piaget (1967: 134; my translation, *G. S.*) says, "an objective aspect of the signified"; thus, for instance, the visible extremity of an object which is almost entirely hidden from view is the signifier of the entire object for the baby, just as the tracks in the snow stand for the prey to the hunter. But when the child uses a pebble to signify candy, he is well aware of the difference between them, which implies, as Piaget (1967: 134ff) tells us, "a differentiation, from the subject's own point of view, between the signifier and the signified".

²¹ It should be noted that at least memory and mental pictures are internal representations, in the sense of cognitive science, but that they are still differentiated, according to Piaget's conception.

²² Not all of Piaget's examples of the semiotic function may really be of that kind, even applying his own criteria. For some critical observations, see Bentele 1984; Trevarthen, Logotheti 1989; Sonesson 1992b. Just as it remains doubtful that there is a unitary semiotic function from the point of view of ontogeny, as Gardner and Wolf (1983) observe, one may doubt its phylogenetic justification (cf. Foley 1991). However, this does not necessarily put into doubt the *structural* unity of the function.

Piaget is quite right in distinguishing the manifestation of the semiotic function from other ways of "connecting significations", to employ his own terms. Nevertheless, it is important to note that, while the signifier of the index is said to be an *objective aspect of the signified*, we are told that in the "sign" and the "symbol" (i.e. in Piaget's terminology, the conventional and the motivated variant of the semiotic function, respectively²³) expression and content are differentiated *from the point of view of the subject*. We can, however, imagine this same child that in Piaget's example uses a pebble to stand for a piece of candy having recourse instead to a feather in order to represent a bird, or employ a pebble to stand for a rock, without therefore confusing the part and the whole: then the child would be employing a feature, which is objectively a part of the bird, or the rock, while differentiating the former from the latter from his point of view. Only then would he be using an index, in the sense in which this term is employed (or should be employed) in semiotics (cf. Sonesson 1992a; 1992b; 1995b).²⁴

Just as obviously the hunter, who identifies the animal by means of the tracks, and then employs them to find out which direction the animal has taken, and who does this in order to catch the animal, does not, in his construal of the sign, confuse the tracks with the animal itself, in which case he would be satisfied with the former. Both the child in our example and the hunter are using indices, or indexical signs. On the other hand, the child and the adult will fail to differentiate the perceptual adumbration in which he has access to the object from the object itself; indeed, they will identify them, at least until they change their perspective by approaching the object from another vantage point. And at least the adult will consider a branch jutting out behind a wall as something

²³ Piaget thus uses the term "sign" to stand for, among other things, an entity consisting of an expression and a content that are connected to each other arbitrarily, and "symbol" for an entity having a non-arbitrary connection, exactly as Saussure does. To Peirce, as we shall see, "sign" is a generic term, and "symbol" applies, roughly speaking, to an entity based on an arbitrary connection (or, perhaps more generally, a "law-like" connection). Deacon does not distinguish between "sign" and "symbol" in their Peircean senses. In this essay, I follow Peirce's usage, though I try to give a more precise meaning to the concept of sign.

²⁴ In fact, the child may even try to objectify his subjective point of view in the sign, by reworking the pebble to resemble a rock, or by transforming (less plausibly) the feather into the likeness of a bird. This is the kind of discovery made by the prehistoric artist, although the rock itself may not really have been a possible subject matter to him.

that is non-differentiated from the tree, to use Piaget's example, in the rather different sense of being a proper part of it. This is so because, from the point of view of phenomenology, defended by Gibson as well as Husserl, the part is no sign of the whole, but is identified with it in perception.²⁵ In the Peircean sense an index is a sign, the relata of which are connected, independently of the sign function, by contiguity or by that kind of relation that obtains between a part and the whole (henceforth termed factorality). But of course contiguity and factorality are present everywhere in the perceptual world without as yet forming signs: we will say, in that case, that they are mere indexicalities. Perception (to pick a Peircean term) is profused with indexicality (cf. Sonesson 1989a; 1992a; 1992b; 1995b).

Each time two objects are perceived together in space, there is *contiguity*; and each time something is seen to be a part of something else, or to be a whole made up of many parts, there is *factorality*. According to Husserl, two or more items may enter into different kinds of "pairings", from the "paired association" of two co-present items (which we will call *perceptual context*), over the "appresentative pairing" in which one item is present and the other indirectly given through the first, to the real sign relation, where again one item is *directly present* and the other only *indirectly* so, but where the indirectly presented member of the pair is the *theme*, i.e. the centre of attention for consciousness. This property serves to distinguish the sign from the *abductive context*, which is the way in which the unseen side of the dice at which we are looking at this moment is present to consciousness: in the abductive context the attention is focused on the directly presented part or spans the whole context. However, there seems to be many intermediate cases between a perfect sign and an abductive context (cf. Sonesson 1989a, I.2).

Piaget's notion of differentiation is vague, and in fact multiply ambiguous, but, on the basis of his examples, two interpretations can be introduced (cf. Sonesson 1992a; 1992b; 1995b): first, it might correspond to the sign user's idea of the items pertaining to different basic categories of the common sense Lifeworld; and, in the second place, it could refer to the impossibility of one of the items going over into the other, following the flow of time or an extension in space. Indeed, it is sufficient to catch a glimpse of the wood-cutter lifting his axe over his shoulder and head to know what has gone before and what is to come:

²⁵ About proper parts, perceptual perspectives, and attributes as different ways of dividing an object and thus different indexicalities, cf. Sonesson 1989a, I.2.

that he has just raised his tool from some base level, and that at the next moment, he is going to hit the trunk of the tree. Here the flow of indexicalities is only momentarily halted. Whereas the items forming the sign are conceived to be clearly differentiated entities, and indeed as pertaining to different “realms” of reality, the “mental” and the “physical” in terms of naïve consciousness, the items of the perceptual context continuously flow into each other, and are not felt to be different in nature.²⁶

The concept of semiotic function, which has here been developed from a reading of Piaget, is not the same as the one found in the work of Hjelmslev, who uses it to distinguish signs from what he calls “symbol systems”: the former, but not the latter, require a different analysis into minimal units on the levels of expression and content, that is, they have “double articulation” (cf. Sonesson 1992a; 1992b). In Hjelmslev’s view, not only chess and other games as well as mathematical symbols but also pictures and onomatopoeias form symbol systems.²⁷ There are many reasons to doubt this analysis: other criteria than the linguistic ones may be found which will allow for a distinct articulation of expression and content (as I have suggested above), and the content and expression of onomatopoeias are certainly different also according to linguistic criteria. But in any case, both onomatopoeias and pictures are differentiated according to our criteria, because expression and content are clearly experienced as being of different nature and having separate spatial and/or temporal location.

Differentiation is also different from “displacement”, which, in Hockett’s (1977) classical formulation, is one of the “design features” of human language: the capacity for being used to refer to things remote in time and space. No doubt this is an important property of some signs, and it has even been suggested that the necessity of remembering the past and of planning for the future (displacement in time) is at the origin of human language (Sjölander 2002; Deacon 1997: 397ff). If so, this property is also realised by pictures as well as by some gestures. Inter-

²⁶ In fact, both content and expression of the sign are actually “mental” or, perhaps better, “intersubjective”, as structural linguists would insist; but we are interested in the respect in which the sign user conceives them to be different.

²⁷ Actually, Hjelmslev may not be talking about pictures as such, because he literally claims that “The Christ of Thorvaldsen as a symbol of compassion” is a symbol. But even this could be disputed applying our criteria. It will be noted that the distinction between sign and symbol in Hjelmslev’s work is quite different both from the Peircean and the Saussurean tradition.

estingly, however, other gestures (such as, most notably, pointing), which, on our criteria, are clearly signs, do only function as they do in the presence of the object to which they refer (cf. Sonesson 1995b). A large portion of verbal signs, and not only what has variously been called (with only partly overlapping terms) “deictics”, “egocentric particulars”, “shifters”, etc., accomplish their peculiar function in the presence of their referent. Indeed, even some pictures require the presence of the referent. In the zoo, for instance, both the verbal label and the picture of the animal will only function as they are meant to function — helping us applying the right name to the animal — in presence of the animal referred to (cf. Sonesson 2003; 2004). So while the capacity of language and pictures for functioning in the absence of their referents is important, it may be equally important that they have usages in the presence of their referents.

In fact, the sign, and therefore differentiation, may be necessary for a much wider purpose: to single out different portions of the perceptual world for attention. Within semiotics, Prieto (1966; 1975a; 1975b) has long insisted on the importance of this function of signs. Interestingly, also Tomasello (1999: 131ff) has recently arrived at the same conclusion: the basic function of “symbolic representation” is “attention manipulation”, which, beyond “displacement”, “undermines the whole concept of a perceptual situation by layering on top of it the multitudinous perspectives that are communicatively possible for those of us who share the symbol”.²⁸ As we shall see (in the second part), this actually points to a more elementary sense of meaning, which, in different traditions, is called such things as “relevance”, “pertinence”, or “form”. It is at the origin of the Peircean concept of “ground”.

Deacon (1997: 397), however, suggests that “almost any objects or events or even particular qualities of objects or events can be signified without symbolic reference, using iconic or indexical means”. It is difficult not to be reminded of Swift’s scholars who communicated using objects, which they carried with them. The difficulty with this solution is not only that one cannot carry all conceivable objects on one’s back

²⁸ It is not clear to me whether the perspective mentioned here should be viewed in relation to similar ideas of Bakhtin’s, for Tomasello’s quotes from the latter concern other issues. Interestingly, however, Bakhtin allows for such perspectives being incorporated into drawings, as well as into linguistic signs, but denies their presence in photographs, for reasons that I have shown to be erroneous. Cf. Sonesson 1999; 2001a.

(which would be equivalent to the displacement argument), but also that the properties and relationships between these objects cannot be manipulated freely (which is the argument from relevance). In some respects, this is similar to Deacon's own claim, that "nonsymbolic reference" cannot point to "abstract or otherwise intangible objects of reference" (ibid.), but the latter may be too general a formulation because it does not mention the possibility of changing the principles of relevance. The latter, in any case, is a capacity of pictures and some gestures as well as verbal language.

It cannot be denied, however, that in some respects my interpretation of Piaget goes against his own self-understanding. I have made much out of a distinction between the "objective" and the "subjective point of view" (which is precisely a kind of "attention manipulation"), which Piaget introduces only later to forget all about it himself. Indeed, if we look at Piaget's examples, it seems that he attributes the semiotic function only to those expressions and contents which are not only *subjectively*, but *objectively different*: the pebble in relation to the candy, but not the feather in relation to the bird.²⁹ In other terms, he seems to confuse differentiation, in the end, with symbolicity, that is, the arbitrariness that accounts for the connection between the expression and the content.

Interestingly, this is, at least by implication, the same confusion we discover in Deacon's work: to him that "special kind of reference" we find in symbols, and notably in verbal language, seems to involve a lack of motivation, opposed to the motivated relationships appearing in icons and indices; but it is, at the same time, as his examples show, differentiation as opposed to non-differentiation. The evaluation of Deacon's claim is certainly complicated, as we shall see, by his rather curious interpretations of iconicity and indexicality, and by his attribution of a system character to all instances of symbolicity (which perhaps, in the end, rather than arbitrariness, is that which defines symbols to Deacon). But clearly, when it comes to the attribution of sign status to the vervet monkey alarm calls, the question at issue is not whether the monkeys perceive contiguities and/or similarities between the calls and the

²⁹ A passage from Deacon (1997: 413f) which seems to go in the direction of my distinction, is when he opposes the "indexical" interpretation of the chimpanzees which are unable to choose the small heap of candies, although they have observed that as a result they are given the big heap, to the "symbolic" interpretation of children who are able to learn the adequate reaction.

predators, but whether they see the former as being anything else than a part of the situation which also contains the latter.

There can be no doubt that the identification of differentiation with symbolicity is a serious confusion, at least because it makes it impossible to formulate some relevant questions for research. And one of the questions which our terminology permit us to formulate actually may explain why both Piaget and Deacon have been led down this alley: it is conceivable that, phylogenetically as well as ontogenetically, differentiation can first only be experienced on the basis of symbolicity, and is then later generalised to iconic and indexical relationships. At this stage, obviously, this can only be a speculative proposition.

On the other hand, it is possible that the notion of differentiation, as it is used here to define the concept of sign, itself needs interpretation. Tomasello's (1997) claims that the sociocultural contexts in which humans are reared allow them, contrary to other animals, to develop "joint attention", which permits them to discover the goals and motives behind the actions of others. This idea is intriguing, particularly in view of the parallelism which Tomasello, along with Vygotsky (and, unknowingly to him, Prieto), postulates between tools and signs. Both tools and signs point beyond themselves, Tomasello notes, to the problems they are set to resolve, and to the situation they describe, respectively. Prieto would say that a set of expressions is connected to a set of contents, just as a set of tools relates to a set of usages.³⁰ Just as Tomasello talks about taking different perspectives, Prieto insists on the set of alternatives (known in classical structuralist semiotics as "paradigm"). In both tools and signs, it seems necessary to intercalate an intention between the two sets, in order to explain the possibilities of choice. To Prieto, who looks at the issue from a more theoretical point of view, intentionality is an additional message, which is superimposed on the original sign. To Tomasello, on the other hand, intentionality is at the origin of all signs, because causality is a later reinterpretation of what was originally a magically misunderstood intentionality, attributing goals to the things of the natural world.³¹

³⁰ Elsewhere, I have introduced the term *allofunctionality* to characterise objects that are defined by reference to the properties of other objects, such as tools and signs (cf. Sonesson 1989a).

³¹ The case of autism is very interesting, because Tomasello interprets it in the sense of a failure to see others as conscious beings, and thus to entertain joint attentions with them. We know however, from other sources (see Winner 1982:

Seen in this way, the semiotic function seems to have something to do with mediation, not only in the very general sense of Peirce and Vygotsky, but in the more special sense of second generation behaviourist theories: an intercalated variable between stimulus and response. Here again, we are of course at the level of mere speculation.

2.3. The picture as a sign.

On not seeing the depiction owing to all the paper

The picture is a sign, in the sense of it having a signifier which is doubly differentiated from its signified, and which is non-thematic and directly given, while the signified is thematic and only indirectly present. This also applies to rock paintings and rock carvings: the rock itself is made of quite another material than the arms, the elks, the boats, and the human beings depicted; indeed, even those stone implements which are represented are not rendered in the same material, since the expressions of these contents are not really the rock itself, but the carved hollows, and the pigment lines, made in, or on, the rock. Nor is there any continuity in space and time between the motifs and their rendering. The rock and its carvings, as well as the pigments deposited upon it, are directly given to our perception; that which is thematic, however, are the animals, men, arms, and tools suggested by these means.

The perception of surfaces is important for the possibilities of survival of all animals; it is only by means of determining their mutual relations that the animals are capable of orienting themselves in the world of experience. However, according to James Gibson (1980), it is only to human beings that the marks made on surfaces attract attention. Such marks may be of different types, for example, colour spots, lines or projected shadows; and they can be produced in different ways: by the fingers, with a pencil, a brush, some engraving instrument, with a rule, a

181ff) that some autistic children a better than normal children at some specific tasks, which include such things as "photographic memory", the ability to sing an entire opera after hearing it once, and an extraordinary capacity for drawing. Just as in the other cases mentioned, however, the drawing ability is of the kind permitting a very close reproduction in the expression of the content as given, without any apparent awareness of alternatives. In this sense, expression and content here appear to be imperfectly differentiated. It is intriguing however, that this is exactly the opposite of the kind of drawing chimpanzees have been known to accomplish.

compass, or with a more complex instrument such as a printing-press, a camera or a projector. The marks on the surface can be disorderly and may even be dirt spots. If they are symmetrical or regular in some way, they make up some kind of ornament; but if the marks have a form that can be interpreted as referring to a possible perceptual scene, we have to do with a picture.

If we follow Gibson, the capacity to interpret pictures is as unique a human capacity as that of using verbal signs. This contention may appear to be contradicted by numerous experiments which show that some animals react to pictures of their keeper in the same way as to the keeper himself; this notably appears to be true of pigeons (cf. Cabe 1980; Fagot 2000). However, these experiments do not show to what extent the animals perceive the pictures are something different from a new instance of the human being in person. In this sense, the iconicity of pictures, to human beings at least, is very different from Deacon's (1997: 76) description of "seeing just more of the same (bark, bark, bark...)." Julian Hochberg showed that a child 19 months old who had never seen a picture could readily interpret it if he/she were familiar with the objects depicted (Hochberg, Brooks 1962). But Hochberg did not investigate whether the child saw the picture *as a picture* or as an instance of the category of the depicted object — a picture of a bird as a bird, etc. For the picture to be a sign, both similarity and difference have to be involved.

Recent experiments have shown that even children 5 months old look longer at a doll than at its picture (DeLoache, Burns 1994). However, it does not follow that the children see the picture *as a picture*. Indeed, 9th month olds, but not 18th month olds, try to grasp the object depicted as if it were a real object (DeLoache 2004); whatever the difference they perceive, then, it does not seem to involve signs as opposed to objects. Just as in the case of the doves, this may simply show that the picture and its object are seen as different, but not necessarily as being a sign-vehicle and its referent. The real doll is perhaps seen as a more prototypical instance of the category; or, alternatively, the real object may be more interesting because of having more perceptual predicates.

Once we know that something is a sign, and, specifically, a pictorial sign, the particular "similarities" will take care of themselves. If we are not told that some particular thing is a sign, and iconic at that, then we may perhaps be aware of it because of general facts derived from our

experience of the common sense world. Members of the Me' tribe, we are told, smell the pictures, taste them, bend them, and so on, in short behave like a Piagetian child exploring his world. According to Deregowski (1973: 167; 1976: 20) not only pictures, but materials like paper are unknown to the Me'; therefore, when Deregowski had pictures printed on coarse cloth, animals well-known to the tribe could be identified, although the recognition was still not immediate. It appears the Me' were so busy trying to discover the fundamental properties of the paper as an object in itself, that the iconic properties, those making it a pictorial sign of something else, were not noted; other attributes became *dominant* in their experience of it. It therefore seems (as I suggested in Sonesson 1989a) that for something to be a pictorial sign of something else, it must occupy some relatively low position in the particular Lifeworld hierarchy of "things".

If we suppose the Hochbergian child to understand, not only that given pigment patterns on paper have something to do with the shoe, the doll, and the Volkswagen of the real world, but also that the former are signs for the latter, and not the reverse, then it will not be enough for the child to have learnt from his experience with objects of the world that the edges of objects have properties which are shared by contours drawn on paper, or to be innately predisposed to react to these common properties (cf. Hochberg 1978: 136; cf. 1972). He must also have acquired, probably from experience in his particular Occidental Lifeworld, some notion of the relative low ranking on the scale of prototypical Lifeworld things of a material like paper, which directs his attention, not to what the pigment patterns on the paper are as "selves", but to what they stand for. And perhaps he must also possess some idea of a meaningful organisation, which relieves him of the task of finding a meaning in ink-blots, in the dirt on the road, in the stains he makes with his dinner on the tablecloth and in the clouds.

Familiarity with paper and familiarity with cloth are facts of particular cultures. Paper, which is too prominent to the Me' to serve as a sign-vehicle, traditionally carries this function in Western culture. But there would probably also be *universals* of prominence: thus, for instance, two-dimensional objects are felt to be less prominent than three-dimensional ones and may thus more readily serve as expressions. In this sense, it is not true that the object is its own best icon, as is ordinarily claimed — at least if iconic means iconic sign. Indeed, iconicity stands in the way of the sign function. The objects of the common sense

world are three-dimensional: much less is required for a two-dimensional object than for another three-dimensional object to represent one of these objects. This is precisely what is suggested by DeLoache's more recent experiments with children: not only is the picture understood later than language in these experiments, around 2 1/2 years (DeLoache, Burns 1994; etc.), but scale models are understood even later, at 3 years of age, half a year after pictures (DeLoache 2000). As noted also by DeLoache, this contradicts what is expected by common sense. But it is reasonable, if the issue is separating the sign and its referent.

DeLoache (2004) employs the term "double representation" to describe the necessity for the child to attend both to the picture and the object depicted. This is a misleading term, for there is only one representation, that is, one sign function.³² Rather, in Gibson's more enlightening terms, there are invariants for both the surface and the referent in the object, and the task is to tell them apart, and decide which is most prominent. In fact, the problem only arises because there is at the same time sign function and iconicity. This means that the term "double representation" is not only misleading: it fails to explain why pictures are easier to interpret than scale models.

In all DeLoache's experiments, the task is, in one way or other, to find a hidden object by using information contained in a picture or a scale model. According to the standard procedure, the experimenter and the child are outside the room in which the child is to search for the toy. The child cannot see the picture/scale model and the room at the same time. The experimenter tells the child that she will hide the toy in the room and then come back and ask the child to search for it. She returns to the child and points out the appropriate location in the picture/scale model telling him "This is where Snoopy is hiding in his room, can you find him?". If the subject fails in the first search it is once more shown the picture and given more explicit prompts. 24 month old do not pass the retrieval test, but 30 month old do; there is no difference in performance using photographs or line drawings. However, when the whole procedure is conducted verbally, children pass the test already before 24 months old; and when a scale model is used, only 36 months old pass it.

³² Perhaps DeLoache talks about "representation" in the sense in which the term is often used in cognitive science, but then this is precisely the problem, as we have suggested above.

This way of investigating the picture function may be criticised from two diametrically opposed points of view. First, it could be argued that the task involves much more than the recognition of the picture as picture — it requires an action, which is no doubt difficult in itself, namely, to search for the hidden object. It remains, however, that even this task is differently accomplished if the instructions are given in entirely verbal form, or if they involve pictures or scale models. On the other hand, even when the instructions for the task feature pictures or scale models, a lot of verbal and indexical scaffolding also takes place, without this being taken into account in the interpretation. It has been argued by Callaghan and Rankin (2002) that pictures would be interpreted even later if such verbal scaffolding had not taken place. More fundamental, however, may very well be the indexical scaffolding: not only are the objects *pointed out* by the experimenter in the picture or the scale model, but the latter are even placed *on* the real objects, creating an artificial neighbourhood relation.

Another one of DeLoache's experiment seems to indicate that the sign function is at least part of the problem. When the experimenter, instead of talking about a model and a real room, tells the children that the search has to take place in the same room, which has shrunk since it was last seen, the task is accomplished much more easily (DeLoache *et al.* 1997). The difference, clearly, is that the two instances are here connected by a narrative chain rather than by a sign relationship. In another experiment, DeLoache (2000) places the scale model behind a window-pane, in order to make it more similar to a picture, with the expected results. In fact, however, two things happen here which would have to be separated: the object becomes less prominent, because it has less the appearance of three-dimensionality; and it is put into a frame, which creates a centre of attention.

DeLoache's work experimentally investigates the central issues broached in Sonesson (1989a).³³ As always, the investigation engenders new problems. However, if understanding pictures is as difficult for children as DeLoache and, even more, Callaghan, suggest, then we should not expect animals to be able to do so. We have already proposed some alternative explanations for the behaviour of Cave's pigeons. On the other hand, primatologists, as mentioned at the beginning of this section, tend to take for granted that the apes to which they are trying to teach language already understand pictures. There are only a

³³ Clearly without knowing Sonesson 1989a.

few regular investigations of apes looking at pictures and scale models. Itakura (1994) reports that enculturated chimpanzees can interpret line drawings; Kuhlmeier *et al.* (1999; Kuhlmeier, Boysen 2001; 2002) have even shown their chimpanzees to understand scale models. It is difficult to know what to make of these results, already because these apes are all enculturated, which is to say that they are trained in many of the semi-otic resources that in ordinary circumstances are peculiar to the human Lifeworld. Moreover, it should be noted that, while the children were introduced to a model of a room that they had never seen before the training-phase, the apes were confronted with a model of their own familiar environment. In addition, a lot of facts about the subjects and the experimental procedure are not clear from the articles. At present, it would therefore be premature to draw any conclusions about the abilities of the great apes in this domain.

It is clear, however, that, in order to understand the peculiarity of the picture, we need a concept of sign which can account for the difference and similarity between perception and pictures, on the one hand, and of pictures and scale models on the other.

2.4. Beyond the "fleeting instant".

From iconicity to the iconical sign

Deacon's way of using the Peircean notions of iconicity and indexicality is curious, not only in relation to the naïve interpretation, found in many textbooks, but also, I am afraid, with reference to a deeper reading, which takes into account the underlying armature of Peircean philosophy. As I have repeatedly pointed out, I am not particularly interested in opposing an orthodox interpretation of Peirce to the one realised by Deacon. What *does* interest me is to find a more enlightening way of talking about the complexities of semiosis.

Deacon (1997: 70f) starts out rather cautiously, pointing out that terms like icon, index and symbol have been used in other senses by scholars before and after Peirce. In his view, however, Peirce was involved in investigating "the nature of the formal relationship between the characteristics of the sign token and those of the physical object represented", where icons depend on similarity, indices on "some physical or temporal connection", and symbols on "some formal or merely agreed-upon link". He also relates Peirce's three sign types to the classical repertory of associa-

tions types, which he lists as: "a) similarity, b) contiguity or correlation; c) law, causality, or convention". This seems compatible with many passages in Peirce's work, with the exception that causality would be in the second category. Deacon no doubt is aware of this, because already on the following page he talks about indices being "causally linked to something else".

