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PEIRCE, SEBEOK, AND THE SEMIOTIC REFORMATION ON CONTEMPORARY COMMUNICATIONS

The sale sign says in bold twenty-inch font: 50% off. That sends off the message "there must be good buys in there." You enter the store but you hardly find items on 50% mark-off. You complain and the sales attendant draws your attention to a four-centimeter text that reads "on selected items."

Why do we demand signs to be accurate? Rectitude in the representation and interpretation of signs makes sense only in view of communication. Communication entails the expression of one's thoughts, feelings, desires, etc., with the intent of engaging another in an exchange of views or a dialogue. For this to take place, the creation of a modeling system becomes imperative.

Communication in very simple terms entails an exchange of any kind of messages whatsoever. A message can consist of a sign or a string of signs transmitted from a sign producer, or sender, to a sign receiver or destination. This article argues that in whatever manner the sign is used to signify, the ultimate indicator of a successful transmission of messages in any system would be the conformity to a norm or an ideal. In fine, we unwittingly uphold the realist's adage *adaequatio*

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rei et intellectus when we end an inquiry with a conclusive "such is the case!" Using Peircian terms, the test of truth ultimately lies in iconicity: truth is iconic. Peircian semiotics claim that iconicity together with indexicality assume that signs signify suprasubjective relations and functions. A framework for communication such as this can aid us in being more wary of contemporary Sophists selling out "truths" very attractively and for a cheap price. Fake news, "expert" opinions backed up by scientific research, proven and tested claims all flood our emails, social media posts, etc. Sadly though, they may all end up as hoaxes.

Modeling and Language

Language in its various forms is a species of a modeling system. Yuri Lotman[1] defined a modeling system as one made up of elements structured by following rules for combining them. These elements hold a fixed relation to the entire sphere of knowledge, insight or regulation.[2] Where language is observed, then the presence of a mind[3] is assumed. And the mind's ability to create communication models is derived from its semiotic capacity. Charles S. Peirce would describe semiotic capacity as the ability to discern sign relations and consequently generate a body of relevant and meaningful significations that eventually impacts activity and behavior.

John Deely explains[4] how Lotman's modeling system differs from Thomas Sebeok's. Lotman formulated a framework that identifies the natural or spoken language as the primary modeling system inas-

[1] A Russian-Estonian semiotician circa 1922–1993.

[2] Lifted from Thomas A. Sebeok, *An Introduction to Semiotics* (London: Pinter Publishers, 2001), 140.

[3] Reference to the mind here definitely includes the Peircian quasi-mind.

[4] Cf. John N. Deely, "The Primary Modeling in Animals," accessed July 20, 2017, http://www.augustoponzio.com/files/12._Deely.pdf. And John N. Deely, *Semiotic Animal* (South Bend, IN: St. Augustine's Press, 2010).

much as it provides the underlying or basic infrastructure for all other human sign systems. Then, acquired supplementary superstructures in the form of written texts that cover the vast extent of human "culturescape" are created as the secondary modeling systems constructed upon natural language.[5] Thomas Sebeok later proposed the existence of an even more primitive modeling system which corresponds to the zoosemiotic system, thus raising natural or spoken language to the secondary status and culture to the tertiary.[6] The continuity between these modeling systems can be exemplified as follows: understanding of the modeling system of the human body as a primary modeling system by a subject who puts it into a systematic and scientific knowledge as a kind of secondary modeling leads to the biological modeling which serves as the basis of the science of medicine as the tertiary model.

Thomas Sebeok[7] describes a model as any formalized system that stands for an object, event, feeling, or any reality for that matter. They take the form of images, concepts or ideas intrinsic to the mind. The corresponding physical or externalized species as language, gestures or material objects among others are models as well. Models reflect the manner in which the mind organizes semiotic relationships, and thus

[5] Sebeok, *An Introduction to Semiotics* (2001), 140, and Daniel Chandler, "Semiotics for Beginners," accessed Aug 19, 2017, http://visual-memory.co.uk/daniel/Documents/S4B/.

