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Umberto Eco and Juri M. Lotman on Communication and Cognition

"Often, when faced with an unknown phenomenon, we react by approximation: we seek that scrap of content, already present in our encyclopaedia, which for better or worse seems to account for the new fact" (Kant and the Platypus, 1999: 57).

"While it can be maintained that semiosic processes are involved in the recognition of the known, because it is precisely a matter of relating sense data to a (conceptual and semantic) model, the problem, which has been debated for a long time now, is to what extent a semiosic process plays a part in the understanding of an unknown phenomenon. (Kant and the Platypus, 1999: 60).

Introduction

One of the main tasks of the semiotician is to compare and translate between models. This paper aims to provide a comparative analysis of two different models: Umberto Eco's model of the semantics of everyday empirical concepts – as conceived in *Kant and the Platypus: Essays on Language and Cognition* (1999) – and Juri Lotman's communication model – as theorized in *Culture and Explosion* (2009).

One may argue that Eco and Lotman, although they both established the ground for semiotics as a contemporary discipline and both published influential works in the field of the semiotics of culture, have quite different perspectives and they have very little in common. Eco's introduction to Juri Lotman's *Universe of the mind* is one of the few occasions in which one author officially comments on the other's work (Eco 1990).[1] To be sure, *Kant and the Platypus* does not have any explicit reference to *Culture and Explosion* and Lotman is cited by Eco only once during the introduction of his book (Eco 1999: 5). Thus, at a first glance the theoretical positions of the two scholars are distant. To put it very bluntly, Lotman is mainly concerned with cultural communication and the logic of explosion in culture, whereas Eco's focus is on perception and cognition as semiosic

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1 In this regard see Eco's *Lezione e contraddizione della semiotica sovietica* (1969), where the author comments on the ideas of the Tartu-Moscow semiotic school.

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processes. It is clear, then, that the two scholars write from very different theoretical perspectives and have quite different aims. Nonetheless, when conceptualizing the issue of "lingual communication" (Lotman 2009: 5), both Juri Lotman and Umberto Eco formulated two models that may be considered as similar (see Figure 1 and Figure 2).
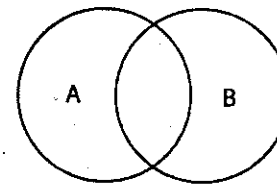

Figure 1: J. Lotman's model of communication (Lotman 1999: 5).
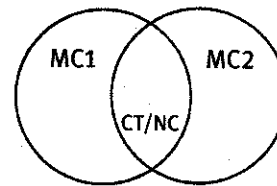

Figure 2: U. Eco's zone of common competence (Eco 1999: 177).

In a way, both models postulate the existence of an area of common competence that establishes the ground for lingual communication. This is quite a generic claim and it must be said that the idea of an intermediate area as the space of effective communication is not a new one. As Lotman (2009: 4) mentioned in *Culture and Explosion*, the idea of "community" and "sharing" is actually embedded in the etymology of the word communication, derived from the Latin word *communitas*.

One important question that is common to both perspectives is the following: how does change occur in culture? In this respect, the underlying question that moves the two books of Eco and Lotman is similar, yet the strategies employed to answer this crucial question are different. Lotman is concerned with evolution in cultural semiospheres explaining its two basic manifestations, namely, continuity (defined as premeditated predictability) and explosion. Eco, on the other hand, albeit is not directly concerned with cultural evolution, does take into consideration unpredictable trajectories that have changed the path of human understanding and history opening up space for explosion, as for instance, the case of the platypus, a puzzling animal that undergoes a series of erroneous cat-

egorization during the centuries. The story of the platypus shows how a chain of abductive reasoning that starts with erroneous perception, that is, a mistake, originates new, unpredictable meanings.

Under the sign of Kant: the foundations of semiotics

It is worth mentioning that both Eco and Lotman share a common sympathy, that is, both have explicit references to the philosophy of Immanuel Kant. Lotman quotes Kant's *Critique of Pure Reason* in the very first page of his *Culture and Explosion* (Lotman 2009: 1) with reference to the concept of "pure apperception" and the critic of the Kantian distinction of phenomenon and noumenon grounds Lotman's disquisition about the nature of the dynamics of language. Eco's *Kant and the Platypus*, as it is apparent from the title, relies on Kant with particular reference to the semiotics of the schema and to the Kantian empirical concepts and perceptual judgments.

