

John Deely

THE PRIMARY MODELING SYSTEM IN ANIMALS\*

“Human understanding recognizes the animal before it recognizes what is human within the animal” (“prius occurrit intellectui nostro cognoscere animal quam cognoscere hominem”) – Thomas Aquinas c. 1266: *Summa theologiae*, 1.85c

Professors Susan Petrilli, Augusto Ponzio, and I (separately, and recently – 2005 – together), have proposed that “semiotic animal” is the best formula for understanding today what it is to be a human being. In particular, Petrilli and Ponzio (2003), with their discussion of “semioethics”, have shown how this new understanding of human being implies also something of a revolution in our approach to moral responsibility, and indeed, as I have argued (2007), even for our grasp of “natural law”. The semiotic revolution is well and truly underway as the 21<sup>st</sup> century begins, and philosophy can no more go unchanged by semiotics than could France after the events of 1789.

Here, occasioned by Susan’s kind invitation to share in the honor of writing for a festschrift to Augusto, I would like to write large a small disagreement in our understanding of the semiotic animal that I think has implications for that understanding as we go forward into a postmodern epoch of philosophy and intellectual culture. And since Augusto is Italian, it seemed fitting to bring to bear in the matter of the semiotic animal a quibble drawn from another Italian, in this case Thomas Aquinas. The question concerns how fully we are to construe the term “animal” in our proposed definition of human beings as “semiotic animals”, even as it applies in particular to the world of culture that human animals create for themselves as their “living space”.

How are we to understand “animal” in the expression “semiotic animal”, and hence the generic component of human being as a species of animal – an animal not merely “capable of reason” (after all, a deficient form of intellectuality, even in the medieval understanding: see

---

\* An essay to honor the 65<sup>th</sup> birthday of my good friend Augusto Ponzio, of Bari.

Deely 2004d) but rather one, the only one, engaged in “metasemiosis”, as we will see; and so engaged whether consciously or not?

1. “*Man*” in modernity

To understand the human being it is not enough to single out “the difference of man” and then to insist upon “the difference it makes”, as did Mortimer Adler in a best-selling philosophy book of the last century (1967), reprinted indeed toward its end (1993). Still less is it useful at this juncture to belittle the “animal language” experiments in order to revel in the “superiority” of animals – ourselves – able to discourse in verbal language, as Professor Marie-George did in her plenary lecture to the 2006 Nashville meeting of the American Maritain Association, as if spiders were to hold a convention belittling and brushing aside all those pathetic animals unable to spin webs.

Such belittlement is all passé modern pastiche, to which it may be said that Thomas A. Sebeok, in cohort with Robert Rosenthal (Sebeok and Rosenthal 1981), dealt the death-blow at their 1980 May 6-7 “Conference on the Clever Hans Phenomenon” held by the New York Academy of Sciences, though there were many lectures and articles in the lead-up to this conference, especially on Sebeok’s side (e.g., 1978).

The quintessence of modernity in matters human was to stress “the difference of man”, and to embrace the conclusion that not only is the rational intellect *superior* to the rest of nature but also that the human being in possessing this “superior mind” is *separate* from nature as well. Whence developed the myth of the “objective observer” in that false sense of the word “objectivity” intended to signify synonymy with what is apart from any observation by which it may happen to become known, and in contrast with the systematically required sense of “objective” as simply that which is known by whatever means and regardless of any further status the known may or may not have in the physical environment as something common to all animals. The “objective” observer is a participant in the universe he or she

observes, and there is no other kind of “observation”, certainly not one “detached” from the human condition as an animal among other animals<sup>1</sup>.

The modern attitude of superiority was captured early in Descartes’ formula displacing “rational animal” as the definition of human being. After all, an animal, however ‘rational’, remains, as Thomas Aquinas earlier stressed (1266: 1.76c), a species within the genus of animals: “it is not ‘human being’ which is posited in the definition of ‘animal’, but ‘animal’ which is posited in the definition of ‘human being’”, so that to define the human being apart from the notion of animal is a vain exercise. For not only is man, like every animal, a composite of body and soul, but that very form or “soul” which specifies the human being as human is one and the very same form which constitutes the human being as an animal<sup>2</sup>. It is as if one were to figure out what makes a giraffe as a species different from every other animal species, and then to define “giraffeness” as something that can leave “animal” out of its understanding.

Yet this is precisely what Descartes did in re-defining the human being as rather a “thinking thing”, *res cogitans*, than a “rational animal”. His grounds (1641) – that it is certain that we think, but only an opinion that we are an animal (or indeed have any body at all) – do not meet the criteria of genuine doubt (cf. *CP* 2.192, 5.265, 5.524, 6.498), any more than they meet the criteria of an essential definition of human being according to Aquinas (“For Socrates is not a human being by one form and by another form an animal, but he is both – a human animal – through one and the same form”<sup>4</sup>).

