It would be foolish if we attempted to impute or ascribe philosophical inadequacy to Uexküll’s interpretations, instead of recognizing the engagement with concrete investigations like this is one of the most fruitful things that philosophy can learn from contemporary biology. (Heidegger 1995: 263)

Uexküll, one of the main founders of ethology, is a Spinozist when first he defines the melodic lines or contrapuntal relations that correspond to each thing, and then he describes a symphony as an immanent higher unity that takes on a breadth and fullness (‘natural composition’). (Deleuze 1988: 126)

What busy inquirers into verbal semantics — linguists, logicians — have probed and profited from Uexküll’s masterful *Bedeutungslehre*? (Sebeok 1976: x)

In order to appreciate the abiding relevance of Jakob von Uexküll’s work for semiotics and philosophy I will first briefly introduce his work and then move to its appropriation by John Deely. This involves the not unfamiliar maneuver of creeping up behind a thinker and producing something new and interesting which both retains essential elements of their thought and places them within an entirely different framework. In this case it will be the shift from Uexküll’s understandably German and Kantian idealism/constructivism (‘All reality is subjective appearance’, Uexküll 1926: xv) to a semiotic ‘constructivism’ which is *objective*, but not as a binary opposite of subjective in the classical modern sense. *Objective* in the semiotic sense (with its roots in Scotus/Poinsot) can include aspects of the physical and psychical in a labile interface. This requires a certain mental agility...
for even the most subtly agile critical thinker. A paradigm shift into a postmodernism worth the name — at least that is Deely’s challenge. Whether we retain the term postmodern or opt for Latour’s (1999: 21) nonmodern matters little. Whatever the term, it will indicate something different from modernism and current accounts of postmodernism.

Furthermore, I will seek to elaborate the critical distinction between the animal and human animal Umwelt or species-specific objective worlds as it is presented in Deely’s work. This distinction is timely because although it has similarities with Heidegger’s treatment of exactly the same question, I will claim that Deely provides a more articulate and nuanced analysis and those who are shocked by and criticize Heidegger’s ‘abyss’ between man and animal (e.g., Krell 1992, or Derrida 1989, 1991) might find this approach of value — even if only to distinguish themselves from it. The ultimate issue being to what extent it can be said that a non-languaging animal apprehends its Umwelt or milieu/environing world as a world at all. Deely’s distinction between zoösemiosis and anthroposemiosis intersects with Wittgenstein’s approach to forms of life and expressive capacities that could only exist in language — ‘We say a dog is afraid his master will beat him; but not, he is afraid his master will beat him tomorrow. Why not?’ (Wittgenstein 1958: §650). What would be the expressive behavioral manifestation of this fear about a future event? To what extent is it intelligible to say that a tick has a pain, or an opinion, or lives in a ‘world’ at all? These distinctions might force themselves between us and become interesting. The concept of objective being (i.e., something existing only insofar as it exists within awareness) will be seen as providing the relational network for the fabrication of species-specific objective worlds or Umwelten.

If we now translate Umwelt as objective world, we are also in a fair position to see the significance of this notion for the understanding of semiosis as a unique process in nature. An Umwelt, von Uexküll tells us, is the physical environment as filtered or transformed by the given organism according to what is important or ‘significant’ to it. Elements of the physical environment are networked objectively, i.e., so as to establish the sphere of experience as something superordinate to and strictly transcending, all the while containing partially and resting upon aspects of the physical environment in its ‘natural’ or ‘mind-independent’ being. Umwelten are thus species-specific: No two types of organisms live in the same objective worlds, even though they share the same physical environment. What the bat seeks (nourishment) the moth avoids (providing nourishment for bats), and conversely. (Deely 1986a: 269)

Uexküll is now much better known than in 1976 when Sebeok asked who had benefited from his Bedeutungslehre (Theory of Meaning). In fact Deely
(1990: 120) will characterize Uexküll as ‘one of the greatest cryptosemiotics of the century’. What did he do to attract the attention of philosophers such as Heidegger, Merleau-Ponty, Deleuze, and Guattari, and particularly semioticians (e.g., Sebeok, Deely) and biosemioticians and biologists (e.g., Kull, Hoffmeyer, Maturana, Bateson)?

I will rely principally on Jakob von Uexküll’s son, Thure von Uexküll, for a preparatory account of his father’s work in T. von Uexküll (1982, 1989). Once the essential notions have been presented we will begin a shift to Deely’s semiotic interpretation which liberates J. von Uexküll from his own somewhat counterproductive reliance on Kantian idealism (i.e., objects conform to cognition, never can cognition conform to objects — the closed bubble of the representational sphere). T. von Uexküll also appears to ultimately rely on an orthodox Kantian perspective although he realizes that ‘The epistemological premise of Jakob von Uexküll’s theory is neither objectivistic nor subjectivist but — as one would describe it today — “systemic”’ (T. von Uexküll 1989: 129) — or as one might also say ‘a semiotic reality’.

Jakob von Uexküll was born in 1864 in Keblaste, Estonia. He originally studied zoology and his later work was concerned with how living beings perceive their environment. He originated a method of research that he called Umwelt-Forschung (Umwelt studies) and in 1926 founded the Institut für Umweltforschung at the University of Hamburg. As Deleuze notes (see introductory quotation), Uexküll is considered to be one of the founders of ethology. His primary interest was in the role played by sign processes in living organisms. His fundamental starting point was that living organisms respond to signs rather than causal impulses. Organisms are selective interpreters, perceiving and acting subjects, that do not respond to external effects in a causal-mechanical way, but with a specific, autonomous response. Uexküll gives the now philosophically notorious example of the tick’s activity to illustrate his Umwelt-theory.

The tick as an interpreter — The functional cycle

In his remarkable A Stroll Through the Worlds of Animals and Men, Uexküll assumes that anyone who lives in the country will know what a tick is, but given that for many people this is not the case, let us add that the tick is a small insect (Ixodinae) related to mites, that lives off the warm blood of mammals. Paraphrasing Uexküll’s account (1957: 6–13) the life of the tick as interpreter unfolds in the following way:

The blind and deaf tick needs to eat so it climbs to the end of some twig or branch where it may fall or be brushed off onto a passing mammal.
The tick climbs toward light due to a photo-sensitive skin. It can detect an approaching mammal due to its sense of smell (i.e., the mammal has a specific odor caused by its sweat glands). When the tick senses the odor (or sign) of the passing mammal it drops (with luck) onto it and latches on. The tick is sensitive to temperature and seeks out a warm hairless spot (e.g., an armpit) where it will pump itself full of blood, becoming the size of a garden pea.

For Uexküll the point of this scenario is that ‘what we are dealing with is not with an exchange of forces between two objects, but the relations between a living subject and its object’ (Uexküll 1957: 11). There are certainly physical and chemical stimuli, but to stop at this purely physiological observation is to have missed something important! A traditional physiological account would describe the tick’s behavior as a ‘reflex arc’ elicited by physical and chemical stimuli (e.g., butyric acid, temperature, tactile response). The reflex arc would simply transmit, by way of the activity of the nervous system, purely physical effects of motion between sensory receptors and the muscles of the effectors. The entire process would involve a transfer of motion (like a mechanism) without any interpretive or perceptual activity that could not be reduced to purely physical terms. Uexküll will certainly recognize the physical or chemical stimuli but argue that this approach misses the point:

We are not concerned with the chemical stimulus of butyric acid, any more than with the mechanical stimulus (released by the hairs), or the temperature stimulus of the skin. We are concerned solely with the fact that, out of the hundreds of stimuli radiating from the qualities of the mammal’s body, only three become the bearers of receptor cues for the tick. Why just these three and no others? (Uexküll 1957: 11)

The answer for Uexküll is that living organisms respond to perceptual signs (Merkzeichen) or ‘meaning’ (Bedeutung), not to causal impulses. Physical, chemical, or thermal changes to the receptor organs are interpreted as signs of the (not yet perceptible) ‘perceptual cues’ of an object, as a counterpart for a specific behavior. Uexküll argues that the ‘subject’ (tick) and ‘object’ (mammal) dovetail into one another and constitute a systematic whole or functional cycle. The organism or interpreter receives signs from its environment and these perceptual signs trigger specific action impulses or operation signs (Wirkzeichen). The whole cycle is a process not made of static objects but of sign relations — a semiosis. For example, with the tick there are three functional cycles following each other in processual succession: (1) the mammal’s skin glands are the sites of perceptual meaning in the first cycle. The butyric acid triggers perceptual signs in the tick that induce the tick to let go of the twig and fall (with luck) onto the passing mammal; (2) the mammal’s hair now produces perceptual
signs which triggers the tick to run around until a warm, bare patch of skin is found; (3) the temperature of the mammal’s bare skin triggers perceptual signs in the tick that initiate the piercing process with the tick’s proboscis.\(^8\)