Deacon (1997: 71f) also quite correctly observes that nothing is an icon in itself, and that similarity is not "caused" by iconicity. "What we usually mean is that they were *designed* to be interpreted that way, or are highly likely to be interpreted in that way."³⁴ However, we need the Peircean notion of ground to account for this fact. As we shall see, an object is actually iconic in itself, but it is only an iconic ground in relation to something else, and an iconic sign in relation to a further relation. Deacon rightly notes that something, such as (a sign of) American Sign Language (ASL), may well partake of different sign types, such as iconicity and symbolicity, at the same time. He is wrong, however, in identifying iconicity with depiction, that is perceptual resemblance. More importantly, perhaps, he fails to note that this shows that the Peircean sign categories are not types of signs at all, but types of relationships between the parts of a sign.³⁵

So far, this is a somewhat more subtle reading of the "received version" of Peirce's theory. Where Deacon's (1997: 74ff) interpretations become strange, however, is when he suggests that iconicity is the fact of there being no distinction: the perception of the same "stuff" over and over again. It is, he maintains, like camouflage: the moth's wings being seen by the bird as "just more tree". Deacon (1997: 77ff) goes on to sug-

³⁴ This hardly seems compatible with Figure 2.2. in Deacon's book, in which symbols are said to have an "opaque" relationship to their object, and icons a "transparent" one, which is glossed as "that they require no additional knowledge to 'see' the one through experience of the other" (Deacon 1997: 60).

³⁵ Deacon (1997: 72ff) goes on to discuss Peirce's idea according to which an index always contains an icon, and a symbol an index, which he interprets in the sense that the capacity to interpret icons must precede the ability to understand indices, and the ability to make sense of indices must come before that of making use of symbols. This is probably not what Peirce meant. In any case, it is certain that the child first is able to interpret the marks on a paper as indices (traces of its own movements), then as icons or symbols (depictions or letters). In another sense, it can be shown that some indices contain icons, such as the footprint, which is an imprint of a foot, but also resembles it, but that others fail to do that, such as the pointing finger, which has no similarity with what it indicates. Cf. Sonesson 1989b; 1999; 2001b; 2001c.

gest that iconicity is recognition, that is, the identification of a category, and even "stimulus generalisation". Interestingly, he is quite right, from a Peircean point of view, in searching for a "basic sense" of iconicity beyond "the way we typically use the term", but he is looking in the wrong place: what he comes up with is both too much and too little, as we shall see when we attend to the notion of Firstness. Deacon (1997: 76f) then claims that "typical cases" such as pictures are essentially of the same kind: what makes pictures into icons is "the facet or stage that is the same for a sketch and the face it portrays". Curiously, he then refers to Peirce's saying that, upon closer inspection, an icon can convey further information about its object, and quotes "the simplification in a diagram or the exaggeration in a cartoon" as instances of this. Although Peirce may really have meant something rather akin to Deacon's claim, the latter examples clearly point in the opposite direction: they show that a difference between the sign and its referent is needed to convey new information.

In Peircean parlance, to put it simply (but we will later see that this is all too simple a manner of putting it), an icon is a sign in which the "thing" serving as expression in one respect or another is similar to, or shares properties with, another "thing", which serves as its content. In fact, according to Peirce, there are two further requirements: not only should the relation connecting the two "things" exist independently of the sign relation, just as in the case of the index, but, in addition, the properties of the two "things" should inhere in them independently.³⁶

³⁶ We are of course not concerned with pictorial representations of persons or events derived from the sacred history of Christianity, often used as an aid to devotion. Icons in the religious sense are not particularly good instances of icons in the semiotical sense, for they are, as Uspenskij (1976) has shown, subject to several conventions determining the kind of perspective which may be employed, and the kind of things and persons which may be represented in different parts of the picture. It may be less clear that the term is not to be used to refer to all things visible, or to everything whose elements are graphically disposed, as in the jargon of computer programming, or in cognitive psychology (e.g. Kolars 1977). Contrary to the latter usage, iconic signs may occur in all sense modalities, e.g. in the auditive modality, notably in verbal language (not only onomatopoeic words, but also in the form of such regularities and symmetries which Jakobson 1965a, b terms "the poetry of grammar") and music (cf. Osmond-Smith 1972), and not all visual signs are iconic in the semiotic sense; indeed, many icons found in computer programs are actually aniconic visual signs. Curiously, many semioticians also tend to confuse these two quite different senses attributed to the term "iconicity": thus still in Eco 1999: 100, in spite of admitting his error in Eco 1998: 10;

Contrary to what is suggested by Groupe μ 's (1992) quotation from Dubois' dictionary, iconicity, in the Peircean sense, is thus not limited to a resemblance with the external world ("avec la réalité extérieure"). When conceiving iconicity as engendering a "referential illusion" and as forming a stage in the generation of "figurative" meaning out of the abstract base structure, Greimas and Courtés (1979: 148, 177) similarly identify iconicity with perceptual appearance. In fact, however, not only is iconicity not particularly concerned with "optical illusion" or "realistic rendering", but it does not necessarily involve perceptual predicates: many of Peirce's examples have to do with mathematical formulae, and even the fact of being American, as in the Franklin and Rumford example, is not really perceptual, even though some of its manifestations may be (cf. Sonesson 1989a: 204ff; 1996; 1998a; 2000a; 2001b; 2001c). It is also common to confound iconicity and picturehood, when in actual fact, if we rely on Peirce's definition, pictures constitute only one variety of iconicity and are not even supposed to form the best instances of it. Something additional is necessary to account for the pictorality of pictures, as I have shown elsewhere (cf. Sonesson 1989a; 1989b; 2001c; 2003; 2004; in press a, b, c). Contrary to what Deacon (1997: 72) seems to imply, the signs of ASL, just like those of Blissymbolics and some kinds of gesture, which I have discussed in another context (cf. Sonesson 2001b), may well rely in part on an abstract type of iconicity which is distinct from depiction.

During the second half of the last century, the claim that there can be no iconic signs came from two rather different quarters. Philosophers like Bierman (1963) and Goodman (1968; 1970), only the first of whom explicitly refers to Peirce, started out from logical considerations, together with a set of proto-ethnological anecdotes, according to which so-called primitive tribes were incapable of interpreting pictures; out-right semioticians such as Eco and Lindekens, on the other hand, wanted to show that pictures conformed to the ideal of the perfect sign, as announced by Saussure, by being as arbitrary or conventional as the sign studied by the "most advanced" of the semiotic sciences, general linguistics. Since then, the question has largely gone out of fashion, but the results of those disquisitions have, rather undeservedly, been taken for granted by later researchers. In my own work on iconicity, which dates from the period of low tide in the debate (Sonesson 1989a; 1992a;

1999: 340. For further details of this analysis of iconicity, see, notably, Sonesson 1989a; 1993; 1994; 1995a; 1996; 1998a; 2000a; 2001b; 2001c.

1992b; 1993; 1994; 1995a; 1996; 1998a; 2000a). I have quoted evidence from psychology and ethnology that tends to show that that conclusion is unfeasible. More importantly, however, I have also suggested that the arguments against iconicity were mistaken, mainly because they construed language and pictures, as well as the world of our experience, i.e. the Lifeworld, in a fashion which is incompatible with our empirical knowledge, i.e. with that which we have good reasons to believe to be true about the world.

If iconicity is part of a (ternary) structure, then it cannot be discussed outside the framework of Peirce's division of signs into icons, indices, and symbols.³⁷ Within philosophy, many divisions of signs have preceded the one proposed by Peirce, ending up with two, or four, or more categories. In some ways, these divisions may be more justified than the Peircean one. However, quite apart from Deacon's reference to Peirce, there are two reasons for taking our point of departure in the Peircean canon: first, it is within these frames that most of the discussion has been conducted; and secondly, when we look beyond those elements which have usually been addressed in the discussion within semiotics, we will find that Peirce's theory offers some help for developing a more subtle approach to iconicity. Even though we may not find the Peircean categories of Firstness, Secondness, and Thirdness particularly useful for the understanding of the Lifeworld, they are important for grasping the differences between his sign types. Indeed, one should never forget that icons manifest Firstness, indices Secondness, and symbols Thirdness.

Many semioticians, in particular those who deny the existence of iconic signs, apparently believe pictures to be typical instances of this category. There are several reasons to think that this was not Peirce's view. Pure icons, he states (1.157), only appear in thinking, if ever. According to Peirce's conception, a painting is in fact largely conventional, or "symbolic". Indeed, it is only for a fleeting instant, "when we lose consciousness that it is not the thing, the distinction of the real and the copy", that a painting may appear to be a pure icon (3.362; cf. Sonesson 1989a, III.1). It will be noted, then, that a pure icon is thus not a sign, in the sense

³⁷ The Peircean use of the term "symbol" is of course problematic, since it contrasts with another sense, more common in the European tradition, and which is found for instance in the work of Saussure, where it is a particular kind of icon. However, it appears that "conventional sign" is not an adequate term for what Peirce means by "symbol", which may involve "law-like" relationships of other kinds (perhaps those which are observed to obtain).

of the semiotic function discussed above (although Peirce will sometimes state the contrary). At first, it may seem that although the icon is not a socially instituted sign, i.e. not something which is accepted by a community of sign users, it could at least, for a short time span, become a sign to a single observer. But even this is contrary to the very conditions described by Peirce: he specifically refers to the case in which the sign loses its sign character, when it is not seen as a sign but is confused with reality itself (which could actually happen when looking at a picture through a key hole with a single eye, producing what Husserl dismisses as a “Jahrmakteffekte”), when, as Piaget would have said, there is no differentiation between expression and content (cf. Sonesson 1989a, I.2.5; 1992b).

Indeed, it would seem that, at least sometimes, the pure icon is taken to be something even less substantial: an impression of reality, which does not necessarily correspond to anything in the real world, for “it affords no assurance that there is any such thing in nature” (4.447). Thus, it seems to be very close to the “phaneron”, the unit of Peircean phenomenology (itself close to the Husserlean “noema”), which is anything appearing to the mind, irrespective of its reality status (cf. Johansen 1993: 94ff). In this sense, the Peircean icon is somewhat similar to that of cognitive psychology, for it involves “sensible objects” (4.447), not signs in any precise sense: however, it comprises all sense modalities.

Now it may seem that iconicity, characterised in this way, corresponds rather well to Deacon’s (1997: 74ff) description of not making a distinction, of “just more tree”, “bark, bark, bark...” or “stuff, stuff, stuff...”. The most obvious objection to this is that there does not appear to be any difficulty in thinking any of these things (even if the bird may not think it, in our sense of thinking), as Peirce suggests should be the case with a pure icon. More importantly, however, these are all relational statements, and whatever else Firstness means, it certainly conveys up a world (or, more exactly, a view of the world) deprived of all relations. The contradiction becomes even more patent, when Deacon (1997: 77ff, 300f) identifies iconicity with recognition and category membership, both of which suppose relations, as much no doubt as “compound *iconic* analysis” (my italics). This is the sense in which Deacon’s interpretation of iconicity allows too much. But it is also too little: the iconic sign is a bundle of relations.

To go from the concept of iconicity to the iconic sign, we have to ponder the meaning of a notion, sporadically, but often significantly, used by Peirce, i.e. the notion of *ground*. As applied to signs, I will here

suppose, iconicity is one of the three relationships in which a representamen (expression) may stand to its object (content or referent) and which can be taken as the "ground" for their forming a sign³⁸: more precisely, it is the first kind of these relationships, termed Firstness, "the idea of that which is such as it is regardless of anything else" (5.66), as it applies to the relation in question. In one of his well-known definitions of the sign, a term which he here, as so often, uses to mean the sign-vehicle, Peirce (2.228) describes it as something which "stands for that object not in all respects, but in reference to a sort of idea, which I have sometimes called the ground of the representamen" (Fig. 1).

According to one of Peirce commentators, Greenlee (1973: 64), the ground is that aspect of the referent, which is referred to by the expression, for instance, the direction of the wind, which is the only property of the referential object "the wind" of which the weathercock informs us. On the other hand, Savan (1976: 10) considers the ground to consist of the features picked out from the thing serving as expression, which, to extend Greenlee's example, would include those properties of the weathercock permitting it to react to the wind, but not, for instance, its having the characteristic shape of a cock made out of iron and placed on a church steeple. It seems to me that, in order to make sense of Peirce theory, we must admit that both Greenlee and Savan are right: the ground involves both expression and content. Rather than being simply a "potential sign-vehicle" (Bruss 1978: 87), the ground would then be a potential sign. Such an interpretation seems to be born out by Peirce's claim that the concept of "ground" is indispensable, "because we cannot comprehend an agreement of two things, except as an agreement in some respect" (*CP* 1.551).

³⁸ It should be noted that I will be avoiding peculiarly Peircean terms in the following, as long as no harm is done by that procedure: I will use "expression" for what Peirce calls "representamen" and "content" for his "object": more precisely, I will roughly identify "immediate object" with "content" and "dynamical object" with "referent", though it might have been better to say that the "immediate object" is what is picked out of the "dynamical object" by the ground. For the purpose of this article, I will dwell as little as possible on the "interpretant", which is clearly also a part of meaning, though not in the simple way suggested by Ogden's and Richard's all too familiar triangle. In many of my earlier works, I have argued for a relationship between the ground and the interpretant, and Johansen (1993: 90ff) even claims the latter was historically substituted for the former, but I now think the relationship cannot be that straightforward, for reasons which will partially appear below.

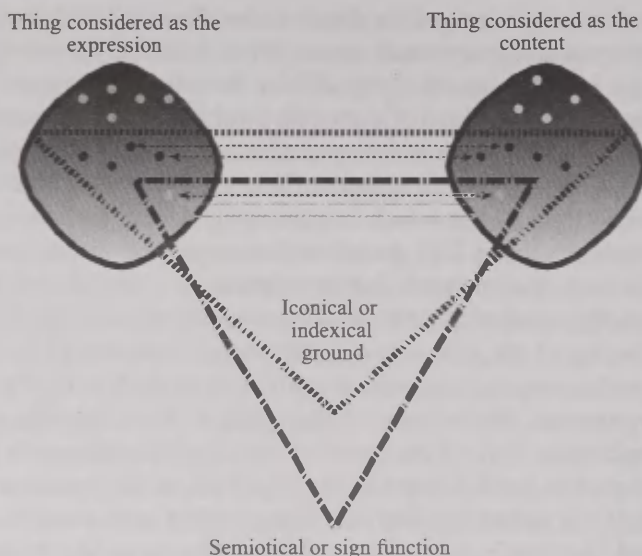


Fig. 1. The sign as a mapping between different spaces, based on different principles of relevance, iconical and/or indexical ground and the sign function. The points are properties of the two things thus put into relation. The arrows are mappings between such properties.

In another passage, Peirce himself identifies “ground” with “abstraction” exemplifying it with the blackness of two black things (*CP* 1.293). It therefore seems that the term ground must stand for those properties of the two things entering into the sign function by means of which they get connected. i.e. both some properties of the thing serving as expression and some properties of the thing serving as content. In case of the weathercock, for instance, which serves to indicate the direction of the wind, the content ground merely consists of this direction, to the exclusion of all other properties of the wind, and its expression ground is only those properties which makes it turn in the direction of the wind, not, for instance, the fact of its being made of iron and resembling a cock (the latter is a property by means of which it enters an iconic ground, different from the indexical ground making it signify the wind). If so, the ground is really a principle of relevance, or, as a Saussurean would say, the “form” connecting expression and content: that which must necessarily be present in the expression for it to be related to a particular content rather than another, and vice-versa (cf. Sonesson 1989a, III.1).

If the ground is a form of abstraction, as Peirce explicitly says, then it is a procedure for engendering types, at least in the general sense of ignoring some properties of things and emphasising others, for the purpose of placing them into the same class of things.³⁹ And if it serves to relate two things ("two black things" for example, or "the agreement of two things" in general), it is a relation, and it is thus of the order of Secondness, i.e. "the conception of being relative to, the conception of reaction with, something else" (*CP* 6.32). All this serves to underline the parallel with the principle of relevance, or pertinence, which is at the basis of structural linguistics, and the semiotics inspired by it (Hjelm-slev and Prieto, notably). But we could take this idea further, adding to the notion of ground a more explicitly constructive aspect. To many structuralists (the Prague school notably), relevance is a double movement, which both serves to downplay non-essential elements and to add others which were anticipated but not perceived: thus, it depends on the twin principles of "abstractive relevance" and "apperceptive supplementation" embodied in Bühler's *Organon* model (cf. Sonesson 1989a, II.4.2), as well as in the Piagetian dialectic between accommodation and assimilation (cf. Sonesson 1988, 1.3.1). Perhaps Peirce himself later abandoned the notion of ground because of its rather static-sounding character.⁴⁰ Interestingly, above I was led to describe what was going on, as "a procedure for engendering types", as a "double movement" from abstractive relevance to apperceptive supplementation", and as a "Piagetian dialectic between accommodation and assimilation". So in spite of the name, it seems we are concerned with a constructive device. Unfortunately, Peirce never gave another name to this phenomenon. Perhaps we should call in "grounding" (if we had not already have had to pay it extra for all the tasks we have given it, as Humpty Dumpty would have said).

Given these preliminaries, it might be said that an indexical ground, or an indexicality, involves two "things" that are apt to enter, in the

³⁹ In this sense, the model presented here (and already in Sonesson 1989a), is similar to that independently proposed by Groupe μ (1992: 124–156; 1995); since both are based on the notion of types mediating between similar predicates, except for the fact that Groupe μ postulates a type only on the side of content. Although Peirce does not specify his terms here, it seems that we are concerned with abstraction in both those senses which Peirce later takes great care to distinguish, the selection of properties ("creating predicates"), and the process of nominalisation ("creating subjects"; cf. Stjernfelt 2001).

⁴⁰ As was suggested to me by John Michael Krois.

parts of expression and content (“representamen” and “object” in Peircean parlance), into a semiotic relation forming an indexical sign, due to a set of properties which are intrinsic to the relationship between them, such as is the case independently of the sign relation.⁴¹ Indexicality, which is a ground, and therefore a relation, is thus basically different from iconicity, which consists of a set of two classes of properties ascribed to two different “things”, which are taken to possess the properties in question independently, not only of the sign relation, but of each other, although, when considered from a particular point of view, these two sets of properties will appear to be identical or similar to each other. This is the sense in which indexicality is Secondness, and iconicity Firstness. As for the Peircean symbol, or generic sign, it is literally groundless, at least until it becomes a sign: there is nothing in the thing serving as expression, nor the thing serving as content which explains the sign relation. The principle of relevance obtaining between the two parts of the sign is produced merely by the sign relation, which is why it is Thirdness (cf. Fig. 2).⁴²

	<i>Firstness</i> Impression	<i>Secondness</i> Relation	<i>Thirdness</i> Habituation/Rule
<i>Firstness:</i> Principle	Iconicity	—	—
<i>Secondness</i> Ground	Iconic ground	Indexicality = indexical ground	Symbolicity = sym- bolic ground
<i>Thirdness</i> Sign	Iconic sign (icon)	Indexical sign (index)	symbolic sign (symbol)

Fig. 2. The relationship between principles, grounds, and signs, from the point of view of Peirce, as revised in the text.

⁴¹ For the discussion of indexicality here and in the next section, see more details in Sonesson (1989a; 1989b; 1993; 1994; 1995a; 1995b; 1996; 1998a; 1999; 2000a; 2001a; 2001c; 2003; in press a, b, c).

⁴² I have always taken Peirce to be committed to the view that, just as indexicality is co-extensive with the indexical ground, using the present terminology, so symbolicity is co-extensive with the symbolic ground as well as with the symbolic sign function. For my part, I rather tend to think that symbolicity also must be able to exist independently of the sign function, if it simply means something like “law-like relations”. If Peirce thinks otherwise, this is no doubt because his sign concept is much broader than mine (for which see the third part of this essay). As he later recognised, it is better termed “mediation”. Fig. 2 takes this difference into account, using a different background for the ground based on habituation and/or rules.

If iconicity is Firstness, but the ground is a relation, which is Secondness, then the only solution, it seems to me, is to admit that, contrary to indexicality, iconicity is not in itself a ground: it is only something which may be used to construct a ground. Perhaps, to use some of Peirce's own examples, the blackness of a blackbird, or the fact of Franklin being American, can be considered iconicities; when we compare two black things or Franklin and Rumford from the point of view of their being Americans, we establish an iconic ground; but only when one of the black things is taken to stand for the other, or when Rumford is made to represent Franklin, do they become iconic signs (or hypicons). Just as indexicality is conceivable, but is not a sign, until it enters the sign relation, iconicity has some kind of being, but does not form a ground until a comparison takes place. In this sense, if indexicality is a potential sign, iconicity is only a potential ground.

Stimulus generalisation and category membership may thus very well be examples of iconic grounds. They are certainly not iconicities, nor iconic signs. And they do not exhaust the domain of iconic grounds.⁴³

As is well-known (though Deacon does not attend to it), Peirce always cross-classifies Firstness, Secondness, and Thirdness in the sense of iconicity, indexicality and symbolicity, with the manifestation of these same general categories as Sinsign, Qualisign, and Legisign, as well as their manifestation as Rheme, Dicent, and Argument. In this way, Peirce manages to make more subtle distinctions, but none of them concern the issues that involve us here. Curiously, as Fig. 2 suggests, the distinctions that *do* interest us may also be expressed as a cross-classification of Firstness, Secondness, and Thirdness with itself, no doubt because Peirce's first trichotomy is really two different ones. However, this difference is hinted at in the work of Peirce, I believe, in oblique ways, with terms such as "genuine" or "pure" as opposed to "degenerate" instances of the three principles. If so, the present reconstruction will at least contribute to make our ideas clear.

⁴³ After discussing indexicality, I will return to iconicity in section 1.5, where I will suggest that Deacon may not be so far from Peirce in his interpretation of iconicity after all.

2.5. The Chinese Room mystery: From the indexical ground to the indexical sign

On the face of it, Deacon's (1997: 77ff) notion of indexicality is less curious than the one he has about iconicity, but it is also very limited. He identifies indexicality with the conditioned reflex. It is a "repeated correlation" between two icons (in the idiosyncratic sense of categories): the smell of smoke repeated over and over again together with flames (index) presupposes the repetition of the phenomenon categorised as smoke as well as the phenomena categorised as flames (icons). This is Deacon's way of absorbing Peirce's contention that all indices contain icons.⁴⁴ Expressed in more ordinary terms, the conditioned reflex depends on a double stimulus generalisation. The advantage of describing perception and learning in terms of iconicity and indexicality, respectively, is, in Deacon's view, to present them as processes of inference and prediction. This is indeed a very Peircean way of looking at our experience of the ordinary world. Indexicality is very intimately connected with abduction, the process by means of which we conclude from one single instance to another.

Numerous definitions of the index, which seem difficult to reconcile, are to be found in Peirce's work; and yet other interpretations are suggested by the examples given by Peirce himself, and even more so, if we also attend to those proposed by latter-day semioticians. According to the paraphrase formulated above, which seems sufficiently broad to account for most of the examples and a fair amount of the definitions, an *index*, is a sign in which *the "thing" which serves as the expression is, in one or other way, connected with another "thing", which serves as its content*. Although the two objects partaking of this relation of indexicality become a sign only by participating in a sign relation, the index relation must exist independently of the former.⁴⁵

In the second place, since there are many conceivable types of connection between two things and, in particular, many ways in which they

⁴⁴ Cf. note 36.

⁴⁵ Normally, this would imply that the indexical relationship precedes the indexical sign function in real time, but there are exceptions to this: some signs create the very contiguity, which make them indexical (for instance arrows and pointing index fingers). In this case, it cannot be true that indexicality is completely independent of the sign function, as Peirce claims. (Cf. discussion about performative indices below and in Sonesson 1989a, I.2.5.)

may be entered into, it is convenient to distinguish various kinds of indices (indexical signs) and indexicalities. This is not the place to enter into any details on the subject of indexicality, but a few varieties must be noted in the following (cf. also Sonesson 1989a, I.2.5; 1989b; 1992a; 1995b; 1999; 2001a). All indexical relations may involve either *contiguity* or *factorality*, that is, the relationship obtaining between the parts and the corresponding whole. Those indexicalities which are not as yet signs, being based on items which are not situated on different levels of directness or thematisation, or which are not clearly differentiated, may be described as contexts (or “pairings”, in Husserl’s sense). Any experience of two elements being related by proximity, conceived as a primordial perceptual fact, can be considered an actual perceptual context involving contiguity. An actual perceptual context involving factorality is any experience of something as being a part of a whole, or as being a whole having parts.