## 2. *The need for a postmodern definition*

---

<sup>1</sup> Here should be mentioned the work of one of the great cryptosemioticians of the last century, Gregory Bateson, who (1972) identified just this view of “separateness” and “superiority” as the “original sin” of modern epistemology.

<sup>2</sup> “Animal per se de homine praedicatur, non per accidens; homo autem non ponitur in definitione animalis, sed e converso. Ergo oportet eandem formam esse per quam aliquid est animal, et per quam aliquid est homo, alioquin homo non vere esset id quod est animal, ut sic animal per se de homine praedicetur” (Thomas Aquinas c.1266: *Summa theologiae* 1.76.3c).

<sup>4</sup> Aquinas, *loc. cit.*: “ita nec per aliam animam socrates est homo, et per aliam animal, sed per unam et eandem”.

Yet in intellectual culture as a whole, there is no going back *tout court*. It is not enough simply to recover, or try to recover, the ancient and medieval formula of “rational animal” to define the human being, valid though it be. Such an attempt at recovery simply does not go far enough to meet legitimate modern concerns. For modernity began by closing off the way of signs, unwittingly albeit, with its hypothesis that the objects of our direct apprehension are already wholly constructs of our own thinking; and Kant’s attempt at a revolution actually only deepened and further fortified the isolation from mind-independent being as something objectifiable in its own right, albeit within and alongside of reality as a social construction. For the average person, in modernity’s early years, it might be said (as Luther indeed said; see the discussion in Deely 2001: ch. 11) that it was a question of whether to believe your eyes or your ears: for while Copernicus and later Galileo told us it was the earth that revolves about the sun and not the sun around the earth, every uncloudy day anyone with eyes to see could behold the opposite of their claim.

### 3. *The impasse of modernity*

In the Latin Age immediately preceding modernity, the human intelligence was conceived as distinguished by being able to know “being”, which meant “the way things are”. The first distinction within being which the human mind discovers is the contrast between, on the one hand, objects which have a subjective dimension to their objective being, and so and insofar are classed as *ens reale*; and, on the other hand, other objects which have no such dimension outside human society and thought, objects which as such belong rather to the order of *ens rationis*. So being, knowable to the human mind, consists of a web or admixture of beings which though known are yet also independent of being known, and beings which while known have no other being independent of being known. The former “beings” constitute – or so the medievals thought – the world of nature, the latter “beings” constitute the world of language and culture, which in part assimilates to itself the natural world.

Modernity, beginning thematically with Descartes, then Locke, then ruthlessly systematized with Kant and after, gave up on the idea of *ens reale* as knowable in its own

right, and left us with cognitive access only to our own constructions, *ens rationis*. The “rational animal” of Latin times, however, belonged determinately to the order of *ens reale*; for rationality (an intellect dependent upon the senses for its object and growing in its grasp of objectivity only over time), is precisely (or so the medieval Latins and Greeks of ancient times were of the opinion) a structure of subjective being known to be such – that is simply to say “known objectively”, since there is no other way to be known, “being objective” and “being known” being synonyms.

Once the move had been made – whether we look to the early, the middle, or the late moderns; to Descartes, Locke, Kant, Russell, Wittgenstein, Davidson, or Kripke – to cut off knowing from whatever the mind does not itself construct, the sort of warning Aquinas issued against the possibility of a valid definition of human being that leaves out the component of “animal” becomes otiose, if not downright moot.

So the impasse of modernity: on the one hand the classical definition of human being as “rational animal”, an *ens reale*; on the other hand the modern definition of human being as “thinking thing”, a creature trapped in its own musings as limited rather to *ens rationis*. Yet if the human being *is* an animal, belonging to and ordered to know an order of *ens reale*, it remains fatuous to think otherwise. Yet, cast as it was, the modern dilemma of “realism vs. idealism” seemed to admit of no third way, no “going beyond”, but required a simple choice, “Yes” or “No” to the question. So Peirce saw the issue (1909; *CP* 1.27), and so did Maritain (1959: 80).

#### 4. *Requirements of the present*

However the human being is to be defined, it is certain that human beings learn only over time, not always even then. Yet of the two constants, truth and time, the latter tends to lead to the former, as Peirce so well put it with his notions of the “final interpretant” and “community of inquirers”.

So we need an interpretant for the human being which does not simply take us back in time to a medieval understanding of ourselves, but one which, fully cognizant of the modern

development making of nature and culture two universes or worlds, as Vico put it (only the latter of which can be known by human beings, as only God can know the former), transcends the modern impasse, reveals something false or inadequate in the forced choice between “Yes” and “No” to the development of idealism (“constructivism”, as some prefer), and so opens a *way beyond* modernity – a *postmodern* path or way in philosophy and for intellectual culture as a whole.