In this functional cycle the mammal (object) is a connecting link between the tick’s effectors and receptors, which metaphorically ‘grasp’ the object like the two jaws of a pair of pincers (‘a double articulation’). The ‘perceptual jaw’ gives perceptual meaning to the object, and the ‘operational jaw’ an effector meaning. For Uexküll there is a counterpoint or contrapuntal relation between the organism as a ‘meaning-utilizer’ or interpretant, and the perceptual cues or ‘meaning-factors’ of the object — Nature as music.\(^9\) The form of living beings develop in a kind of natural contrapuntal ‘harmony’ or refrain, with each other and their environment.\(^10\) Uexküll (1982: 53) gives the example of the octopus, designated as the subject in its relation to sea-water as the meaning carrier. In this scenario the fact that water cannot be compressed is the precondition for the construction of the octopus’ muscular swim-bag. The pumping movement of the swim bag on the noncompressible water propels the animal backwards. Uexküll claims that the rule that governs the properties of sea-water acts on the protoplasm of the octopus thereby shaping the melody of the development of the octopus form to express the properties of sea-water. The rule of meaning that joins point and counterpoint is expressed in the action of swimming — an energetic interpretant!

So the Umwelt is a model of a species’ significant surroundings. The essential claim is that organisms interpret their environment and are not merely the passive objects of natural selection, as emphasized by contemporary Darwinian evolutionary biology. The Umwelt consists of significant sign relationships. However, Uexküll, in the prevailing context of Kantian idealism, presented Umwelten as subjective appearances or phenomena, and thought of his Umwelt research as a confirmation of a Kantian philosophy of mind:

All reality is subjective appearance. This must constitute the great, fundamental admission even of biology. It is utterly in vain to go seeking in the world for causes that are independent of the subject; we always come up against objects which owe their construction to the subject. When we admit that objects are appearances that owe their construction to a subject, we tread on firm and ancient ground, especially prepared by Kant to bear the edifice of the whole of natural science. Kant set the subject, man over against objects, and discovered the fundamental principles according to which objects are built up from the mind. (Uexküll 1926: xv)

Before examining the contemporary value and semiotic use of the concept of Umwelt, freed from a needlessly unsemiotic Kantian philosophy of
mind, I will give a brief account of Deleuze and Guattari’s appropriation of Uexküll’s work.

The key is the concept of the univocity of being. In his Vincennes seminar, Deleuze (1974) articulates Uexküll’s work by moving from the concept of the univocity of being to a Spinozist interpretation of Uexküll’s nascent biosemiotics. For Deleuze, Duns Scotus only thought univocal being whereas Spinoza affirms it with one Nature for all individuals, and Uexküll’s Umwelt theory becomes an expression of the univocity of being! How does this truly creative and remarkable proposition work (not unlike John Poinot grasping the formal sign as an ontological relation in 1632 — the year Spinoza is born) and in what way might it be further articulated with the being of ontological relations?

Deleuze (1974) makes a ‘terminological detour’ through the Middle Ages and seventeenth century (the philosophical black hole of the between times). This trajectory is, in fact, obligatory, as one has to go back this far to rediscover ontology and its relevance to an onto-logic of signs. For Deleuze this detour concerns the problem of the nature of being which was discussed by the scholastic seminarrians in terms of equivocity, analogy, and univocity. He emphasizes that these scholastic discussions still have concrete relevance for us because we continue to think with these terms even if we are not aware of them.

To state that ‘being is equivocal’ means that ‘being is said in several senses of that which it is said’. For example, being is said in a different way of God, animals, and tables. They have different kinds of being and there is no common measure between these equivocal senses of being.

To state that ‘being is analogical’ means that ‘being is said in several senses of that which it is said, but these senses are not without common measure: they are governed by relations of analogy’. This was the canonical interpretation of Aquinas and it is intimately linked to the concept of the categories (e.g., substance, quantity, relation) or categorial thinking of Aristotle or Kant. The categories are the concepts which are said of every possible object of experience — in other words the categories are that which is said of the different senses of the word ‘being’. Deleuze gives the example of the ‘object’ lion which is not a category because one cannot say ‘lion of every object of experience’ (one, of course, can do this at the risk of being placed in a mental asylum). Thus categorial thought is analogical because the categories are applied to the different senses of the word ‘being’.

Deleuze defines the univocity of being thus: univocal being ‘has only one sense and is said in one and the same sense of everything of which it is said’. This is the thesis of Duns Scotus. Deleuze understands this as a ‘pre-categorial’ and pre-analogical thought — ‘a mad thought’ — which
will become an experimentation with relations as the violent and repugnant ‘hallucination point of thought’. How can we say that God and ticks, trees and stones, imaginary worlds and impossible objects (e.g., a square circle) have one sense, or univocal being?

Now it is possible at this point to sense that one is beginning to drown in a set of sterile debates that have absolutely no relevance to our experience. I have no mastery of scholasticism, nor of the history of philosophy (nor do I aspire to this) but there is something interesting happening here that I would like to focus on.12

Duns Scotus is not seeking to completely eliminate analogy from the concept of being but to show that it cannot be exclusively analogous. He does not exclude analogy but allows for its possibility. His fundamental point is that unless there is a univocal concept of being common to the analogous ones, they will not be analogous but equivocal! In fact, he affirms that although being is metaphysically or logically univocal, in the order of entitative physical being it is analogical. Deleuze notes that without this distinction univocity would become heresy and lead to unpleasant consequences at the stake.

If I say being is univocal, this means: there is no categorical difference between the assumed senses of the word ‘being’ and being is said in one and the same sense of everything which is. In a certain manner this means that the tick is God; there is no difference of category, there is no difference of substance, there is no difference of form. It becomes a mad thought. (Deleuze 1974: 3)

Scouts does not go this far. His motive is to safeguard both the possibility of our knowledge of God and give metaphysics its proper object in a univocal concept of being. He thought this would distinguish metaphysics (as a science of being qua being) from physics portrayed as concerned with the reality of singular physical existents (ens realis).

Now Scotus argues, following Avicenna, that if being is univocal it follows that being is the primary object of the intellect, preceding any particular notion of being as applied to God or creatures (e.g., infinite or finite — being-as-first-known is neither infinite nor finite). The intellect or understanding has its own proper object or primum intelligibile, just as sound is to hearing (primum audibile) or light to seeing (primum visibile). The object of the intellect or understanding is ens primum cognitum, being-as-first-known. Avicenna had made being the primary object of the intellect, in contradistinction to either God or substance, the proper subject of metaphysics. Scotus adopts this position with his own nuances that I will not pursue here.

So what? Deely will claim that John Poinsot’s conception of the coinciding univocal being of relations in objective existence (i.e., as
known), whether mind-dependent or mind-independent (ontological relations are truly relations and distinct or ‘external’ to their terms, whether posited as mental or physical), is grounded in the univocity of the primary object of the intellect, *ens primum cognitum*, as understood by Avicenna. The ontological rationale of relation is univocal, neither physical nor psychical, although capable of being either depending on the particular circumstances. Relations are transversal, they can pass freely from what we consider mind-dependent to mind-independent and vice-versa. Relations in their univocal being as ‘objective’ relations are neither ‘real’ nor ‘ideal’ although at any given *hic et nunc* they will be one or the other — the ultimate abstract machine. There is much here to consider! For Deely it is this univocity that allows for both semiosis (the action of signs) as the being proper to experience and the consequent fluid intermixing of ‘nature’ and ‘culture’ in our experience as constituted through ontological sign relations in anthroposemiosis — the human use of signs — the semiotic web or labile, osmotic, limitless interface secreting interiority and exteriority. ‘An outside more distant than any external world because it is an inside deeper than any internal world: it is immanence … the incessant to-ing and froing of the plane, infinite movement’ (Deleuze and Guattari 1996: 59).