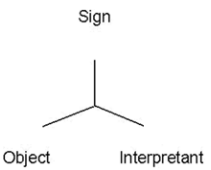
[6] Thomas A. Sebeok, *An Introduction to Semiotics* (London: Pinter Publishers, 1994), and Kalevi Kull, "Thomas A. Sebeok and Biology: Building Biosemiotics," *Cybernetics and Human Knowing* 10, no. 1 (2003): 12. Sebeok acknowledges the congruity of this expanded paradigm with Popper's famous Worlds 1–2–3 (see Karl Popper, *Knowledge and the Body-Mind Problem* [London and New York: Routledge, 1994]). His World 3 is the world of culture; his World 2 is the subjective 'human world' which encompasses language developing together with the former in 'symbiotic interaction'; and his World 1 is the whole material world of the cosmos, both inorganic and organic, including machines and all of biology. Sebeok, *An Introduction to Semiotics* (2001), 145–6.

[7] Thomas A. Sebeok and Marcel Danesi, *The Forms of Meaning: Modeling Systems Theory and Semiotic Analysis* (New York: Mouton de Gruyter, 2000), 2.

aid in recognizing patterns in things. They serve as exemplars of specific kinds of phenomena. Models also have a predictive feature and can serve as a guide. The predictive and exemplar characteristics of models find a very close parallelism with the structure of language, the component elements of which are its predictive and demonstrative roots.[8] Since communication is basically built around the capacity of language to demonstrate, specify or point out on one hand, and to predicate on the other hand,[9] we can thus take language in a broad sense to assume a system of modeling.

Modeling and Semiosis

Modeling in a broad sense is a product of semiosis. Peirce defines semiosis as the process where Objects represented by Signs effects the emergence of Interpretants in the mind of a subject.[10]



This representation shows the intrinsic causal relation the sign holds with both the object it signifies and the interpretant it causes in the receiver of the sign. The involvement of such causal relations account for the objective realism of Peircian semiotics.

[8] Max Müller, *Lectures on the Science of Language*, revised 2nd ed. (New York: Charles Scribner, 1862), kindle location (KL) 2863–2865.

[9] For this reason, morphological changes in linguistic signs, e.g. words, accompany their specific manner of demonstrating (declension of substantive forms) and of predicating (conjugation of verbs) in a given sentence.

[10] Deely claims that "[T]here is general agreement . . . on the model of sign operative within semiotics: every sign consists in a relation connecting three terms. One term performs the function of other-representation (which Peirce calls accordingly the 'representamen'); a second performs the function of self-representation or objectification (which Peirce calls the 'object signified', a somewhat redundant expression); and a third term performs the function of relating within the signification itself (even when the representamen or sign-vehicle is a natural event, such as a volcano belching smoke) the representamen to the significate." John N. Deely, "Thomas A. Seebeok and Semiotics of the 21st Century," in *Semiotics Continues to Astonish: Thomas A. Sebeok and the Doctrine of Signs*, ed. Paul Cobley et al. (Berlin–Boston: Walter de Gruyter GmbH & Co., 2011), 144.

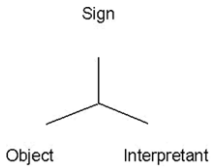
Models predicate or describe the state of things. Peirce would say that Models reflect or mirror the things they want to signify iconically. Moreover, models are also used to serve as indicators that signify, not itself but another reality. These models would be equivalent to Peircian indexes. Peirce explains that the mind is affected by icons such that the mind elicits an image of things. Indexes prompt the mind to look for the object the sign points out to. Both icons and indexes are linked to their respective Objects synechistically, that is, in a continuous manner. Finally if the relation is understood only within the realm of certain conventions, then the sign is understood as symbolic. Almost always, symbols hold a fundamental iconic or indexical character, which we shall see later.

On one hand, it can be said that signs behave in peculiar ways which determine the manner the mind formulates secondary models.[11] On the other hand, the mind creates models in accord with its modeling capacity and, as Peirce would emphatically hold, always structured by the norms of Logic, Aesthetics and ultimately Ethics (in that order). These norms govern the vast symbolic world of tertiary models. Inasmuch as models and language conflate, they both have to be grounded on rules, structures or grammar to even make sense. Models should be subject to the assumptions and rules of logical operations for communication to take place.[12] The ultimate measure of success in communication is gauged by the iconicity achieved in the modeling systems creat-

[11] The reference to "mind" here is congruent to the description Deely makes of the "postmodern" mindset that establishes the dependence of species-specific *Umwelt* of "objects" on things, contrary to the modernistic solipsistic "mind." Biosemioticians recognize that "it is the distinction between 'sign', 'object' and 'thing', developed principally (by) Deely that is central to the recasting of semiotic theory with biosemiotics at its center." Paul Cobley et al., "John Deely, from the point of view of Biosemiotics," *Biosemiotics* 10, no. 1/2 (May 2017): 3, DOI: 10.1007/s12304-017-9291-x.

