

Umwelt, an apparently German term, has become in fact a technical term within semiotics, and is also destined (such is my guess) to become a term of general use in philosophy and intellectual culture. If this guess is correct, then the term is too important to be left to scholars, etymologically inclined ones in particular. Still less is it enough to rely on existing German-English dictionaries to render the term, for the notion of Umwelt as it has come to be established in the usage proper to semiotics as the doctrine (in contrast to ‘science’ or ‘theory’) of signs admits of no full predecessor, least of all one dependent on the thoroughly modern, even ‘ultra-modern’, epistemological paradigm developed in Kant. For semiotics has its own epistemological paradigm, albeit underdeveloped, namely, that proper to the sign; and for the sign, as Peirce early intimated (1867: 118/6–9), the perspective proper to realism in philosophy is no less inadequate than the perspective proper to idealism in the modern sense. For the sign performs its task at the crossroads of nature and culture. And though it marks paths variously deep into both realms, the sign itself in its proper being is native to neither, always ‘mixed’ in its ontogeny — at least as it comes to be a reflexive instrument within anthrosemiosis, where alone we first and initially grasp it as such.

The semiotic usage of the term Umwelt, then (I eschew placing it in quotation marks, for, as I have tried to insist, it is not a ‘foreign’ word, but a term indigenous to the developing doctrine of signs), began with Thomas A. Sebeok’s reading of the work of Jakob von Uexküll (see J. von Uexküll 1899–1940, esp. 1920, 1934, and 1940; also T. von Uexküll 1987a, 1987b). J. von Uexküll himself (1864–1944) was what has been termed a ‘cryptosemiotician’ (Sebeok 1976: x; 1977; see the discussion in Deely 1990: 119ff.) rather than a semiotician proper. He did not see himself from within the perspective of semiotics. He thought of himself rather in terms of research in a biological science, early ethology, some might put it. It took a semiotician, Sebeok in particular, as it happened, to see that Uexküll’s work, in its central application of the expression

'Umwelt' (here let it be for a moment a 'German' term, and hence 'foreign'), concerned 'biological foundations that lie at the very epicenter of the study of both communication and signification in the human animal', and every other animal, for that matter.

For the Umwelt belongs first of all to zoösemiotics, and to anthro-
posemiotics only from there. In other words, the Umwelt is first of all, even within semiotics, a vehicle for expressing especially the role of biological heritage in the use and function of signs, rather than for expressing what is species-specifically human in the use and function of signs. Now the philosopher who best understood the limiting functions of psycho-biological constitution upon knowledge was Immanuel Kant. So it is not at all surprising that Uexküll saw himself indebted philosophically to Kant above all in his creative research within biology.

What Uexküll uniquely realized was that the physical environment, in whatever sense it may be said to be the 'same' for all organisms (we are speaking, of course, of the environment on earth, though much of what we say could be applied, *mutatis mutandis*, to biospheres on other planets should such eventually be found), is not the world in which any given species as such actually lives out its life. No. Each biological life-form, by reason of its distinctive bodily constitution (its 'biological heritage', as we may say), is suited only to certain parts and aspects of the vast physical universe. And when this 'suitedness to' takes the bodily form of cognitive organs, such as are our own senses, or the often quite different sensory modalities discovered in other lifeforms, then those aspects and only those aspects of the physical environment which are proportioned to those modalities become 'objectified', that is to say, made present not merely physically but cognitively as well.

What needs to be stressed, then, is the limited and partial aspect of the environment of which the organism becomes aware in sensation. When I look out over a rich meadow on a beautiful day, I see what might be loosely described as 'an infinite variety of colors'. That will do for the poet or even the practical man, but the careful thinker will realize that such expressions are but shorthand for our limitations: we see not all colors possible, but only those that, under given conditions of light and shade, fall within the range of our type of eye. Nor is 'our type of eye' the only type of eye. That same meadow will appear variegated quite differently to the eye of a bee, a beetle, or a dragonfly, however much we may suppose an underlying common 'physical' being which is 'the same' no matter who or what species of individual happens to be beholding the meadow. A rose by any other name may still be a rose. But what a rose is will not be the same to a bee and to a human suitor.