## 5. *Enter semiotics*

Exactly here does semiotics enter the picture, for the reason that Poinsett was the first systematically to indicate (1632: Book I, Question 1, opening paragraphs): the first requirement to be met by any would-be student of sign is to discover a standpoint that transcends the division of being into *ens reale* and *ens rationis*, for the sign belongs to both orders and indeed, depending on circumstances, passes between them. Umberto Eco much later (1976) would say that semiotics studies whatever can be used to lie, a more colorful way of making Poinsett’s original point – though a way which yet does not address the question of the knowability of *ens reale*, which is required if we are to transcend the constructivist impasse in the matter of defining human being.

### 5.a. *The shaping influence of Sebeok*

The one who first addressed this complex of issues in a way that compelled discursive progress was undoubtedly Thomas A. Sebeok, with his insistence from the first that the action of signs is not only common to all *animals* but indeed to all *living things*, and, later (even more forcefully), that species-specifically human linguistic or verbal communication would not be possible at all were it not for the sign-processes, or “zoösemioses”, which subtend verbal communication and which are not species-specifically human at all save in marginal ways but are rather *centrally and generically animal*. In the course of developing this view between 1963 and his death in 2001, Sebeok succeeded in shifting the whole center of gravity in contemporary studies of sign *from* the determinately late-modern and partial view known as

“semiology”, according to which only humans use signs and all signs as signs are such only by assimilation into the world of culture, to the wholistic or global and postmodern view of “semiotics” as the doctrine of signs which not only transcends the nature/culture divide of modernity but shows at the same time that culture is but the species-specifically human form of *natural* development in the case of the human animals.

Sebeok’s manner of doing this was nothing short of ingenious. Not only did he indicate the needed solution from the original genius of his own work in zoösemiotics and biosemiotics, but he did so by drawing upon the major insights developed in Tartu, Estonia, first by the cryptosemiotician Jakob von Uexküll (esp. 1934, 1940), and second by the semiologist Jurij Lotman (e.g., 1984, 1990). Whence we can express a kind of formula: *Cryptosemiotics* (von Uexküll) + *Semiology* (Lotman) = *Semiotics* (Sebeok).

#### *5.b. Sebeok’s appropriation of “Umwelt”*

Von Uexküll’s central idea was the *Umwelt*, the idea of the objective world (Deely 2001, 2004c) in which animals live as a sphere of meaning irreducible to the physical environment as simply *ens reale*, that is to say, irreducible to something physically common to all the animals, all the life forms. For the physical environment is a world of things interacting only as such, while the world of objects is a world of interpretations, interpretations stimulated by the sensations of animal life but formed by the perceptions organizing those sensations into what is to be sought (or +), what is to be shunned (or –), and what is safe to ignore (or 0). Thus the *Umwelt* is an objective world, or world of animal *awareness*, shot through with interpretations that have their reality only in relation to the interpreting organism (only as *ens rationis*, in the Latin parlance), even though shot through as well with realities of sensation at the base of these interpretations, realities without which the animal interpretations could not suffice to keep the animal alive (hence contain and are, perspectively, *ens reale* in the Latin parlance). Sebeok like to quote Jacob (1982: 56) on the point:

No matter how an organism investigates its environment, the perception it gets must necessarily reflect so-called “reality” and, more specifically, those aspects of reality which are directly related to its own behavior. If the image that a bird gets of the insects it needs to feed its progeny does not reflect at least some aspects of reality, then there are no more progeny. If the representation that a monkey builds of the branch it

wants to leap to has nothing to do with reality, then there is no more monkey. And if this point did not apply to ourselves, we would not be here to discuss this point.

The Umwelt or outer world of objects, thus, corresponds to an *inner world* or Innenwelt, as von Uexküll termed it, of mental representations which, in contrast to being themselves objects, serve rather as the foundation for relations to what is sensed and construed as objects of the +, −, or 0 nature. The medievals had construed the animal access to the *ens reale* of the physical surroundings on just this basis of a prescissive difference between *sensation* – as a dyadic interaction of “brute force” between sensible surroundings and animal sense powers giving rise to a naturally determined network or pattern of triadic relations of signification (whereby, for example, differentiated light reveals shape and movement, sound reveals distance, etc., to the animal organism) – and *perception* as a network of irreducibly triadic relations interpreting what is sensed as objects of this or that significance (+, −, 0, as has been said) (see Poinso 1632: Book I, Question 6).