[12] Sebeok, *An Introduction to Semiotics* (2001), 148.

ed by the *utterer* (Object) and the *interpreter* (Interpretant).[13] As such, there is truth in communication which is consistent with the Peircian formulation that Truth is ultimately iconic.



The sign-object-interpretant relationship involves complex semiotic systems. For the Tertiary Model to reflect the truth about its object which is the Primary model, the system has to reflect its primordial source iconically.

In keeping with Peircian semiotic principles, the mental model *in toto* is also a sign.[14] The reference to the model as a sign precludes its existence as a single unit. A model should be seen as a complex semiotic system that can be called a 'text'[15] or a *composite form* of a sign. It represents non-unity[16] Objects in a "combinatory" manner.[17] Although texts take on the formal properties of the semiotic signifiers that make it up, they are more than simply the aggregate of their signified Interpretants.[18] As we shall see, classifying modeling systems as primary, sec-

[13] Cf. Peirce MS 318, 205–6 quoted in John N. Deely, "The Grand Vision," *Transactions of Charles S. Peirce Society* 30, no. 2 (1994): 371–400. In another article, Deely writes, "Peirce was the first to identify triadic relation as the being proper and formal to the sign (which he was not) as the foundation of semiotics, but rather because in introducing the distinction between interpreter and interpretant, the latter of which 'need not be mental', Peirce had opened the way to what I would describe as 'the full vista of the action of signs'." Cf. Deely, "Thomas A. Seebeok and Semiotics of the 21st Century," 141. It is worthwhile to note that both Object and Interpretant are related to the Sign which is, using Deely's term, suprasubjective.

[14] Peirce formulates the doctrine of signs as a way of describing the genesis and development of human knowledge or thought. It is with these ideas that Peirce writes in the cognition series of 1868–1869 that "man is a sign." Cf. Charles S. Peirce, *The Essential Peirce: Selected Philosophical Writings*, vol. 1, ed. Nathan Houser (Bloomington: University of Indiana Press, 1992), 54.

[15] Kalevi Kull, "A Sign Is Not Alive—A Text Is," *Sign Systems Studies* 30, no. 1 (2002): 329.

[16] Sebeok and Danesi, *The Forms of Meaning*, 201.

[17] *Ibid.*, 3.

[18] *Ibid.*, 29.

ondary and tertiary also derives from the modeling capacity of the mind to formulate a system and the kind of texts that emerge from it.

Primary Modeling System (PMS)

Communication is a process involving the movement of signs or the transmission of Form between at least two minds. It spans the generation up to the consequent interpretation of these signs. For the communication process to be completed the mind as receiver must be able to elicit the Interpretant determined by the Sign. This simple process describes the semiotic production of an iconic Interpretant which characterizes the primary modeling system's innate capacity for *simulative* modeling. It is a system that allows the mind to mirror or simulate perceptual Objects.[19]

Communication completed with the generation of an Interpretant is signaled by the exhibition of a habit or response that accompanies sign interpretation. Behavioral response is assumed to be in synchrony with the model of "reality" the mind's modeling capacity enables it to formulate. The mind's modeling capacity should allow the organism to come up with a model of Nature that will enhance survival, or else "it will surely be doomed, by natural selection, to extinction."[20] Survival thus would be the ultimate mark of success of an organism's PMS.

The regularity of the pattern observed in PMS can be captured in an Iconic model which is marked by predictability. Yet some deviations from patterns of behavior do occur. This is so because semiotic processes do not actually take place in a vacuum.[21] Some intrinsic and/or

[19] *Ibid*., 44–5.

[20] *Ibid*., 145.

[21] Peirce clarifies that since "connected Signs must have a Quasi-mind, it may further be declared that there can be no isolated sign." Charles S. Peirce, "Prolegomena to an Apology for Pragmaticism," *The Monist* 16 (1906): 492–546; also found in Charles S.

extrinsic conditions provide the context where the processes occur ultimately affecting the realization of the communication process. Hence, aside from semiosis, communication assumes the satisfaction of certain conditions, e.g. rules, as requisite for success.