But that is only the starting point in the construction of an Umwelt. For an Umwelt is not merely the aspects of the environment accessed in sensation. Far more is it the manner in which those aspects are networked together as and to constitute 'objects of experience'. No doubt there are relations among items of the physical environment that have no dependency upon the awareness of beings in that environment. No doubt too that, given the type and condition of my eye, what colors will appear to me when I look in a certain direction will not depend upon my evaluation of anything that is there. If we prescind (in Peirce's usage) sensation as such within our perceptions of the world, it is quite evident that our bodily constitution filters and restricts, but does not by itself determine, what we will become aware of in sensation. If my eyes are normal and a traditionally equipped classroom is lighted, I cannot fail to see the black rectangle against the lighter background that I will interpret as a chalkboard affixed to a wall. But what my eyes objectify and what my mind makes of that vision remain as distinct as sensation as such in contrast to perception which alone transforms sensations into objects experienced, like dark rectangles against lighter surfaces 'seen' to be chalkboards on walls.

The bee unfortunate enough to fly into the classroom will not see a chalkboard. The beetle will likewise fail to apprehend what is so obvious to me. What objects will the bee or the beetle, or the dragonfly, for that matter, encounter in this same classroom?

That is the question (or type of question) which guided the *Umwelt-Forschung* pioneered by Jakob von Uexküll. Uexküll uniquely saw that the difference between objects of experience and elements of sensation is determined primarily not by anything in the physical environment as such but by the *relation* or, rather, network and set of relations that obtains between whatever may be 'in fact' present physically in the surroundings and the cognitive constitution of the biological organism interacting with those surroundings here and now. Nor are those relations primarily of the type that antecede and hold independently of any such interaction. To the contrary. The relations in question are not mainly between the organism and what is sensed, those limited and partial aspects of the physical surroundings which are proportioned to and activative of the limited range of this or that sensory channel in combination with however many other cognitive channels the organism in question is biologically endowed with. No. The relations in question concern above all how the limited and partial sensory aspects of the physical environment are connected among themselves so as to constitute *objects of experience*, and this constitution depends above all on the constitution of the organism doing the sensing. For it is the interests of that organism, not the

'independent' nature of the source of the sensory stimuli, that is at issue in the perception as such that the organism finally acts upon and uses to orientate itself within the environment for the purposes of its life and well-being.

In other words, the organism does not simply respond to or act in terms of what it senses as sensed, but rather in terms of what it *makes* of that sensation, what it perceives to be sensed, rightly or wrongly. The female wolf responds to the male's howl differently than does the sheep, regardless of gender. Thus, whereas sensation prescised and taken as such actively filters but passively receives incoming stimuli, perception by contrast actively structures sensation into things to be sought, things to be avoided, and things that don't matter one way or the other. Yet what constitutes a pattern of stimuli as desirable and to be sought or menacing and to be avoided depends less on the stimuli than upon the biological constitution of the organism receiving the stimuli. Thus, the pattern of stimuli, in perception as contrasted to sensation as such, is actively woven, not passively received. Between and among sensory elements of stimulation, the organism itself weaves a network of subsequent relations which obtain only in the perceiving, not prior to and independent of it. It is the pattern of this network of relations within perception, not any prior pattern within sensation alone, that determines and constitutes the objects of experience so far as they are distributed into the categories of desirable (+), undesirable (–), and neutral (0). Perception does no more.

In this way, each species constructs and lives within *its own* lifeworld. The whole process is executed by means of signs, but the perceiving organism does not think of the matter in that way. It simply uses signs, as Maritain best put it (1957), without realizing for a moment that there are signs. For whenever one element of experience makes present something besides itself, be that other 'real' or not (for example, the danger perceived only through an erroneous amplification of the stimuli of sense), the element in question is functioning as a vehicle of signification. This is why Sebeok so aptly speaks of experience as 'a semiotic web', that is to say, a web woven of sign relations, at whose nodes alone stand the objects of experience as experienced, whatever be their further status as 'physical' or 'real' independently of the experience within which they are given.

So it is clear that experience, for any organism, does not simply consist of anything that is 'there' prior to and independently of the experience, but only of 'what is there' within and dependently upon the experience. So that however many or few relations within the experience may *also* obtain independently of the experience, these relationships have *meaning* only insofar as and as they are incorporated with that larger network of relations which constitutes perception in contrast to (while inclusive of)

sensation, upon whose pattern the appearance of objects as such depends. And this larger network involves relations which would not obtain but for the biological constitution of the perceiving organism acting as interpretant even of what is given in sensation along with, indeed, *within*, the perception of objects as objects.