**Univocal becoming**

What is of particular interest is that both Deleuze and Poinsot (mediated to us by Deely) emphasize that there is something about univocal being that is *pre-categorial*. The ‘problem of the unity of Being as over against the multiplicity of categories applied to things’ (Heidegger 1962: 23). Poinsot’s doctrine of signs is a more *fundamental ontology* in that the action of signs as the medium of communication is presupposed by any system of categories and it is semiosis, the action of signs, that allows for the subsequent construction of categorial schemas. Traditional Aristotelian natural philosophy was concerned with the structure of *ens reale*, or mind-independent existence understood in terms of *substances* or units of independent existence and their *accidents* or properties and characteristics. Poinsot’s creative genius is to undercut this categorial approach by showing that it is from within our experience that being is divided up between the mind-dependent (*ens rationis*) and mind-independent (*ens reale*) and that these two kinds of being come together in the sign understood as an ontological relation. Poinsot realizes that the formal sign is an ontological relation, ‘external’ to its terms. It is existentially inseparable, but, nevertheless, distinct from its foundation. A doctrine of signs or
semiotic is not restricted to one side of the division — it is as ‘realist’ as it is ‘idealistic’. We can come to know of the mind-independent existence of things because the ontology of the sign relation is univocal. The ontological relation is neutral or indifferent to its realization, whether in nature or thought. Ontological relation is contrasted with the transcendental ‘relation’ or rather the relativity of relative beings. A transcendental relation is not a relation, but rather the fact that individual existents or subjects are not relations, but relative beings. All being is ‘relative’ but this relativity is twofold — transcendental and ontological. That is to say, within experience we find that as soon as we wish to explain or understand some individual existent we are obliged to take account of what those individuals are not, namely their relations and dependencies upon things other than themselves (their ontological relations). For example, the eye or visual system is not a relation, but as soon as we wish to discourse about the eye we are forced by its manner of being to consider its relation to light. I am not my mother (thank God) but I am related to my mother — that relation is an ontological relation ‘over and above’ my transcendentally relative being, i.e., as an individual being dependent on many factors other than my actual instantiation.¹³

Poinsett’s semiotic approach is pre-categorial because the sign ‘as the medium of communication functions by distinguishing connections within experience, and so is not only presupposed to any system of categories, but is also the instrument of their establishment’ (Deely 1985: 476). What needs to be emphasized is that the sign is univocal in its being as an ontological relation and that this univocity is ‘grounded’ in the univocity of being-as-first-known, the primary object of the understanding. In other words: univocal, semiotic reality — the reality of experience — is neither reducible to the mind’s own workings (e.g., as in the Kantian synthesis) nor to that of a prejacent external physical world in which the mind has no part. It is a limitless interface where the line between what is and what is not independent of interpretive activity is a continually shifting semiotic process. As Deely observes so well in numerous articles¹⁴ what comes first in experience is neither ens reale nor ens rationis. It is through experience that being divides into what is not independent of understanding (ens rationis) and what is independent of my understanding (ens reale). Thus, there is a ‘prerivative’ sense of being, and this ‘sense’ of being ‘whatever it be, is prior to being in either of the derived senses; and it is this prior being — the being proper to experience — that semiotic takes as its province’ (Deely 1988b: 73). This priority of univocal being is not a linear temporality which would be left behind, it is intrinsic to the possibility of being able to predicate anything at all (e.g., ‘what is that?’). Univocal being is a ‘unique’ or singular notion, sui generis. It is the
happening of experience, or the eventing of the event, neither ‘inside’ nor ‘outside’ — the non-subjective ‘thisness’ or heccity of the signifying event or action of semiosis. As we have noted Scotus is inspired by Avicenna in his understanding of univocal being, as is Deleuze, who understands ‘sense’ in terms of Avicenna’s univocity. For Deleuze it is the univocity of sense that allows the escape from the circle of the proposition. We are established ‘from the outset’ within sense as that which allows for the articulation of the difference between things and propositions. Sense, or univocity, is presupposed and is that which allows for the distinction between the particular and the general. For Avicenna univocity is the third state of essence, essence as sense, the ‘pure event’, indifferent to all opposites. This Persian doctor and metaphysician (Ibn Sina) seems to be a critically important and somewhat neglected conceptual persona.

In fact, we are able to see in hindsight that what Avicenna had given a name to was nothing less than the materia prima of anthroposemiosis. The primum cognitum of medieval thought turns out to be precisely what the linguistic sign informs in enabling us through discourse to argue about what is and what is not in nature as about how experience is and is not rightly to be interpreted in any given context of discourse, including the metaphysical. (Deely 1988a: 8)

Deely will argue (with some reference to Heidegger — for the non-languaging animal everything is ready-to-hand, not present-to-hand) that this apprehension of univocal being by the understanding or intellect is only available to animals operating in language (currently humans), because language entails the grasping of relations of signification, as such, rather than perceptible aspects of things. Non-languaging animals are aware of their surroundings and of relative beings, but not of the relations themselves because they are not sense-perceptible. Univocal being requires an understanding of something that is not perceptible and can only be expressed through linguistic means. In such an incorporeal scenario this would be what differentiates human communication from animal communication. We will inevitably return to this ‘problematic’ proposition!

Let us recapitulate: There is a pre-categorial, ‘prederivative’ understanding of being (or sense) as univocal. It acts as the permeable, osmotic interface or articulation between the orders of being and non-being, or the mind-dependent and mind-independent as they are distinguished in our experience. It allows for the communion between thought and being. It is superior to any categorial standpoint in that it allows for categorial interconnections by distinguishing connections or relations within experience.
The thesis is that relation, rather than substance or accident, is to serve as the basis for all semiotic explanation, and that the ontological explanation in the traditional categories of substance and accident, to whatever extent it is valid, is subordinate to the standpoint of semiotic by reason of being assimilable to (and subsequently analytically derivable from) transcendental relation and ontological relation generally. (Deely 1988b: 80)

Thus, as Deely often observes, semiotic is ‘an integral philosophy of experience’ that goes beyond either Aristotelian or Kantian categorial thought. Aristotelian realist categories are concerned with nature as it is supposed to exist independently of human thought. Kantian idealism takes the opposite view, claiming that the order of beings as existing in themselves is forever hidden from human understanding. The Kantian categories represent universal forms or structures that are presupposed to any judgments about the world of appearances or phenomena, not to things in themselves. Deely argues throughout his work that although Poinsot recognizes the inadequacy of the Aristotelian categorial schema for the perspective of semiotic which understands experience as a product of sign relations or semiosis, it is Peirce’s semiotic categorial scheme (Firstness, Secondness, and Thirdness — which are three classes of relations — monadic, dyadic, and triadic) that begins to truly develop this realization of the interpenetration within experience of a ‘living tissue’ of sign relations that does not preclude mind-independent elements from experience (as does the Kantian schema). This interpenetration within experience of ‘nature’ and ‘culture’ is possible because of the univocal being of the ontological sign relation (Peirce’s thirdness as triadic relation) in which they come together. Deely does indicate that in Hegel’s Logic (‘Being, as the immediate indeterminate, is in fact nothing’) there is a confused recognition that not all relations are the work of the mind, but that Hegel never clearly articulates their interrelation in experience, nor adequately isolates the ontological rationale of the univocity of relation.17

Furthermore, Deely will argue that it is Peirce’s ‘semiotic categories’ that account for the transformation of the species-specific objective world of the animal Umwelt into the species-specific objective world of the human Lebenswelt, within which it is realized that its human Umwelt (or Lebenswelt) is different from, and not coextensive with the sense-perceptible physical surroundings, and understands the imperceptible relation of signification as such. The ‘animal’ remains captured by its Umwelt which never becomes present to it as an Umwelt — although it is clearly aware of sense-perceptible aspects of its surroundings. (Heidegger will say the animal is ‘benumbed’.) Although Heidegger’s (1995) analysis is ‘violent and awkward’ (Derrida 1991: 111), it is obvious that Heidegger is struggling to differentiate zoösemiosis (as common to
animals) from anthroposemiosis (as unique to linguistic animals) without the necessary semiotic tools. The approach taken by Deely, is neither anthropocentric/morphic (in fact, it precisely avoids misplaced linguistic anthropomorphism), nor bad biology; it ‘simply’ distinguishes between different uses of sign relations. Physiosemiosis, phytosemiosis, zoösemiosis, anthroposemiosis. The argument is that non-human animals use signs and communicate, but they do not live in language, and do not grasp imperceptible sign relations as such. Their apprehension terminates in sense-perceptible aspects of the physical environment. Or, to be more reserved, we can say that currently we have no knowledge of a non-human linguistic animal that ipso facto grasps, or rather understands, the corporeal sign relation as distinct from its terms. The species-specific human Lebenswelt arises with the awareness of the distinction between the relation and the things it relates, thus allowing for the arbitrary systems of communication that we designate as languages — and as a consequence for textuality and the, in principle, infinite malleability of the Lebenswelt. Eugen Baer succinctly states the matter:

Semiotics [the human study of semiosis] begins ontogenetically as ‘a moment of anthroposemiosis’ with the insight that experience depends on the action of signs. Once signs are recognized as imperceptible ontological relations which correlate objects and/or things, we are at the threshold of what for Deely is specifically anthroposemiotic, the ability to introduce into objects the dimension of stipulability. This underlies the capacity for language and renders semiosis in principle unlimited. The stipulable sign is the characteristic trait of what Deely calls ‘text’. And it is this capacity to produce texts that distinguishes anthroposemiosis from zoösemiosis. It is species-specific for human semiosis.