So no Umwelt without an Innenwelt, and no Innenwelt without an Umwelt which includes, via sensations, *ens reale* on the basis of which the animal forms its *ens rationis* giving meaning to the physically indifferent surrounding as this or that for an organism of this particular biological heritage. Sebeok saw right away that the Innenwelt as source of the mental representations which give meaning to sensations by interpreting them on the basis of biological heritage is nothing more nor less than what cognitive scientists call a *modeling system* (see Sebeok and Danesi 2000).

### *5.c. Sebeok’s appropriation of “modeling system”*

Now a “modeling system” in the late modern 20<sup>th</sup> century study of signs known as “semiology” had come to have a rather different meaning from this. Jurij Lotman of Tartu, “one of the first Soviet scholars who became famous abroad”, as Voigt remarked (1995: 200), and the founder of the oldest semiotics journal in existence<sup>6</sup>, had introduced the idea of a

---

<sup>6</sup> Originally titled *Σημειωτική* in 1964, exactly as the original coinage by Locke in 1690 (see Deely 2004), “corrected” to *Σημειωτική* in its third issue, the journal today is best known under the name of *Sign System Studies*, and has transformed from a Russian language periodical (until 1992) into an international peer-reviewed journal on semiotics of culture and nature, especially since 1998. Lotman was directly involved as an editor for the first twenty-five volumes.

*primary modeling system* as nothing less nor other than the key without which one cannot enter the world of culture in its proper terms, namely, human verbal language. The world of culture, then, as consequent upon language, Lotman termed the “*secondary modeling system*”, and this way of viewing the matter gained great prominence among the semioticians.

Sebeok saw at once the genius and the deficiency of Lotman’s view. Indeed culture is a system of signs secondary to, in the sense of dependent upon, verbal language (species-specifically human communication) in order to come into existence at all as well as to be known for what it is. Any animal can see the Mannerheim statue outside the Helsinki main rail station, but only a human animal has a chance to find out why that statue is there or “what it means”.

But at least as important as the semiological genius of Lotman’s view is its semiotic deficiency: for just as the modeling system of cultural artifacts and customs cannot be or be understood unless it be reached through the portal of language, so the portal of language (*pace* the analytic philosophers and the semiologists together) is not something semiosically sufficient unto itself and autonomous respecting the realities objectified through zoösemiosis. So true is this, Sebeok remarked, that in fact about 90% of our actual intraspecific communications, although commonly 100% layered over with verbiage, transpire not due to the verbal overlay but rather by way of the zoösemiosic underlay – by way of so-called “body language”, that is to say, by *moyens* of communication that are generically animal rather than species-specifically human. Take away the zoösemiosic underlay, and the verbal overlay implodes. Even in those 10% of matters theoretical and practical where the component of linguistic communication is fully essential and truly reaches beyond anything reducible to zoösemioses, the animal reality of the human being as a social presence plays a role often critical, if not decisive.

Indeed there is much distinctively human that can only be communicated by verbal language. But that verbal language still relies on zoösemiotic means of seeing and hearing and movement, and these means go in their own way as far beyond verbal language as verbal language in its way goes beyond preverbal zoösemioses.

Now Sebeok took great pains to meet Lotman, and indeed, even in the Soviet times, to do so on Lotman's home ground in Tartu, in August of 1970 (see Sebeok 1998). But it was after their third encounter in Norway in 1986 that Sebeok returned to the United States and, in an address to the Semiotic Society of America (Sebeok 1987), announced his own idea on how to bring the Moscow-Tartu school fully into the semiotic fold as semiotics had developed beyond the provincial late-modern florescence of semiology as a part of semiotics, a province, as it were, of the doctrine of signs. That address, on Sebeok's terms, laid out how semiology should best be viewed as a *pars semeiotica* rather than as a domain unto itself, unable theoretically (that is to say, unable from its own resources) to move beyond the late-modern solipsistic development in philosophy of modern "epistemology". The importance Sebeok attached to this point may be gleaned from the extent to which he put it into circulation (see the entries for Sebeok 1987 through 1991a).

#### *5.d. Sebeok's synthesis*

The conceptual move Sebeok proposed, *au fond*, is as simple as it is revolutionary in the actual contemporary development of semiotics as the general doctrine of signs: make von Uexküll's notion of the biological and animal Innenwelt the *primary* modeling system, and locate *language* in the root sense as an *element within* thatInnenwelt, as (in Porphyrian terms) the "difference" added to genus to constitute the species. "Language" so considered is *not* verbal language but rather *that part* of the human Innenwelt which is biologically underdetermined such that, upon being *exapted* (Gould and Vrba 1982) to communicate, becomes *what we commonly call* "language" but which is in fact that species-specifically human form of communication properly called *linguistic*<sup>7</sup>. This communicative modality, in turn, constitutes a *secondary* (rather than the primary) modeling system, and the realm of culture thus enabled is in its turn a *tertiary* (rather than a secondary) modeling system.