Now there is a great difference between an object and a thing. For while the notion of thing is the notion of what is what it is regardless of whether it be known or not, the notion of object is hardly that. An object, to be an object, requires a relation to a knower, in and through which relation the object as apprehended exists as terminus. A sign warning of 'bridge out' may be a lie, but the thing in question, even in such a case, is no less objective than in the case where the sign warns of a 'true situation'.

So we see plainly that while nothing precludes an object from *also* being a thing, nothing necessitates that a given object *also* be a thing. And an object that is one kind of 'thing' for one kind of organism (a wolf, say) may be quite a different kind of 'thing' for another kind of organism (such as a sheep) — even without getting into the question of mistakes organisms make about what kind of thing an object is or is not, mistakes which may cost life or limb, or which may in the end 'make no practical difference'.

To say that an object may or may not be a thing and to say that a thing may or may not be an object sound like simply inverse sayings, but they are not. For to say that a thing may or may not be an object is merely to say that any given element in the order of what exists independently of finite knowledge ('things') may or may not *be known*, whereas the *prima facie* inverse saying that an object may or may not be a thing is to say that *what is not known is not an object*, or, equivalently, to say that *whatever is known is an object*. And since whatever exists as an object does so only within that network of relations (what Sebeok characterized as 'a semiotic web' and Uexküll called an 'Umwelt') indifferently from nature and from mind (yet according to a mixture or pattern wherein those relations within and by cognition itself tend to predominate in the presenting of an object *as* this or that), we see at once that 'what an Umwelt is' amounts to a *species-specific objective world*, with elements of the physical environment made part of a larger, 'meaningful' whole or 'lifeworld' wherein the individual members of a given species live and move and have their being *as* members of *that* species rather than some other.

We see then how different and richer is the concept of Umwelt than the subalternate concept of 'environmental niche'. The concept of environmental niche simply identifies that part of the environment as physical upon which a given biological form mainly depends in deriving the physical aspects of its sustenance. The concept of Umwelt, by contrast, shows us how a given 'environmental niche' is merely the physical part of a larger,

objective, not purely physical whole which is, as it were, fully comprehensible only from the perspective of the particular lifeform whose world it is, whose 'environment' is meaningful in the specific way that it is thanks only to an irreducible combination of relations many of which have no being apart from the lifeworld and all of which contribute to the contrast between the physical environment as neutral or common respecting all organisms, on the one hand, and parts of that same physical environment interpreted and incorporated within a meaningful sphere of existence shared by all the members of a species, on the other hand. Only things which are objects make up part of these species-specific worlds, but within these worlds are many objects which also are not things apart from the worlds.

Uexküll compared each Umwelt to an invisible bubble within which each species lives. The bubble is invisible precisely because it consists of relations, since all relations as such, in contrast to things which are related, are invisible. The objective meaning of each world and each part within each world depends less on physical being than it does on how the relations constituting the Umwelt intersect. The difference between objects and things makes mistakes possible, but it is also what makes for the possibility of meaning in life, and different meanings in different lives.

There is yet another way of putting this matter, one which brings more immediately to the fore the dominance of semiotics as the perspective proper to the problematic traditionally called 'epistemological'. Relations among things always directly presuppose physical existence; but for relations among objects as such, physical existence is presupposed only indirectly. To hit a tree with my car I have to have a car and there has to be a tree. But to discourse about my car hitting a tree I need neither a car nor a real tree. The reason for this anomaly traces back to a little noticed yet fundamental point for epistemology: the status of objects as objects presupposes directly the action of signs, whereas the status of things as things does not (although I would argue that even the status of things presupposes the action of signs indirectly, as a 'physiosemosis': see Deely 1998, 1999). In Peirce's terms, of course, this is but to say that things belong to the category of secondness, while objects involve always thirdness. But we need not deviate into a technical discussion of these semiotic categories in order to make the point that relations among things always suppose two existents, whereas relations among objects suppose only one existent necessarily, namely, the interpreting organism. For even when the sign vehicle is a physical mark, sound, or movement, that which it signifies need not be physical, when the organism is mistaken, for example, or thinking of a state of affairs that is possible ('this bank robbed') but not yet actual, for example, when a beaver sets out to build its dam. So we realize that what we have heretofore called objects, and what are yet

commonly confused with things, in fact are, as a matter of principle and in every case, signifiates. To say 'object' and to say 'object signified' is to say exactly the same thing. The two-word expression merely makes explicit what the one-word expression implies and — all too often — serves to quite effectively conceal from the one using the expression.