What exactly is textuality? Texts are strings of signs that are in principle exchangeable (substitutable) with other signs in accordance with a given code. Texts are thus transformable from one set of objects to another, precisely because their ‘being’ resides not in things or objects, but ‘in-between’ them. (Baer 1992: 355–356)

Both Bergson and Ruyer (who are both major influences on Deleuze and Guattari’s work) make a similar distinction, although less analytically nuanced, between the animal and human animal use of signs. Ansell-Pearson (1999: 54) reminds us that for Bergson in Creative Evolution, the instinctive signs which characterize the language of insects are limited and attached to specific objects, ‘the sign is adherent to the thing signified’ (Bergson 1975: 174). What characterizes human language is the ability of signs to be transferred from one object to another; they become infinitely ‘mobile’ rather than ‘adherent’ — ‘the intelligent sign is mobile’ (Bergson 1975: 175). There is a difference in kind between the human and animal use of signs (moreover, animals don’t know they are using signs!). In fact,
there is in these remarks of Bergson a fleeting glimpse of the distinction between formal and instrumental signs and the fact that ‘ideas’ are imperceptible formal signs. The word is an ‘external thing’ (i.e., an instrumental sign) and an ‘immaterial thing’ or idea (i.e., a formal sign). The main insight of Bergson is that without language, as the awareness of the relation of signification, which allows the sign to be ‘mobile’ (or territorialized), the animal is ‘riveted’ to materially present sense-perceptible objects — the animal is captured or riveted to an Umwelt, whereas the human animal lives with the understanding of being-in-an-Umwelt and can play with the relations that constitute it, thereby having the possibility, amongst others, of developing and discussing philosophies of life and semiotics.

Ruyer (1964) makes essentially the same observation when discussing the well known case of the blind, deaf, mute, Helen Keller. Ruyer discusses the matter in terms of the difference between the animal’s use of stimulus-signals and the human’s grasp of sign-symbols. The difference being that the human animal grasps the relation of signification as such:

To understand a signal as a signal, following a conditioning process, is not at all to understand it as a symbol. On the contrary the signal-function blocks the symbol function. The decisive point for Helen Keller is that ‘water’ wasn’t necessarily a sign-signal by which water was requested or expected, but was ‘the name of the substance whereby it could be mentioned, conceived, remembered, celebrated.’ At that moment, the meaning, for her, of the word ‘water’ could not be interpreted as the last phase of a conditioning. As long as one attempted to condition Helen Keller to a word, one in fact prevented her from understanding what language was. It was necessary that she suddenly realized that the word had a meaning. A discovery that leads to the discovery that everything has a name, and that every name had a meaning. From now on she was no longer in an animal Umwelt, but in the world. (Ruyer 1964: 98–99)

In fact, Deleuze and Guattari make a related observation in A Thousand Plateaus (1988) when they refer to the well known example of the bees dance studied by Karl von Frisch (1950) as taken up by Emile Benveniste. Deleuze and Guattari are claiming in the plateau (Postulates of Linguistics) that the first determination of language is not trope or metaphor but indirect discourse. The bee has no language because it can communicate what it has seen but not transmit what has been communicated to it. A bee that has seen a food source can communicate the message to bees that did not see it, but a bee that has not seen it cannot transmit the message to others that did not see it. (Deleuze and Guattari 1988: 77)

For Deleuze and Guattari language has to be able to go from a second to a third party, neither of whom has seen. Language is deterritorialized
and can be passed on ad infinitum. As Maritain (1957) notes, commenting on Frisch’s work, what this means is that bees use signs — and they do not know they are using signs. The bees dance is no more a language than the fact of a dog sitting when his owner says ‘sit’.19

Deleuze and Guattari will argue, following Spinoza’s medieval ethics and proto-ethology, that a thing, animal, or person are defined by movements and rests, speeds and slownesses (longitude) and by affects (intensities) latitude. These are assemblages or hecceities (taking up and modifying Duns Scotus’ term) which are not individuations of an already individuated object or person, but of relational events that can include, for example, a time of day, a season, or anything at all ... a text, a social body. This is also called a plane of immanence or of composition having no supplementary dimension — an abstract machine. It is a plane with n dimensions growing and contracting with respect to the relations and assemblages being formed and dissolved between relative beings. An event in which both ‘subjects’ and ‘objects’ are being produced and linked through relations between the two (relative beings and the relations they are involved in) — Interbeing, always in the middle. ‘HECCEITY = EVENT’.

Deleuze and Guattari claim that beings are distinguished not analogically in terms of genus or species, but by their degrees of ‘power’ which corresponds to a certain capacity to be affected. They construct a univocal Spinozist ethology or cartography of affective capacities. The univocity of being is expressed through one determining factor: what are the affections or relations that a being can enter into — what assemblages can it participate in — what are its becomings? The only difference from the point of view of univocal being is the different relations that a being can enter into. Univocity for Deleuze ‘is said’ of completely different, equivocal beings (boy, table, girl, train, god). ‘A single and same voice for the whole thousand-voiced multiple’ (Deleuze 1994: 304). This is no longer a conception of genera and species but of the assemblages into which each being is capable of entering. In other words a being is defined by the relations and assemblages it can enter into — tell me what relations you can enter into, and I will tell you who you are. These relations, as the relations of relative beings, are univocal in their being as relations. And this gives us precisely the distinction in our experience, between relative beings and their relations prior to a categorial schema. Deleuze puts it thus: ‘so an animal, a thing is never separable from its relations with the world’ (Deleuze 1988: 125). Gregory Bateson and many other biologists will make the same observation — for Bateson the ‘unit of survival’ was organism + environment.

In Deleuze and Guattari (1988) (the book of subjectless events and becomings) this approach is illustrated with (among many other striking
and creative examples) Uexküll’s notorious tick. The tick is viewed in terms of its affective capacities or relations, rather than in terms of physiology. As Ansell-Pearson notes in a brief but insightful encounter with the work of Deely, that this is a ‘semiotics of affect’ (Ansell-Pearson 1999: 187) in which Uexküll’s Umwelt theory and concept of organism can be understood in terms of the scholastic notion of ‘species’ rather than in Darwinian terms of relations of descent. The organism does indeed inhabit a ‘species-specific objective word’ (the expression is Deely’s) in that its world is specific to its biological type; but also because its ‘species’ whether impressed or expressed are what makes its ‘world’. And as we have already noted, at some length, scholastic expressed ‘species’ are formal signs or interpretants that are not ‘subjective’ or in the modern classical sense. Their whole being as ontological relations is in ‘being-toward.’ This is what makes Umwelten ‘objective’, or open worlds, rather than ‘subjective’, closed worlds. Objective worlds are not in binary opposition with the modern sense of subjective. Objective worlds as experienced include a shifting amalgam of mind-dependent and mind-independent aspects (or the ‘psychical’ and ‘physical’) through the univocal being of sign relations. This dynamic is what allows for the enterprise of constructive scientific realism, through the critical control of objectification and the possibility that some theories remain purely objective fictions (i.e., with no physical lining), or return to the status of fictions (e.g., the ether, phlogiston) and others become ‘objective’ testimonies to nature’s subjective being (i.e., its being independently of being known). For example, the earth’s tectonic plates now drift and collide, over and above our thinking that they do, although for many years such a ‘fiction’ was ridiculed. Some things are not reducible to our experience of them, but paradoxically become more substantiated and ‘in-themselves’ the more we are related to them, or the more they are experienced — ‘the truth of the relative’ or the truth of relations.