When only one of the items is directly given, and the other precedes it in time, or follows it, we may speak of an *abductive context* (protention and retention, respectively). The term *abduction* is employed here in Peirce’s sense, to signify a general rule or regularity that is taken for granted and which links one singular fact to another. All experience taking place in time is of this kind, for instance our expectancy, when seeing the wood-cutter with the axe raised over his head, that in the following moment, he is going to strike the piece of wood (contiguity protention), and in the moment just preceding, he lifted the axe to its present position (contiguity retention). A case in point would also be the linguistic syntagm before it is completed, the foaming beer and feelings of refreshment, etc. Abductive contexts involving factorality would be, using in part some Peircean examples, the gait of the sailor, the symptom as part of the disease, part and whole in a picture, a partly destroyed Minoan fresco, a jig-saw puzzle, a piece of torn paper (the last three examples combine factorality and contiguity).⁴⁶

When an indexicality has been stabilised, and objectified, into a real sign, it may become an *abductive index*, which can involve contiguity, as in the case of footprints, fingerprints, the cross as a sign of the cruci-

⁴⁶ Although Deacon (1997: 399) at one point seems to deny the capacity of indices for representing future events (or is it only prescription?), he later (Deacon 1997: 465f) actually appears to identify such anticipation with indexicality, as when the animal expects some particular behaviour on the part of another animal, as distinct from deducing them from a “theory of mind”.

fied, the weather-cock (contiguity to the direction of the wind); or factorality, when an anchor is used to stand for navigation, the clock to designate the watch-maker's (as part of the sum total of clocks), or a painting to indicate the painter's workshop. Some of Peirce's examples, and many of those suggested later, are however of another kind, for, instead of presupposing a regularity known to obtain between the "thing" which serves as expression of the sign, and another "thing" which is taken to be its content, they transform something which is contiguous, or in a relation of factorality, to the expression, into the content of the latter. These signs may therefore be termed *performative indices*. With contiguity, they give rise to such phenomena as the pronoun "you", the finger pointing to an object, the weathercock (as marking the here-and-now of the wind), the clock of the watch-maker's (as marking the location of the shop); and with factorality, they may produce the pronouns "I", "here", "now", the finger pointing out a direction, etc.⁴⁷

If we use the term *indicator* to describe signs which are employed to single out an object or a portion of space for our particular attention, all indices in Peirce's sense are certainly not indicators, and those which are cannot sufficiently be characterised by being so classified (cf. Sonesson 1989b: 50ff, 60f; 1995b; Goudge 1965: 65ff).⁴⁸ Not all parts have as their primary function to point to the whole of which they are a part. On the other hand, real indicators, such as fingers and arrows, are equally contiguous to a number of objects which they do *not* indicate, for instance to the things which are at the opposite side of the arrow-head, in the direction to which it does not point (Sonesson 1989a: 47; 1995b). Therefore, something beyond mere indexicality is required, in the case of the arrow, for instance, the forward thrust of the arrow-head as imagined in water, or the sentiment of its slipping from our hands, as Thom (1973) has suggested.

To term certain signs "indicators" is, obviously, to make a categorisation of signs on the basis of their functions, as seen in relationship to

⁴⁷ It is also possible to identify secondary indexical signs, including rhetorical figures known as synecdoches and metonymies. Cf. Sonesson 1989a, 1.2.5 and 1999.

⁴⁸ As pointed out in Sonesson (1995b), there is even a vague sense of "indicator" in which the latter does not have to be an index. As Deacon (1997: 362) observes, pointing is more or less the only universal gesture remaining in human beings, so perhaps it is the ancestor of indicators as well as indices — *nota bene* of indices, not of indexicality, because it is clearly a sign — and this applies to both "imperative" and "declarative pointing" in the sense of Bates (cf. Brinck 2004).

the over-all scenes in which signs are produced. We should not expect this categorisation to coincide with the one stemming from Peirce's classification, which depends on the nature of the relationship between the expression and the referent or content of the sign. Of course, from this point of view, the term "index" is a misnomer, for although the finger so termed may function as an index, its specific function goes beyond that.

If indexical signs are as complex as this, it is obvious that they cannot be identified with conditioned reflexes, as Deacon suggests. But even the indexical ground goes well beyond the conditioned reflex. In fact, there is no necessity for the perceptual context to be repeated over and over again for us to interpret it indexically. One instance of a perceived contiguity or factorality may be sufficient to establish the corresponding indexical relation. And a long series of cases in which the expected contiguity or factorality does not obtain, does not necessarily lead to "extinction", contrary to Deacon's (1997: 82) claim. In fact our anticipation of rain when seeing dark clouds, or, to pick Deacon's own example, of fire when we perceive smoke, is so entrenched a semantical relation that it will not be abolished simply because it cannot always be realised in the world of our experience.⁴⁹

On the other hand, not only is the conditioned reflex an instance of the indexical ground, but so is the unconditioned reflex, whether it is innate or not. In fact, the unconditioned reflex is a pattern of behaviour, which is released, in the temporal and/or spatial *contiguity* of a particular feature of the experimental world (that is, the *Umwelt*). Thus, an indexical ground is formed not only between the sound sequence "food", and the edible substances that a rat may be conditioned to associate with it in the Skinner box, but also between these same substances, and the smell, colour, or other properties which the animal would use in real world circumstances as an identifying clue of the food. It could even be said that, while the unconditioned reflex depend on an abductive context (known regularity), the conditioned reflex is the result of a performative

⁴⁹ As Stjernfelt (2001) points out, the conditioned reflex is already symbolic in Peirce's sense, no doubt because it supposes a regularity. But this only makes sense if Peirce is taken to be talking about mediation, not signs, according to the way these terms are interpreted here. See III below.

context (posited regularity).⁵⁰ However, from the point of view of the animal, this apparently amounts to the same.

However, it does not follow that “the association between the word and what it represents is not essentially distinguished from the kind of association that is made by an animal in a Skinner box” (Deacon 1997: 80). In particular, words like “there”, “Aha!” and “George Washington”, to quote Deacon’s examples, and “shifters” in general, function very differently from conditioned reflexes. Indeed, just like the tracks interpreted by the hunter, which we opposed to the branch of the tree, when discussing the semiotic function, words which “derive reference by being uniquely linked to individual contexts”, can only function as such if, at the same time as they are indexically connected to their context, they are clearly differentiated from it. If not, we would have no use for the real George Washington, once we knew his name. Indeed, Deacon’s (1997: 82) reference to the fable of the Boy Who Cried Wolf is misleading: if we knew for other reasons that the boy was a confirmed liar, or that he was obsessed with wolves, we would not even from the beginning have expected a contiguity between his use of the word “wolf” and real-world wolves. However, if the conviction is sufficiently strong, no reality will ever be able to produce “extinction”, as we have recently seen in the case of Iraqi weapons of mass destruction expected by the American leadership.

An excellent example of the difference between indices and indexicalities is the employment of warlike behaviour as a part of the Yanomamö peace ritual quoted by Deacon (1997: 403ff): if the participants had not made any difference between indexical signs and indexicalities (notably conditioned reflexes), the result would have been war, not peace. Perhaps this is also what Deacon wants to suggest, but he does so with a stereotypical, meaningless, formula, when he explains ritual from the fact of symbols having “a higher meaning” (Deacon 1997: 401f).

Of course, Deacon (1997: 83; cf. 301) knows that there is a difference: he suggests that “indexical power is *distributed*, so to speak, in the relationship between words”. This is reminiscent of the binary reanalysis of the Peircean trichotomy, suggested by Jakobson (1979: 16) long ago, which, much to the displeasure of orthodox Peirceans, combines contiguity and similarity with actual and imputed connection. Ac-

⁵⁰ In the case of an innate releasing mechanism, there is no prior experience of contiguity, but only a contiguity in the situation of release, so the term abductive context seems inappropriate.

cording to this analysis, icons rely on actual similarity, indices on actual contiguity, and symbols on imputed contiguity. There remains a fourth category, based on imputed similarity, which in Jakobson's view, corresponds to the poetic function. In other contexts, I have pointed out several problematic features of this analysis (cf. Sonesson 1989a: 213f). Here, I will only note one of these: it is not clear where the imputed contiguity of symbols is to be located. If Jakobson wanted to refer to the contiguity of expression and content in the mind (which seems the only reasonable interpretation), then of course the same contiguity must also obtain for icons and indices. Contrary to Jakobson, Deacon would apparently accept such a consequence. It also appears more reasonable within the framework of Deacon's theory: the contiguity that he talks about is a contiguity of learning the signs. In our terms, this means that icons, indices and symbols, as opposed to the corresponding grounds, must be learnt in relation to other signs, not in relation to the non-semiotic world. At least, this is how Deacon would have seen it, had he used our terminology. This will be clarified when we turn to the systemic nature of symbolic signification.

Before going on to discuss system character, however, I would like to point to a passage in which Deacon's vague and/or ambiguous concept of indexicality breaks down. It is in his discussion of the Williams syndrome, which he interprets as an incapacity to use index relations, coupled with a hypertrophy of symbolicity, resulting from a reduction of the posterior cerebral cortex and an exaggeration of the cerebellar size (cf. Deacon 1997: 268ff). Victims of this syndrome are verbally highly fluent, and adept at storytelling and the recital of verbal information, but have major cognitive deficits. It is, according to Deacon, as if they had ready access to lexical entries, that is, to the relationships between signs, as found in a thesaurus, but lacked all contact with reality, that is, the objects in the real world, to which the words refer. Thus, they get lost in symbolicity.

Here, Deacon really seems to identify indexicality with the link between the sign and the object in the real world, whereas symbolicity apparently characterises the internal structure of language, where words only point to other signs (an authentically Saussurean vision, as we shall see). This is, as we have already seen, a very reductionist view of indexicality, but it also seems to be in contradiction with what Deacon has said about the same notion earlier, on several levels. First, as an expression having reference (an indicator, notably), an index is certainly a

sign, in which expression and content are differentiated (as in the verbal examples discussed above). It cannot be identified with "conditioned reflexes".⁵¹ Therefore, the patient may well have lost something more than mere indexicality. In the second place, if indexicality as such is unavailable, it seems that this must give rise to deficiencies on even more elementary levels. Third, it should produce problems also for the symbolic capacity, since the latter is described as a transposition of indexicality to the relations between signs, rather than between sign and reality (cf. Deacon 1997: 301). It is true that Deacon (1997: 302) talks about a "symbolic recoding", but the latter appears to consist precisely in the displacement of indexicality into the internal domain of language.

This brings us, in conclusion, to Deacon's (1997: 444ff) interpretation of Searle's *exemplum* of the Chinese Room: the man inside the room who, when he is given a message with a number of Chinese characters, responds by handing back another set of Chinese characters, which he takes out of a book where they are arranged as pairs, thus giving the false impression of understanding Chinese. According to Deacon, this highlights the difference between indexical and symbolic interpretation. The Chinese Room may certainly remind us of the Skinner box. Both, no doubt, are instances of the Black Box: we have no information of what is going on inside. That is, the *exemplum* supposes us not to have any information about what is going on in the room, but of course Searle has given it all away. As such, the Chinese Room does not only obliterate the difference between "symbols" and "indices", but equally that between the latter and mere indexicalities. If the man is really following Searle's instructions, then he is manipulating indexical signs: he is exchanging one token for another, because they are contiguous in the manual, as stated in the rules. But just as would a real Chinese, the Searlean man is producing the same facts on the ground as could a simple computer and perhaps some variety of the Skinnerean rat. From the outside of the Chinese room, we would not only be unable to tell the symbol from and index, but also to distinguish an index from a mere indexicality.

So far, I have tried to show that the nature of the link between two objects that may serve as the expression and content, respectively, of a sign, must be distinguished from the existence of a semiotic function relating these objects. Iconicity, indexicality, and symbolicity only de-

⁵¹ Nor does this seem to me to be a plausible interpretation of the purported indexicality of function words and the like (cf. Deacon 1997: 299).

scribe that which connects the two objects; it does not tell us whether the result is a sign or not.⁵² The advantage of this analysis is not only theoretical clarity. It also allows us to formulate a series of questions, which could not have been conceived previously. It allows us to separate the study of the phylogenetic and ontogenetic emergence of iconicity, indexicality and symbolicity from that of the corresponding signs. However, we will now go on to suggest that the emergence of symbolic signs cannot itself be confounded with that of symbol systems.

2.6. From “tone” to “type”. A note on iconicity as generality and configuration

It may seem that iconicity as such is not really needed in semiotic theory. If so, this could be the reason why Peirce points out that it is more or less impossible to grasp. But it is certainly indirectly needed. Even if iconicity only gains any real existence as an iconic ground, and thus as a relation, the ways in which iconicity and indexicality inhere in relations are different (cf. Fig. 2). Whereas both iconic and indexical grounds require a relation to function, the indexical ground is “about” this relation (its contiguity, its factorality, etc.), but the iconic ground is “about” the object at the other end of the relation. This is no doubt what Peirce wants to say when he claims that the items forming the icon are independent of each other, not only of the sign relation, as is the case of the index. If you think of the portrait painter trying to create the closest possible likeness to his model a literal interpretation of independence immediately becomes absurd — for, in this sense, the portrait can never be independent of its model (cf. Sonesson 2000a).

However, it is possible that “pure iconicity” has a more direct part to play, if not in Peirce’s conception, then at least in Deacon’s theory. Another of the manifestations of the Peircean trichotomy is the distinction between “qualisign”, “signsign”, and “legisign”, sometimes also described with the terms “tone”, “token”, and “type”. The opposition between token and type is straightforward (e.g. the letter “t” which as a

⁵² Of course, Peirce would have said that symbolicity does predict the sign character. I find this problematic, because if symbolicity describes the “general law” which is motivated by neither similarity nor contiguity, then it clearly exists independently of the sign function. There are many rules that are not sign functions. This is true, for instance, of etiquette and the rules of chess.

type only manifests itself once in the sentence "The opposition between token and type is straightforward", although there are 7 corresponding tokens in the sentence), but it is more difficult to make sense of the notion of "tone".⁵³ Contrary to the token, which is an individual instance, the tone seems to share some kind of generality with the type. But it is a kind of immediate impression of generality, not the organised, systematic kind found in the type. It is blackness, but not the category of blackness. It is certainly not recognition. It may be "black again", without "again" being part of the thought.

At least Deacon seems to be on to something like this, although this is really only borne out by his admission, in the section of suggested readings, that he has been influenced by "the classic text on *Symbol Formation* by Heinz Werner and Bernard Kaplan (1963)" (cf. Deacon 1997: 486). Now this is a text of Gestalt psychology, or, more properly speaking, *Ganzheitspsychologie*, but it is not, as far as I understand, much indebted to the well-known Berlin school (with such names as Köhler, Wertheimer, Koffka, Arnheim, etc.), but rather to the Leipzig school, represented, notably, by Krueger, Sander and Volkelt (cf. Sonesson 1989a, I.3.4.). This latter school insisted on the fact that there are wholes present in our experience which are not properly speaking *Gestalten*, that is, not typical configurations standing out from a background which are internally articulated (i.e. which have parts which may in due course be separated). Such non-configurational holistic properties are externally and internally diffuse (i.e. neither their parts nor their limits to other wholes is easy to distinguish), but they may yet be transposed from one context to another. Some properties of this kind are "closure" and "angularity". Another case in point is the child being unable to count who still has the experience of something being "a lot" or "a little". In none of these cases does the experience of sameness require the perception of category identity.

Elsewhere, I have suggested a double distinction between the meanings of meaning (cf. Sonesson 1989a, I.3.4 and I.4.2.): on the one hand, *structure* is opposed to *configuration* (including non-configurational wholes), and on the other hand, there is a distinction between *categories* and *signs*. While structural wholes result from the mutual

⁵³ It is of course no accident that Peirce talks about "qualisigns", which is a term reminiscent of the contemporary discussion of "qualia" (e.g. in Edelman, Tonini 2000). No doubt the philosophical antecedents are the same. However, Peirce is nowhere really preoccupied about how it *feels* to be conscious.

relations between their components, including negative ones, a holistic whole is primarily a delimitation created in the field of perception, a setting up of borders, from which an inner differentiation may later ensue. Structures give rise to categories. But to reach the sign, we need the interrelation of two categories on different levels.

Human language is clearly both categorical and structural. That is also what Deacon thinks. But without pausing to consider, he attributes these properties to symbols in general.

2.7. The house that Saussure built.

From symbols to symbol systems

There is a double irony to Deacon's (1997: 69ff) plea for Peircean semiotics, as opposed to Saussurean "semiology". Not only does he impute to Saussure the very conception of language the Swiss linguist was out to criticise, but he ascribes to Peirce a conception of the symbol which, in a strict sense, is found nowhere in his work and which, in a loose sense, would really apply to all signs. Contrary to Deacon's self-understanding, his semiotics is really Saussurean at heart.

As anybody who has ever read a single paragraph of Saussure knows, his *bête noire* was — in the very terms that Deacon turns against him — the theory that words could be seen "as labels for objects, or mental images, or concepts" (ibid.). Saussure uses the same term ("etiquette") as Deacon to criticise this theory. He would heartily agree with Deacon that word meaning cannot "be modelled by an element-by-element mapping between two 'planes' of objects." Yet this is exactly the reproach that Deacon addresses to Saussure. In fact, Saussure (or the students who put together his *Cours* posthumously) may be responsible for the simple drawing of a circle divided into two halves, the signifier and the signified, but he also observed that such a conception was a gross oversimplification, because what really creates meaning in language is what he called "values", that is, the relations between signs, within an edifice where no terms are positive, and everything depends on everything else. Indeed, Deacon (1997: 70) sounds properly Saussurean when he says that "the correspondence between words and objects is a secondary relationship, subordinate to a web of associative

relationships of a quite different sort, which even allows us reference to impossible things".⁵⁴

In contrast, Peirce claimed no such thing. When Deacon (1997: 96ff) says that symbols do not form "one-to-one associations" but "many-to-one-associations" and "one-to-many-associations", Saussure would certainly agree. This is the very meaning of "structuralism", the linguistic tradition that Saussure is supposed to have initiated. Peirce, however, never discusses this issue. It is true that Peirce maintains that the three parts of the sign may themselves be made up of signs, that is, that the representamen, the object, and the interpretant can be dissolved into new signs, which themselves are made up of signs, and so on indefinitely. But nowhere does he tell us that such chains of signs are not linked by "one-to-one-associations". More crucially, he does not maintain that this model applies only to symbols, let alone linguistic signs. As far as can be gathered from the Peircean canon, the model applies equally well to icons and indices.⁵⁵ Indeed, it is the Saussurean tradition, rather than the Peircean one, which has permitted Eco to oppose the thesaurus model of meaning to the dictionary model. But even in Eco's version, the model applies to all kinds of signs.

In the light of this close correspondence between Saussure's and Deacon's conception of language, it is not surprising that when defining a concept of language which goes beyond the linguistic system, they independently come up with the same examples, such as games, norms of etiquette, and ceremonies. In these cases, the system character of the signs seems to be fundamental to their meaning. But it is not true that this system character translates to all signs, nor to all symbols in the Peircean sense. Indeed, this has always been a problem for Saussurean "semiology", as practised by such French structuralists as Barthes.

The description of system character of language is later rephrased by Deacon (1997: 83ff) as "possibilities of combination". Commenting on the Rumbaugh experiments with chimpanzees, Deacon points to the difficulty of teaching somebody the impossibility of certain combinations. Language has a great number of combinatorial possibilities, but how is a poor ape to learn that "banana juice give" is not one of them? It is impossible to train what is not to be done. Therefore, in order to be

⁵⁴ The latter is a point also made by Bouissac (2000) and Stjernfelt (2000).

⁵⁵ Perhaps there is some justification for Deacon's view, for after all there is a famous quotation from Peirce, according to which "symbols grow". But this conception is nowhere elaborated.

able to use a system, one must at some point recode indexical relations as symbolic ones. There is what Deacon (1997: 92, 95) calls "a symbolic threshold", where the individual gains an insight permitting the reorganisation of the whole system.

Deacon's combinatorial possibilities are reminiscent of the two aspects of the language system, described by Saussure, and later termed the *syntagm* and the *paradigm* by Hjelmslev. The syntagm is the set of signs appearing after each other in a combination of signs. The paradigm is the set of signs that may be substituted for each other at the same place in the syntagm. It is possible to generalise these terms, so that the syntagm is any set of signs appearing together, regardless of temporal and spatial relationships, whereas the paradigm consists of all signs that can be substituted for each other. Thus, the syntagm is made up of conjunctions, and the paradigm of disjunctions. Such a model applies very well to language and to games such as chess, as well as to restaurant menus and clothing, as Barthes has shown. However, as I have demonstrated elsewhere (cf. Sonesson 1992a, b), pictures as such do not have any paradigms and syntagms, although depicted objects (such as clothing) may be organised in that way, as may pictorial styles (the variety of colours permitted, different kinds of perspectives in different parts of the painting, as in Russian icons, cf. Uspenskij 1976; etc.). There are, however, other kinds of visual signs, which are not properly speaking pictures, which could be said to contain paradigms and syntagms, or at least the former: naval flag codes, graphic signs for washing instructions (such as those current in Sweden), traffic signs, etc. On the other hand, while complete gesture systems such as ASL certainly have syntagms and paradigms (which is why contemporary linguists insist on calling them "languages"), that is hardly true about many other kinds of gestures, for instance, emblems such as the V-sign.

It might be supposed that all sign systems have syntagms and paradigms.⁵⁶ We have seen that some kinds of semiotic resources, in which iconic relationships are dominant, such as pictures, do not have system character in this sense. However, it does not follow that, as Deacon (1997: 100) maintains, "there can be no symbolisation without systematic relationships". If symbolicity is to be defined, as in Peirce conception, by the lack of both iconic and indexical motivation, then this does

⁵⁶ In fact, perhaps only paradigms are required. At least on the level of complete units, traffic signs do not allow for any (or only a few) combinations, although they certainly offer a series of choices (cf. Posner 1989 and Sonesson 1998b).

not imply anything about the system character of the signs. It is of course conceivable that there is some kind of "universal" which says that all signs that are constituted by means of symbolic relations are also organised into systems. It may even seem reasonable to argue this point: if signs are not held together either by iconicity or by indexicality, they may need to form part of a system in order not to lose their meaning. Or the other way round: if they are held together by a system, they do not need iconicity or indexicality.

Nevertheless, it is easy to show that this is not the case: if I decide with a friend that each time I have a particular shirt on, I want him to drive me home after the seminar, then this is a clear instance of a Peircean symbol. And yet, if we have not decided that not having this particular shirt on means the opposite, then there will not even be a minimal system. A lot of real world symbols are like that. If my example seems contrived, then this is not the case with the white walking stick used by blind people in some countries. Somebody not using a white walking stick does not convey the message "I am not blind", so there is not even a minimal system. On the other hand, the absence of a flag on the admiral ship does signify that the admiral is not onboard (cf. Prieto 1966: 43ff). The latter thus constitutes a minimal system, but its very minimality puts it on a level rather far from what Deacon is thinking about.

It should be clear by now that Deacon does not, in fact, have any use at all for Peirce's terminology. The system character of language, around which everything turns in the end, is not anything that is relevant to Peirce. The real criteria that define iconicity, indexicality and symbolicity are not interesting to Deacon.

On the other hand, I think that *it is interesting* for us to bring together the topics taken up by Deacon and the issues considered by Peirce. If symbolicity and systematicity are independent variables, then there is a series of empirical questions that may be formulated about them. If all symbols do not form part of sign systems, then is it at least true that all sign systems are made up of symbols? Perhaps semiotic resources of the kind in which iconic and/or indexical grounds dominate do not form sign systems. Then there is the historical issue: do we perhaps need to learn symbols first in the context of sign systems, before we can use them independently, unlike what happens with icons and indices? These are all empirical questions, which should be possible to investigate.

Perhaps a new meaning could be given to the idea often expressed by the Tartu school, which has maintained that verbal language is primary in relation to the "secondary modelling systems", if the latter domain, since it involves systems, is restricted to symbols. In that case, language learning would really be a "semiotic threshold", which is important not only as such, but also for the new possibilities it opens up.

3. The case for relevance. Beyond the Peircean *Umwelt*

The following section has multiple goals. In the first place, I want to consider the "semiotic turn" in a part of biology that is not associated with cognitive science: biosemiotics, as first introduced by Hoffmeyer and Emmeche. In the second place, I will take into account a second interpretation of Peirce, which figures prominently in biosemiotics (but not only there), and which contrasts with my own interpretation in using the term "sign" in a very broad way. I will show that this interpretation leads to quite another conception of meaning, different from the sign, which is best paraphrased by such terms as relevance, filtering, and organisation. However, I will not abandon Deacon: on the contrary, at the end of the section, we will return to him with a vengeance. For it will be suggested that such concepts of meaning as are neglected or conflated with the sign in Deacon's work, and which we have introduced as iconicity (as opposed to the icon) and indexicality (as opposed to the index) are foreshadowed in this broader notion of meaning.

3.1. Reading Peirce hermeneutically: the process of interpretation

In all the earlier discussion, my point of departure has been an interpretation of Peirce, which I have found necessary to develop in order to defend the possibility of there being iconic signs, against such critics as Bierman and Goodman, who oppose to it the so-called *arguments of symmetry and regression*. The former argument says that, since similarity is symmetrical, it cannot explain the sign relation, which is asymmetrical; and the latter says that since all things in the world are similar to others in some respects (notably in relation to general categories such as "animate being", etc.), everything in the world could be a sign of

everything else. Basically, those arguments can be countered by arguing that, apart from being iconic, an iconic sign must also manifest the semiotic function.

I still believe that this conception must correspond to something that Peirce was sometimes thinking about. There is, as we have seen, ample justification for some parts of this interpretation in the Peircean canon. In any case, this interpretation is needed in order to defend the theory against some arguments that have been formulated against it. And yet I think there is another theory in Peirce's work, which is not incompatible with the former, but which is considerably more general. It is concerned with interpretation in a more generic sense. Perhaps this is what Peirce was thinking about when, at a later stage, he discovered that his notions were too narrow, and that, instead of referring to signs, he should be talking about *mediation* or "branching".

In a sense, this theory is about the situation of communication, but it is more akin to what we now would describe as a hermeneutical model than to the model known from the theory of information. In this sense, "a sign is whatever there may be whose intent is to mediate between an utterer of it and interpreter of it, both being repositories of thought, or quasi-minds, by conveying a meaning from the former to the latter" (MS 318).⁵⁷ In some passages, the object is not described as that which the sign is about, that is, to which it refers, in the sense in which this term is used in linguistic philosophy: instead, it is that which incites somebody to produce a sign (which may or may not coincide with the referent). It is in this sense that the object is *Secondness*: it concerns the relation between the reality perceived and the expression produced. Similarly, the interpretant must be seen as the result of the receiver taking in the whole event of the utterer creating an expression starting out from some feature of his experience. Because it refers to the relation between the utterer and that which he reacts to, it is more than an elementary relation, it is *Thirdness*. Indeed, this idea is very well illustrated by the notion of "branching" which Peirce used to characterise his later concept of mediation (cf. Fig. 3).