Primary modeling can account for phenomena in nature such as osmosis, camouflage, mimicry, simulation and the like. Among humans, the natural language code provides a modeling resource that enables them to convert requirements for "concrete living existence" into "active plans."[22] In human semiosis, the PMS takes on various formulations that ranges from the plainly physical to the highly abstract: *singularized* as in the case of the "OKAY" hand-gesture; *composite* as in a still life painting; *cohesive* as in the attempt of simulating the movements of a swan in the ballet "Swan Lake;" and *connective* as in the using the "love=sweet taste" metaphor in discourse.[23]

Sebeok cites the signs observed among "infants and the signs of the human body, both in its more culturally dependent manifestations as well as its natural-biological manifestations"[24] as examples of PMS. Human language as PMS satisfies not only an iconic modeling but an 'indicational' or indexical function as well. The PMS enables children to formulate a working knowledge of the world as their "world." Then, when mere looks and gestures prove insufficient to communicate[25] his ever expanding "world," children have to resort to the use of the extensional verbal modeling of language which is speech.

Peirce, *Collected Papers of Charles Sanders Peirce*, vols. 4, ed. Charles Hartshorne, Paul Weiss (Cambridge, MA: Harvard University Press, 1933), 511.

[22] Sebeok and Danesi, *The Forms of Meaning*, 108.

[23] *Ibid*., 44.

[24] Augusto Ponzio, "Thomas A. Sebeok, Hybrid Joke-Teller," in *Semiotics Continues to Astonish: Thomas A. Sebeok and the Doctrine of Signs*, ed. P. Cobley et al. (Berlin–Boston: Walter de Gruyter GmbH & Co., 2011), 332.

[25] Müller, *Lectures on the Science of Language*, KL 351–2.

Science seems not to have much difficulty accepting the paradigm of reflecting the object of its study as PMS iconically. The sign of approval is given to any scientific theory that proves itself as adhering to the following statement of "iconicity:" I have evidence to prove my claim that "such is the case." However, when the primary modeling is an offshoot of the natural law, e.g. elaboration of human sexuality, there seems to be a problem. In contemporary interpretations, the consideration of the human body as the PMS of the human modeling by a subject or SMS are not to be taken as related or connected. The more popular interpretations of sexuality emanate from communication frameworks grounded on modernist ontologies. Thus, a metaphysics grounded on realism is imperative in the elaboration of this framework.

This Peirce-Sebeok framework for communication, which John Deely places as "postmodern" is premised upon what he designates as the suprasubjective nature of sign relations and their equally suprasubjective functions. For this to be understood, he has taken pains to differentiate the Piercian object from the Kantian object. The former is dependent on the "thing" which is independent of the subjective mind while the latter is found intrinsic to the mind.[26] Deely maintains that the relation of the object to the thing is extrinsic to the subject. It is this relation that functions as a sign to an intended mind. Let's say that the object reflects the thing. The sign then functions as an icon. If the object points to the thing, then the sign functions as an index. This manner of signifying relation and function assumes the presence of an interpreter. For a sign to be considered a sign, a mind or receiver has to be affected by such a sign generating an Interpretant. However, Deely maintains that though the Interpretant happens in the interpreter's mind, it is determined by the Object while counting on the capacity of the mind to generate it.

[26] John N. Deely, "A Sign Is What?" *Sign Systems Studies* 29, no. 1 (2001): 712 & ff.

Secondary Modeling System (SMS)

It is now the subject's turn to create a modeling system. With this in mind, Sebeok warns against the temptation to conflate "three incommensurate semiotic practices and their corresponding appellations: 'communication', 'language' and 'speech'." He differentiates communication, universally associated with the living, and language, attributed to humans alone thus rendering the phrase "languageless human" oxymoron. Though one cannot speak without having a language, having a language does not assume the ability to verbalize or indeed externally manifest in any other manner such as script, sign languages, sound codes or the like. He asserts that "these three phenomena evolved quite separately in phylogenesis as well as emerge severally in human ontogenesis. The labels are thus by no means interchangeable."[27]

Charles Morris (1901–1971) considered language as a sign system that includes mathematics and symbolic logic in its class together with all varieties of spoken and written languages. He excludes animal signs though because there is no evidence that any animal connects or relates signs in such a way that they produce combinations according to those fixed regulations that define any language system.[28] Among those salient characteristics that mark a clear distinction between human and animal communication, two are of particular importance, namely double articulation and syntax.[29] All human languages consist of tens of

[27] Thomas A. Sebeok, "Semiotics and the Biological Sciences: Initial Conditions," Discussion Papers No. 17 (Collegium Budapest / Institute for Advanced Study, November 1995), 9, accessed July 30, 2017, http://livingbooksaboutlife.org/pdfs/sebeok.pdf.