Species-specific objective worlds

A recapitulation: Deely has systematically and continously argued for the importance of the notion of Umwelt or species-specific worlds for understanding the action and being of signs in the constitution of an objective world, i.e., a world to the extent that it exists in any way as known. As experienced, the physical world is objective, it is an object of awareness. The distinction between objects of experience that are only objects of experience and those that are also physical existents also occurs within experience (which leads some thinkers to an idealism in which experience is
‘subjective’ and we can know nothing apart from our ‘constructions’ or representations). Experience is not locked into realism or idealism, it is univocal in its being, including both the constructions of the mind and elements that are not reducible to the mind’s constructive capacity.

Instead of a dichotomy between subjective (observer dependent) and inaccessible objective (observer independent) there is a *trichotomy*, or triadic semiotic relation, including an experiencing organism (or interpretant), the object experienced, and the basis on which the object exists as experienced. I will present an extended quotation from Deely which I would suggest indicates that semiotics has fortunately progressed, in his hands, beyond anything Heidegger’s phenomenology was able to articulate:

That in which experience consists in the being proper to it is the sign relation, or rather, the network of sign relations colorfully called ‘the semiotic web’ by Thomas Sebeok in a metaphor borrowed from the German biologist Jakob von Uexküll. This web is, on the one side, superordinate to physical nature ..., on the other side, subordinate to the constitution of the knower (the cognitive organism). The being proper to experience is not the being of objects, still less the being of things. It is the being proper to the network of interpretive relations according to which the cognitive organism is inserted in the environment not merely as one physical thing among others (one substance with its accidents among other substances with their accidents), but as a being whose objective world is shot through and constituted by cares and interests species-specifically proper to it according to its biological constitution. Beyond this, in the case of human beings, the objective world is further structured through linguistic relations (a species-unique type of semiotic relation) which convey a cultural heritage linked, not directly, but indirectly only, to a specific biological constitution. ‘Being-in-a-world’, that is to say, an objective world as distinct from a merely physical environment, is not something uniquely human, though ‘being-in-a-world’ that has the texture of linguistic understanding woven into its fabric or perceptual and sensory objects is uniquely human. (Deely 1992: 309)

Which returns us to the difference between the animal Umwelt and the human animal Umwelt, or Lebenswelt, as Deely will sometimes call it. As we have already noted, this distinction lies in the peculiarity of the human animal’s ability to interact and play with pure relations. This is equivalent to the emergence of language and allows for the possibility of inventing the Umwelt in ways that are not strictly proportionate to biologically determined positive, negative, or indifferent affects. Deely gives the example of legal systems which distribute property not on the basis of species territoriality but ‘according to an abstract plan of objective boundaries imposed upon the physical environment as identified with
this or that of its features, for example, the Mississippi River as separating Iowa from Illinois for a certain stretch’ (Deely 1994a: 221). The essential point here is that the human Umwelt is not ‘riveted’ or ‘captured’ by its species-specific world, as Bergson would say, but is able, through the human understanding of relations as distinct from related objects, to restructure its Umwelt in infinite ways — an unbounded semiosis within anthroposemiosis. A human-becoming itself in its unlimitedness.

As Deely notes (1994a: 218–219) the notion of Umwelten or species-specific worlds is now well established in semiotic studies to distinguish between the prejacent physical environment and the objective world of an organism.22 Uexküll imagined the Umwelt as like an invisible bubble surrounding the organism:

... we must first blow, in fancy, a soap bubble around each creature to represent its own world, filled with the perceptions which it alone knows. When we ourselves step into one of these bubbles, the familiar meadow is transformed. Many of its colorful features disappear, others no longer belong together but appear in new relationships. A new world comes into being. (Uexküll 1957: 5)

In the same extraordinary work Uexküll also compared the Umwelt or world of experience to a spider’s web. ‘As the spider spins its threads, every object spins its relations to certain characters of the things around him, and weaves them into a firm web which carries his existence’ (Uexküll 1957: 12). The semiotic web.

In order to illustrate the constitution of an objective world Deely (1994a: 219) combines these two notions ‘into the single model of a kind of geodesic sphere whose interior as well as its surface consists of a series of intersecting lines’. He notes that the spherical image is only analogous as the surface of the ‘sphere’ is irregular and determined by the radii relations linking the individual with elements of its physical surroundings (some of which are very close and some ‘as far as alien galaxies’). The model is so valuable and interesting that I will quote from Deely’s own work which would be absurd to paraphrase:

Each intersection is an object, each line a relationship. Lines radiate outwards from the center where each of us stands to the surface of the sphere, and lines extend also crosswise, intersection the radii. The radii lines represent relations between ideas and objects, the intersecting lines represent relations between objects, and the intersections themselves represent the objects. Thus, the objective world is the sphere of an individual’s experiences built up out of relationships, and the internal constitution of this sphere is precisely that of a web the various intersections of whose strands present to us the objects according to the meaning of which we lead our lives. At the center of such a three-dimensional spider’s web, by maintaining and elaborating it, we live our lives. (Deely 1994a: 219)
It is crucial to understand that in this model the surface of the geodesic sphere of experience is a ‘virtual intersection or interface between nature and culture’. The external senses guarantee that elements of the physical surroundings are objectified in experience in interaction with our bodies. Now this model of experience is further (and infinitely) complexified by memory and imagination which add new radii and further intersections. Thus, there are incorporated into this web of experience elements that do not correspond to actual physical environmental influences. Now, as Uexküll and Deely note, this web of experience is determined by the biological constitution of the organism or species — it is a species-specific objective world. As we have already had occasion to observe human animals understand the relational strands themselves which structure sense-perceptible objects and which can now be used to restructure the Umwelt, starting with the realization that it is an Umwelt! And then perhaps wondering what other Umwelten are like, which as Deely observes is a priori impossible in the original Kantian scheme.

Either Umweltensforschung is a form of transcendental illusion, or, if, for example, von Frisch really did interpret with some exactness the bee’s dance or von Uexküll the toad’s search image — then von Uexküll, in extending Kant’s ideas to biology, was doing something more, something that the Kantian paradigm did not allow for, namely, achieving objectively and grasping as such an intersubjective correspondence between subjectivities attained through the sign relation. (Deely 1990: 123)

Deely argues that Uexküll is going beyond the Kantian paradigm in spite of himself. Uexküll saw the Umwelt as a ‘subjective’ or phenomenal world, as opposed to an ‘objective’ world, but the semiotic approach to experience cannot be assimilated to Kantian idealism or any simple realism. Semiotic reality is an interpenetration of the mind’s own constructs together with aspects of a mind-independent environment woven seamlessly together in the ontological univocity of sign relations. Semiotic objectivity (esse objectivum/objective being), as we have had much occasion to note, is not assimilable to the modern opposition between subjective and objective. It is ‘the truth of the relative’. Objectivity in this sense is opposed to both subjectivity and objectivity as understood in classical modern idealism. As Deely notes (1990: 122) the reappropriation of the scholastic notion of objectivity (particularly as formulated by Poinsot — and implicitly developed by Peirce) is ‘necessary to make sense of the very title von Uexküll gives to a main section in one of his key essays [1957: 73], “The same subject as an object in different Umwelten”’.

This kind of objectivity is engendered by Peirce’s interpretant or proper signifi cate outcome of a sign which makes present an object other than
itself to some third, in a mediated semiotic interaction irreducible to dyadic physical interactions. Guattari (1995) suggests we should place the concept of an enlarged definition of ‘subjectivity’ within this relational perspective:

So we are proposing to decentre the question of the subject onto the question of subjectivity. Traditionally, the subject was conceived as the ultimate essence of individuation, as a pure, empty, prereflexive apprehension of the world, a nucleus of sensibility, of expressivity — the unifier of states of consciousness. With subjectivity we place the emphasis instead on the founding instance of intentionality [which is derived from relationality] This involves taking the relation between subject and object by the middle and foregrounding the expressive instance (or the interpretant of the Peircean triad). (Guattari 1995: 22)

For Guattari it was imperative to enlarge the definition of subjectivity beyond the classical opposition between individual subject and society and all his work involved developing a more ‘transversalist’ or ‘schizoanalytic’ approach to subjectivity that recognized the importance of non-linguistic elements irreducible to the linguistic analysis of the Saussurean tradition. Guattari affirmed the value and importance of Peirce’s semiotics over and above European semiology throughout his work and in *Chaosmosis* (Guattari 1995) takes up Peirce’s concept of the diagram as an ‘icon of relation’.23 It should also be noted that part of Deely’s contribution to the commonwealth of ideas lies in his being one of the most astute contemporary readers and innovators of a post-Perceian semiotics capable of doing justice to our experience, rather than engaging in elaborate feats of explaining it away.