⁵⁷ Quoted in Jappy, Tony (2000). Iconicity, Hypoiconicity. In: Quiroz, João; Gudwin, Ricardo (eds.), *The Digital Encyclopaedia of Charles S. Peirce*. (<http://www.digitalpeirce.fee.unicamp.br/jappy/hypjap.htm>).

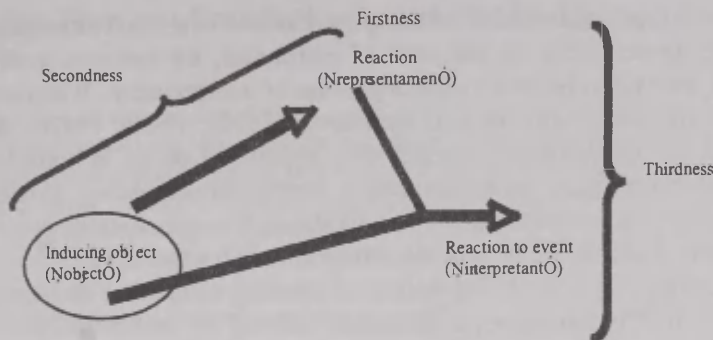


Fig. 3. A reconstruction of the hermeneutical interpretation of Peirce.

In this model, it is easier to understand that the parts of the signs are always also signs. On the other hand, it becomes much more complicated to make sense of the notions of iconicity, indexicality and symbolicity. In particular, it is not easy to see how they can be applied to the relation between the object and the representamen, if the latter is not, in some sense, the referent. Perhaps they should be understood in the sense of the principles, rather than the corresponding grounds, in the sense in which we discussed this in earlier chapters (cf. also Fig. 2.). Firstness, Secondness, and Thirdness, after all, are categories of human understanding, meant to function in the same way as the Kantian categories, that is, as schemes, or, to put it more simply, as filters determining our experience of the real world.

This model does nothing to justify Deacon's usage of the Peircean terminology, because it is too general to have anything to say about the issues that interest him. However, it is useful for the purpose of understanding the ground zero of meaning, semiosis, which may explain why it has been employed within biosemiotics to explicate von Uexküll's notion of meaning.

3.2. The breed that Uexküll bred. Biosemiotics and the Kantian heritage

Although the concept of sign is not clearly defined in Deacon's work, it certainly is a notion central to his concerns. There is, however, a domain

of semiotics within which meaning is addressed in a much more general sense: biosemiotics. In the work of Hoffmeyer, for instance, even the cells are said to be involved in a process of interpretation. When exponents of biosemiotics such as Hoffmeyer (1997a; 1997b; 1997c; 1998) make use of Peircean concepts, they apparently do so in accordance with what we have called the second, hermeneutical reading. However, in order to understand what this is all about, it is more helpful to turn to the principal cultural hero of biosemiotics, Jakob von Uexküll.

Uexküll's (1956; 1973) notion of meaning centres on the environment, the *Umwelt*, which is differently defined for each organism (Fig. 4). As opposed to an objectively described ambient world, the *Umwelt* is characterised with respect to a given subject, in terms of the features which it perceives (*Merkwelt*) and the features which are impressed upon it (*Wirkwelt*), which together form a functional circle (*Funktionskreis*). According to a by now classical example, the tick hangs motionless on a branch of a bush until it perceives the smell of butyric acid emitted by the skin glands of a mammal (*Merkzeichen*), which sends a message to its legs to let go (*Wirkzeichen*), so that it drops onto the mammal's body. This starts a new cycle, because the tactile cue of hitting the mammal's hair incites the tick to move around in order to find its host's skin. Finally, a third circle is initiated when the heat of the mammal's skin triggers the boring response in order for the tick to drink the blood of its host. Together, these different circles consisting of perceptual and operational cue bearers make up the interdependent wholes of the subject, corresponding to the organism, and the *Umwelt*, which is the world as it is defined for the subject in question.

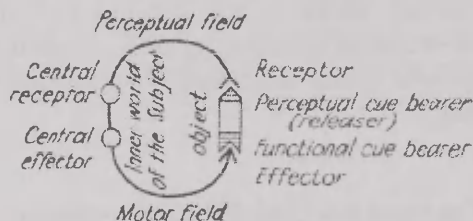


Fig. 4. The model of the *Umwelt* [functional cycle] according to Jakob von Uexküll (1973 [1928]: 158).

Quoting Thure von Uexküll, Ziemke and Sharkey maintain that this model

contains all the elements which are part of a sign process, and whose interaction forms the unity of a semiosis: an organism is the subject (or interpreter), certain environmental signals play the role of signs (or interpretanda), and the organism's biological condition determines the behavioural disposition (or interpretant). The object (interpretatum), on the other hand, can be harder to identify using common sign-theoretical concepts, since for the organism, e.g. the tick, it does not necessarily exist as an abstract entity, e.g. 'a mammal', but might only have temporary existence as different semiotic objects and the bearer of varying meanings, e.g. three different ones in the tick's case. (Ziemke, Sharkey 2001: 709)

As is clear from the terminology, this conception of the "sign process" has little to do with Peirce, but owes a lot to Morris' behaviourist reinterpretation of the former. Even Peirce often uses the word "sign" in the sense of expression ("representamen"), but he certainly does not talk about the interpretant as a set of "behavioural dispositions"; however, it is perhaps not all too unreasonable to see the functional (or operational) cue bearers (*Wirkzeichen*) as being some variety of interpretants.

In any case, Ziemke and Sharkey's remark about the object is certainly judicious: that the object is, strictly speaking, nowhere to be found.⁵⁸ In fact, they go on to quote an early text by von Uexküll, in which he says that "in the nervous system *the stimulus itself does not really appear* but its place is taken by an entirely different process" (my italics). Uexküll calls this a "sign", but it should be clear that it does not in any way fulfil the requirements of the semiotic function. Indeed, expression and content are not differentiated, already because they do not appear to the same consciousness. The butyric acid is there to the tick; the mammal is present only to us.

If we return to our earlier reconstruction of the Peircean sign process as a hermeneutic act (Fig. 3), we will discover that what is lacking is real Thirdness: the reaction to the primary reaction, that is, the reaction which does not respond to a simple fact (Firstness), but to something which is already a reaction, and thus a relation (Secondness). Without having to enter into the earlier discussion of differentiation, we see that, from a strictly Peircean point of view, there is no Thirdness for the tick:

⁵⁸ As we shall see, the object is there, in a way, both as "immediate object" (the cues) and as "dynamical object" (the mammal).

it does not respond to any relationship, since it is not aware (even in the most liberal sense of the term) of any second item (the mammal) to which the first item (the butyric acid) stands in a relation.

In fact, things are even more complicated. In a true sign relation, the mammal is not really the object, in the Peircean sense, for which the butyric acid is the representamen. Or, to be more precise, it is not the "dynamical object". At the very most, it is the "immediate object". It will be remembered that while the "immediate object" is that which directly induces the sign process, the "dynamical object" is something much more comprehensive, which includes all those things which may be known about the same object, although most of them are not present in the act of inducing. Indeed, the dynamical object is that which corresponds to the potentially infinite series of different interpretants resulting from the same original immediate object (cf. Fig. 5). It should be clear that, for the tick and similar beings, there can be no distinction between direct and dynamical object, because there is no room for any further development of the chain of interpretants. In this sense, Deacon's idiosyncratic reading of Peirce, according to which only signs such as those found in human language (his "symbols") give rise to chains of interpretants seem to have some justification — in reality, if not in Peircean theory.

We here enter a quite different, obviously Kantian domain: the mammal has become, to the tick, *das Ding an sich*, of which it can have no real knowledge. In a way, however, we are on familiar ground. It will be remembered that the categories of Firstness, Secondness, and Thirdness were designed by Peirce to occupy the position of the Kantian categories, that is the forms in which the world is given to us. More relevant, in the present context, however, is the presence of a concept of meaning within the Peircean sign concept that is similar to that of von Uexküll: the notion of ground. As I have pointed out elsewhere (and as Søren Brier 2001 has independently noted) the ground accounts for the difference, among other things, between the immediate and the dynamical objects. The butyric acid, the hairiness, and the warmth form the immediate objects of the tick, and we would expect the mammal as such to be the dynamical object. The difference, however, is that there is no way that the tick, unlike human beings, may learn more about the dynamical object than that which is given in the immediate one. Therefore, there is strictly speaking no difference between immediate and dynamical object to the tick.

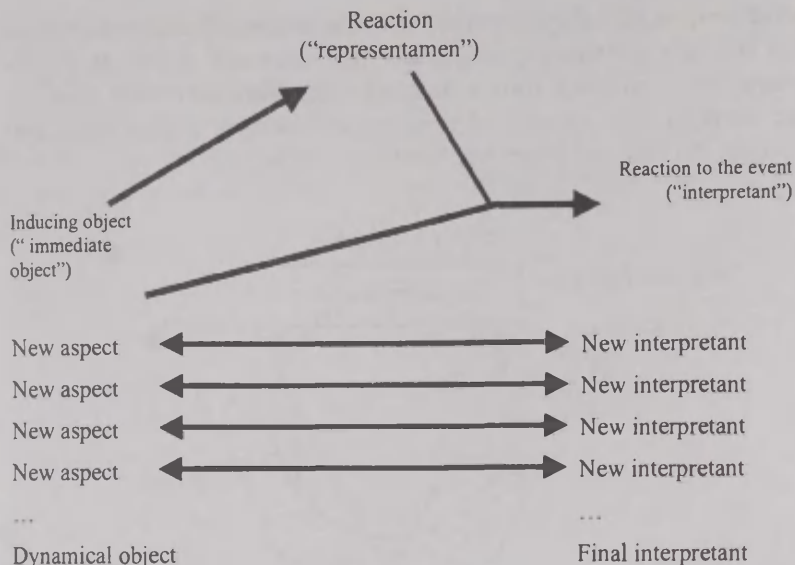


Fig. 5. A more complete reconstruction of the hermeneutical interpretation of Peirce's theory. New aspects are parts of the dynamical object (just as the immediate object) and are the support of new interpretations, which form a series.

Meaning here appears as a kind of "filter": it lets through certain aspects of the "real world" which, in its entirety, is unknowable, though less so for human beings than for ticks. Yet, as even Uexküll insists, it would be wrong to see the tick's world of experience as just a series of features extracted from reality. They are also organised into a whole. Indeed, this can best be expressed in terms of another Kantian philosopher, Karl Bühler, who talked about the principles of "abstractive relevance" and "apperceptive supplementation", where the first principle accounts for the neglect of such physical properties as are not endowed with meaning, while the second one explains the projection to the meaningful experience of properties not physically present in perception (Fig. 6). In fact, Bühler tried to explain the same linguistic phenomena as Saussure and Hjelmslev described in terms of "form" as opposed to "substance": the fact that certain properties of a physical sound may vary a lot without the units of meaning (the phoneme, the word, etc.) being changed; and that other properties which are not physically present may yet be

perceived, because they are expected in the context. It can now be seen that Bühler's principles of abstractive relevance and apperceptive supplementation go much further than the sign. They have been found in the studies of the systems of cooking and clothing realised by Lévi-Strauss, Barthes, and others (cf. Sonesson 1989a).

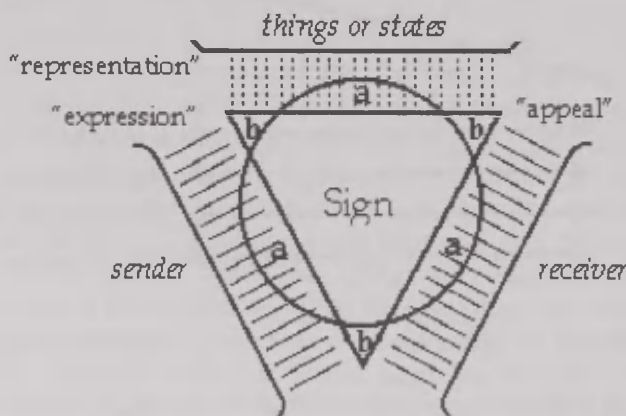


Fig. 6. Bühler's *Organon* model (with (a) 'abstractive relevance' and (b) 'abstractive supplementation'), from Bühler 1978 [1934]: 28.

The same general idea is found in the work of the cognitive psychologist Fredrick Bartlett (1932: 32, 44), who introduced the concept of scheme to account for our "*effort after meaning*". Bartlett used the notion of scheme in his studies of memory, in order to explain the successive modifications which a story stemming from an alien culture was subjected to, as the experimental subjects were asked to recount it from increasing temporal distances; but also in order to explain how one and the same drawing was transformed in later reproductions from memory, in different ways according as it had been labelled the first time as a pair of glasses or as a dumbbell. The scheme is to Bartlett "the setting which makes perceiving possible", and, more precisely, it is "an active organisation of past reactions, or of past experiences, which must always be supposed to be operating in any well-adapted organism's response", with the result that responses do not occur in isolation, but "as a unitary mass" (Bartlett 1932: 201). The last definition (in spite of introducing a

socio-historical dimension) is reminiscent of Uexküll's notion of *Umwelt*.

This notion of schemes was used before Bartlett by Janet and Halbwachs, and it has been taken up later by Piaget, as well as by the phenomenologist Alfred Schütz (1932; 1967). It has of course also become a fundamental concept in cognitive psychology, linguistics, and artificial intelligence, but perhaps sometimes with a lower intentional depth. Elsewhere, I have summarised the results of these studies in the following way (Sonesson 1988): a scheme is *an overarching structure endowed with meaning, which, with the aid of a relation of order, in the form of syntagms and/or paradigms, joins together a set of in other respects independent units of meaning*. Among its further properties, two, in particular, are to be noted here: (a) schemes contain principles of relevance which extricate from each ineffable object such features as are of importance relative to a particular point of view (this is Piaget's assimilation, and the principle of abstractive relevancy, according to Bühler 1978 [1934]); (b) schemes also supply properties missing from the ineffable objects, or modify the objects so as to adapt them to the expectancies embodied in the schemes (this is another aspect of Piaget's notion of assimilation, and what Bühler terms apperceptive supplementation; also, it is involved in what Halbwachs (1925; 1950) and Bartlett (1932) call reconstruction).⁵⁹

Returning to modern-day biosemiotics, it can be easily shown that what these authors are involved in has nothing to do with meaning as sign function, but very much with meaning as relevance, organisation, configuration and/or filtering. In their early joint paper, Emmeche and Hoffmeyer (1991: 4), point out, in criticising the concept of information in information theory, that they are interested in "*a difference that makes a difference to somebody*". They go on to say that living beings "*respond to selected differences in their surroundings*" (their italics in both cases). This formulation clearly invokes relevance, and even some kind of filtering device. Later on in the paper, however, when the Peircean sign concept is introduced, the DNA-sequence of the gene is said to be the representamen, the protein its object, and the interpretant the cellular-biochemical network. It is difficult to detect any sign function

⁵⁹ Some schemes incorporate (some of) the results of their own use on ineffable objects, and are themselves changed in the process, which is what Piaget calls *accommodation*, and perhaps what Lotman calls "internal recoding". Cf. Sonesson 1988, II.1.3.3.

here, in the sense in which we have defined it. According to our authors, the contribution of Peircean semiotics is to show us that “the field of genetic structures, or a single gene, cannot be seen in isolation from the larger system interpreted” (Emmeche, Hoffmeyer 1991: 34). This certainly suggests meaning as a whole or a configuration. In a later paper, Emmeche (2002) sets out to show that in the living being function and meaning are the same. This can also be demonstrated, simply because Emmeche understands meaning in the sense of function: the relation of the part to the whole. But even in this article, there are traces of the filtering concept of meaning: we learn that “the whole operates as a constraint”. Indeed,

Saying that *cytochrome c* means something to the cell is the same as saying that it has a function. It is not just any molecule. We could well synthesise small proteins and artificially introduce them into the cell. They would be without importance or they would be dysfunctional or, with certain fortuitous strokes of luck, they would actually fulfil some function in the cell. (Emmeche 2002: 19)

This implies that the meaning of the enzyme “is structural” in the sense that “the cell’s molecules form a system of dissimilarities (like the elements of language in Saussure” (Emmeche 2002: 20). This is of course true to the extent that there are relevancies in cells, in particular if these relevancies result from a system of oppositions, like those of Saussurean language. From this point of view, everything that is in the cells is also in language. But the opposite cannot be true. There is, of course, no semiotic function as we have defined it. Indeed, the semiotic function may be a function: but it is an external relationship between an expression and a content that are differentiated from each other.

It may be useful to distinguish two elements which often go together, both in Uexküll’s notion of *Umwelt* and in the concept of scheme: *organisation*, which may derive from structure or configuration, and *relevance*, which may or may not be a result of organisation. It is clear that in language, as Saussure understands it, relevance is a result of organisation, and more exactly of structure. In Uexküll’s notion of *Umwelt*, it rather seems to be a product of the configuration.⁶⁰ Lacking the competence, I prefer not to pronounce myself in the case of genes.

⁶⁰ My reason for saying so is that Uexküll insists that the three properties to which the tick reacts form a whole, or an experiential world, to the animal. This is the sense in which the *Umwelt* is a subjective concept (cf. Brier 2001). In denying

It is useful also to distinguish relevance from filtering, although they do have something in common: the picking up of a limited set of features from the totality of the environment. However, *relevance*, strictly speaking, does not exclude anything: it merely places some portions of the environment in the background, ready to serve for other purposes. Thus, in the case of language, properties, which are not relevant for determining the meaning of the words and sentences, still may serve to inform us about the dialect, or even identify the person speaking (Hjelmslev's "connotational language"). Indeed, relevance lets the difference between immediate object and dynamical object subsist, in the vague sense which they retain in the hermeneutical interpretation of Peirce: that which is directly given, in contrast to that which is potentially given for further exploration. Thus, the principles of "abstractive relevance" and "apperceptive supplementation" still apply. In contrast, *filtering* simply strikes out that which is not let through the filtering device.

The difference between relevance and filtering no doubt has something to do with the capacity to be aware of the borders of one's *Umwelt*. It requires some kind of "metacognition", or, as cognitive scientists are wont to say, "a theory of mind". To the tick, to paraphrase Wittgenstein, the limits of its language are the limits of its world, but not so to human beings. Or rather, the limits of our *Umwelt* are not the limits of our *Lebenswelt*.

3.3. The *Umwelt* as *Lebenswelt*: from neural networks to Jakobson's law

Edmund Husserl introduced the term "Lifeworld" to describe the world taken for granted and shared by all human beings, as opposed to the constructed world of the physical sciences.⁶¹ Smith (2000; Smith, Varzi 1999) invokes ecological terminology to describe the *Lifeworld* as the niche in which human beings stake out their life. It is found on a

the robot an *Umwelt*, Emmeche (2001) also puts his emphasis on the experiential whole. Not being a biologist, I have some difficulty seeing why we have to suppose any connectedness between the features to which the tick reacts.

⁶¹ This is thus not the same concept of the "Lifeworld" referred to by Habermas, which is opposed to the "System world". From a Husserlean point of view, the latter would remain a part of the former.

mesoscopic level, in between the microscopic and the macroscopic levels described in physics, but, in Smith's view, this level is real in the same sense as the latter two. If it is a niche, then it could perhaps also be described as an *Umwelt*.

Curiously, there is at least one other domain of semiotics, which shares with biosemiotics a concept of meaning that has nothing to do with signs. It is the semiotics of culture, as first defined by the Tartu school. In cultural semiotics, something has a meaning to the extent that it is part of our particular portion of the Lifeworld, what is, from our egocentric perspective, the Culture. Something coming to Culture from the outside, Non-culture, must first be translated into a text of Culture in order to acquire meaning. If it is declared a non-text, it loses its meaning (cf. Sonesson 1998a; 2000b; 2004). Thus, Culture takes the form of a filtering device. Indeed, if we follow the criteria offered by the Tartu school for the definition of culture, the latter even seems to have a lot to do with meaning as organisation, as scheme of interpretation, that is, as *Umwelt*. This may seem in many ways a limited model of the world, but it does account for some ways in which we tend to think about the relationship between different societies, in the contemporary world as well as throughout history.

According to the phenomenologist Aron Gurwitsch (1974), we may talk about different sociocultural lifeworlds, apart from the common structures of the Lifeworld, which we all share as human beings. Such a socio-cultural lifeworld would then correspond to a culture, in the sense of cultural semiotics. However, the phenomenologist Alfred Schütz (1967) suggested there really are "multiple provinces of meaning", such as dreaming, religious experience, the art world, the play world of the child, and that esoteric practise we know as science. The peculiarity of the Lifeworld, in this context, is that it offers access to the other worlds, and is accessible to all of them. In this sense, the human *Lebenswelt* is different from the *Umwelt* of other animals. Or at least it has the capacity to be different.

In Peircean terms, human beings may reach for the dynamical objects beyond the immediate ones. They may try to transform Non-culture into Culture. However, as Wittgenstein observed, even if we had a common language game, we would perhaps not have so much to talk about with a lion. The lion, presumably, does not try to go beyond his own *Umwelt* to grasp the properties of the objects that lie behind it. There is, so to speak, no dynamical object beyond the immediate one to

him. And this is why there may not be much hope for us ever being able to discuss semiotics with a chimpanzee.

In spite of his background in biology, Deacon's concept of meaning is certainly not that of biosemiotics. To all appearance, relevance carries no interest to Deacon, and organisation only becomes interesting at a level of complexity that has nothing to do with the *Umwelt* of the tick. The biosemioticians and Deacon go fishing for very different concepts in the Peircean current of ideas. And yet I think our reconstruction of the biosemiotic concept of meaning will allow us to understand much better a crucial part of Deacon's theory.

It will be remembered that one formulation given by Deacon to what I have termed Deacon's problem is the difficulty of explaining the non-existence of simple languages, that is, something which is similar to human language while being in some respects less complex. As a correlate, consider the fact that children, at an age when they are unable to learn many other things (because of their inability for sustained attention, their brief span of working memory, etc.), are better at learning language than they will ever be later. Together with the fact that the language data offered the child, that is, existing languages, are under-determined with relation to the rules, this observation prompted Chomsky's postulation of a "universal grammar" functioning as a kind of innate "language acquisition device". However, Deacon (1997: 122ff) very plausibly suggests that these facts can be given another explanation. It is, as he puts it, the very immaturity of the child that allows it to discover language structure. Taking a clue from Elisa Newport, he suggests that "less is more": children's advantages consist in their not being able to take in all there is. Jeff Elman, quoted by Deacon (1997: 129ff), showed that while an unconstrained neural network could not pick out correctly the structure of a language sample, because it got bogged down by low-level regularities, the network produce much more adequate results when starting out from a small sample of simple sentences which was gradually extended, or when "noise" was periodically introduced into the machinery. If this is what happens when children learn language, innate rules of universal grammar are not needed.

Deacon's own interpretation of these facts is reminiscent of our discussion in the last section. First, he claims that, in the neural network, "what was available for learning at early stages was 'filtered' [...], so that only some aspects of the input were available at any time" (Deacon 1997: 134). Here the very term of "filtering" appears. Then, proceeding

to talk about children, he suggests that "the relevant large-scale logic of language 'pops out' of a background of other details too variable for them to follow, and paradoxically gives them a biased head start" (p. 135). This passage more directly suggests the concept of relevance. Perhaps we should not disregard this difference in terminology. Relevance, as opposed to filtering, implies the availability of a dynamical object, beyond the immediate one. It roughly corresponds to what Vygotsky calls the "zone of proximal development".

If the *Umwelt* is an organised network of filters and/or relevancies, as I suggested in the last section, maturing in the child seems to consist in breaking out of one *Umwelt* and going on into another, broader one, until reaching the human *Lifeworld*. Between each *Umwelt* and the next, which encompasses it, there is always a zone of proximal development. In this sense, ontogenesis itself forces us to go through a series of "finite provinces of meaning", in the sense of Schütz. A temporal dimension is thus added. If it is still needed, it might also be said that, from the earliest stage to the later ones, with the introduction of structure, the child also passes from features in the form of Peircean "tones" (Deacon's icons) to "types".

Understood in this way, our Russian doll model of *Umwelten* does not lack precedents. One clear case seems to me to be Jakobson's (1942) conception of the development of phonological distinctions, which, according to his claims, follows a more or less fixed order in all the languages of the world. Jakobson's law really comprises three distinct theories: about the language learning of the child, the language loss of the aphasic, and the common traits of all languages. As I noted in another context (cf. Sonesson 1989a, 1.3.4), none of these systems of precedence relations (except perhaps the last) necessarily coincides with the set of units that the normal adult perceives in his language, in particular if this is a system "où tout se tient", as the structuralist saying goes. In the heyday of universalism, Jakobson's theory was interpreted as involving a subset of language universals, together with the colour terms, and of course Chomsky's syntax (cf. Holenstein 1985). But just as Deacon says with reference to the precedence relations between colour terms according to the theory of Berlin and Kay, there is no need to interpret Jakobson's system as being in any sense innate. At least as applied to the child, the principles simply say that it starts out attending to only that which is common to a set of similar units in the language of

the adult. The rest is "filtered" out, but remains at the margin, being incorporated in later versions of the child's *Umwelt*.