To preclude this concealment and all the errors of modern philosophy attendant upon the failure systematically to distinguish objects from things we need only to realize that signs are what every object as such immediately presupposes. Without signs there are no objects. For signs are those very irreducible relationships that comprise the semiotic web, and the semiotic web is precisely that network of suprasubjective relationships which constitute objects as such as publicly accessible elements of the Umwelt shared by every member of each biological species.

In Peirce's time (the late sixteenth and early seventeenth centuries), the distinction between objects and things and the status of objects as signifieds was explained in terms of the difference between physical relations, which in principle link two subjects (or are 'intersubjective', connecting two or more elements physically existing), and sign relations, which in principle link always at least three elements of which one at least (namely, the object signified), need not exist physically at all, or not in the way that it is represented as existing physically. Later on (early twentieth century) Peirce would succeed in expressing this situation by a terse formula, or maxim: sign relations are irreducibly triadic, whereas physical relations as such are only dyadic.

We see then how truly Sebeok characterized the species-specific objective worlds which Uexküll labeled *Umwelten* as concerning 'biological foundations that lie at the very epicenter of the study of both communication and signification in the human animal', and, as I said, every other animal, for that matter. I think it is not too much to say that, insofar as there is any one single concept that is central to the study of zoösemiotics, that would be the concept of Umwelt, the invisible bubble or species-specific objective world within which every biological organism that is an animal dwells.

But the concept has one shortcoming, we might say, as a biological concept, inadequate in one particular to explaining the human use of signs. For when it comes to the human being it is true but not enough to say that we live in a bubble wholly determined by our biological constitution. True, our body, no less than the body of a snail, alligator, bee, or armadillo, determines the range and type of physical environmental aspects that we can directly objectify; and our perception, so far as it depends upon sensation, is quite bound by those limits, just as is the perception of a dog, dolphin, or gorilla. But the human modeling system, the *Innenwelt* underlying and correlate with our Umwelt, is, strangely, not

wholly tied to our biology. The first effectively to notice this anomaly in the context of semiotics was again Sebeok (e.g., 1984, 1988). When we are born, or, indeed, when our genotype is fixed at fertilization in the zygote from which we develop, what we can see or sense in any direct modality is established and determined, just as is the case with any animal life form. But what language we will speak or what we will say in that language is far from so fixed and determined. Sebeok was the first effectively to point out that failure to grasp the implications of this fact result largely if not entirely from the widespread and long-standing confusion, in learned circles no less than in popular culture, between *language*, which is a matter of an *Innenwelt* or modeling system that is not wholly tied to biological constitution, and *communication*, which is a universal phenomenon that in and of itself has nothing whatever to do with language.

Thus zoösemiotics studies the communication systems of animals, both those that are species-specific to each animal form and those that overlap two or more forms, including communicative modalities shared between human animals and other animal species. But language is not first of all a communication system. Language is first of all a way of modeling the world according to possibilities envisioned as alternative to what is given in sensation or experienced in perception. When such a modeling system is exapted for the purpose of communicating something of its content to another, the attempt succeeds, if at all, only when the other to whom one attempts to communicate such a praeter-biological content is a conspecific (that is, only when the prospective receiver likewise has an *Innenwelt* which is not wholly tied *omni ex parte* to biological constitution); and the result of the communication (when and to the extent it succeeds) is the establishment precisely of a *linguistic code*, which will correlate with but in no way reduce to elements accessible through one or another sensory modality of the organism, which is the establishment of a new, species-specific channel of communication, to wit, *linguistic communication*, commonly miscalled and thoroughly confused with language itself.