**Heideggerian Umwelten**

Heidegger (1995), in some of his most relentless and stunningly benumbing reflections, presents the thesis that ‘*the animal is poor in world*’.24 I will not attempt here to give a complete account of Heidegger’s 1929–30 biology lectures,25 but simply attempt to indicate the relation between Heidegger, Peirce, and Deely and thereby demonstrate the contemporary relevance of a semiotic appropriation and reformulation of Uexküll’s Umwelt theory.26

As Ansell-Pearson notes (1999: 188, 240) there is an aspect of Uexküll’s theory that is not fully developed in Deleuze and Guattari’s approach, namely, that there is a ‘becoming’ intrinsic to the activity of the animal-Umwelt. ‘In other words, the peculiar ‘animality’ of the animal is not simply something ‘given’, and there needs to be posited an *animal becoming* as well as a *becoming-animal*. For Heidegger (and many others in their
own way) what is peculiar to the animal is the way it is captivated by its environment and is thus ‘poor in world.’ What might this perhaps troubling and ‘problematic’ expression mean?

As a possible theme for a fundamental problem of metaphysics Heidegger asks the question What is World? And as a strategy for dealing with this question he undertakes a comparative examination of three theses: the stone is worldless, the animal is poor in world, man is world-forming. Heidegger starts from the middle by asking what it means to say that the animal is poor in world and quickly notes (Heidegger 1995: 192) that at first sight this thesis appears ‘to run directly counter to the most penetrating fundamental reflections in biology and zoology, when we consider that ever since J. von Uexküll we have all become accustomed to talking about the environmental world of the animal’. How does Heidegger deal with this apparent contradiction? His thesis unfolds in the following way:

Being poor in world implies poverty in the sense of possessing less. But less of what? (Heidegger 1995: 193). Heidegger, taking many of his examples from Uexküll, starts with the proposition that the animal has fewer relationships than human Dasein has at its disposal. For example, the bee, the frog, or the chaffinch operate within a strictly limited domain of relations, but there is something more crucial than this. Heidegger will claim that the manner in which an animal can ‘penetrate’ whatever is accessible to it is also limited. His fundamental claim, which will be continually reworked and examined, is that the animal does not know things as things. As a first approximation it lacks the structure of the apophantic as. This is, in fact, strikingly close to Deleuze and Guattari’s (1988) analysis (especially in the plateau ‘The geology of morals’). A threshold of deterritorialization is crossed wherein

the scientific world (Welt, as opposed to the Umwelt of the animal) [allows for] the translation of all the flows, particles, codes, and territorialities of the other strata into a sufficiently deterritorialized system of signs, in other words into an overcoding specific to language. (Deleuze and Guattari 1988: 62)

The worker bee is familiar with the color and scent of the blossoms it frequents but does not know the stamens of these blossoms as stamens. Nor does it know of the number of leaves or of the roots of the plant. Contrary to the animal, Heidegger will argue that the world of man is more extensive both in its penetrability ‘and in respect to the manner in which we can penetrate ever more deeply in this penetrability’ (Heidegger 1995: 193). This is why man is characterized as world-forming. Heidegger emphasizes that at this point in the analysis there is no question of claiming some
hierarchical evaluation or superiority for man and incompleteness for the
animal. To get closer to understanding the sense of word poverty Heidegger
turns in his comparative examination to the stone which is worldless. The
stone lies on the path but does not touch the path. Everything around the
stone is inaccessible to the stone itself (Heidegger 1995: 197). The stone
is not deprived of anything (it is not poor in world) because it has no access
to the beings amongst which it turns up. Thus there is a distinction
emerging between the specific manner of being pertaining to animals,
and the specific manner of being pertaining to a material thing. The rock
is given in some way to the lizard but not as a rock — the rock is not
accessible to the lizard as a being. The blade of grass is a ‘beetle-path’ for
the beetle, but it is not a blade of grass. Heidegger will claim that the
metaphysical significance of the specific relationships of animals with their
environments has never been fully appreciated. If the animal has some
access to the beings around it in a way that the stone does not, the animal
is not deprived of world, but has world.

Heidegger frankly admits that the preliminary results of his comparative
examination are perplexing and apparently logically impossible: ‘the
animal reveals itself as a being which both has and does not have world.
He argues that concept of world must therefore need further clarification.

I will pass over the discussion of solipsistic, modern idealism (Descartes,
Kant, Hegel) in which man is initially understood as subject and con-
sciousness, existing in its own isolated ‘ego-sphere’, and take the story up
with Heidegger’s clarification of the ‘proper being or proper peculiarity
as the manner of being specific to the animal and its way of being proper
to itself’ (Sich-zu-eigen-sein) (Heidegger 1995: 231). In distinguishing
the organism from a machine Heidegger (like many others) notes that
the ‘peculiar’ character of the organism lies in its ‘capacity’ for self-
production, or self-preservation. What is this autopoietic, ‘subjectless
self’?

The capacity for molecular self-production indicates a kind of boot-
strapping or circular production in which the capacity of the organism
to produce itself ‘does not leave itself behind’ (Heidegger 1995: 233), or
escape itself. To use Heidegger’s novel terminology the capacity for
self-production remains proper to itself without any self-consciousness or
reflection. The essential being of this self-productive capacity is properly
peculiar (Eigen-tümlichkeit). Heidegger reserves the expression ‘self’
and selfhood for the specifically human peculiarity of possessing reflection
and consciousness beyond the proper peculiarity of self-production or
autopoiesis, proper to all organisms including human animals. The
proper being of the animal or of animality (and Deleuze notes human
animals can live in a world that has fewer affects than that of the tick!) lies in this proper peculiarity of self-production and possession which does not lose itself but rather remains ‘its self’ in this autopoietic drive or capacity. This drive has a self-reserve and circular production which is not reflective. Thus for Heidegger neither the animal’s mode of being nor its behavior direct themselves toward beings as such.

The essential lesson of this analysis is that ultimately, for Heidegger (and Deely) the environing world (Umgebung), or Umwelt of the animal is ready-to-hand but not present-at-hand. The animal is open to its surroundings, but not as a world that is not coextensive or reducible to the prejacent environment. Heidegger gives detailed accounts of experiments on bees (amongst other examples) recounted by Uexküll in Theoretical Biology, to illustrate the thesis that the behavior of the animal (in this case the bee) is not determined by the presence or absence of honey or flowers but by a play of inhibited and released drives. The bee is captured by the sun and does not grasp the sun as such — it does not view the sun. The animal is encircled by a ring of drives within which it is both open and captivated — it is incapable of ever properly attending to something as such (Heidegger 1995: 248). Heidegger is distinguishing this approach from Uexküll who suggests that the animal lives an Umwelt as an Umwelt. It will be in anthroposemiosis that this realization occurs. However, Heidegger moderates the analysis:

This question now leads us toward the distinction we tried to express by talking of man’s world-forming and the animal’s poverty in world, a poverty which, roughly put, is nonetheless a kind of wealth. The difficulty of the problem lies in the fact that in our questioning we always and inevitably interpret the poverty in world and the peculiar encirclement proper to the animal in such a way that we end up talking as if that which the animal relates to and the manner in which it does so were some being, and as if the relation involved were an ontological relation that is manifest to the animal. The fact that this is not the case forces us to claim that the essence of life can become accessible only if we consider it in a deconstructive [abbauenden] fashion. But this does not mean that life represents something inferior or some kind of lower level in comparison with human Dasein. On the contrary, life is a domain which possesses a wealth of openness with which the human world may have nothing to compare. (Heidegger 1995: 255)

Deely claims that although Heidegger makes use of the term ‘ontological relation’ he does not have the univocal concept of it as developed by Poinsot.28 The ontological relation is not manifest to the animal because it is imperceptible, and in its proper univocal being neither mind-dependent nor mind-independent (although it will be one or the other at any given hic and nunc). Animals can be aware of ‘absent signifieds’ (objects that are not actually present) but these absent objects would always have some
physical instantiation. Relations as the ‘incorporeal vapour’ (Deleuze) or ‘ethereal linkage itself’ between the terms, can be understood but not seen or touched (Deely 1993: 261). As Deely emphasizes animals see related things but not the relations (which can only be understood, not perceived). The human being by distinguishing things from objects (and the relations from both) within anthroposemiosis, can use the relations to create the systems of communication we call languages. Maturana will argue in a similar way, claiming that animals do not live in language although he will suggest that some animals can begin to enter into language (as a coordination of a coordination of acts) when living with languaging human animals. However, Deely will claim that although animals can enter into coordinations of coordinations of acts, as long as these coordinations terminate in sense-perceptible objects language in its species-specific human sense has not been attained. Animals communicate and are aware of their surroundings, but not of their surroundings as surroundings, of their Umwelt as an Umwelt or objective world grasped as a whole in relation to itself, which requires a distinction of objects from things and relations from both. This as Deleuze and Guattari observe is what transforms an Umwelt into a Welt, or to use Deely’s term a Lebenswelt. It is a question of thresholds. The fact of Guattarian ‘non-human enunciation’, ‘proto-subjectivity’, ‘ontological intensities’, ‘specific enunciative consistencies’, or a ‘non-human for-itself’ does not gainsay a distinction between human and non-human enunciation. What is remarkable in Guattari’s ‘fractal ontology’ and ‘transversalist’ enlargement of enunciation, is the refusal to accept the couplet Being-being as an ontological binary digit and replace it with polyphonic Being and processes of deterritorialization deploying particular relations of alterity. Emphasis is no longer placed on Being but on the manner of being, the machination producing the existent (Guattari 1995: 108–109).