When I referred to Jakobson's law in an earlier publication, my main purpose was to find out to what extent a parallel development could be found in quite a different domain, that of visual shapes (cf. Sonesson 1989a, II.3.6. and note 9 to I.1.). For our present purpose, this is interesting to the extent that it would show that such principles, if they are at all innate, are not specific to linguistic development. There unfortunately are very few empirical investigations to base any such theories on. Therefore, the main basis of my discussion was Lotte Hoffmann's (1943) investigation into the way children, between 2.2 and 9.7 years of age, behave when they are urged to imitate some simple geometrical configurations using readymade material, like sticks, plates, and rings.⁶² The youngest children offer what Hoffmann (1943: 39ff) calls "Etwaslösungen", i.e. the solution through anything whatever. Interestingly, no matter which configuration is imitated, the objects used are predominantly the round ones and those that are filled rather than those having contours. Later the child will produce "Sowaslösungen" (Hoffmann 1943: 55ff), again using only one piece, not to imitate proper parts of the configuration, but to render properties, or attributes, of the configuration, such as being closed, angular, pointed, having holes, and so on. Even though all configurations have contours, and some are angular, the child will often choose objects to imitate them which are filled and rounded, and which furthermore share some other property with the object imitated. Unfortunately, Hoffmann's indications are insufficient to build an hierarchy as complete as that suggested by Jakobson, but at least we can sketch a provisional model, in which an initial "tone" of "anything at all" is represented by a filled circle, which later gives way to a distinction between the straight line and the filled circle, further branching out into the opposition between the filled and the contoured circle.

The general principle thus seems to hold true. Of course, this happens much later in child development, and it is most definitely a case of relevance rather than filtering: the child certainly perceives everything that is does not care to represent.

⁶² Explanations based on the child's limited manual dexterity could be ruled out because of the ready-made material used for the task.

4. Concluding remarks

In this essay, I have tried to show that semiotic concepts in general, and the concept of sign in particular, are useful for discussing many of the issues relevant to cognitive science. More specifically, I have suggested that scholars who, like Deacon, take an interest in semiotical development, need to use a more complex terminology when talking about phenomena endowed with meaning. The semiotic function, it has been suggested, is quite separate from iconic, indexical, and symbolic grounds, and may or may not be combined with them. And system character may be found or not in symbolic signs. The advantage of this terminology is first and foremost to allow for the formulation of a series of questions which may be empirically investigated, bearing on the systematic as well as temporal interconnectedness of symbolicity, the sign function, and systematicity. Specifically, by defining the sign independently of the particular type of motivation connecting expression and content (iconicity, indexicality, symbolicity) as well as of the system character joining it to other signs, a number of hypotheses concerning semiotic development (in phylogeny and ontogeny) can be formulated and tested. Even if iconicity and indexicality as such precede the emergence of the sign, it is conceivable that true signs first appear as symbols. And even if system character and arbitrariness come together in verbal language, it is possible that they are quite independent, or that one of them serves as the cause of the other. Deacon's theory embodies a specific hypothesis within this framework: that sign function, symbolicity and system character necessarily go together. But he presents no theoretical or empirical arguments for this hypothesis. He takes the relationship for granted.

In the second part of the essay, we looked at a much broader concept of meaning than that of the sign, used in biosemiotics as well as in cultural semiotics, and we showed that it was not only a prerequisite for the sign, but that it also had a use of its own. Even if meaning, in this general sense (as organisation and most of all as relevance) is implied in the sign concept, we cannot know whether it is contemporaneous with it, or develops even earlier. In this case, however, the second hypothesis sounds more reasonable. Indeed, we used Deacon's description of how language learning is possible to illustrate the workings of this broader concept of meaning, and we added a parallel from the development of visual shapes. In the end we therefore had to conclude, not only that by

making our terminology clear, we can shed some new light on Deacon's theory; but Deacon's ideas have also helped in developing some fragments of the theory of semiotic development.

It has been suggested by Kalevi Kull (2005) that there is a primary semiotic threshold opposing physics (that which is not alive) to biology (living things, including internal biological processes, known since Sebeok as endosemiotics), and that there is a secondary semiotic threshold, which opposes the latter to that which is language-like (discussed in sociology and semiotics of culture).⁶³ In view of the earlier discussion, it seems to me that further thresholds could be usefully introduced (Fig. 7). I would posit the first threshold, just as Kull does, between that which is not alive and that which is alive: non-semiotic vs. semiotic. I would, however, separate that which only becomes meaningful to the investigator, such as endosemiotic processes, from that which can only function as such when seen as semiotic, which would oppose that which is purely meta-semiotic to that which is semiotic *sui generis*. Within the latter domain, I think we should at least separate purely mediational semiosis from sign-based semiosis. This latter distinction is the one which is at stake in Deacon's book. It is, also, I think, the one with which we must be involved, if we really want to understand the difference between human beings and other species.⁶⁴

⁶³ Lecture given in the framework of the SGB-seminars [*Språk, gester och bilder* — "Language, Gestures and Pictures in the Perspective of Semiotic Development"] at Lund University, May 20, 2006.

⁶⁴ *Acknowledgements.* I would like to acknowledge the stimulating comments offered on an earlier version of this paper by the members of the project "Language, gesture, and pictures from the point of view of semiotic development". In particular, I have learnt a lot from Jordan Zlatev's extensive and thorough critique of several versions of the text. Moreover, the discussions of some papers by Hoffmeyer, Emmeche, Kull and Brier during some of my Semiotics Seminars in Lund have been very enlightening. A preliminary version was "published" on the net as Working Paper 3 of the SGB project. Since then I have received some observations by John Michel Krois. In addition, Paul Bouissac (2000) and Frederik Stjernfelt (2000; 2001) have pointed out to me that they have published reviews of Deacon's book, which is a fundamental theme of the first part of this essay. Also, Sara Lenninger directed me to the review of Deacon written by Lumsden (2002). Although I was not aware of these texts when writing the earlier versions of this paper, we all agree that Deacon's understanding of Peirce is faulty. Stjernfelt and Bouissac note, as I do, that Deacon is closer to Saussure than he likes to think, and Lumsden claims, just like me, that the Peircean terminology serves to obscure Deacon's own central issues. However, the thrust of the present argument is entirely different. Finally, I would like to thank Ingrid Nilsson for her spon-

non-semiosis	not-alive		physics
<i>first threshold</i>			
(pure) meta-semiosis	alive but not given to everyday perception	so-called endo-semiotic processes	biology
<i>second threshold</i>			
mediational semiosis	that which only functions as such when seen as meaningful	perception, organisation, perceptual categorization, etc.	biology as ethology, ecology, etc.; psychology of perception and cognition
<i>third threshold</i>			
sign semiosis	that which only functions as such when seen as meaningful and differentiated	signs and sign systems such as language, pictures, gesture	psychology of cognition, cognitive science, visual semiotics; sociology, anthropology, semiotics of culture

Fig. 7. The three thresholds of semiosis (cf. Kull 2005: 181, Table 1).

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Значение значения в биологии и когнитивных науках: семиотическая реконструкция

Цель статьи — объединить разные концепции значения, разработанные в семиотике, биологии и когнитивных науках, чтобы стало возможным формулировать вопросы, касающиеся эволюции. Концепция знака в семиотике, как и понятие репрезентации в когнитивных науках, зачастую либо использовались настолько широко, что стали бессодержательными, либо же их отвергали вообще. Мои более ранние исследования о понятиях иконичности и «картинности» заставляли меня формулировать понятие знака в традиции как Пирса, так и Соссюра. Мои работы последнего времени об эволюции семиотических средств (как, например, язык, жест, картина) доказали необходимость обращения к более точному понятию знака. Для дефиниции понятия “знак” я опираюсь на понятие *семиотической функции* (в понимании Пиаже) и на понятие *аппрезентации*, взятое у Гуссерля. В первой части настоящей статьи я сравниваю семиотику и когнитивные науки, в особенности в связи с трактовкой параллельных понятий *репрезентация* и *знак*. Вторая

часть касается книги Терренса Дикона *The Symbolic Species*, которая является до сих пор самой влиятельной попыткой объединить семиотику и когнитивные науки. Я показываю, что употребление Диконом понятий иконичность, индексальность и символичность является не только противоречащим канону Пирса, но и довольно бесплодным для понимания эволюции и развития семиотических средств. Именно это является причиной, почему я предпочитаю отгородить понятие знака от понятий иконичности, индексальности и символичности, которые только при комбинировании со знаком могут стать основой для иконов, индексов и символов, но которые имеют кроме этого и другое, более элементарное употребление в области перцепции. В третьей части рассматриваются некоторые биосемиотические употребления понятия значения, которые расходятся с пониманием знака, представленным в первой части. Тут мы имеем дело с значением в его общем, связанном с отбором и организацией, значении. Хотя я считаю возможным соотнесение пирсовской интерпретации с идеей функционального круга Юксюлла и со значением как функцией, как это описывают Эммехе и Хоффмейер, — все же я утверждаю, что подобное понимание значения отличается от концепта, содержащегося в знаке. В заключение я предлагаю, что для охвата различий “значения” (в широком смысле) и “знака” (специфицированного в традиции Пиаже-Гуссерля) нужно использовать большее количество порогов значения, чем это предлагается, например, Калеви Куллем.

Tähenduse tähendus bioloogias ja kognitiivteadustes: semiootiline rekonstruktsioon

Artikli eesmärgiks on ühendada semiootikas, bioloogias ja kognitiivteadustes välja arendatud tähenduse kontseptsioone viisil, mis võimaldaks evolutsiooni ja arenguga seotud küsimuste formuleerimist. Märgi kontseptsiooni semiootikas, nagu ka representatsiooni mõistet kognitiivteadustes on kasutatud kas sedavõrd laiana, et nad on muutunud peaaegu sisutuks, või on nad pikemata tagasi lükatud mõne eelarvamuse tõttu nende tähenduse kohta. Mu varasemad uurimused ikoonilisuse ja pildilisuse mõistete kohta on sundinud mind sõnastama märgi mõiste vaikumisi eeldatud tähendusi nii Saussure'i kui Peirce'i traditsioonis. Mu viimase aja tööd semiootiliste vahendite (nagu näiteks keel, žest ja pildid) evolutsiooni ja arengu kohta on tõestanud vajadust pöörduda täpsustatuma

märgi mõiste poole. Et defineerida märki, võtan ma lähtekohaks *semiootilise funktsiooni* mõiste, nii nagu seda on iseloomustanud Piaget, ja *appresentatsiooni* mõiste, nagu seda on defineerinud Husserl. Käesoleva artikli esimeses osas vaatlen ma kognitiivteaduste ja semiootika mõningaid sarnasusi ja erinevusi, eelkõige seoses paralleelsete mõistetega *representatsioon* ja *märk*. Teine osa puudutab Terrence Deacon'i teost *The Symbolic Species*, mis on seni ilmselt kõige olulisem katse ühendada kognitiivteadusi ja semiootikat. Ma näitan, et mõistete ikoonilisus, indeksiaalsus ja sümbolilisus kasutus Deaconi poolt pole mitte ainult väär Peirce'i kaanoni suhtes, vaid ka üsna kasutu, mõistmaks semiootiliste vahendite evolutsiooni ja arengut. See on põhjuseks, miks ma eelistan eristada märgi mõistet ikoonilisusest, indeksiaalsusest ja sümbolilisusest, mis alles kombineerudes märgiga saavad panna aluse ikoonidele, indeksitele ja sümbolitele, kuid millel on lisaks sellele ka teine, elementaarsem kasutus taju valdkonnas. Kolmandas osas vaatlen ma mõnesid bio-semiootilisi tähenduse mõiste kasutusi, mis, nagu ma näitan, ei mõista märki säärasel viisil, nagu seda on iseloomustatud käesoleva artikli esimeses osas. Seal on tegu tähendusega üldisemas, valiku ja organisatsiooni mõttes, mis on tähenduse elementaarsem tähendus. Olgugi, et pean võimalikuks Peirce'i interpretatsiooni, milles on vastavus Uexkülli funktsiooniringi ideega ning tähendust kui funktsiooni, nagu seda on kirjeldanud eeskätt C. Emmeche ja J. Hoffmeyer, väidan ma, et sellise tähenduse mõiste sisu on teistsugune kui märgi kontseptis sisalduv. Lõpetuseks panen ma ette, et tähenduse (laias mõistes) ja märgi (nii nagu seda on täpsustatud Piaget'–Husserli traditsioonis) erinevuste hõlmamiseks on vaja rakendada veelgi rohkem tähenduse lävesid kui seda pakub välja näiteks K. Kull.

Disaster semiotics: An alternative 'global semiotics'?

Han-liang Chang

Dept. of Foreign Languages and Literatures, National Taiwan University
No. 1, Sec.4, Roosevelt Road, Taipei 106, Taiwan
e-mail: changhl@ntu.edu.tw

Abstract. Thomas A. Sebeok's global semiotics has inspired quite a few followers, noticeably Marcel Danesi, Susan Petrilli and Augusto Ponzio. However, for all the trendiness of the word, the very concept of *global* should be subject to more rigorous examination, especially within today's ecological and politico-economic contexts. With human and natural disasters precipitating on a global and almost quotidian basis, it is only appropriate for global semioticians to pay more attention to such phenomena and to contemplate, even when confined to their attics, the semiotic consequences of disasters. The paper probes into the semiotic implications of the tsunami disaster that claimed quarter of a million lives in South and Southeast Asia during the Christmas holidays in 2004, and proposes a semiotics of disaster, developed from the discussions of the eighteenth-century British Empiricist philosopher Thomas Reid and the contemporary semiotician David S. Clarke, Jr. As the word's etymology indicates, *disaster* originally referred to a natural phenomenon, i.e., 'an obnoxious planet', and only by extension was it later used to cover man-made calamities, be it political or economic. Although the dichotomy of nature versus culture no longer holds good, the author uses the word *disaster* in the traditional sense by referring to 'natural' disasters only.

At an international seminar devoted to the theme of global semiotics, it seems only appropriate to pay homage to the founder. This paper is no exception.¹ When the late Thomas A. Sebeok used the phrase

¹ This paper was originally presented at Seminar 2, 'Global Semiotics', at the International Semiotics Institute held in Imatra, Finland on 11–19 June 2005. The occasion explains the specific rhetoric of the essay. However, under the frivolous-sounding wordplay and the chiasmatic substitution of 'global semiotics' and 'global disasters' and hence 'disaster semiotics', is a rather serious questioning of Thomas A. Sebeok's concept of global semiotics.

'global semiotics' in 1994 to lavish his plenary lecture at the IASS Berkeley Congress with gusto, he was presumably aware of the linguistic sign's reiterability and interpretability, not only within the boundaries of life, but often beyond them. To begin with, Sebeok evokes two never-really-alive master tricksters in Shakespeare: Prospero and Hamlet. Whilst Prospero plays on the double denotation of our planet and the South Bank Theatre called The Globe, Hamlet likens his own skull to the 'distracted' globe, thus rehearsing the trite Elizabethan themes of micro-macrocosmic identification, and dialectics of illusion and reality as well as that of life and death. These histrionics serve to usher in, firstly, Sebeok's short list of connotations: 'all-encompassing', 'comprehensive', 'international', 'limitless', 'pandemic', 'unbounded', 'universal', 'cosmic'; and secondly, his inventory of nations from A to Y, viz. from Argentina to Yugoslavia, short, however, of Zimbabwe and, short, alas! of the geopolitical foresight for the collapse of Yugoslavia. The author characteristically rambles amongst disciplines, from disciplines to the meta level of interdisciplinary method, and finally arriving at his darling bud of biosemiotics, where the master trope of geo-bio-semiosphere allows him to draw a full circle of his global semiotic circumnavigation.

'What forgetfulness', then, is left 'after such knowledge?' to paraphrase another procrastinating anti-hero Alfred J. Prufrock created by the poet T. S. Eliot. It seems little can be said of global semiotics except sequels in piecemeal added here and there to the alphabet of nations on a distracted world atlas. Today the word *globe* is so loaded that it has lost its *sensus communis*, i.e., 'global' sense. Compare, for instance, Sebeok's list of redundancies above and a left-wing social critic like Anthony Giddens' (1998) condemning sense of the word (Wisner 2003), and you will know the heterogeneity rather than homogeneity underlying the usages.² Nevertheless, because of its

² Pelling (2003a), following Giddens (1998), notes that 'most aspects of globalization are disputed'. One consequence of such globalization processes as capital transfer, e-culture, and labour migration is the change of 'geography of risk and disaster' (Pelling 2003a: 5–6). He could have added another process in relation to the topic under discussion: tourist mobility. Incidentally, Sebeok uses 'global' in the metaphorical sense of 'holistic' (Sebeok: 2001: 27) in his description of animal groupings as 'global semiotic systems'. without the awareness that the literal sense of 'global' (of the biospheric globe) has stolen in. The example is not self-defeating, but it shows that global is a both natural and cultural construct. A reader of the manuscript has kindly referred the present

over-use, one is under the quotidian bombardment of 'global warring' as if it were global warring; one struts and frets in a 'global e-village' as if in a virtual Disneyland; and one takes for granted the now too familiarized but still estranged bedfellow called, grotesquely, 'glocalization' (Swyngedouw 1997).

Echoing, unwittingly, Sebeok's 'pandemic', I have worked towards a semiotics of parasitism, which touches upon a global epidemic when the SARS outbreaks claimed hundreds of lives in Southeast and East Asia (Chang 2003). It was only after I had the paper published in *Sign Systems Studies* 31(2) was I able to see Sebeok's book, to find therein a curious book jacket displaying the computerized Creator's hand, apparently lampooning Michelangelo, indicating a sketched parasite instead of Adam. In the same line of parodied argument for life-claiming semiosis (rather than the life-generating semiosis dear to Sebeok), I shall address myself on the semiotic implications of a recent global event, in fact a disaster, that has affected not only where it happened (topia or heterotopia?) but where it didn't (here or there?), namely, the earthquake and tsunamis in South Asia that claimed nearly a quarter million of lives, many of whom were from this remote Nordic part of the disoriented world.

What are disasters? How are they encoded as they are decoded? Why haven't we semioticians paid sufficient attention to it, save perhaps René Thom from a probabilistic-topological perspective (Thom 1972; 1983) and Maurice Blanchot (1986) from a hermeneutic-rhetorical point of view, whereas secondary literature in risk and hazard studies, from the perspectives of geoscience and human sciences, such as economics, have been well-documented?³ Given

writer to Jean Baudrillard's essay (Baudrillard 2002) where the French thinker disparages globalization as an undesirable but inevitable product of violent (virulent) technologization, which gives rise to all kinds of terrorism for its own penalty.

There is, however, a substantial literature on hazards or risk research in human geography and political ecology. See El-Sabh, Murty 1988; Hewitt 1983; 1997; Beck 1992; Etkin 1999; Dore, Etkin 2003; Klein *et al.* 2003; Kondratyev *et al.* 2002; Pelling 2003b. Etkin 1999, with its model of risk assessment, planning and transference, is particularly relevant to semiotics. In terms of geology and paleontology, Kalevi Kull has notified me about the fact that René Thom's concept of catastrophism can be traced back to Cuvier, and that the French tradition of non-gradualist evolutionism can be seen as opposed to British gradualism of Lyell and Darwin. See n. 6 below. I have since also consulted

Umberto Eco's observation that 'Any natural event can be a sign' (Eco 1984: 15), why hasn't there been a semiotics of disaster?⁴ For all our zeal in globalization, why hasn't there been a semiotics of global disasters? Surely Sebeok's semiotics of life is not to blame.

The catastrophe on Christmas 2004 has forced us to reflect upon the semiosis of a network of systems, both natural and cultural. The polysystem of that magnanimous earthquake and its subsequent killer sea surges is so intricate that it merits in-depth semiotic analysis. It is a network consisting of multiple scientific and folkloric interpretations of series of transformations amongst iconic, indexical and symbolic signs, one interpretation giving rise to another; reported animal and human responses to semiotic actions and reactions, where humanity is segregated into national, ethnic and social groups, some of which, like those minorities in the Andaman archipelagos, have been hitherto shrouded in mystery (Greenway 2005). The results are sound geo-physical readings plus myriads of *petits récits*, eyewitness narratives of various points of views, a lot of which are semantically overcoded by religion and superstition, such as animals saving human lives, etc. Tourism, media, charitable organizations, disaster-relief groups, debris, bodies — all these had a role to play in forming this miserable medley of cosmic scale.

Whilst Eco would suggest that all these coded texts fall into the category of encyclopedic semiotic practice, one envisages a semiotics of disasters in both the restricted and non-restricted senses. In one of his many illustrations of the triad, Peirce describes a person, in his dreamy state of existence (as a First), being hit by a brutal force from without, e.g., 'a loud and prolonged steam whistle' (Second) (Peirce 1998, 2: 4). Such a bodily shock forces him to interpret the phenomenon as, for example, an earthquake or otherwise through the

Rudwick 1997 which includes the English translations of Cuvier's 'Preliminary discourse' and other earlier essays before his *Recherches sur les ossements fossils* (1812).

⁴ U. Eco says, 'The process of recognition of natural events which generates sign-proposition takes place in the same manner [i.e., as inference]. Perception is always interrogative and conditional and is invariably based (even if we do not realize it) on a bet. If certain perceptual data are present, then (there is) perhaps smoke, as long as other contextual elements authorize me to think that the perceptual interpretation is appropriate. Peirce was aware of the fact that perception is always presumptive evidence, a source of potential semiosis' (Eco 1984: 35).

functioning of interpretant (Third), e.g., after looking, as people in Taiwan are wont to do, for other indexical signs (swinging ceiling lamps, turbulent water surface in the flush toilet bowl). Whereas a seismologist could tell us that the magnitude nine quake off west Sumatra was only an indexical sign in the wake of, and pointing to, the spasmodic slide of two tectonic plates underneath; and the tsunamis, in turn, are indexical to, and in the wake of, the quake, and all these could be graphically (i.e., as iconic signs) represented through computerized imaging, the actual disaster that claimed a quarter million lives calls for a semiotic study of both nature (including animal cognition and behaviour that would appeal to zoosemioticians) and culture, in particular, the impact of inter-continental tourist mobility, especially those seeking brighter and warmer sun, and the global reactions to the event.

This paper will, therefore, attempt to explore into a semiotics of disasters, incorporating the theories of Peirce, his predecessors and critics, in particular, a relatively slighted semiotician of our times, David S. Clarke, Jr., as well as human geographers and hazard researchers like Kenneth Hewitt (1983; 1997) and David Etkin (1999), and drawing on textual materials from literature (e.g., the Rousseau-Voltaire debate on Lisbon comes immediately to mind), media, and subculture. The product will be, finally, a tribute paid to Sebeok for his sustained interest in pre-human geo- (i.e. 'global') semiotics.

Those of us who are familiar with Sebeok's writings on the history of semiosis will surely recall his account of the prehistoric stage of semiosis. But this part of history is global only in the narrow physical sense of the word, descriptive of a world yet unsullied by human traces. Despite that even such a pre-human world is not a transparent fact, but always already a construct of human geophysical knowledge, a *gaia hypothesis*, if you like, its semiosis is far from being global in the sense of human geography. Ask any fellow semiotician, and you will find the role humanity plays in global semiotics, let alone disaster semiotics. Isn't, one may ask, Sebeok's 'global semiotics' based on nationality a concept of human geography?

The immediate task for us in formulating a disaster semiotics is to define disasters rather than semiotics. Traditionally, as the word's etymology of malevolent star suggests, a disaster is understood as a celestial and, by inference, natural phenomenon. In one of his outbursts into lyricism, Blanchot says, 'If disaster means being separated

from the star (if it means the decline which characterizes disorientation when the link with fortune from on high is cut), then it indicates a fall beneath disastrous necessity'. (1986, 2) But a natural phenomenon can be interpreted as disastrous and its extent gauged only in relation to its impact on human beings — or, for that matter, other living organisms; the old dichotomy of nature versus culture was already undermined in the very beginning when the expression was used. The editor of a recent volume on disasters, Mark Pelling (2003b), succinctly defines 'natural disaster' as 'shorthand for humanitarian disaster with a natural trigger'. (Pelling 2003a: 4). He continues, 'Whilst physical phenomena are necessary for the production of natural hazard, their translation into risk and potential for disaster is contingent upon human exposure and a lack of capacity to cope with the negative impacts that exposure might bring to individuals or human systems' (Pelling 2003a: 4)...

Then one needs to outline the domains of natural hazards. Interestingly, as if echoing Vladimir Vernadsky, risk researchers have classified natural hazards according to the traditional division of the planetary environment into spheres; they include atmosphere, hydrosphere, lithosphere and biosphere — short, though capable, of anticipating the Lotmanian semiosphere (Hewitt 1997: 63). Into these four categories fall such hazards as the atmospheric heatwaves and typhoons, the hydrological floods and droughts, the geological movements, like earthquakes and volcanic eruptions, and the biological influenza and parasitism. Fortunately, hitherto, there have not been semiospheric hazards, and we certainly hope that such apocalyptic visions will be deferred. To parody Jacques Derrida, 'No apocalypse, not now' (1984). There is no doubt that some disasters are of mixed origin. For instance, the tsunami is construed as 'simultaneously a geological (by origin) and hydrological (regarding its consequences) phenomenon' (Kondratyev *et al.* 2002: 22).

All these accounts date back to the discussions of natural signs in the early history or pre-history of semiotics. The identification of *semeion* with *tekmerion*, or sign and evidence, clearly indicates how a natural event observed *in praesentia*, like the tectonic slide, can stand, by inference, for a future event *in absentia*, in this case, tsunami waves (Clarke 1987: 12); or it can stand for a message of the divine (Manetti 1993: 15). In ancient Greece, one type of divination, *mantike technike*, refers to the analysis of perceptible signs produced in the

external environment, such as lightning or eclipses, in relation to the larger cosmic order (Manetti 1993: 19–20). Many narratives of the tsunami disaster under discussion are very much of this folkloric nature; these include animistic belief in the rage of sea god (Goodnough 2005), ghosts haunting Phuket after the disaster (Burdett 2005), and animals' sixth sense saving their lives (Reuters, Dec. 30, 2004).⁵ How to cope with such folk wisdom becomes increasingly international relief groups' major problem (Greenway 2005). From a semiotic point of view, these disaster narratives qualify what Eco (1983) terms as encyclopedic semiotic practices.