---

<sup>7</sup> The case is comparable to the distinction Peirce and Poinset draw between "sign" in the strict sense which consists not in any sensible element but precisely in the "invisible" suprasubjective triadic relation, and "sign" in the common loose sense of that sensible element within a triadic relation occupying the position or role of representamen (of "sign-vehicle"). Similarly, Sebeok distinguishes "language" in the strict sense as consisting in that aspect of an animal modeling system capable of founding relations terminating in objects (or aspects of

By tracing the root of language to an element at once within but differentially part of the *generically common* source of objectivity for all animals, Sebeok removes the modern – the Cartesian and Kantian – error of separating anthroposemiosis (the human use of signs in communication) from zoösemiosis, the use and action of signs common to all animals as “able to become aware of their surroundings”. By then distinguishing this root sense of *language* from *communication* through the notion of exaptation, Sebeok neatly removes the modern pretensions in philosophy of language to treat linguistic communication as a whole unto itself (cf. Todorov 1977; Deely 2006), even as he removes also the pretensions of semiology to adequate semiotics as a general doctrine of signs.

Thus, in Sebeok’s scheme, the *primary* modeling system is the Innenwelt as a whole, not any species-specifically human part thereof. Language in Lotman’s sense of linguistic or verbal communication, then, presupposes *both* the Innenwelt as a whole which, as common to *all* animals is generically biologically determined, *and* a differentiative part which, as unique to human animals is specifically biologically *underdetermined* (as appears from objects and aspects of objects ininstantiable as such to sense perception – e.g., the “presidency” of a president, in contrast to the physical organism here and now serving as president, etc.). Precisely the exaptation in communication of *this* differentiative or biologically underdetermined representation of objects, yet perforce within the species-specific context of the Umwelt as a whole which contains also its biologically determined objective counterpart to the animal evaluation (or interpretation) of the physical surroundings as +, –, 0, lends to the human Umwelt that species-specifically human communicative modality (absent in the Umwelt sharings of other animals) that we commonly call “language” but which is more properly and strictly termed *linguistic communication*.

Thus “verbal language, whether spoken, written, or gestured, is neither a primary modeling system nor “language” in the strict sense; and not even “language in the strict sense”, though species-specifically human, adequates Sebeok’s notion of primary modeling system.

---

objectivity) not directly instantiable to sense from “language” in the loose sense of a communication system – especially a *verbal* communication system.

The *outward expression* of “language” through the establishment of codes which appear “arbitrary” (precisely by reason of their lack of underlying biological determination) – but which are anything but arbitrary in the social context of their establishment and of the animal (human or not) habituated to them in social employment – is in fact a communicative channel, an exaptation, in contrast to “language” as a feature of the *Innenwelt* of human animals. Vocal communication is not necessarily verbal communication. The confusion, then, of *language*, which is species-specifically human, with *communication*, which pertains to the whole of animal life (and indeed to the whole of nature), leads to the late modern blunder of attempting experimentally to introduce a biologically underdetermined communicative modality into the *Umwelt* of animals whose *Innenwelt* is incapable of supporting that modality by reason of being unable to intellectualize – that is, to mentally represent – sensorially ininstantiable objects and aspects of objects.

By contrast, in those animals – the humans – whose *Innenwelt* can and does maintain an *Umwelt* with features transcending the directly sense-instantiable, this new and unique modality of linguistic communication (“verbal communication”) is able to constitute, superordinate to the animal *Umwelt* as containing only sense-instantiable objectivities, a veritable *secondary* modeling system as the communicative modality which opens the way to culture as a yet further realm of *tertiary* modeling. But we see then that it is not quite the case that, as Ponzio proposes, “the primary modeling system of the species *Homo* is *language*”, even though it is certainly true that language as the biologically underdetermined part of the human *Innenwelt* “should not be confused with verbal language, as in the Moscow-Tartu school” (Ponzio 2004: 20).

#### 6. *The primary modeling system as common to all animals*

For it is not *language*, not even in Sebeok’s root sense, let alone Lotman’s sense of verbal communication, that is the primary modeling system. “Language” in Sebeok’s root sense, even prior to exaptation through communication to constitute Lotman’s sense of “language”, is yet species-specifically human; whereas the *primary* modeling system in

Sebeok's sense *includes* but *cannot be coarctated* to the root sense of "language", i.e., to language as distinguished from the exaptation of language to communicate.