[28] Ponzio, "Thomas A. Sebeok, Hybrid Joke-Teller," 335.

[29] Sebeok affirms that syntax is not found in zoosemiotic systems, although this feature does abound in endosemiotic systems, such as the genetic code, the immune code, the metabolic code, and the neural code. It is noteworthy that Sebeok in 1976 introduced the endosemiotic sphere (signs in the body) as different from zoosemiotics. See Sebeok,

thousands of signs, which are combinations of form and meaning.[30] Besides, the incorporation of syntax in language accounts for the possibility among humans to represent immediate experiences as well as "to frame an indefinite number of possible worlds."[31] Such considerations strongly favor the hypothesis that language is exclusively and uniquely human.

Language is a Secondary Modeling System (SMS). The SMS can be defined as the capacity to formulate systems to signify Objects with "extended primary forms and with indexical (indicational) forms."[32] Language subsumes both 'indicational' and 'extensional' modeling processes. Indicational modeling hinges upon association by contiguity.[33] This model serves to direct attention towards the referent's location, situation, presence, absence, distance, direction, orientation, or in some context of occurrence.[34] Nonverbal forms of indicational modeling have been documented in various animal species. But they are not capable of extensional modeling. The capacity for extensional modeling assumes the power of abstraction as prerequisite for language. Even Locke recognizes this barrier as dividing man and brutes.[35]

In contrast with indicational modeling, extensional modeling is a uniquely human capacity that entails the application of primary, singularized, composite, cohesive or connective models into secondary ones by extension, that is, through connotation, morphological modification

An Introduction to Semiotics (2001), 149, and Kull, "Thomas A. Sebeok and Biology: Building Biosemiotics," 9.

[30] Halvor Eifring and Rolf Theil, *Linguistics for Students of Asian and African Languages* (Oslo: University of Oslo, 2005), 2–3.

[31] Sebeok, *An Introduction to Semiotics* (2001), 149.

[32] Sebeok and Danesi, *The Forms of Meaning*, 10.

[33] *Ibid.*, 95.

[34] *Ibid.*, 87.

[35] Müller, *Lectures on the Science of Language*, KL 185–91.

or linkage in the case of connective modeling.[36] An example of this would be the extensional modeling of the word, *crash* which is initially coined to simulate a shattering sound that would connote a "sudden devastation." Thus the word *crash* can be extended to other abstract referents by connotation, e.g. "their business crashed" or "my computer crashed" or "he came in as a gate crasher." We appreciate how language procures a representational power for humans precisely because of its extentional modeling capability. This expands the domains of human knowledge on one hand and of expression on the other. Extensional modeling thus proves to be a uniquely human capacity because it presupposes natural language (primary modeling system) as well as speech (human secondary modeling system).[37]

The human capacity for language is postulated to have evolved as an adaptation mechanism. It was built by selection with the development of a system of mutual adjustment of the encoding with the decoding capacity required by the cognitive function of modeling. Through selection, humans developed a capacity for communication which enhanced its fitness for survival. Millions of years later, humans developed other features that enhanced fitness for some evolving role but were not built by natural selection. Stephen Gould and Elisabeth Vrba coined the term *exaptations* to designate such features.

Language came as a derivative exaptation for communication then speech developed out of language as exaptation over a succeeding period of approximately two million years.[38] Language which manifested first in the form of speech aided in the fine-tuning of 'ear and mouth work'. Then much later language as script was also 'exapted' for the role of communication. A second exaptation of speech was for second-

[36] Sebeok and Danesi, *The Forms of Meaning*, 82.

[37] Ponzio, "Thomas A. Sebeok, Hybrid Joke-Teller," 333.

[38] Stephen Jay Gould and Elisabeth S. Vrba, "Exaptation—A Missing Term in the Science of Form," *Paleobiology* 8, no. 1 (1982): 4–15.

ary modeling, i.e., for 'mind work'.[39] The exaptation of speech to modeling implies that speech is forever involved in the mind work, in the thought. The Interpretants that emerge in the mind as determinations caused by Sign, which are loosely referred to as "thoughts,"[40] are made possible by speech.