These small narratives (*petits récits*), often first-person narratives, are seen joining forces with such grand narratives (*grands récits*) as catastrophism, which, thanks to the disaster, is staging a grand comeback.⁶ A proponent of popularised catastrophism in our days,

⁵ Suffice it to quote from two news clips. On 14th January 2005, the *International Herald Tribune* features John Burdett's article, 'The ghosts of Phuket'. The author intrudes in the course of his story by alluding to the religious background:

[W]hen Theravada Buddhism came to dominance here in the 13th century, it had to accommodate Hinduism and native animism. Detachment is all well and good, but spirits must be appeased, the dead cannot be left to roam aimlessly — and something must be done to feed that ravenous sea god who expressed his rage by eating 5,300 people.

This is followed by a brief conversation between the narrator and a Thai barmaid.

'How do Thai people like you feel about it now, two weeks later?' I asked Pui ...

'The ghosts are a problem,' she replies without hesitation.

'Thai people hate ghosts and now Phuket is full of them. I won't go down there again.'

On 24th January 2005, *The New York Times* reports the minority tribe the Moken who survived the disaster. One survivor named Salama said 'his people believed that tsunamis came because the sea was angry.' The report continues:

Another group of Moken, who lived on a different island and are now at a refugee camp in Takua Pa, about 110 kilometers north of Phuket, on the Thai coast, said they, too, thought that the wave was punishment from the spirits. They said some dolphins they saw appeared to be agitated shortly before the tide receded that morning, a sign that something was coming. (Quoted from *International Herald Tribune*, p. 4 — Goodnough 2005).

⁶ In his discussing of nineteenth-century debate between two schools of geology, the uniformitarians and the catastrophists, in particular Charles Darwin (1809–1882) and his mentor Charles Lyell (1797–1875), Rudwick (1992) points out the catastrophists' theoretical difficulty and discursive solution, in his words, 'a style of theorising':

Antony Milne, being apparently very excited about this development, went so far as to predict that 'The Indian Ocean disaster could well lead to catastrophism moving to centre stage in future conferences about the fate of the world'.⁷ In the wake of the said disaster, I had searched online for a cheaper copy of Milne's *Doomsday: The Science of Catastrophic Events* without success. All these constitute another dimension of disaster discourse, belonging to a different semiotic order. For now, let's return to the initial stage of disasters.

In his fourth Harvard lecture delivered on 16th April 1903 (MS 309), Peirce discusses how Thirdness operates in Nature. He begins by talking about the fall of a stone. 'I know that this stone will fall if it is let go, because experience has convinced me that objects of this kind always do fall.' Here Peirce has coupled a natural phenomenon and experience as well as the habit or law, engendered from experience, which eventually serves as interpretant. The famous example of one's waking up to a sound does contain a tripartite structure in causal and temporal order, but one is legitimate in questioning the availability of interpretant in the initial stage.

Regarding the archetype of fall, Blanchot would say there is no law in celestial disasters: 'Would law be the disaster? The supreme or extreme law, that is: the excessiveness of uncodifiable law — that to which we are destined without being party to it' (Blanchot 1986: 2). Given his interest in human disasters, Blanchot's statement is deliberately ambiguous. To counter Peirce's assertion of law as interpretant that governs our interpretation of signs, David S. Clarke, Jr. alludes to

Most of the best earth scientists of the early nineteenth century felt that the evidence available to them obliged them to be in some sense catastrophists. They felt that in trying to explain *some* phenomena they had no option but to invoke causal agencies far greater in intensity than those we can now see at work in the world around us, or even those of which we have reliable human records. But they also felt compelled by the evidence to infer that some of these geological 'causes' had acted with such intensity only on very rare occasions in Earth history. Such events, they concluded, fully deserved to be termed 'catastrophes', and they themselves were content to be known as 'catastrophists' (Rudwick 1992: 81).

For its twentieth-century development in geology, see, for example, Ager 1993. For the relationship between catastrophe and evolution theories, see Zeeman 1992.

⁷ *International Herald Tribune*, January 20, 2005, p. 7.

the immediate perception propounded by the eighteenth-century Scottish empiricist Thomas Reid (1994 [1863], 2: 195).⁸

It would be anachronism to reinstate the argument of an empiricist after the linguistic turn in the early twentieth century. Given the fact that Nature is always a semiotic construct embedded in socio-historical context, there cannot be a transparent Firstness, nor can the facile dichotomy of nature/culture be maintained. However, for all the primacy granted to the interpretant, the Peircian mapping of evidential inference in terms of indexical sign could be construed as a way of naturalising natural events, as if they were independent of language mediation. Take for example the tsunami disaster: The tribal elders in the Andaman sea region noticed the incoming tide and alerted his people to flee and seek higher shelters. His alert is indeed linguistic or possibly paralingual, given the urgency of the moment. Here the interpretant is no doubt the Peircian 'habit', but habit is already linguistically mediated or, at any rate, when the message was communicated, the natural signs have to be translated to linguistic signs. Clarke argues that before the experience is communicated, the immediate perception of natural disorder can be free from language mediation. Unconvinced by Peirce, he proposes the distinction between natural sign and logically more primitive '*natsign*', the latter being a 'short-range' sign, which is produced not for communication and can be interpreted without inference (Clarke 1987: 50).

As Clarke sees it, *natsign* precedes *comsign* — sign for communication, and *lansign* — the higher order of human linguistic sign, and is therefore a more primitive sign in both the logical and evolutionary sense. Clarke alludes to Thomas Reid's classification of natural signs: 'What we commonly call natural *causes* might, with more propriety, be called natural *signs*, and what we call *effects*, the things signified' (Reid 1994 [1863], 1: 122). This amounts, in fact, to only the first class of natural signs, where the thing signified is 'established by

⁸ It is curious to reinstate the argument of an eighteenth-century empiricist after the epistemological divide effected by linguistic turn in the early twentieth century. Thomas Reid asserts that there is a close correspondence between 'original' perception and natural language. 'The signs in original perception are sensations, of which Nature hath given us a great variety, suited to the variety of the things signified by them. Nature hath established a real connection between the signs and the things signified; and Nature hath also taught us the interpretation of the signs — so that, previous to experience, the sign suggests the thing signified, and create the belief of it' (Reid 1994 [1863], 2: 195).

nature, but discovered only by experience' (Reid 1994 [1863], 1: 121). Reid gives examples of mechanics, astronomy, and optics, which are 'but connections established by nature, and discovered by experience or observation, and consequences deduced from them' (Reid 1994 [1863], 1: 121). One may, no doubt, add seismology to the list.

This definition may serve as the point of departure for our investigation into natural disaster as sign. Whether it's an earthquake or a tsunami, a natural disaster involves at least three phases: (1) a natural happening; (2) the interpretations of it; (3) after effects of the happening. It must be remembered that the word 'natural' is used provisionally. According to Clarke, whilst in classical evidential signs or Peircian indexical signs, the cause and effect can be remote, 'the referent occasion of a natsign as an object of dynamic interpretation is spatially contiguous or temporally proximate to the sign' (Clarke 1987: 67). One type of natsign would be 'an environmental event discriminated from a background, with a significante occurrence being an environmental event recognized at a referent occasion' (Clarke 1987: 64). A brief explanation of the two terms coined by Clarke is necessary. A *significate occurrence* refers to 'the occurrence of what is signified by a given sign token', and the sign's *referent occasion* refers to 'the spatial-temporal occasion at which we recognize a significante occurrence or non-occurrence' (Clarke 1987: 61). Because of its lack of subject-predicate structure characteristic of language, its lack of intention for communication, and its lack of rules of interpretation, the natsign appears ubiquitously in lower animals and indeed all the organisms.

How can one be sure that a natsign will give rise to *significate occurrence* rather than *non-occurrence*? Clarke says,

If there is an occurrence *y* of *Y* as the type expected, then there is recognition of a significante-occurrence [...]. Repeated recognition of non-occurrences has the effect of changing the significance of a sign of type *X* for the interpreter or replacing it with another sign *X'* with the same significance. (Clarke 1987: 61)

The example he gives is the non-occurrence of thunder after heat lightning, which violates the popular inferential logic that thunder follows lightning. After the Boxing Day earthquake, there have been a couple of big ones, but, contrary to general expectation, they failed to effect tsunamis.

The distinction between significant occurrence and non-occurrence can be a serious matter, in fact, a matter of life and death if the occurrence proves to be a disaster. Look at the following eyewitness report on the tsunami. On the beaches, people saw two subsequent occurrences: first, wave surge receding, and second, fish being exposed and stranded. The distinction between natural sign and natsign aside, these two occurrences are contiguous in space, proximate in time, and causal in relationship. Though being natsigns, and thus free from intention of communication, they did send signals. And how signals (or signs, if you like) were interpreted made all the difference. There were, in fact, two opposing interpretations that led to different actions and consequences. One interpretation survived its interpreters and through the mouth of others: some took the fish to be gifts from Nature and went down to catch the fish, not knowing that a third significant occurrence, a major one, and disastrous one at that, was impending. Others, better informed, i.e., decoding the first two occurrences rightly with a different interpretant coupled with experience and habit, managed to escape and thus survived their hapless fellow interpreters. What makes the difference? One can no longer explain away such a matter of life and death by suggesting a conflict in interpretation. Among other things, a major difference is that the second group of interpreters took the first two occurrences not at their face value, but as referent occasion for another significant occurrence, as Clarke would say, or, in Peircian parlance, as an indexical sign to still another sign. Blanchot has a paradoxical but powerful argument on disaster's 'imminence'.

When the disaster comes upon us, it does not come. The disaster is its imminence, but since the future, as we conceive of it in the order of lived time, belongs to the disaster, the disaster has always already withdrawn or dissuaded it; there is no future for the disaster, just as there is no time or space for its accomplishment. (Blanchot 1986: 1–2)

As the above example of fish suggests, a disaster occurrence never comes isolated but enters into a chain of causality. What's more important, whilst natural disasters seem to be *bona fide* natural signs, they are such only in terms of their impact on human beings. Disaster researchers Dore and Etkin observe, 'Natural disasters occur when an event such as an earthquake or storm reveals social vulnerability, and consequent damage to the physical and social fabric exceeds the

ability of the affected community to recover without assistance' (Dore, Etkin 2003: 75). Here, 'social vulnerability' and 'recovery' amount to what Pelling describes above as the 'translation' of natural hazard into social risk and human reaction to cope with it. From the perspective of semiotics, the process involves system mutations (e.g., from natural to social) or transcoding of signs and entails social pragmatics. Such pragmatics, according to Etkin, consists of the following procedures: (1) 'response and recovery', (2) 'mitigation', and (3) 'preparedness'. 'These activities alter future vulnerability (and therefore the construction of future disasters), reducing risk if they are done wisely, or not if they are done otherwise' (Etkin 1999: 69). The three overlapping activities form a 'disaster adaptation cycle' (Etkin 1999: 70), as shown in Figure 1.

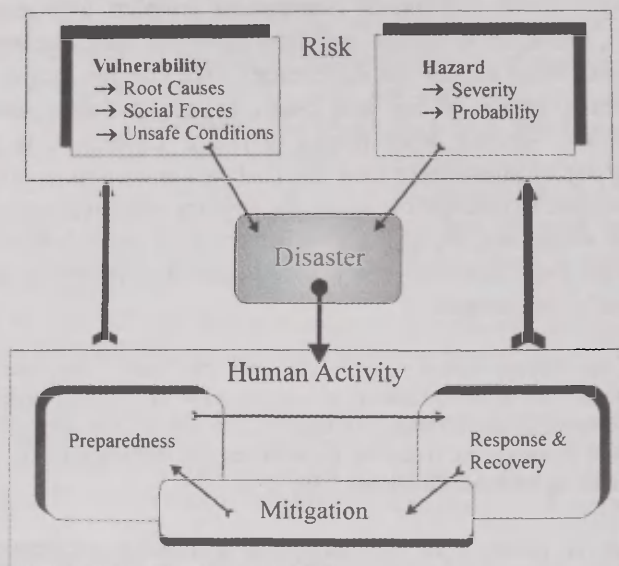


Figure 1. Disaster adaptation cycle. A disaster typically triggers a cycle of human response of response and recovery, mitigation and preparedness. This response can alter vulnerability and thereby influence future disasters. (From Etkin 1999: 70.)

A semiotics of disasters will have to articulate the complicated network of transformations among numerous natural and social systems that are only global in scale. This returns us to the question of global semiotics. Why the global community today is paying more attention to disasters? Apart from the noble cause of humanity that no man is an island, the answer lies in the dynamic process shown in Figure 1 above: increased social vulnerability and hazard mitigation, manifesting, for example, in international reliefs and cost-sharing; risk transference, from more frequent, low-impact events to unpredictable high-impact future disasters (Hewitt 1997); and the rupture or discontinuity between probability prediction and actual distribution of damage. Blanchot has warned us, disaster writing is an impossibility, for when it does occur, writing ceases to be, so does semiosis.

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Семиотика бедствия — альтернатива “глобальной семиотике”?

“Глобальная семиотика” Томаса Себеока инспирировала многих семиотиков, таких, например, как Марсель Данези, Сьюзан Петрилли и Аугусто Понцио. Все же это модное понятие *глобальность* нуждается в более точном рассмотрении, особенно в современном экологическом и политико-экономическом контексте. Задача глобальных семиотиков — обращать по мере своих возможностей больше внимания на человеческие и природные катастрофы, которые встречаются глобально и повсеместно, и рассматривать возможные последствия таких катастроф. В статье расследуются семиотические последствия цунами, которое пронеслось во время Рождества 2004 года и унесло четверть миллиона человеческих жизней. Предлагается семиотика бедствия, которая основывается на идеях британского философа-эмпирика 18 века Томаса Рида и современного семиотика Д. С. Кларка. Как показывает этимология слова *disaster*, первоначально оно указывало на природные явления и только потом его употребление распространилось и на создаваемые человеком бедствия (политические или экономические). Хотя дихотомия культура — природа неудачна, автор все же пользуется здесь словом

disaster именно в традиционном значении, указывая только на природные бедствия.

Õnnetuse semiootika: Alternatiiv 'globaalsemiootikale'?

Thomas Sebeok'i 'globaalsemiootika' on inspireerinud mitmeid semiootikuid, nimetaksin neist Marcel Danesi't, Susan Petrilli't ja Augusto Ponzio't. Siiski, vaatamata selle sõna trendikusele, vajab *globaalse* mõiste täpsemat vaatlust, eriti tänapäevases ökoloogilises ja poliitökonoomilises kontekstis. Globaalsemiootikute ülesanne on oma võimaluste piires pöörata enam tähelepanu inimlikele ja looduslikele õnnetustele, mis globaalselt ja peaaegu igapäevaselt ette tulevad, ja vaadelda selliste õnnetuste võimalikke tagajärgi. Artiklis uuritakse semiootilisi järeleid tsunamile, mis leidis aset 2004. aasta jõulupühade ajal ja nõudis veerand miljonit inimelu Lõuna- ja Kagu-Aasias. Esitatakse õnnetuse semiootika, mis toetub 18. sajandi briti empiristslikule filosoofile Thomas Reid'ile ja tänapäeva semiootikule David S. Clarke'ile. Nagu sõna *disaster* etümologia näitab, viitas see esmalt looduslikele nähtustele, 'ebameeldivale planeedile', ning üksnes hiljem laienes ta kasutus inimese loodud hädadele, olgu poliitilistele või majanduslikele. Kuigi looduse ja kultuuri dihhotoomia pole enam hea ega asjakohane, kasutab autor sõna *disaster* traditsioonilises tähenduses, viidates üksnes looduslikele õnnetustele.

Semiotics of natural disaster discourse in post-tsunami world: A theoretical framework

Sungdo Kim

Department of Linguistics, Korea University
Sung Buk Gu, An Am Dong 5, Ga-1, Seoul 136-701, Korea
e-mail: ksd1995@hotmail.com

Abstract. The study of natural disaster and its discursive dimensions from a semiotic perspective can provide a theoretical frame for the scientific communication of global catastrophes. In this paper I will suggest two models; one is a semiotic model on the natural catastrophic events and the other is a hexagon model composed of semiotic dimensions of natural disaster discourse. The six main modules include narration, description, explication, visualization, prevention, and recovery action.

1. Introduction: Context

Tsunami, Katrina, Kashmir, we have rarely witnessed human tragedy on these scales. Contemporary natural catastrophes are often represented in media with rhetoric and imagery taken from the Tsunami. This paper does not deal with how media visualize the event of the Tsunami itself, but focused on the semiotic implications of the Tsunami discourse represented in media. It considers natural disasters as a semiotic object and a discourse of enormous cultural capital and argues that the persistent recurrence of natural catastrophes and the practice of its transfer images raise many important questions for the economy of representation in narration, description and explication of news events. In the global appropriations of cultural meaning of natural catastrophes a significant shift has happened from the natural disaster as event to natural disaster theory: the use of the natural catastrophe and its cultural representation as a political and critical tool and as

a genre, as well as its commodification within and for contemporary media discourse production. With this shift, the Tsunami has been integrated into global scientific consciousness. According to Marc Augé (2005), it signaled the planetary consciousness of global threats. With increased removal from its primary referent, the natural catastrophe itself and the uses of its images turns more and more into an imaginary, the French idea of 'imaginaire' as the constructed mental landscape of collective aspirations.

2. Objective and method

Tsunami should be able to play an important role in the development of a semiotics of catastrophes. In the representation of catastrophic events, Tsunami has come to influence and structuralize the media's narratives of natural disasters. Tsunami has also come to generate the critical apparatus for theorizing this representation: the various epistemological and semiotic approaches, ideas about the role of the media in catastrophic events, about how to disseminate and construct a communication strategy of such event and ultimately about how to analyze and gain a semiotic understanding of contemporary natural disaster discourses.

The question is what kind of scripts has been formed out of natural disaster discourse about how to represent, think and experience science in the face of catastrophe. The purpose of this paper is to conduct a preliminary speculation on what kind of epistemological move has been performed when production and consumption of natural disaster discourses took place within the framework of Tsunami event. The topic will be considered with a focus on the uses of Tsunami imagery.

This paper will bring three areas of expertise (structural semiotics, discourse analysis, and scientific communication) together to this end and make an attempt to explore the techniques of constructing highly ambivalent images that represent sciences either as adjuvants or criticize them as powerless, incapable of resolving this kind of natural event.

3. Natural disasters and globalization: Ambivalence of sciences in an era of globalization

In modern "risk society", everybody is obliged to deal with uncertainties and their consequences (Beck 1992). Facing risks has been part of

everyday life nowadays. In fact, in global ecological threats, a lack of confidence in science may result in various, contradictory fears. People may fear the possibility in which science is powerless in the face of natural disasters. In other cases, people may also be concerned about that science is so superhumanly powerful that some scientific inventions could be even harmful to the human benefit.

In sum, recent natural disasters have caused an increased feeling of insecurities and a mixture of great expectations and fear about science. If it is correct to refer to the popular perceptions of the sciences as "a mixture of great expectations, fears, utilitarian interests, curiosities, ancient prejudices, and superstition" (Gerbner 1987: 110), other visual medias such as Film and TV can be interpreted as a major source for these ambivalent attitudes represented in public images.

When confronted with the applications of scientific research, or with new technologies, people may be torn between a frenetic desire to consume, particularly when given with new possibilities of communication, and ancestral fears reactivated and updated, like the fear of the year 2000. Such two kinds of contradictory feelings are all related to transformation of world view. The world of news and images which submerges us merely confirms our feeling that we are living in a global situation from which no escape is possible. The future of our societies, indeed the future of the planet as an array of societies, cannot be imagined without science (Augé 2005).

The paper's working premise is that contemporary natural disasters should be considered as effects of, as well as media and catalysts for, processes of globalization. They are distinguishable from earlier large-scale disasters by the various forms of transnational causal chains in which they are involved. Because contemporary natural disasters are embedded in globalizing processes, they should be studied in the context of the various facets of globalization. In this regard, it's timely helpful to get ideas from global semiotics which focuses on the interconnection among signs and all forms over the planet, and their relations of interdependence. In this vein it seems to me relevant to apply a theoretical framework of global semiotics to the phenomena of natural disaster (Chang 2006).

4. Socio-semiotic features of contemporary natural disasters

Let me briefly mention some semiotic features of contemporary natural disasters.

4.1. Social constructedness

Unlike ordinary natural disasters, the social constructedness of these events is a crucial aspect of the experience of those who undergo or witness a natural catastrophe. What characterizes contemporary natural disasters is the fact that nature has been entirely socialized and natural causal chains cannot be disassociated from social ones.

4.2. Multi-dimensionality and liminality

Compared to their precedents, then, contemporary natural disasters might be determined as large scale, multi-dimensional events that transcend any specific boundaries and resist to conventional causal explanations and traditional ways to contain and manage the rapid dissemination of their destructive effects.

Some of the most terrible natural disasters do not obey such model of the demarcated event as its relatively clear delimitation between center and periphery, event and context, before and after. Such catastrophes are not concentric, site-specific events, and can be perceived only as a multiple network, or a rhizome (to use Deleuze and Guattari's notion). They lack any clear temporality, and their effects are still being disseminated over vast and distinct regions (Deleuze, Guattari 1987).

4.3. Interdependency between globalization and natural catastrophe

As the news reports have made clear about the Tsunami catastrophe, this natural disaster can properly be called a planetary catastrophe. Although many scientists would easily agree that natural disasters today could not be studied out of the context of globalization, one

could invert this line of thought, and study globalization itself through the special perspective obtained through contemporary natural disasters. Natural disasters will be interpreted as productive events, i.e., not only as effects of, but also as media and catalysis for, processes of globalization.

This paper's thesis is that contemporary natural disasters enhance novel global orders of human existence, transform social cultural and economic relations, promote new forms of morality and shape new forms of political governance.

5. Semiotic configurations of natural disasters

5.1. Semiotic modeling of natural disasters

Given Umberto Eco's (1984) recognition that any natural event can be a sign, it might be possible to conceive a semiotics of natural disaster in the framework of natural semiotics. In this context Eco underlined an essential role of diverse inferences which are at work at every level of semiosis in the understanding of natural signs, in order to demonstrate that "the understanding of signs is not a mere matter of recognition (of a stable equivalence); it is a matter of interpretation" (Eco 1984: 43).

Here I would present a morphodynamic model of René Thom's (Thom 1983). His ideas from a morphosemiotic and topological perspective is an example of semiotics of natural disaster par excellence. There is semiosis — participation of the semiotic — in all morphological process of (spatio-temporal) transfer: Source–Message–Receptor that one can symbolize as the Figure 1 (Thom 1981: 301).

This model may raise some objections especially because it lacks subject-predicate structure characteristic in language, intention for communication, and rules of interpretation. There are processes of purely physical transfer, for them, a priori, which cannot be accepted as a semiotic interpretation. Therefore, when Tsunami took place, nobody imagined some semiotic configuration. However, in this process of Tsunami, some dynamic elements are actually contained in the entire processes of conventional communication. An essential criterion (a priori) of semiotic characteristic of a transfer concerns the intentionality of sender subject who wishes that the content of message

would be absorbed by the receiver. If one interprets natural disasters semiotically, one might invoke the effect of a malevolent intentionality which used a giant wave of water as an instrument. There was an assertion that nature was not so small and diminished but more powerful than our plans and impositions.

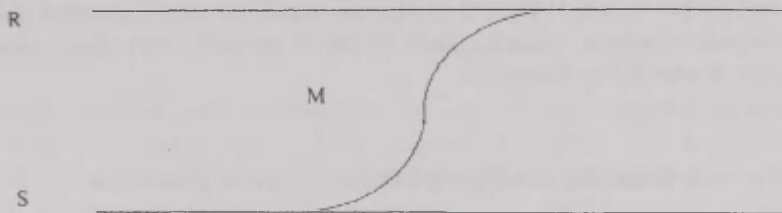


Figure 1. Catastrophic schema: Source (S) — message (M) — receptor (R).

Thom's model poses some very subtle questions concerning the agency of interpretation, the inferential nature of sign and also reminds us of the notions of natural signs in the pre-history of semiotics (Manetti 1993; Peirce 1998). In the case of Tsunami the tectonic slide-tsunami waves connection as a sign of possible future event would indeed lack both a sender and a message-goal. But, it might be admissible to argue for the existence of a natural phenomena as a kind of sign producer or source in this case and the sign-receiver or destination serving to designate whoever might observe the tectonic slide and make a connection that produces an intelligible sign indicating potential tsunami waves.

5.2. Syntactics, semantics, pragmatics

The discussion above may serve as the point of departure for our investigation into natural disaster as sign. Whether it is an earthquake or a tsunami, a natural disaster involves at least three phases: (1) occurrence of a natural event, (2) representations of it, and (3) after-effects of the happening.

This brings us to a number of principles of narratology, which center on the concepts of transformation, desire, and lack. As a narrative, natural disaster is a form of expression that deals with transformations. This is illustrated by Arthur Danto's tripartite formula for an event, defined as a transformation in time and of time (Danto 1968).

- (1) X is F at time t_1
- (2) E happens to X at time t_2
- (3) X is G at time t_3

In the present case, X is the affected place by natural disasters. Narratives are about protagonists attempting to attain a goal, that is to say an object of value, which they attain or do not attain. Taking the principles of desire and transformation together, we can say that all transformations lead to a conjunction or a disjunction. In common language the word "disaster" is used to refer to a distinct event that interrupts habitual flow of everyday life. It seems very interesting to remark that the narrative structures of disasters are similar to Aristotle's rules of drama: there are a beginning and a middle and an end. On the contrary, Tsunami disaster does not adhere to all the rules of plot in generating epistemological confusion and ontological uncertainty.