Deleuze and Guattari’s (1996) appropriation of Ruyer’s work gives us one line of approach to the question of whether a robot (as it currently exists) has an Umwelt. To the extent that the robot is not a primary true form, i.e., that it is not self-producing and does not have the ‘proper peculiarity’ of autopoietic systems, it cannot even have ‘poverty in world’ never mind an Umwelt! Guattari (1995) will seek (developing an approach already proposed by Stafford Beer) to expand the concept of autopoiesis, arguing that when one thinks in terms of the machinic assemblages that machines constitute with human beings, ‘they become ipso facto autopoietic’. This coupling between the biosphere and mechanosphere (and reworking of the concept of autopoiesis) allows for a more complex approach to questions of non-human enunciation and ‘a-signifying semiotics’ which will not be developed further at this point.
As we previously indicated, Deely (1998: 217) calls ‘Peirce’s “new list of categories”’ his “semiotic categories”, or “categories of experience”, because precisely what they do is account for the transformation of the animal Umwelt into the human Lebenswelt. I will conclude this article by giving a short summary of Deely’s argument.

The fundamental argument is that Peirce’s category of Firstness, which is for Deely equivalent to Avicenna’s univocal being, or Aquinas’ ‘being-as-first-known’ (primum intelligibile), (or within the context of this thesis Deleuze’s ‘sense’), provides for the intelligibility of the objective world (Umwelt) presented in perception, apprehended in relation to itself. As Deely notes:

Here, however, at the level of primum intelligibile, it is not a question of any given object of perception being cognized in relation to itself. It is rather a question of the objective world as such, the Umwelt as the totality of objectification at any given moment, being grasped in relation to itself. (1998: 220)

For Deely this is Peirce’s category of ‘Firstness’ ‘the conception of being or existing independently of anything else’ (CP 6.32); ‘the present in general’ (CP 1.547). It is the apprehension of the imperceptible ‘relation to itself’ that transforms the Umwelt into a welt or lebenswelt over and above the naturally biologically determined Umwelt of zoösemiosis. For Deely it is at this point that Umwelt becomes present-at-hand rather than ready-to-hand. Firstness as a species-specifically human mode of apprehension establishes the possibility of asking the question ‘What is that?’:

The animal aware of its objective world [Umwelt] in such a fashion is alone positioned to form the conception along with reality, and of a piece with it, of otherness. Otherness (present-at-handness, in contrast to the ready-to-handness which reduces the environment within objectivity to the level of that extension of organismic dispositions which is the essence of an Umwelt proportioned to the biological nature of the cognizing organism) arises precisely within experience through ‘brute actions of one subject or substance on another, regardless of law or of any third subject’ (CP 5.469). It is ‘the conception of being relative to, the conception of reaction with, something else’ (CP 6.32). It is, in a word, the conception of ‘something other’, of one thing different from another thing within the play of objects of awareness. The experience of otherness within firstness is the motivation of every question of the form ‘What is that?’ (Deely 1998: 226)

Deely concludes his account of the relevance of Peirce’s ‘semiotic categories’, which unlike Aristotle’s or Kant’s, are designed to express the interweaving of mind-dependent and mind-independent relations in the univocal being of the sign relation (as an ontological relation); by claiming
that although Heidegger does not have the clarity of Peirce’s thought on sign relations and their manner of being, what Heidegger does contribute is an extraordinary analysis of the distinction within human experience between objects and things subsumed within the concept of being-as-first-known.

I will conclude by suggesting that Deleuze’s ‘logic of sense’ should not be ignored in any attempt to understand ‘things’ as signs, and their ‘external’ relations on a univocal plane of immanence. Language understood as the relation between a proposition and thing is only possible because of the incorporeality of univocal sense, attributed to bodies but distinguished from them. It is the ‘event’ of sense that allows for language to be in relation with things. The question of the truth or falsity of a proposition requires this primary univocity of sense and relation. Even a false proposition has a sense. Deleuze thought that everything he wrote constituted a theory of signs and both Deleuze and Guattari saw Peirce as the modern inventor of semiotics. A semiotics that they complexify for their own peculiar purposes and which makes creative use of Jakob von Uexküll’s pioneering work.

Notes

1. Latour (1999: 21) sets up an opposition between the postmodern as seeking ‘more absence, more debunking, more negation, more deconstruction’ and the nonmodern which seeks ‘proof of presence, deployment, affirmation, and construction’.

2. The expression non-languaging will be developed throughout this article. What is at issue is the extent to which animals other than humans grasp the relation of signification as such. The argument to be presented here is that non-human animals communicate but do not live in language. They use signs without knowing they are using signs. Some find this abduction shocking, arrogant, and anthropocentric. In doing so they conserve a principle rather than exercise their understanding.

3. This is a critical issue for Professor Humberto Maturana (1980). The frog does not ‘aim’ at anything … ‘What the frog’s eye tells the frog’s brain’.

4. There is a web site dedicated to furthering Jakob von Uexküll’s work at: http://www.zbi.ee/~uexkull/.

5. Deleuze often refers to Uexküll’s tick. Heidegger seems more fascinated or benumbed by Uexküll’s description of the being of the bee. ‘Beeing’.

6. Here ‘meaning’ is like Peirce’s ‘thirdness’ — mediation or relation as an interpretive process over and above dyadic physical interaction or ‘secondness’. The connecting link of relations, that are necessarily ‘external’ to their terms.

7. Bateson (1977) affirms this in claiming that ‘mental process’ (immanent to ‘mind’ and ‘nature’) is triggered by ‘news of difference’, not energy. It is news of difference that is circulating — ‘the pattern that connects’. Bateson illustrates this with Uexküll’s tick (although he does not actually mention Uexküll).

A tick on the twig of a tree waits for the smell of butyric acid that would mean ‘mammal in the neighbourhood’. When he smells the butyric acid, he will fall from the tree. But if he
stays long enough on the tree and there is no butyric acid, he will fall from the tree anyway and go to climb up another one. He can respond to the ‘fact’ that something does not happen. (Bateson 1977: 241)

8. Deleuze and Guattari often refer to Uexküll’s work. In Deleuze (1993: 92–93) the following passage occurs which is worthy of an extended quotation; it both beautifully expresses the material we are engaging with and suggests that the human monad or soul can sink to a level lower than that of the tick:

The tiniest of all animals has glimmers that cause it to recognize its food, its enemies, and sometimes its partner. If life implies a soul, it is because proteins already attest to an activity of perception, discrimination, and distinction — in short, a ‘primary force’ that physical impulsion and chemical affinities cannot explain ... If life has a soul, it is because it perceives, distinguishes, or discriminates, and all animal psychology is first of all a psychology of perception. In most cases, the soul gets along quite well with a very few clear or distinguished perceptions: the soul of the tick has three, including a perception of light, an olfactory perception of its prey, and a tactile perception of the best place to borrow, while everything else in the great expanse of Nature, which the tick nevertheless conveys, is only a numbness, a dust of tiny dark, and scattered perceptions. But if an animal scale exists, or an ‘evolution’ in the animal series, it is insofar as increasingly numerous differential relations or a deepening order are determining a zone of clear expression that is both more extensive and increasingly hermetic. Each of the conscious perceptions that comprise the zone is associated with others in the infinite process of reciprocal determination ... Few monads fail to believe themselves damned at certain moments of their existence. When their clear perceptions are now and again extinguished, when they recede into the night — in relation to this the tick’s life appears to be singularly rich. But with freedom there also comes the moment when a soul is won over to itself and can whisper a convalescent’s astonishment, ‘My God, what did I do in all of these years?’ (Deleuze 1993: 92–93)

9. The title of an unpublished article by Professor Keith Ansell-Pearson of Warwick University (as well as a term in Deleuze and Guattari 1988: 314, that refers to Uexküll). I have appropriated parts of Keith’s succinct account of the relation between Uexküll’s ethology and Deleuze and Guattari’s work.