Understanding the difference between language and speech can lead us to see that communication may take place with language as a PMS yet without speech as is the case with a deaf-dumb person who is using sign language. But thinking which assumes interpreting is not possible without speech or SMS. A speech deficient person still retains his SMS capacity which only means that from a semiotic perspective, "language is not reduced to speech but speech is a specification of language."[41] The language which is specific to man as a semiotic animal comprehends the acoustic verbal model as much as the non-verbal gestural or the tactile model, depending on the kind of sign vehicle that intervenes, which is not necessary limited to the verbal in a strict sense.

Since human language as SMS employs extensional modeling, the Interpretants or thoughts that are elicited in the mind are not as fixed and predictable as habits formed in PMS. Relying on the human mind's symbolic capacity, extensionality generally allows the interpretation of the same sign in more than just a singular manner. Besides, signs as symbols, icons or indices do not, strictly speaking, exist as such in the real world.[42] Since Peircian signs are not designated to denote the Object as a metaphysical entity but merely its relation to it, a single Sign can serve as an icon, an index and a symbol depending on

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[39] Sebeok, *An Introduction to Semiotics* (2001), 147, and Ponzio, "Thomas A. Sebeok, Hybrid Joke-Teller," 334.

[40] Charles S. Peirce, *Semiotic and Significs: The Correspondence Between Charles S. Peirce and Victoria Lady Welby*, ed. Charles S. Hardwick, J. Cook (Bloomington: Indiana University Press, 1977), 195.

[41] Ponzio, "Thomas A. Sebeok, Hybrid Joke-Teller," 335.

[42] *Ibid.*

the relation it holds with its Object. One can say, "This is a chair" taking the Object as an exemplar of what is understood as "a chair." In this case, the Sign "chair" serves as an Icon. When one says, "Go around that chair," the Sign "chair" is taken as a point of reference. The same sign serves as an Index in this case. In saying, "He is to be seated in the presidential chair," the Sign "chair" is taken to mean a place of honor. Thus, the very same sign serves as a Symbol.

A marked difference divides human and non-human modeling capacity. Animals model solely a representation of the 'existent world'. Man can elaborate an SMS that includes models of a potentially unlimited variety of 'possible worlds'.[43] This rich interior semiotic resource constitutes the person's symbolic realm, his own world of Thirdness. In here the person creates his own modeling system that serves as the communication tool when relating with the external world.[44] This innerworld takes on some form of consistency as a SMS. This subjective modeling system may or may not take the form of conventional human language that comprises words and statements. We can somehow see this idea in these words of Peirce:

> Meditation is dialogue. "I says [sic] to myself, says I," is the vernacular account of it; and the most minute and tireless study of logic only fortifies this conception. The majority of men commune with themselves in words. The physicist, however, thinks of experimenting, of doing something and awaiting the result. The artist, again, thinks about pictures and visual images, and largely in pictured bits; while the musician thinks about, and in, tones. Finally, the mathematician clothes his thought in mental diagrams, which exhibit regularities and analogies of abstract forms almost quite free from the feelings that would accompany

[43] Thomas A. Sebeok, "Signs, Bridges and Origins," in *Origins of Language*, ed. J. Trabant (Budapest: Collegium Budapest, 1996), 106.

[44] Peirce writes to Lady Welby, "A thought is a special variety of sign. All thinking is necessarily a sort of dialogue, an appeal from the momentary self to the better considered self of the immediate and of the general future." Peirce, *Semiotic and Significs*, 195.

> real perceptions. A person who from childhood has habitually made his reflections by experimenting upon mental diagrams, will ordinarily lack the readiness in conversation that belongs to one who always thought in words, and will naturally infer that he lacks talent for speech when he only lacks practice.[45]

In fact, symbolic communication can also be found even among animals. A rhesus monkey before an aggressor sticks out its tail stiffly behind as an indicative sign of fear and it may do exactly the same gesture in the presence of its young as a symbolic sign of motherly solicitude and that is so that her infant balance on her back.[46] However more often than not, symbolic communication in and among humans involves the use of language. "(W)ithout words to objectify and categorize our sensations and place them in relation to one another, we cannot evolve a tradition of what is real in the world."[47] The indexical relationship of our representations with the Object should ultimately generate habits that are Iconic of the Object.