5.3. Syncretism of nature and culture

Wikipedia, the free encyclopedia, defines natural disaster as 'the consequence of a natural hazard and human activities. The key concept here is the human vulnerability which determines the translation of natural hazard into structural human and cultural losses. This point is demonstrated by biosemiotics. The impact on both nature and culture, resulting from the tsunami, is considerable, particularly with regard to damage of coastal ecosystems and of cultural assets. Such losses may affect the rich cultural life in crisis-stricken countries and can threaten traditional livelihoods. Given the fact that there are different Natures in semiosphere embedded in cultural and cosmological context, there cannot be a transparent naturalness (Kull 1998). The explanatory divisions between nature and culture are no longer consistently sustained. These points suggest that we live, as Haraway might put it, in "nature-

culture". In this vein I want to propose the following typology of disasters by using semiotic square (see Fig. 2).

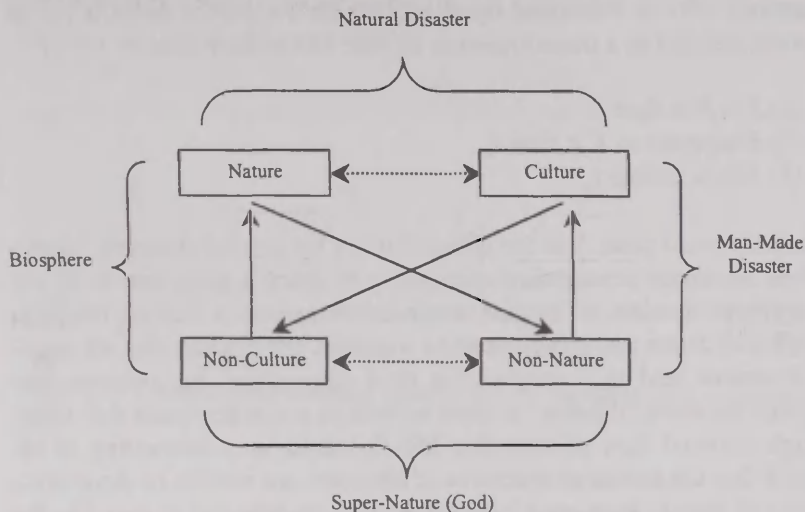


Figure 2. Semiotic square of natural disaster.

6. Semiotic dimensions of natural disaster discourse: A hexagon model

The paper's key point is to present a semiotic approach to contemporary natural disaster discourses that takes into account their visual, narrative and scientific aspects. I propose a hexagon model which shows semiotic constitution of natural disaster discourse (see Fig. 3).

6.1. Visual discourse: Ecology of images

Photography, film and electronic media are the most popular sources of pictures which shape and influence collective memory. Very little is known about the formation of popular images of science in general

and even less in relation to the impact that visual media could have on the perception of the sciences in the context of natural disasters.

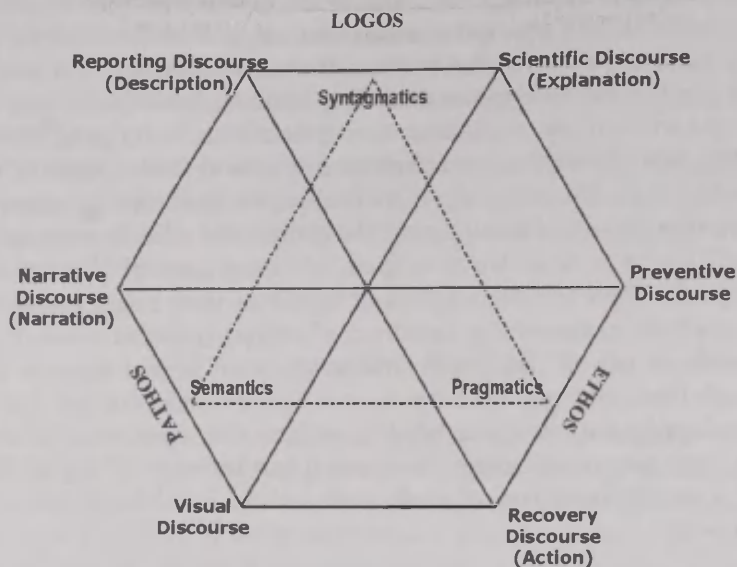


Figure 3. Semiotic dimensions of natural disaster discourse.

The images of the Tsunami cause distress. They serve to make us feel ourselves present at the site of disaster, to make visible, imaginable what has happened. They also bring about as much empathy as understanding. The dimension of pathos is most conspicuous here.

Susan Sontag suggested that photographs must be weighted against the obliviousness they dispel as well as against the cruel disregard they might drive, the exploitation they might cause, and the perils of interpretation. In her most recent book, *Regarding the Pain of Others*, S. Sontag remarked that being a spectator of natural or human disasters taking place in another country is fundamentally modern experience. She argued that we should construct an ecology of images to maintain feeling of compassion. What is now most striking now about Sontag's argument is that it is not so much about visual image but about compassion, an emotion and an ethic that visual can awaken or undermine (Sontag 2001; 2004).

6.2. Narrative discourse

Narrative dimension of natural disaster discourse forms a network consisting of multiple scientific and folkloric interpretations of series of transformations amongst iconic, indexical and symbolic signs. In fact, many narratives of the tsunami disaster under discussion correspond to this folkloric nature, including animistic belief in the rage of sea god and animals' sixth sense saving their lives, etc. (Chang 2006). In fact natural disasters are represented as acts of God or caprices of amoral nature. Consequently, there is always a dimension of narrativity (a story to be told about them), and deontic and ethic dimensions (a moral lesson to be drawn from them, always a share of blame to be assigned). There are many genres of narratives from sound geophysical readings to eyewitness narratives of various points of views. It is possible to talk of 'the public interpretation' of natural disasters although these interpretations based upon Peirce's abduction and Eco's encyclopedia are often overcoded by religion and superstition. In sum it is important to recognize the yawning gap between the big stories like scientific narratives of explication and the small local forms of testimony.

6.3. Media's reporting discourse

Most of the information we have about natural disaster discourse comes to us by the way of the mass media. But, it does not, for the most part, come as explicit reporting about risk. Instead, most reporting about hazards and their associated risks comes in the guise of news and feature stories about accidents, illnesses, natural disasters, and scientific breakthroughs.

6.4. Science's explicative discourse

The scientific discourse on the natural disasters is causal in nature. Not surprisingly, the central cause target of such explanation is the elucidation of cause-effect relationships among variables of interests. Although the scientific discourse is upon the observation of natural phenomena, scientists confess they cannot explain everything. Scien-

tific discourse does not always address the most fundamental causes of the disaster; when, where and why to happen, etc.

The semiotic analysis of scientific discourse is framed by a sophisticated theory of how language and other semiotic resource systems are put together as the means through which meanings are fabricated. In this vein, we need to investigate actantial structures and deontic doing of scientific discourse (Greimas 1976). This has important implications for a general semiotic theory on the processes of social meaning.

The social heteroglossia should demonstrate how the meaning-making practices of a given community construct systems of relations among texts, or give voice to, the different cultural positionings and social view in a given community.

6.5. Recovery actional discourse

Contemporary natural disasters exemplify a field of interaction between scientific organizations that try to address the root causes of catastrophes and those organizations that specialize in relief operations and the delivery of aid in emergencies. While subjects of the first type address themselves to the wider context of catastrophes (which are usually yet to come), agents of the second type underline the black hole itself in which whole life-world including cultural defenses has been collapsed. Humanitarians are gradually establishing themselves as prominent mediators of moral sensibility and responsibility. The two parties, however, have tendency to manipulate different ideological and semiotic discourses.

6.6. Preventive discourse

The core idea of prevention discourse is that prevention is the best defense against natural disasters. We can reduce the damage from these disasters through effective prevention measures. In order to better protect communities under threat from natural disasters, it is crucial to fully integrate disaster prevention into reconstruction efforts. For example, UNESCO is extending its long experience in tsunami mitigation, for the establishment of an Early Warning System for the Indian Ocean, as the first step towards a global alert system. First of

all, the distribution in time and space of these phenomena must be evaluated through the scientific means at our disposal. Indigenous prevention measures are also an important factor. In the area of natural disasters, semiotics' role is to bring about a better understanding of the semiotic features of this preventive discourse. Semiotically oriented scientific communication can contribute, with others, against disasters in world communities, through a better awareness of the seriousness of these natural disasters and the need to promote means of prevention as an integral part of sustainable development.

7. Conclusion

This preliminary study is a semiotic approach to the semiosis of natural disaster and semiotic constitution of natural disaster discourses. In order to implement this semiotic modeling, the parameters must be more precisely defined and some empirical research should be done to testify the validity of this model.

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Семиотика природных катастроф: теоретическое обрамление

Изучение природных катастроф и их дискурсивных измерений в семиотической перспективе нуждается в теоретическом обрамлении, позволяющем развить научную дискуссию о сущности глобальных катастроф. В данной статье предлагаются две модели: семиотическая модель природной катастрофы как события и шестиугольная (гексагонная) модель семиотических измерений дискурса природной катастрофы. Основные шесть модулей последней модели: наррация (рассказ), описание, выражение, визуализация, предотвращение и восстановление.

**Looduskatastroofi semiootika tsunamijärgses maailmas:
teoreetiline raamistik**

Looduskatastroofide ja selle diskursiivsete dimensioonide uurimine semiootilises perspektiivis vajab teoreetilist raamistikku, mis võimaldaks arendada teaduslikku diskussiooni globaalkatastroofide üle. Artiklis pakutakse välja kaks võimalikku mudelit: üks on looduskatastroofide kui sündmuste semiootiline mudel ja teine — looduskatastroofidiskursuse semiootiliste dimensioonide heksagonaalne mudel. Viimase kuus põhimoodulit on jutustamine, kirjeldus, väljendus, visualiseerimine, preventioon ja taastamine.

Impact or explosion? Technological culture and the ballistic metaphor

Irene Machado

School of Communications and Arts
University of Sao Paulo, Brazil
e-mail: irenemac@uol.com.br

Abstract. The term 'impact' has become the kind of word which, when it relates to the evaluation of technological advances in contemporary culture, suggests signs of erosion, debilitation and evasion. The misinformed and indiscriminate use of the term in the most varied of contexts has created an impasse in the cultural semiotic approach, where sign systems are viewed in terms of borders and relations. The objective of this article is to examine the trivialisation of the use of the ballistic metaphor in this explosive moment of the culture. For this, we will refer to the formulations presented by the semiotician, Juri Lotman, in his book, appropriately entitled *Culture and Explosion*. To what degree is the concept of explosion presented as a counterpart to the notion of impact? The desire to find answers to this question is what motivated this inquiry.

Introduction: Technologies, degree zero

What could the ideas of the philosopher Baruch Spinoza (1632–1677) have in common with modern digital-electronic technology? Perhaps neither Marilena Chaui, the teacher of philosophy who has been studying the Spinoza's essays for many years, nor the mega-magnate, Bill Gates, could say. However, for many theoreticians or media professionals, there is at least one aspect in common between the products of technology and the work of the philosopher: both are capable of provoking an impact on the life of people, culture or society. For the journalist who announced the publication, in Brazil, of Chaui's new book dedicated to the study of the thought of Spinoza, "the objective of the work is to demonstrate the impact of the ideas of the

Dutch philosopher on all areas of Western thought".¹ I have nothing against his evaluation. After all, if technologies can be responsible for certain impacts on the contemporary world, why can't the ideas of a philosopher have an equal impact? My inquiry is different from this.

I do not doubt that ideas are capable of forcing an action on humanity, on culture, on society. I also recognize that advances inside the world of ideas and the field of knowledge usually provoke sharp upheavals. My doubt, however, lies in the notion that 'impact' is so naturally connected to modern digital-electronic technologies so as to produce an ignominious effect on culture. Today, there is not a call for a meeting or conference, a book, an article in a scientific magazine or journalistic material on technology that does not make use of the word 'impact', thus neutralising adverse positions to an irreconcilable degree. It is possible that such a precise semantic background can define such adverse manifestations without running the risk of trivialisation?

Either the phenomenon of "impact" in fact obscures mysteries requiring a global inquiry or we are faced with a serious epistemological mistake.

The impasse tends to grow when related to an understanding of an anthropo-semiotic conception of culture; from the time that Clifford Geertz took upon himself the task of examining "the impact of the concept of culture on the concept of man" (Geertz 1989: 45–66). Could it be that the anthropologist had it in mind to situate culture outside humanity?

Whilst it is the kind of word used in contemporary culture, it is necessary to evaluate the relevance of the use of ballistic metaphor as the degree zero of the explosive movements of culture. The coherence observed in the field of anthropology, does not hold up when related to the semiotic evaluation of an event. The notion of 'impact' can, quite simply, be trivialised by the inability of the thought to reach the reality of its object. When all is said and done, such a revolutionary moment as that unleashed by digital-electronic technologies does not fit into the limits of 'impact'. On the contrary, new technologies are eruptions which arise from a gradual, slow process, created by the accumulation of continually evolving dynamic processes, between time and eternity, if we were to paraphrase Ilyá Prigogine (Prigogine,

¹ Article published in the newspaper *Folha de S. Paulo*, March 24, 1999 (*Ilustrada*, p. 3) on the occasion of the publication of a book by Marilena Chaui (1999).

Stengers 1988). It is something comparable to the Big-Bang, the expansion of which cannot be denied. This is the problem that needs to be examined if we are to take a path which eliminates neutralisation.

Geertz's impact

Clifford Geertz was not without cares in announcing his concept on the impact of the concept of culture on the concept of man. Fearing that the heading of his essay could excite controversy, Geertz began by clarifying that his definition of culture is essentially semiotic: "man is an animal chained by the web of meanings he himself has conceived (Geertz 1989: 15). It is a concept which revisits the memorable sentence of the Russian, Mikhail Bakhtin: "when we study man, we search and we find signs everywhere and we try to understand their significance" (Bakhtin 1986: 114). Geertz's intention was to defend the symbolic system as a fundamental tool of culture; and this he perceived as having an impact on the concept of man. After all, neither the concept of man propagated by the Enlightenment, based on innate ability, nor the definition of man from behaviour, as became typical in the social sciences, had admitted such a possibility. "A web of meanings" is neither innate nor reproductive of concrete standards of behaviour, such as habits, customs, traditions. For Geertz, these refer to mechanisms of control aimed at governing behaviour. Such mechanisms are developed by culture. Herein lies the core element of 'impact', once the evolutionary arrow has been redirected: biological and cultural development begin to be understood as interactive rather than causal movements. On the basis of such redirection, the major element in the definition of man lies not in "the empirical trivialities of human behaviour" and still less in human innate abilities, but in the mechanisms of control without which human behaviour would be unmanageable. Geertz recognizes that his ideas are not new, however

certain recent developments, as much in anthropology as in other sciences (cybernetics, information theory, neurology, molecular genetics) had become susceptible to a more precise affirmation, in order to afford them a certain degree of empirical support which they did not previously possess. (Geertz 1989: 57)

In this sense, culture functions as a centre of production for the mechanisms of control to directing behaviour. If it were

not directed by cultural norms — organized systems of symbolic signs — the behaviour of the man would be virtually unmanageable, a simple, meaningless chaos of acts and emotional explosions [...]. This means that culture, rather than being added, so to speak, to a finished or virtually finished animal, is an ingredient, and an essential ingredient, in the production of exactly this animal. (Geertz 1989: 58, 59)

On the basis of this position, Geertz's intention is to show that man not only creates signs, but he is controlled by them (a position also defended by the Russian semiotician V. V. Ivanov (1977: 27–38) who defines a convergence with cybernetics, a hypothesis also considered by Geertz). The major sign systems (languages, art, myth, rituals, media and the sign systems of contemporary culture) have become systems of feedback, control and organization of the biological system. Soon, there will be no human nature without culture: "we are incomplete and unfinished animals, and are completed through culture". Culture fills the informational gap of man (Geertz 1989: 61).

The controversial position of Geertz has regard, therefore, to the interconnection between biological and cultural mechanisms through a principle of complementarity. He clearly states that human is an unfinished being, constantly developing and seeking completion. For him, "the discovery of that most of the biological changes produced by modern man, apart from man's more immediate ancestors, occurred in the central nervous system, and especially in the brain" (Geertz 1989: 58), is an undeniable sign of incompleteness. Therefore, it is in the development of tools, manuals and intellect that the interconnection appears most appropriate. If it is true that man must learn in order to function, it is equally true that man needs to learn to think in order to develop. Development, here, represents completion.

The Geertzian notion of impact is, therefore, justified. It intervenes with consolidated conceptual fields, undoing beliefs and distinctions, as the polemical opposition between nature and culture.

Will this be the case of the notion of impact in the field of contemporary technological culture? This is what we will now consider.

Semiodiversity of technological culture

Before moving on, it is necessary to make a precise determination as to whether the concept of technology represents a redirection of culture, in Geertzian terms, so that we can reflect on the issue of 'impact'. As a starting point, let us consider the definition presented by McLuhan: "Technologies", affirmed the theoretician, "are ways of translating one kind of knowledge into another" and "translation is, thus, a 'spelling-out' of forms of knowing" (McLuhan 1998: 56). Technology is explicitness. So, explicitness is a mechanism responsible for the improvement of technological tools that permit, amongst other things, the expansion of different sign systems, codes and cultures. In this sense, technologies appear as part of a gradual process, proper to all evolutionary technique, as it was conceived by Juri Lotman (1994; 1999). However, each new technology represents an explosive movement in culture, but as a crossroads rather than a causal effect. Evidential proof of this process is to be found in a currently increasing semiodiversity. When situated in the gradual scale of explicitness, that is, against the background of semiodiversity, the idea of 'impact' starts to show signals of fragility and inadequacy. So much has been said about the notion of the 'impact' of digital-electronic technologies on writing and this controversial example is as much polemic as it is enlightening; fertile ground for the current reflection.

Firstly, it is worth remembering that writing as technology is a descendent of the gradual process of the explicitness of technological culture. The fact that it consisted of extremely simple codes or discreet signs did not prevent it from becoming our first technology, referred to by the anthropologist Jack Goody as: "the technology of the intellect". Its devices had already experienced diverse explicitness and expansion, most likely initiated by the Sumerians and is far from being complete. Writing has already explored diverse areas of possibility: alphabetical writing has already been handwritten, typographical and, today, it is digital-electronic. The character of explicitness is embedded in the concept of writing in such way that, naturally, it may be used for writing sign systems which are not articulated by an alphabetical code, for example, as is the case when drawing an image. Thus writing is a designation of the semiodiversity of technologies of the intellect; and is entirely in contrast to any idea of impact. However, it

has also been one of the most expressive ways of demonstrating the effect of the impact of modern technologies.

For many lauded scholars of culture, electronic technologies not only have an impact on society, they are becoming a great threat to writing!... The Brazilian linguist, Maurizzio Gnerre, leads the stream of critics who take this point of view. For him,

writing, and the reflection of the *impact of writing* on human society, appears to be an object of interest when it, whilst being practised inside traditional forms, seems to have already reached its apogee and appears ready to become an *obsolete activity*. Whilst important decision-making centres manipulate billions of data and information through a whole range of new technologies, traditional writing is slowly losing its position — previously exclusive — in this process, it also becomes an object of reflection. (Gnerre 1991: 41–42; italics are mine — *I. M.*)

For the linguist, digital technology has nothing to do with writing; it can, therefore, threaten it and exterminate it. With this, traditional writing (*sic!*) is becoming an archaeological artefact to be examined, perhaps even relegated to visiting in major museums of the scholastic world which defined it.

Perhaps the position of the Brazilian linguist is not entirely unjustifiable. After all, we live in a country whose literary culture includes a high degree of illiteracy. In this case, one could affirm that writing in the alphabetical language runs the risk of obsolescence: not everyone who, today, manipulates a digital keyboard with great dexterity possesses the textual ability to write even the most trivial note in their mother tongue, everything is dominated by the process of typing and digitalisation. The suspicion of the writer Alberto Morávia is thus confirmed when, for sure, we can affirm that the problem of our time is that now illiterate people know how to read... A paradox that could be synthesized by the idea that we are creating the most cultured illiterates on the planet.

Whilst the exception is made, electronic technology need not proceed to lead to the obsolescence of writing. If the linguist identifies traditional writing, distinguishing it from that of modern digital writing, it is because “writing modifies itself”. It has not disappeared and it has shown itself to be even more necessary. The proof of this is that the text in which he declares the obsolescence of writing was written and printed in a technological way, or better, digitised and copied by

an electronic system. Such arguments reproduce a commonality of the type of mistake that Plato fell into when condemning writing for all in a generation who could only access his ideas through a written composition.

If we recognize the interactive function as an elementary mechanism of contemporary technological culture, we cannot admit to a notion about the impact on culture which is so exaggeratedly disseminated, especially between the "written" and the "digital system". As N. Negroponte never ceases to affirm, we are talking about a "difference between atoms and bits", nothing more. There is nothing of impact, because, overall, the bit does not possess colour, size, volume, depth and, much less, weight, even so it has the capacity to travel at the speed of the light. "To be digital it is to have license to grow", to expand, to be open to possibilities and not to gravitate around any old centre (Negroponte 1997: 19, 46). Growth, however, does not appear out of nothing; it only can appear *via* atoms. Or better, in terms of an interaction between atoms and bits and also of the mixtures of bits. The bits, move in a fluid network; and this is what creates open expansion. This may also be of interest for economics or sociology [of this I have few doubts] but it is fundamental for semiotics. Without interactivity, there is no semiotic chain, much less semiosis. This did not pass unobserved by Clifford Geertz.

Explicitness becomes confusion in the revolution of strong impacts; whereas technology is ejected from culture as if it were a body alien to it. In such a situation the so-called ballistic metaphor of the impact on culture emerges in a huge way. It is time to approach a more declarative approximation of the word 'impact' in the domain of semantics and conceptual achievements.

Defining ballistic metaphor

It was previously affirmed that, in any reflection on the culture of today, the word 'impact' appears as a natural appendix of technology, thus forming a basic conceptual nucleus of all that relates thereto. There are as many fervent allies of "new" technologies as there are cruel adversaries of "advance" or "impact". My doubt lies in this neutralising association of dissenters. If culture represents the collective intellect of management, gradual processes, control mechanisms, how

can we identify the linking of its learning, of its successes, if in the present moment an alien body is causing a short circuit in the flow of its development?

Advance does not necessarily imply impact which is no more than a poor metaphor. The sociologist, Pierre Lévy, has very much disqualified the metaphor of impact so naturally applied to the advance of the current technologies. For Lévy, in this metaphor where "technology [is] comparable to a projectile (rock, howitzer, missile) and culture or society to an ambulant target...", a minimum condition for the verification of the management of cultural knowledge, its discoveries and the generating tools of cultural systems do not exist. The totality of the project of propagated intelligence of cognitive ecology is engaged. And Lévy, very ironically, asks: "Could it be that these techniques come from another planet, the world of machines, cold, emotionless, stranger to all human meaning and value, as a certain intellectual tradition tends to suggest?" (Lévy 1997). Evidently not. We learnt in Lotman's (1990) studies on the semiosphere that in the semiotic space, extra-semiotic elements are carriers of translations and, between them, create border relations.

Nevertheless technologies are products of society and culture. So we have to agree with Lévy when he says,

not only are these techniques imagined, manufactured and reinterpreted for human use, but it is the proper intensive use of tools that constitutes humanity as such (together with complex language and social institutions). It is the same humanity who speaks, buries her or his dead and cuts the stone. [In this sense,] it is not a case of evaluating impacts, but of discovering the irreversible, the uses to which they would lead. (Lévy 1997: 3)

This affirmation is sufficient to suggest that the semiodiversity of technological culture is something which it is much more important to preserve and to disseminate than the notion of impact. Thus technologies can only be considered tools through which the process of cerebral completion looks to develop its search for complementarity, so doing via notions of "interior" and "exterior" which are treated as being translators and border-generating processes.

Moreover the proper etymology of the word 'impact' precludes the misinformed use of the word, and is unsuitable for semiotic studies. Impact, a term originating from the Latin term *impactu*, as a semantic encounter entails the notion of force, and from that to the specific or

encountered domain of war, or better, the traumatic effect of a projectile, missile or bomb as it meets another body or surface. Thanks to the notion of shaking, the impact registers the resultant emotional manifestations as great traumas or disturbances. There is no other meaning for the word impact in ambient technology. In this field of research, the study of impact seeks to account for the risks and problems that a specific area may suffer if, into it, is inserted a strange, artificial element. For example: given the damage that the construction of a highway, or the installation of an industrial complex, or a dam, can cause to the environment where should they be installed? Anyone who lives in the city of Sao Paulo, in Brazil, knows very well what happened after the transformation of the nearby village of Cubatao into the biggest concentration of iron and steel industry of Latin America. Its impact on the environment (acid rains and all types of pollutant gases) was horrific for animals, plants and human beings. There was no one person who was not shocked when media tired of showing smoky images of the region, started to report on the birth of babies with bad cerebral malformation or proven cases of encephalitis. Events such as these speak radically of the nature of impact: an action directed, from one to another one, usually with harmful results. The action of impact proceeds from the exterior to the interior; there is no border capable of being translated. In this case, really, it is industrial technology whose economic purposes cause an undeniable impact not on culture, or the environment and its population, but on life. It is impossible to apply the same scale of values to the sign systems of culture.