That is why, for communication to be linguistic, it matters not a whit whether it be spoken, written, or gestured: all that matters is the type of *Innenwelt* underlying the communication which makes immediate, non-reductive interpretation of the linguistic code possible in the first place. That is why the 'meaningful world' in which the human animal lives involves postlinguistic structures (Deely 1980) accessible in what is proper to them only by a linguistic animal, whereas all the other animals, even when they employ (as is in fact fairly common) symbolic means of communication, are restricted to the order of prelinguistic, sense-perceptible object domains (including postlinguistic structures in their sense-perceptible aspects of embodiment).

So the concept of Umwelt applies fully to the human animal insofar as humans are animals, but the invisible bubble within which the individual human being lives as a member of a biological species is permeable in a way that the Umwelt of no animal without language is: for the human Umwelt is not restricted to a semiotic web based only on biology. In ancient and medieval philosophy this species-specifically distinctive openness or ‘permeability’ of the human lifeworld was expressed in a maxim: *anima est quodammodo omnia*, ‘the human mind in a certain way is all things’, namely, in the extent of its possible knowledge. In fact, that is the reason for the very possibility of semiotics in the first place. For *if*, as we saw, signs consist essentially in triadic relations which, as relations, are always suprasubjective and only sometimes intersubjective as well (insofar as semiotic relations incorporate physical relations within objectivity, as always happens), but are never themselves directly sensible even when all three of the terms they happen to unite in a signification may be sensible, *then* only an animal whose awareness is not wholly tied to biological constitution will be able to realize that there are signs, in contrast to merely using them, as Maritain pointed out as the case with nonlinguistic animals.

So we arrive at a new definition of the human being, no longer the ‘rational animal’, as in ancient Greek and medieval Latin philosophy, nor even the ‘thinking thing’ of modern philosophy, but rather the ‘semiotic animal’, the animal that not only uses signs but knows that there are signs, because as linguistic the human animal is capable of modeling that fundamental reality of all experience which never appears to the eyes and ears or any other biological channel of sense: relations as such in contrast to the objects or things that are related; relations as such as the fundamental reality which makes possible the experience of objects in the first place; relations as such which make possible the difference between objects and things; relations as such which, in their peculiar being and irreducibly triadic form, are that which every object presupposes; relations, those irreducible strands of the semiotic web which constitute the Umwelt or objective world in its contrast with and difference from the physical environment as such prior and in some measure common to every life form.

In other words, the human Umwelt is so modified from within by the exaptation of language to communicate that, without ceasing to be an Umwelt, it becomes yet so different from an Umwelt based on an Innenwelt without language that some further term to characterize it becomes imperative. I have proposed that the term *Lebenswelt* should be adopted to express an Umwelt which is species-specifically human, retaining Umwelt to express the generic idea of an objective world which is in every case species-specific consequent upon biological constitution. Whether this

suggestion will catch on remains to be seen, and I have rested my case mainly on the three hundred and eleven paragraphs constituting my account titled *The Human Use of Signs*. But while the question of whether my argument on this crucial point will prevail by becoming an accepted usage remains open, the question of whether Sebeok's argument is sound in asserting that the concept of Umwelt is central to semiotics may be considered decisively closed in the affirmative. The success of Sebeok's argument by itself justifies his ranking of Jakob von Uexküll as 'one of the greatest cryptosemioticians of this period' in which we have been privileged to see semiotics pass from the status of abstract proposal to successful intellectual movement, perhaps the most international and important intellectual movement since the taking root of science in the modern sense in the seventeenth century.

Note

1. Given the nature of the volume within which these remarks appear, I have not deemed it necessary or particularly useful to document at length the historical sources upon which Jakob von Uexküll drew, but only those works within which the concept of Umwelt as Sebeok took it up were introduced. Beyond this, I have restricted my references to those very few works directly quoted or cited in the course of my remarks; for my aim here has been not etymology or scholarly illustration in the full sense, but simply and directly to explicate and influence the *usage itself* of the term Umwelt within semiotics as a contribution to the establishment, little by little, of an epistemological paradigm 'home grown' from reflection directly on the being and action proper to signs as the fundamental and universal vehicles by which experience grows and on which knowledge within experience depends. For this is the line of intellectual development most promising for the foreseeable future of semiotics, at least if semiotics provides, as Locke obscurely prophesied, a 'new sort of Logick and Critick', to wit, a definitive breaking out of and moving beyond the confinement of modern philosophy by an epistemological paradigm which precludes that very intersection of nature with culture that semiotics takes as its distinctive 'point de départ'.

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