The importance of understanding the nature of SMS can be appreciated more in the light of the relation it holds to Tertiary Modeling Systems. Sebeok aptly captures this significance in this text:

> The notion of a secondary modeling system, in the broad sense, refers to an ideological model of the world where the environment stands in reciprocal relationship with some other system, such as an individual organism, a collectivity, a computer, or the like, and where its reflection functions as a control of this system's total mode of communication. A model of the world thus constitutes a program for the behavior of the individual, the collectivity, the machine, etc., since it defines its choice of operations, as well as the rules and motivations underlying them. A model of the world can be actualized in the various forms of human behaviour and its products, including linguistic texts—hence

[45] Charles S. Peirce, *Charles Sanders Peirce: Contributions to the Nation*, vol. 3, ed. Kenneth L. Ketner, James E. Cook (Lubbock: Texas Tech Press, 1979), 258–9.

[46] Sebeok and Danesi, *The Forms of Meaning*, 125.

[47] Ruth Hubbard as quoted in Sebeok and Danesi, *The Forms of Meaning*, 82.

the emphasis on the verbal arts—social institutions, movements of civilization, and so forth.[48]

Tertiary Modeling Systems (TMS)

Among humans, a communication system that links minds in the form of an exchange of ideas lends to the creation of a Tertiary Modeling System (TMS). The TMS features highly abstract, symbol-based modeling processes implying the mind's ability to further extend forms to stand for abstract referents without any apparent sensory origin.[49] It exemplifies a system that is responsible for fabricating assemblages that blend together nonverbal and verbal signs and texts in highly creative models that merit to be called 'true culture'. The TMS is 'a system of representing all the subtleties of language'[50] taken in both its broad and narrow sense.

Persons resort to TMS early on in their lives. When a child is learning to use a culture-specific name to refer to an object, he is already engaging in a Thirdness form of knowing. This activity actually involves the TMS capacity of the child which is intrinsically connected to his SMS that allows him to pool semiotic resources coming from them as interpreted Objects. From there, he learns to utilize the symbolic resources of culture-specific abstract systems of representation for his own modeling activities.[51]

Such characterizes the realm of anthroposemiosis where the concept of language as a tool of communication is more overt. Language as TMS or a culture-bound model acts as the standard against which a number of SMS conform, reform or reconfigure their subjective model-

[48] Thomas A. Sebeok, *Contributions to the Doctrine of Signs* (Lanham, Md.: University Press of America, 1985), 23.

[49] Sebeok and Danesi, *The Forms of Meaning*, 120.

[50] Sebeok, *An Introduction to Semiotics* (2001), 149.

[51] Sebeok and Danesi, *The Forms of Meaning*, 10.

ing systems. But at the same time, language as a TMS is created by a collectivity of SMSes. Such exemplifies the symbiotic and synechistic relationship between SMS and TMS.

TMS is a modeling system that involves purely symbolic forms which implies that these forms have the capability to be freely applied as representations even for abstract Objects, e.g. those generated through SMS, and not constrained by any apparent sensory connection between the Sign and the Object.[52] This gives room for creativity and resourcefulness in the utilization of forms done by the interpreting mind. The creativity of the human mind is often categorized as a prototype of emergence.[53] As a phenomenon, emergence refers to the "spontaneous generation of a higher-order novel synergy arising from the interaction of component processes."[54] The TMS itself is emergent in that the processes that lead to its formulation are not necessarily linked in fluidity or continuity. There can be large gaps or leaps leading up to the emergent.

The human mind alone possesses the ability to fabricate or put together such model. This led Terrence Deacon to append to *Homo Sapiens sapiens* the designation "Symbolic Species,"[55] Ernst Cassirer "symbolic animal"[56] and John Deely "semiotic animal."[57] The end

[52] *Ibid*., 121.

[53] The exosomatic functions of the human mind (consciousness) are intended towards matters that transcend the satisfaction of corporeal existence and are measured against something extrinsic to the mind itself. These are indicative of emergent nature of human consciousness. Jacob Klapwijk, *Purpose in the Living World? Creation and Emergent Evolution* (UK: Cambridge University Press, 2008), 90–7.

[54] Terrence Deacon and Tyrone Cashman, "The Role of Symbolic Capacity in the Origins of Religion," *Journal for the Study of Religion, Nature and Culture* 3, no. 4 (2009): 494.