Is this, in fact, what scholars in all areas have in mind when they refer to the impact of digital-electronic technologies on culture, on individuals, on society? I am fully convinced that we are confronted here by completely different situations, thus, we cannot mistake the issues by playing with a semantic domain which is apparently unique and neutral. It is impossible to create novel words, much less strategies of neutralisation.

Evidently the situations reported here show that it is not the semantic domain of the damage that is intended to be valued. I believe that the word impact gained ground even before understanding advanced in the domain of the object itself. The field of medical research, for example, takes us into another sphere in the use of the technology. In the same edition of the periodical which announced the

publication of the Marilena Chaui's book on Spinoza, Bill Gates, discussing medicine, confesses his admiration for the medical profession and, on a specific level, affirms: "good doctors enjoy sufficient personal and professional freedom and exert a great positive impact on the life of people" (Gates 1999: 2). What it would a "positive impact" be?

We know of the impact (in the strict sense of damage) that certain accidents, certain illnesses, provoke to the body. Thanks to equipment, rendered more perfect each time by technology, much of this damage can be repaired, so long as there is a full acceptance by the organism. It is seen, for example, in the case of human prostheses. For those whose lives are threatened by the loss of organic functions, of agency and limbs, could it be that new technologies might provoke an impact which is comparable to the damage of the accident or illness itself? It seems not. On the whole, this is due to the fact that the insertion of such devices in the body offers the only opportunity to keep on living or to carry out vital tasks. Thus, for the mutilated body, to be completed through products derived from an advance in knowledge in a given period of cultural development — such as in the case of a bypass, a leg or a mechanical arm, a metal valve or bolt — has no impact. The device serves to repair the damage. Despite the immense emotional trauma and the strangeness of the aesthetic arrangement, the impact of the technology inserted or connected to the body is of little account in such circumstances. And what are these devices? Technologies. No more than this. They did not come from another planet, nor are they forces that seek to provoke destruction on humanity. On the contrary, they are complementary objects without which many would not have the pleasure of eating, walking, getting dressed, hearing the beat of their heart, pushing a supermarket trolley, even if it remains impossible to retrieve the warmth of an embrace... Evidently, we are talking of a technological object of the exterior world which, translated by the organism, becomes a complement to the body, a semiosphere where the interior and exterior elements of the system live on the borders, but do not suffer any type of neutralisation.

Let me talk about two particular examples. In 1998 the famous Brazilian top model Ranimiro Lotufo was seriously injured in an accident and, unfortunately, he lost one of his legs. This man would definitely have lost his career if he had not been able to remain erect and

walk, thanks to a mechanical leg. And so he did. During 'M. Officer'² summer fashion collection show of 99, Ranimiro appeared showing his mechanical leg in tennis shoes. Everyone who saw his photo on advertising billboards was shocked. Not much time later, the media announced the cruel accident that cut off the leg of the yachtsman Lars Grael during a competition. A few months later he could be seen walking with the aid of a mechanical leg.

Perhaps these examples are enough to show that although positive impacts exist, the inadvertent use of the word impact does not eliminate paradoxes. I believe that such use is a result of the precariousness of our understanding of cultural discoveries that complete us. From this comes the need to review concepts, to re-position the facts and, above all, to ponder the meanings of the semantic domain of the term used.

Impact or explosion?

The notion of impact is applied to products which are so heterogeneous that instead of generating meaning they empty the object of any sense related to it. If it is true that the cultural development of man follows the path of a gradual process, tied to cerebral improvement, a new tool or technology cannot so much be considered from the perspective of its immediate effect. To classify a tool in positive terms can be interesting, but it does not take into account of the irreversibility that its growth causes. Its significance lies in the process of cultural conquests. To achieve such an understanding it is necessary to change the method of discussion.

In studies dedicated to culture and its semiosphere or, alternatively, its semiodiversity, the Russian semiotician, Juri Lotman, provides for the concept of the border and the dynamic transformations of cultural processes where the products are the result of what are defined as explosive moments which take place in the interior of gradual processes of development. The Lotmanian notion of explosion is the counterpart of the notion of impact. In it, it is possible to consider some technologies semiotically, as part of the semiosphere, or alternatively, as part of the semiotic space where different sign systems

² *M. Officer. Summer 99. Catalogue*, vol 7, no. 10. See also www.ranimiro.com.

occupy the borders and, what is more important, where the various extra-systemic constituents can be translated by that which is inside without the use of force. This is because semiotic translation does not occur through impact, but through explosion.

Before moving on, it is necessary to clarify the fact that the explosion conceived of by Lotman is a philosophical concept and not a physical phenomenon, even though so much has been formulated on the latter in the light of the great explosion provoked by the Big-Bang, a landmark of the expansion of the universe. In fact, it is not so much the phenomenon as the process that lies at the origin of the Lotmanian concept. An explosive moment, once it has occurred, is completely ignorant of the chain of events. We are talking about a timeless and plurisecular moment, a time in which the present 'snapshot' emerges from the past, whilst containing all the possibilities of future development.

The moment of explosion interrupts the chain of cause and effect and projects onto the surface a space of equally probable events, from which it is impossible, in principle, to say which will be fulfilled. The moment of explosion locates itself in the intersection of the past with the future in an almost timeless dimension. (Lotman 1994: 35)

None of this is confused with impact because explosion implies, more than anything, interactivity.

Lotman probably considered that his way of thinking went developed against the flow of some generalisations on culture.

At the present moment, European civilisation (including American and Russian) is experiencing a period of general discredit against the very idea of explosion. Humanity lived through a period between the 18th and 20th centuries which may be described as the realisation of a metaphor: socio-cultural processes found themselves under the influence of the image of explosion not as a philosophical construct, but rather in terms of its vulgar relationship with gunpowder, dynamite and nuclear fission. Explosion as a phenomenon of physics, transferable to other processes only in the metaphorical sense has, to the contemporary man, come to be associated with ideas of devastation and has turned into a symbol of destruction. But if, at the core of our representations of today, there lies the kinds of associations that existed during periods of great openness, such as the Renaissance or art in general, then our understanding of the concept of explosion would evoke in us such phenomena as the birth of a new living creature or any another creative transformation of the structure of life. (Lotman 1999: 22–23)

Herein resides the core argument which separates impact from explosion. If, by explosion we are considering the physical phenomenon, invested with atomic power, then we will be dealing in this case with the idea of impact and the ballistic metaphor suggested by it. However, if the explosion is an overlapping expansion of a gradual process and is, therefore, capable of dialogue with each one of the links of the chain without reproducing any of them, then we will be approaching culturally explosive processes. Impact expresses the vulgar side that trivialises all objects in the vicinity, whether this be a powerful complement to life, such as is the case with human prostheses, or a projectile, or even an intellectual tool such as digital-alphabetical writing.

Conclusion

To consider contemporary culture as an explosive moment is to traverse "the great time of cultures" as conceived by M. Bakhtin (1986), as soon as digital-electronic technologies create dialogic relations with the past, they point to future possibilities. Just as, in the heat of the dazzlingly wonderful accomplishments of the computer and of its networks, speculations about life in the next millennium grow at a dizzying pace. Future conquests and possibilities inhabit the same semiotic space. The future becomes a phenomenon of the extra-system which can be translated by the constituent elements of the system. Past, present and future live on the borders. In the semiosphere, there is not the least risk that an extra-systemic element can attack the interior. It is not for nothing that Lotman appealed to the mathematical theory of sets to elaborate his concept of the border. Thus, in the semiosphere, the border corresponds to a modelling process of that which lies in the exterior and, therefore, can be translated by that which is interior and vice versa (Lotman 1993: 125).

So far as the border in the semiotics of culture is concerned, the main consequence of explosion is the decentralisation between systems and the redistribution of the borders that exist between them. In this sense, Lotman sees explosion as a key to understanding culture from a global perspective. In the notion of culture as text, that is, as a dynamic system capable of multiplying itself in multiple semiotic systems it becomes fundamental. Explosion as an accelerator of the development of systems hides the radical transformations that occur in

the interior of culture in the form of a chain which promotes the expansion of systems rather than their destruction.

What we see in technological culture is the agency of electronic objects and something similar to the explosion which Lotman speaks of is anchored in the discoveries of Prigogine. In this sense, writing would be the most explosive component of the system. If, in culture, the scholar explodes orally, in eras of electronic information, writing expanded in notational and numerical systems, in the case of digitalisation. As the anthropologist and poet, Antonio Risério confirms:

writing is born in one factor that is already human: graphology. A graphical foundation does not exist in the world external to humans — the scribbles of monkeys are linked to a potentiality which we only see occurring in captivity, with monkeys being submitted to special training [...]. And as with *homo sapiens*, it is risk that converts this into a symbol. The set of traces is in the brain. But, in order for it to materialise elsewhere, it requires that the hand be put in motion — and that the hand in motion dominates not only its own rhythm, but also the technique through which it inscribes. (Risério 1998: 50–51)

The movement of the system is always explosive: “the sudden expansion” happens in the interior of a compressed space, a force, which, here, is not a gas, but rather the explosive movement of intelligence. Something like the dynamic of the Big-Bang which imprinted on culture the paradigm of explosive manifestation.

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Столкновение или взрыв?

Технологическая культура и баллистическая метафора

Термин “столкновение, воздействие” (*impact*) стало словом, которое при использовании его в связи с оценкой технологических достижений в современной культуре означает эрозию, ослабление и уклонение. Такое неразборчивое употребление этого термина в самых разных контекстах привело к необходимости использовать подход семиотики культуры, где знаковые системы рассматриваются в терминах границ и отношений. Цель настоящей статьи — анализировать тривиализацию использования этой баллистической метафоры в момент культурного взрыва. Для этого обратимся к формулировкам, представленным Юрием Лотманом в его книге “Культура и взрыв”. В какой мере понятие взрыва противопоставлено понятию столкновения? На этот вопрос пытается ответить данная статья.

Kokkupõrge või plahvatus? Tehnoloogiline kultuur ja ballistiline metafoor

Termin 'kokkupõrge, mõju' (*impact*) on saanud sõnaks, mis, kui ta käib tehnoloogiliste saavutuste väärtustamise kohta tänapäeva kultuuris, määrib erosiooni, nõrjust ja kõrvalehoidmist. Selle mõistmatu ja hoolimatu kasutamine kõige erinevates kontekstides on loonud tarviduse kultuuri-semiootilise lähenemise järele, kus märgisüsteeme vaadeldakse piiride ja suhete termineis. Käesoleva artikli eesmärk on analüüsida ballistilise metafoori kasutuse trivialiseerumist kultuurilise plahvatuse käigus. Selleks pöördume semiootik Juri Lotmani poolt tema raamatus *Kultuur ja plahvatus* esitatud sõnastuste poole. Mil määral on plahvatuse mõiste esitatud kokkupõrke mõiste vastandina? Püüd vastata sellele küsimusele on motiveerinud käesolevat uurimust.

Структурные парадоксы русской литературы и поэтика псевдооборванного текста

Олег Борисович Заславский

Dept. of Mechanics and Mathematics,
Kharkov V. N. Karazin National University
Svoboda Square 4, Kharkov 61077, Ukraine
e-mail: ozaslav@kharkov.ua

Abstract. Oleg B. Zaslavskii. Structural paradoxes of Russian literature and poetics of pseudobroken text. Traditionally, the Pushkin's work "My provodili vecher na dache..." is considered to be uncompleted. However, on the basis of structural arguments, we show that, in fact, it is completed as an artistic whole. Taking also into account the results of previous analysis of works by Pushkin, Lermontov and Gogol', we introduce a new notion of "pseudobroken texts". Their distinctive feature consists in the structural correspondence between the break of a plot and a break as the theme of the text — such, that it is the break of a text which confirms that the text is finished. From the general viewpoint, such a paradoxical phenomenon can be viewed as modeling the impossibility to destroy art and culture.

Введение

Вопрос о том, закончено ли произведение или нет, является иногда далеко не очевидным. Особенно актуальной эта проблема представляется применительно к поэтике Пушкина — здесь предельная лаконичность не раз вводила исследователей в заблуждение. В результате ряд оставшихся в рукописном виде произведений, которые в действительности представляют собой законченное художественное целое, считаются незавершенными, что не может не вести к обеднению и искажению их смысла. В предлагаемой работе мы рассматриваем статус одного из таких произведений — "Мы проводили вечер на даче...", который до сих пор печатается в разделах "Отрывки и наброски" собрания его

сочинений, — и приводим аргументы в пользу его законченности.

Рассматриваемая проблема имеет также аспект, связанный с более общими вопросами структуры художественного текста. В серии предыдущих работ (Заславский 1999; 2003; 2004; 2006) нами был уже рассмотрен ряд произведений русской классической литературы, не доведенных авторами до публикации в окончательном виде и традиционно считавшихся незаконченными. Их анализ, проведенный в цитируемых работах, привел к другому выводу — что в действительности эти произведения полностью завершены. Мы увидим, что независимые разборы совершенно разных произведений (включая предложенный в настоящей работе) приводят к сходному результату, причем на основании сходных аргументов структурного характера. Это естественным образом приводит к обобщению полученных ранее частных выводов: мы предлагаем выделить в отдельную категорию тексты, в которых имитация оборванности не только является значимым фактором их внутренней структуры, но и парадоксальным образом удостоверяет их завершенность как художественного целого (они названы нами псевдооборванными).

“Мы проводили вечер на даче...”

Произведение Пушкина “Мы проводили вечер на даче...” (в дальнейшем для краткости МПВД) традиционно рассматривается как неоконченный отрывок. Такой взгляд закономерно приводит к тому, что данному произведению отказывают в самостоятельной значимости, рассматривая его лишь как предшественника “Египетских ночей”. Исключением является мнение Ахматовой, которая сравнила МПВД с маленькими трагедиями и определенно высказалась в пользу законченности этого произведения. Хотя в своей заметке о МПВД Ахматова (1977: 197–200) продемонстрировала глубокую читательскую интуицию, она тем не менее не привела филологически значимых аргументов.

Основание для распространенного вывода о незаконченности МПВД лежит на поверхности — сюжет действительно обрывается, так что дальнейшая история Алексея Иваныча и Вольской в ее соотносении с “анекдотом” о Клеопатре остается не-

известной. Вместе с тем, сам факт обрыва сюжета еще не обязательно означает незавершенности художественной структуры: обрыв может тематизироваться и приводить к тому, что “незавершенность” оказывается намеренной (ниже мы приводим ряд таких примеров). Сейчас мы покажем, что аналогичное обстоятельство действует и в данном случае, так что в действительности МПВД является законченным.

Обратим внимание на следующие факторы: (1) возможность повторения условий Клеопатры в современном для персонажей мире предполагает, что *жизнь* подражает *тексту*; (2) в МПВД дано изложение истории о Клеопатре в виде *незавершенного текста*, введенного внутрь основного текста (“поэма”, начатая, но брошенная);¹ (3) после получения явственного намека, что условия Клеопатры подтверждаются, текст заканчивается, причем таким образом, что главный герой “встал и тотчас исчез”. В результате исчезновение оказывается двойным — из помещения и из текста, а сам текст при этом обрывается как раз на слове “исчез”, демонстрируя параллель между текстом об обрыве жизни и исчезновении персонажа. Более того, ключевая идея произведения — о преждевременном и противоестественном обрыве жизни — получает в этом случае непосредственное воплощение в структуре самого текста. Читатель никогда не узнает о том, что случилось с Алексеем Ивановичем и Вольской — подобно тому, как не случится дальнейшая жизнь Алексея Ивановича, если условие Клеопатры будет принято и исполнено.

Обратим еще внимание на акцентирование темы отрицания, отбрасывания в самом конце, чем еще раз утверждается параллель между обрывом, т.е. отрицанием текста, и отрицанием жизни. Алексей Иванович задает вопрос: “Вы не обманываете меня?” и получает ответ: “*Нет*”. Обман уже означает отрицание правды, в вопросе добавляется частица “не”, а ответ, утверждающий условие, дается через отрицание.

Все это заставляет сделать вывод, что обрыв является мнимым и художественно значимым — как раз благодаря ему основная

¹ Отметим еще, что обстоятельства, связанные со структурой типа “текст в тексте”, важные для определения статуса МПВД, оказываются существенными и для определения статуса “Египетских ночей”. См. об этом К. Штедтке (1986: 138–141).

идея произведения и получила воплощение в его художественной структуре. Поэтому МПДВ является *законченным произведением*.

Другие примеры псевдооборванных текстов

В этом разделе мы даем краткий обзор ряда аналогичных свойств других произведений (за подробностями мы отсылаем читателя к цитированным статьям), которые приводят к необходимости выделения подобных текстов в отдельную категорию.

“Рославлев”

Центральная для произведения патриотическая тема реализует себя, в том числе, при помощи мотивов “кастрации”, отсечения. Это проявляет себя, например, в высказываниях Полины, которая восхваляет “самоотрубание” рук народом, который поджег собственную столицу, и представляет гибель жениха героини на войне как высшее благо и счастье — через мотив несостоявшегося брака и фразеологизм “отдать руку” последнее также приобретает кастрационный оттенок (более подробно это обсуждается в работе Заславский 1999, раздел 4.2. “Рославлев”). Заканчивается “Рославлев” обмороком рассказчицы при известии о гибели жениха: пресекается жизнь персонажа, происходит обморок как заместитель смерти и пресекается текст. Такой параллелизм, в сочетании с общей значимостью мотива отсечения, приводит к выводу, что обрыв сюжета является намеренным и служит художественным воплощением идейной проблематики произведения. Это согласуется с мнением о законченности “Рославлева”, сделанным ранее на основании анализа сюжетной интриги с учетом “психологической мотивированности жанра мемуаров” (Филиппова 1962: 58).

“Сказка для детей”

Здесь значима тема ускользающего, вырывающегося слова (“Свой стих за хвост отважно я ловлю”). В конце концов стих

вырывается и улетает, в руках же у автора остается дефектный, оборванный текст — отсюда и кажущийся (но в действительности значимый) обрыв сюжета. К этому нужно прибавить, что свойства таких категорий как начало и конец текста сами обыгрываются в произведении и тем самым тематизируются, причем формально отсутствующему концу соответствует не объясненная и не вполне локализованная в тексте “завязка” (“Ее волшебнo-темную завязку Не стану я подробно объяснять”). Более того, игра категориями начала и конца имеет в произведении парадоксальный характер, подчеркивающий условность обрыва: “хвост” — задняя, *концевая* часть, — упоминается в *начале*, а эпиграфы (“эпиграфы неведомых творений”) — признак *начала* — в самом *конце*.

“Очами в очи”

Вспомним последнее предложение произведения: “Так угаснувший огонь еще посылает на воздух последнее пламя, озарившее трепетно мрачные стены, чтобы потом скрыться навеки и”. Здесь заканчивается текст в целом, а кроме того обрывается его последняя фраза, причем содержанием этой оборванной фразы является как раз момент обрыва (длившийся процесс угасания заканчивается последней вспышкой) — получается тройное структурное соответствие. Поскольку в произведении речь идет о процессе угасания жизни, указанные композиционно-тематические соответствия означают, что обрыв последней фразы — не просто намеренный, но воплощает в себе центральные коллизии сюжета, связанные с преждевременным обрывом жизни персонажа, так что произведение является полностью законченным художественным целым.

“Отрывок”

Проведенный в работе (Заславский 2006) анализ текста в целом приводит к выводу, что резкий обрыв едва начавшегося повествования может рассматриваться как выражение художественной автономии творца. А именно, на приставания публики по поводу

создания новых произведений в 1-й части произведения следует ответ — обрыв повествования и демонстративное предъявление публике отсутствия текста, которое однако на другом (недоступном ее пониманию уровне) является содержательным и представляет собой органическую часть завершеного целого. Кроме того, в произведении особую роль играет лейтмотив отрицания — таким образом, что текст рассказывает об отрицании и при этом отрицает сам себя, превращая такое отрицание (в том числе обрыв сюжета) в содержательный фактор.

“Египетские ночи”

Выше мы уже упоминали работу К. Штедке (1986: 138–141), в которой на основании анализа идейной проблематики произведения и с учетом его структуры был сделан вывод в пользу законченности произведения. Сейчас мы хотим добавить к этому другие соображения структурного характера, которые приводят к сходному выводу. История о Клеопатре звучит в исполнении импровизатора — тем самым внезапность симметричным образом относится как к ее началу (происходит импровизация на заранее не предсказуемую тему), так и ее концу (где происходит обрыв). История о Клеопатре представлена как текст в тексте, причем с учетом последней строки (“Глава счастливых упадет”) обрыв оказывается тройным: упоминается отсечение головы, “отсекается” последующий текст импровизации и произведения в целом. К этому нужно добавить, что (как и в МПВД) темой здесь является противоестественный и преждевременный обрыв жизни. Все это свидетельствует в пользу законченности “Египетских ночей”.

Обрыв текста как признак его целостности

Приведенных выше примеров вполне достаточно, чтобы выделить в самостоятельную типологически значимую категорию художественные тексты, названные нами псевдорванными. Их отличительный признак состоит в том, что сюжетный обрыв оказывается в них иконическим знаком обрыва как темы про-

изведения в целом, причем таким образом, что здесь получается структурный парадокс: именно кажущаяся незаконченность текста (обрыв сюжета), оказываясь мощным генератором смысла, как раз и удостоверяет его законченность.² Подчеркнем, что при этом парадоксальность³ является не только свойством изучаемого текста как заранее фиксированного объекта, но выделяет и ограничивает сам этот объект, делая его завершенным целым.

Если говорить о возможных реализациях отмеченных закономерностей, то, как показывают рассмотренные примеры, характерными являются здесь тема смерти (обрыва жизни персонажа) или тема обрыва (отсутствия) текста как такового. Последнее обстоятельство показывает значимость метапостроений для обсуждаемого типа текстов. Кроме того, в их композиции особую роль могут играть и структуры типа “текст в тексте” (Лотман 1981), которые благодаря удвоению актуализуют и делают особенно значимым структурные аспекты, включая границу, на которой обрывается текст. С обрывом (отрицанием) текста может также сочетаться повышенная роль отрицательных предложений. Сказанное может быть практически использовано в конкретных литературоведческих изысканиях: если в тексте рукописи с оборванным сюжетом содержатся указанные особенности, исследователь должен задаться вопросом, не является ли текст художественно законченным. Более того, благодаря простоте и четкости критериев задача определения статуса текста может оказаться “точно решаемой” (или, по крайней мере, вывод о статусе текста как законченного может быть сделан со степенью строгости, относительно высокой по литературоведческим критериям).

С семиотической точки зрения, обсуждаемое явление можно рассматривать как особый случай текстов с отмеченной категорией конца. По наблюдениям Лотмана,

² Не является ли столь необычная особенность таких текстов как раз причиной, по которой их авторы не решились их опубликовать (по крайней мере целиком — Пушкин опубликовал в “Современнике” лишь отрывок из “Рославлева”)?

³ Подход к парадоксальности как самостоятельному явлению, заслуживающему отдельного изучения, был ранее продемонстрирован выходом сборника с характерным названием “Парадоксы русской литературы” (Маркович, Шмид 2001).

кажущаяся неоконченность или неначатость является в художественном произведении особенно маркированным конструктивным приемом. Ср. имитацию неоконченности в “Сентиментальном путешествии” Стерна, неначатости (“Вступление” помещено в конце седьмой главы) и неоконченности “Евгения Онегина”, перенесение действия за пределы рампы в драматургии Пиранделло и ряд др. примеров. (Лотман 1970: 56)

В примерах, приведенных Лотманом, законченность произведения заранее очевидна (в том числе и благодаря такому внешнему фактору как окончание книжного текста), а обрыв выступает на фоне ожидаемого продолжения как демонстративное нарушение норм повествовательного текста — именно поэтому такая “неоконченность” и оказывается “особенно маркированным конструктивным приемом”. В нашем же случае статус текста заранее не очевиден, и сама его оконченность удостоверяется именно обрывом. (Возможны и промежуточные случаи, когда благодаря игре категориями начала и конца обрыв текста тематизируется, однако сам факт целостности оборванного текста следует из других обстоятельств. Скажем, “Иван Федорович Шпонька и его тетушка” демонстративно обрывается на словах, что замысел тетушки станет известен читателю в следующей главе, однако уже из вводной части читателю известно, что рукопись сохранилась не полностью, что и объясняет статус произведения.)

В обсуждаемом явлении есть еще один аспект.

Устойчивость культуры проявляется в ее необычайной способности к самовосстановлению, заполнению лакун, регенерации, способности преобразовывать внешние возмущения в факторы внутренней структуры. В этом смысле культура проявляет свойства таких организаций, как живой организм и произведение искусства. (Лотман 1970: 105)

Поскольку псевдооборванный текст восстанавливается и окончательно завершается как единая художественная целостность именно в результате сюжетного обрыва, то этот тип текстов моделирует на своем собственном примере неуничтожимость искусства и культуры как таковых.

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Struktuursed paradoksid vene kirjanduses ja pseudokatkestatud teksti poeetika

Traditsiooniliselt peetakse Puškini “Me veetsime õhtut suvilas...” lõpetamata tekstiks. Tuginedes struktuurasetele argumentidele väidame, et see on lõpetatud kunstiline tervik. Võttes arvesse eelnevaid Puškini, Lermontovi ja Gogoli samalaadsete tekstide analüüse, viime sisse uue mõiste “pseudokatkestatud tekst”. Neid eristavaks tunnuseks on struktuuralne seos süžee katkemise ja katkestuse kui teksti teema vahel. Just näiv teksti lõpetamatus (süžee tasandil), olles võimsaks tähenduse generaatoriks, kinnitab teksti lõpetatust. Üldistavalt võib öelda, et taoline teksti tüüp modelleerib kunsti ja kultuuri hävitamise võimatust.