Otherwise, exactly as Aquinas noted in his criticism anticipative (as it turned out) of the early modern definition of the human being as *res cogitans*, the Umwelt would not be a creation *common* to *all* animals. Only the Innenwelt *generically considered* is characteristic of *all animals*. In the human case, as in all other cases, the Innenwelt is governed in its perceptual interpretations of sensation first of all by biological heritage. In the human case uniquely, this governance first of all is not, however, *last* of all, the end of the story. For the Innenwelt of the human animal uniquely or alone ("differentiatively") on this planet involves an aspect or a dimension that is not wholly biologically determined. Thus, all other animals are restricted to a horizon of *sensible objects in their sensible aspects* for their interpretations of the world. The human animal too interprets within the horizon of sensible objects, but because the human animal has an aspect of its Innenwelt that is biologically underdetermined – "language" in Sebeok's root sense – human interpretations transcend the realm of the sensible aspects of sensible objects to include objectivities that cannot be exemplified as such and directly to the senses, hence cannot as such and directly be perceived.

#### 7. *From semiosis to metasemiosis*

Central for semiotics among these imperceptible realities that can be understood but not perceived are relations in their difference from related objects or things. This is crucial, for as we have learned, first from Peirce and in our own times from Peirce, what we commonly *call* signs, those sensible items we can see with our eyes, point to with our fingers, and hear with our ears, are in themselves not signs at all but rather *sign-vehicles* (or "representamens", as Peirce called them). The *signs* strictly speaking are the irreducibly triadic relations which unite us in cognition and cathexis to signifieds – *entia realia* and *entia rationis* alike – other than ourselves, making dialogue possible, indeed, but always and only within a web of zoösemiosis constitutive of our life as animals, albeit uniquely animals capable of

*metasemiosis* or “semiotics”, the knowledge that arises from the awareness that there are signs in their proper being as triadic relations suprasubjectively speaking.

8. *Defining the “human being” from within metasemiosis*

If, then, we define ourselves as *semiotic animals* on the grounds of the twin realization that the whole of human awareness from its birth in sensation to its debates over the reality of God and angels depends upon the action of signs, and that we are the only animals capable of knowing that there are signs by virtue of possessing an *Innenwelt* that is not wholly yet only in part biologically underdetermined, we have met Aquinas’s objections to the Cartesian and modern way of attempting to define the human being: but only because we realize that the *Innenwelt* is a reality of animal life before and also as it is realized in human animals, and that even in human animals the species-specifically distinctive feature of language as biologically underdetermined is not the whole of our *Innenwelt*, not at all. Besides language, there are in us as in all animals *biologically determined* aspects of our *Innenwelt*, and hence of our objective worlds.

The linguistic aspect of our objective world, thus, and the whole of human culture, appears not only as species-specifically human but also as *species-specifically natural* to the semiotic animals. Culture is not opposed to nature in this way of understanding the matter, but extensive of nature, albeit in species-specific ways, just as the species-specific modalities of each variety of animals defines its natural world and the “meaning” within that natural world as *wholly* objective but only *partly* inclusive of the physical surroundings common to all the life forms.

Sebeok’s primary modeling system, then, is a revolutionary idea because, by including *the whole of the Innenwelt* with language as a part, it restores to thinkers as human their animality. Sebeok’s revolutionary idea is at the same time *postmodern* because it deals with the distinctive realization of anthroposemiosis as manipulating relations in their indifference to the difference between *ens reale* and *ens rationis*, and not merely (as in the medieval

formula of the human as “rational animal”) with the underlying possibility of such manipulation as a subjective structure or feature of a distinctive modeling system.

But the “primary modeling system” as Sebeok proposes it is not identifiable with language – with the differentiative part – *tout court* of the human Innenwelt. To reduce the primary modeling system to language in this sense is to miss Sebeok’s point, and, in a new way, to repeat the error of Descartes and the myopia of the original semiologists of the mid-20<sup>th</sup> century. It would be to see the semiotic animal as an animal only nominally, by failing to include in the real definition of its metasemiosis the zoösemioses which alone make possible in the first place even the species-specifically human dimension which anthroposemiosis adds to the zoösemioses in which linguistic communication is implicated and upon which it depends for its success, even as it transcends those zoösemioses.