10. Humberto Maturana will call this mutual specification or contrapuntal relation ‘structural coupling’. He once told me that Uexküll ‘had everything except the notion of structural coupling’ which is a more analytical and less musical account of nature’s ‘harmony’. Maturana does employ one example drawn from Uexküll’s work:

A fly seen walking on a painting by Rembrandt does not interact with a painting by Rembrandt. The painting of Rembrandt exists only in the space of human aesthetics, and its properties, as they define this cultural space, cannot interplay with the properties of the walking fly. (Maturana 1980: 51).

Varela’s ‘enaction’ or ‘embodied action’ is a version of Uexküll’s Umwelt theory. Cognition depends on various linked sensorimotor capacities (perceptors and effectors — a double articulation). The organism ‘enacts’ or ‘brings forth’ (taking up the Heideggerian hervorbringen) a world.

Varela (in a personal communication) sees Uexküll as having had a ‘good intuition’ but dismisses his semiotic approach as inadequate in accounting for the generative mechanisms of meaning which Varela et al. (1991) try to engage with. In
Varela et al. (1991: 174) they nevertheless quote Merleau-Ponty referring specifically to the concept of Umwelt. Their approach is in terms of observable neurophysiology and a ‘naturalized’ Husserlian phenomenology that does not seem to accept the ‘realist’ possibilities of a post-Peircian semiotics that includes external or ontological relations.

11. Consult Deleuze (1994), chapter one, ‘Difference in itself’, for Deleuze’s complex and original propositions on the univocity of being. Deleuze traces a complex path through Scotus (thinking univocity), Spinoza (affirming), and Nietzsche (realizing) which I am not competent enough to engage with. The emphasis here is on the relevance of univocity to relation as such. Deleuze likes grouping thinkers in threesomes. For a logic of the event it will be the Stoics, Leibniz, Whitehead. For the logic of sense it will be the Stoics, Gregory of Rimini, Meinong. Ultimately, in Deleuze and Guattari (1996), it will be Spinoza who constructs ‘the best’ plane of immanence. That is, one that does not give in to any transcendent plane. A univocal plane — an abstract machine or rhizosphere.

12. For the ‘serious student’, Alliez (1996) engages with Scotus and the univocity of being. I make no attempt to emulate his account which also makes reference to the fine article by Boulnois (1989). The new Routledge Encyclopaedia of Philosophy has a valuable entry on Duns Scotus written by Barry Taylor.

13. Deely’s classic account of ontological and transcendental relatives i.e., the two kinds of relative being can be found in Appendix 1 (‘Contrasting ontological and transcendental relatives’) of Deely 1994a; I base my account on his singular efforts.


15. See Deleuze (1990: 34–35), for his reference to Avicenna.

16. One possible area of research would be the connections between Avicenna and Sufi ‘thought’, particularly the Sufi concept of imaginal worlds (Corbin 1978).


18. My translation. Ruyer was aware of Uexküll’s work, which he also sought to free from its Kantian heritage. See also Ruyer (1952), a work that significantly influences Deleuze and Guattari’s final work (1996):

   Note that von Uexküll, in his general philosophy [cf. Theoretical Biology, Preface], is Kantian and confuses, as does Merleau-Ponty, comprehensive biology and critical biology. For example: ‘All reality is subjective appearance. This must constitute the one great, fundamental admission, even of biology’. We take his ‘word’ in itself, without reference to his general doctrine. (Ruyer 1952: 217)

19. It is important to understand that an animal can be aware of ‘absent signifieds’. The critical distinction is that a non-languaging animal is not aware of what are in principle imperceptible objects, such as relations or linguistic objects.

20. I am encouraged to see that my interest in Deely’s semiotic has infected/affected Keith Ansell-Pearson’s thoughts.

21. This univocal ‘truth of the relative’ rather than the intrinsically negative ‘relativity of truth’ (tied to a subject) will be engaged with at another place and time. It is the approach taken by thinkers such as Deleuze and Guattari, Latour, Stengers, and the actual practice of science.

22. This of course begs the question of whether robots or computers have Umwelten. We will get to this ...

23. For Deely’s treatment of icons within a Poinset/Peirce framework consult Deely 1986b.

24. Heidegger wanted The Fundamental Concepts of Metaphysics to be the first lecture series published in the Gesamtausgabe (Collected Works). It was first published in
German in 1983 and published in English in 1995. No where else in his work does Heidegger engage so extensively with experimental science, in particular the Umwelt theory of Uexküll.

25. The most forceful criticism of Heidegger’s biology lectures comes from Krell (1992). It is certain that Heidegger’s approach is awkward and I am not seeking to defend his understanding. However, it remains a remarkable attempt which cannot be dismissed out of hand. A semiotic approach in the line of Peirce/Deely offers a perhaps more nuanced approach.

26. Deleuze and Guattari (1996: 183–186) also significantly return to Uexküll’s work, suggesting that art begins with the animal, ‘at least with the animal that carves out a territory and constructs a house (both are correlative, or even one and the same, in what is called a habitat)’. A contrapuntal theory of Nature where nature and art become indistinguishable. The bower bird is a ‘complete artist’ (1996: 184), Scenopoeetes dentirostris. Alliez (1993: 94) will seek to distinguish Deleuze and Guattari’s approach to ethology from Heidegger’s phenomenology of behavior and ‘word-poverty’ of the animal by commencing with refrains, counterpoints, and expressive qualities; assemblages and becoming rather than behavior — ‘becoming-colors, becoming-sounds’. A superior ethology …

27. Haar (1993: 160 fn. 8) notes (without any development of the relation) that this proper peculiarity of self-production or autopoiesis ‘would come close to the notion of the “unified field” or “absolute domain” of individuality or presence, which according to R. Ruyer (1950) would characterize life’. This is a truly interesting conceptual relationship as Deleuze and Guattari draw significantly on Ruyer’s work, especially in Deleuze and Guattari (1996) and Deleuze (1993). For Deleuze and Guattari, following Ruyer, the organism has an ‘absolute interiority’ and the brain is ‘a primary true form’ or ‘absolute domain’ in ‘self-survey’. For further insight into these terms see Bains (1997) which engages with the relation between Deleuze, Guattari, and Ruyer.

28. In personal correspondence Deely makes the following observation: ‘Remember that relatio secundum esse, unlike relatio secundum dici which has already the Latin one-word synonym transcendentalis, never acquired a one-word counterpart among the Latins. So my “ontological” relation is a neologism for the purpose. The term occurs in Heidegger, but not the concept, i.e., not the notion of the relatio secundum esse indifferent to the otherwise contrasting orders of what is and is not independent of cognition. I have since wondered if there might not have been a better choice; but what might it be still eludes me’.

29. See Corrington (1994) for further discussion of the difference between human and animal Umwelten undertaken within a generalized Peirce/Deely perspective. ‘Human meaning horizons are not simply augmented versions of animal Umwelten, but have distinctive features that radically alter the semiotic structures of the world’ (1994: 188).

30. As Corrington (1994: 188–189) notes, traces of alterity/otherness within zoösemiosis do not always constitute or generate apprehension of their source, or involve conscious awareness of otherness. This requires an awareness of relations. This is not in itself a judgment but a distinction.

31. Emmeche provides the most comprehensive discussion of this question in his essay ‘Does a Robot have an Umwelt?’ (in this issue). The answer is no. ‘Thus only genuine living beings (organisms and especially animals [as active subjects]) can be said to live experientially an Umwelt’.

32. As Deleuze (1993: 104) notes following Ruyer (and Whitehead), ‘A great line of difference does not separate the organic from the inorganic, but crosses the one like the other
by distinguishing what is individual from what is a collective or mass phenomenon, what is an absolute form and what are massive, molar figures or structures’. Remember also that Haar (note 27 above) sees a relation between Heidegger’s ‘proper peculiarity’ of the organism and Ruyer’s ‘absolute domains’ which Deleuze and Guattari draw on particularly in their final work (1996).

33. This is one of the central claims of Zourabichvili (1996).

References


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