[55] Terrence W. Deacon, *The Symbolic Species: The Co-Evolution of Language and the Brain* (New York: W. W. Norton and Company, 1997).

[56] Ernst Cassirer, *The Philosophy of Symbolic Forms*, vol. 3: *The Phenomenology of Knowledge* (London: Yale University Press, 1957).

[57] John N. Deely, *Semiotic Animal* (South Bend, IN: St Augustine's Press, 2010).

product of TMS is the creation of culture, which can be considered as an "interconnected system of signs, texts, codes and connective forms."[58] This world of culture then would define the unceasing communication man carries out between his innerworld and the external world which together *in toto* would constitute the person's "world."

Anthroposemiosis is unique as the only semiotic system that utilizes all three modeling systems, working interdependently and interactively in the production of models and, consequently, of knowledge. But its real uniqueness is heavily grounded in the biology of the human species.[59] The great significance of human language is aptly encapsulated in these words of linguist Max Müller:

> Language has been called sacred ground, because it is the deposit of thought. We cannot tell as yet what language is. It may be a production of nature, a work of human art, or a divine gift. But to whatever sphere it belongs, it would seem to stand unsurpassed—nay, unequalled in it—by anything else. If it be a production of nature, it is her last and crowning production which she reserved for man alone. If it be a work of human art, it would seem to lift the human artist almost to the level of a divine creator. If it be the gift of God, it is God's greatest gift; for through it God spake [sic] to man and man speaks to God in worship, prayer, and meditation.[60]

Truth as Iconic

Iconicity leaves the stamp of likeness between object and interpretant. A statement or an utterance formulated by a subject can be taken as a singular sign signifying an object intended to be communicated to a receiving mind. Truthfulness in the sign modeled by the subject is marked by its iconicity with the object intended to be communicated. A

[58] Sebeok and Danesi, *The Forms of Meaning*, 129.

[59] *Ibid.*, 171.

[60] Müller, *Lectures on the Science of Language*, KL 52–6.

successful communication ensues when the receiving mind, who is another subject, generates an interpretant iconic of the object the modeling subject initially uses as its point of reference. In a simple illustration of communication, it is easier to uphold the norm that truth is iconic.

However, with the extended capacity of the human subject to generate secondary models far removed from the things the objects of the signs they generate signify, maintaining the norm of truth as iconic become a challenge. As as safeguard to ensure the adherence to this norm, Peirce establishes Logic, Aesthetics and Ethics to be the ultimate arbiters of iconicity. And as for Deely, the appeal to the suprasubjective relations and functions inherent in signs serves as immunity against the tendency for modeling systems to succumb to solipsism which generates relativistic cultural models. The utility of a Peirce-Sebeok framework, such as what this article proposes, can aid in the formulation of models that uphold truth as iconic. It can likewise serve as a tool to evaluate the "truthfulness" of contemporary cultural models by ultimately tracing that of which such models stand, in effect, as icons.

PEIRCE, SEBEOK, AND THE SEMIOTIC REFORMATION ON CONTEMPORARY COMMUNICATIONS

SUMMARY

Language in a broad sense becomes imperative for communication to ensue. Language considered as a system of signs and signification is achieved through a process involving sign relations, e.g. semiosis. Charles S. Peirce's Theory of Signs can provide a basic framework for the elucidation of the intelligibility of signs. Furthermore, the ability for generating sign processes in an organized manner is determined by what Thomas A. Sebeok designates as an organism's modeling capacity. Modeling capacities range from primitive to complex, thus generating three orders of language corresponding to language as a Primary Modeling System (PMS), a Secondary Modeling System (SMS) and a Tertiary Modeling System (TMS). This Peirce-Sebeok framework for communication, which John Deely places as "postmodern," is premised upon what he designates as

the suprasubjective nature of sign relations and their equally suprasubjective function. Thus, Sebeok's Modeling Theory together with Peirce's doctrine on the nature and behavior of signs can be used to direct the generation as well as the interpretation of language systems in accordance with the ultimate norm of communication, that is, to reflect truth as an icon of reality.

KEYWORDS

language, communication, sign, signification, semiosis, Charles S. Peirce, Thomas A. Sebeok, modeling system, John Deely, postmodernism, suprasubjective nature of sign, modeling theory, truth, icon of reality.

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