#### References

- Adler, Mortimer J.  
1967 *The Difference of Man and the Difference It Makes*, 2<sup>nd</sup> ed., New York, Fordham University Press, 1993.
- Aquinas, Thomas  
c.1266/73 *Summa theologiae*, in Roberto Busa (ed.), *S. Thomae Aquinatis Opera Omnia ut sunt in indice thomistico*, Stuttgart-Bad Cannstatt, Frommann-Holzboog, 1980, vol. 2, pp. 184–926.
- Bateson, Gregory  
1972 *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*, San Francisco, Chandler Publishing Company; reprinted by the University of Chicago Press with a Foreword by Mary Catherine Bateson in 1999.
- Deely, John  
2004 *Why Semiotics?*, Ottawa, Canada, Legas.  
2004a “Semiotics and Jakob von Uexküll’s Concept of Umwelt”, presented 10 January 2004 at the 9-10 January 2004 International Symposium “Zeichen und der Bauplan des Lebens – Uexkülls Bedeutung heute” opening the Jakob von Uexküll-Archive at the University of Hamburg; published in *Sign System Studies*, 32, 1/2 (Tartu University, Estonia), pp. 11–34.  
2004b “The Semiosis of Angels”, *The Thomist*, 68, 2 (April), pp. 205–258. See also: <<http://www.thomist.org/journal/2004/April/2004%20Apr%20A%20Deely.htm>> and <http://www.bun.kyoto-u.ac.jp/mdvphil/ksmp/24corrigenda.html>.  
2006 “The literal, the metaphorical, and the price of semiotics: an essay on philosophy of language and the doctrine of signs”, *Semiotica*, 161, 1/4, 2006, pp. 9–74.  
2007 “Evolution, semiosis, and ethics: rethinking the context of natural law”, in Ana Marta González (ed.), *Contemporary Perspectives on Natural Law*, Aldershot, England, Ashgate, volume in preparation.
- Deely, John; Petrilli, Susan and Augusto Ponzio  
2005 *The Semiotic Animal*, Ottawa, Canada, Legas Publishing.
- Descartes, René

- 1641 "Meditations on First Philosophy", trans. John Cottingham, in John Cottingham, Robert Stoothoff and Dugald Murdoch (trans. & eds.), *The Philosophical Writings of Descartes*, Cambridge, England, Cambridge University Press, 1985, vol. 2 of 2, pp. 3-62.
- Eco, Umberto  
 1975 *Trattato di semiotica generale*, Milan, Bompiani.  
 1976 *A Theory of Semiotics*, Eng. trans. David Osmond-Smith, Bloomington, Indiana University Press; *Trattato di semiotica generale*, Milano, Bompiani, 1975.
- George, Marie  
 2006 "Nature, Human Beings and Animals", Plenary Lecture delivered to the Saturday, November 4 session of the American Maritain Association at Seton Hall University, Nashville, Tennessee.
- Gould, Stephen J. and Elisabeth S. Vrba  
 1982 "Exaptation – A Missing Term in the Science of Form", *Paleobiology*, 8, 1 (Winter), pp. 4-15.
- Jacob, François  
 1982 *The Possible and the Actual*, Seattle, WA, University of Washington Press.
- Lotman, Yuri  
 1984 "O semiosfere", *Sémeiôtiké. Sign Systems Studies*, 17, pp. 5-23.  
 1987 "On the Contemporary Concept of the Text", *Livstegn*, 3, pp. 159-163.  
 1990 *Universe of the Mind: A Semiotic Theory of Culture*, London, I. B. Taurus.
- Maritain, Jacques  
 1959 *Distinguish to Unite, or The Degrees of Knowledge*, trans. from the 4th French ed. of original 1932 entry above, q.v., under the supervision of Gerald B. Phelan, New York, Scribner's.
- Peirce, Charles Sanders  
 1909 A set of manuscripts all with "Meaning" and the date in the upper left-hand corner of the pages, from which *CP* 1.27 derives.  
 1931-1958 *The Collected Papers of Charles Sanders Peirce*, vols. I-VI, ed. C. Hartshorne and P. Weiss, vols. VII-VIII ed. A. W. Burks, Cambridge, MA, Harvard University Press; all eight vols. in electronic form ed. John Deely, Charlottesville, VA, Intelix Corporation, 1994. [The abbreviation followed by volume and paragraph numbers follows the standard *CP* reference form].
- Petrilli, Susan and Augusto Ponzio  
 2003 *Semioetica*, Rome, Meltemi.
- Poinsot, John  
 1632 *Tractatus de Signis*, disengaged from the *Artis Logicae Prima Pars* (Alcalá, Spain) and published in a bilingual critical edition subtitled *The Semiotic of John Poinsot*, arranged by John Deely in consultation with Ralph Austin Powell, Berkeley, University of California Press, 1985. Available in electronic form, Charlottesville, Virginia, Intelix Corporation, 1992. New edition forthcoming from St. Augustine's Press, 2007.
- Ponzio, Augusto  
 2004 "Dialogism and Biosemiotics", *Semiotica*, 150, 1/4, pp. 39–60; reprinted in Deely, Petrilli and Ponzio 2005, pp. 15-34, to which reprint page reference is made.
- Sebeok, Thomas A.  
 1978 "Looking in the Destination for What Should Have Been Sought in the Source", *Diogenes*, 104, 1978, pp. 112-37. Also in Louise Horowitz, Alex Ornstein and Raphael Stern (eds.), *Languages and Psychotherapy*, New York, Haven Publishing Corp., 1979; and in *The Sign & Its Masters*, Austin, TX, University of Texas Press, 1979, pp. 84-106.  
 1987 "Language: How Primary a Modeling System?", in John Deely (ed.), *Semiotics 1987*, Lanham, MD, University Press of America, 1988, pp. 15-27.  
 1988 "In What Sense Is Language a Primary Modeling System?", in Henri Broms and Rebecca Kaufmann (eds.), *Proceedings of the 25th Symposium of the Tartu-Moscow School of Semiotics*, Helsinki, Artor Inc., pp. 67-80.  
 1988a "In What Sense Is Language a Primary Modeling System?", in F. Steurs (ed.), *World Behind Words*, Leuven, Leuven University Press.

- 1989 “In What Sense Is Language a Primary Modeling System?”, in F. J. Heyvaert and F. Steurs (eds.), *Worlds Behind Words: Essays in Honour of Prof. Dr. F.G. Droste on the Occasion of His Sixtieth Birthday*, Leuven, Leuven University Press, pp. 25-36.
- 1991 “In What Sense Is Language a Primary Modeling System?”, in Myrdene Anderson and Floyd Merrell (eds.), *On Semiotic Modeling*, Berlin, Mouton de Gruyter, pp. 327-339.
- 1991a “In What Sense Is Language a Primary Modeling System?”, published in Spanish translation, *AdVersuS. Revista de Semiótica* (August).
- 1998 “The Estonian connection”, *Sign Systems Studies*, 26, 1998, pp. 20-41. See <http://www.ut.ee/SOSE/sebeok.htm>.
- Sebeok, Thomas A. and Robert Rosenthal  
1981 (eds.) *The Clever Hans Phenomenon: Communication with Horses, Whales, Apes, and People*, New York, Annals of the New York Academy of Sciences, vol. 364, published June.
- Sebeok, Thomas A. and Marcel Danesi  
2000 *Forms of Meaning: Modeling Systems Theory and Semiotic Analysis*, Berlin, Mouton de Gruyter.
- Todorov, Tzvetan  
1977 “The Birth of Occidental Semiotics”, being “La naissance de la sémiotique occidentale”, in Todorov, *Théories du symbole*, Paris, Éditions du Seuil, 1977, pp. 13-58; trans. Daphne Swabey and Judith Mullen, in Richard W. Bailey, L. Matejka and P. Steiner (eds.), *The Sign*, Ann Arbor, MI, Michigan Slavic Publications, 1978, pp. 1-42.
- von Uexküll, Jakob  
1899-1940 *Kompositionslehre der Natur. Biologie als undogmatische Naturwissenschaft*, selected writings edited and with an introduction by T. von Uexküll, Frankfurt a. M., Ullstein.
- 1934 *Streifzüge durch die Umwelten von Tieren und Menschen* (Berlin), trans. by Claire H. Schiller as “A Stroll through the Worlds of Animals and Men”, in Claire H. Schiller (ed.), *Instinctive Behavior: The Development of a Modern Concept*, New York, International Universities Press, Inc., 1957, pp. 5-80; reprinted under the general editorship of Thomas A. Sebeok as a Special Issue of *Semiotica*, 89, 4, pp. 319-391.
- 1940 “Bedeutungslehre”, *Bios*, 10, Leipzig; Eng. trans. by Barry Stone and Herbert Weiner published under the general editorship of Thomas A. Sebeok as “The Theory of Meaning”, *Semiotica*, Special Issue, 42, 1, 1982, pp. 25-82.
- Vico, Giambattista  
1968 *The New Science of Giambattista Vico*, rev. trans. by T. G. Bergin and M. H. Fisch, Ithaca, NY, Cornell University Press, 1968. [Original ed. 1725, 2<sup>nd</sup> ed. 1730, 3<sup>rd</sup> ed. 1744].
- Voigt, Vilmos  
1995 “In memoriam of ‘Lotmanosphere’”, *Semiotica*, 105, pp. 191-206.

John Deely is a Professor of Philosophy at the Center for Thomistic Studies at the University of St Thomas, Houston. He is a founding member of the Semiotic Society of America, which in 1993 named him the first living “Thomas A. Sebeok Fellow”. Among his books, *Basics of Semiotics* has been translated into nine languages, including Italian; and his *Four Ages of Understanding* is the first complete history of philosophy which incorporates a semiotic point of view over the whole development.