Eco (1999: 60) rises the question as to what extent a semiosic process plays a part in the understanding of an unknown phenomenon. In the assessment of a new thing, one of the first cognitive processes at stake is to rely on existing knowledge that allows to fit the novelty in an existing type. Relying on an encyclopaedia here is essential. As Eco pointed out: "Often, when faced with an unknown phenomenon, we react by approximation: we seek that scrap of content, already present in our encyclopaedia, which for better or worse seems to account for the new fact" (Eco 1999: 57). In other words, the problem discussed is how a given *token* can be assigned to a given *type* – "it is precisely a matter of relating sense data to a (conceptual and semantic) model" (Eco 1999: 60).

As a way of example, Eco mentions Marco Polo who saw rhinoceroses on Java and initially though they were unicorns insofar as the encyclopaedia of his time provided him with the notion of unicorn as an animal with a horn projecting from its forehead (Eco 1999: 58). Thus, by analogy, Marco Polo interpreted the rhinoceroses as if they were unicorns inasmuch as the latter was the only notion available in his culture's encyclopaedia (or "collective memory", to put it with Lotman) to rely on and grasp the token as referring to an already existent type. In a second moment, eventually, he realized that the animals he saw were black and this information did not match with the notion of unicorns he had as being white animals. He, then, corrected the contemporary description of unicorns. In short, Marco Polo did a sort of *bricolage* of previous notions in order to create a new entity.

The question that arises, however, is what did Marco Polo see before saying that he actually saw unicorns. Peircean semiotics considers perceptual processes as to be already inferential. In other words, semiosis is present in perception as such. This is clear in the following quote:

> We have no power of introspection, but all knowledge of the internal world is derived by hypothetical reasoning from our knowledge of external facts. (CP: 5.265).

As Eco (1999: 60) pointed out, "the problem is that it seems that the fullness of perception (as the assignation of meaning to the unknown) has been attained by starting from a sketch, a skeleton plan, an outline, an "idea" if you like". Here Eco recalls Peirce's concept of the "ground". As Eco remarks, the ground "is an 'initial' way of considering the object from a certain point of view" (Eco 1999: 62). In other words, the ground is for Peirce an instance that seems to constitute the initial moment of the cognitive process. It functions as the first step towards conceptual understanding.

Let us consider the example given by Eco:

> The ground has to do with 'internal' qualities, the properties of the object. In *The ink is black* the quality "black" or, rather, blackness, embodied by the ink, is abstracted from it, through a process of abstraction, or prescision [...]. In prescinding, attention is paid by one element by neglecting another. In the Ground the object is seen *in a certain aspect*, the attention isolates one feature. (Eco 1999: 61).

I could consider ink as a liquid, for instance, but in the abovementioned example the ink is considered *under the profile* of blackness. (However, it must be noted that the term "ground" itself is somehow misleading inasmuch as it might suggests a background against which something is set, but actually in Peirce's view is rather the contrary, namely, something that sets itself against a background that was not yet well distinct).

Eco points out that Peirce's enterprise was the reformulation of the Kantian schema inasmuch as Peirce attempts was to explain how our concepts serve to unify the manifold of sense impressions. The genesis of Eco's model is rooted in both Peirce's ground and Kant's schema. Regarding the latter, in Kantian schema, Eco is very clear. Eco starts with this question: how do we assign names to things? Simple versions of the scholastic (by essences) and the empiricist (by complexes of ideas) answers are both refused in favour of the Kantian notion of schema. The schema is the element that mediates between the manifold of intuition and the concepts. Through the schema, the manifold of the intuition is ascribed to the unity of the concept. Thus, Kant assigns to the intellect a synthetic-productive function – not only an abstractive function. However, and drawing on Rorty,

Eco (1999: 69) stresses that fact that Kant in the first critic was not concerned with 'knowledge of' (meaning the conditions of knowledge of objects) but he was rather interested in 'knowledge that', in other words, the possibility of truth of propositions about objects. Put simply, in Eco's view, Kant seems uninterested to clarify how we come to know objects of everyday experience such as a dog or a platypus. This explains Eco's interest in the processes of perception, recognition, and communication of natural kinds. Kant's schematism failed in such an enterprise. The main problem, according to Eco, is in fact that Kant's schematism does not account for empirical concepts (the dog, the platypus, etc.). Eco (1999: 73) states: "those concepts of pure intellect that are the categories are too vast and far too general to enable me to recognize the stone, the sun, and the heat". The Kantian table of categories does not allow how to perceive a stone as such. The concepts of stone, sun and air are, for Kant, empirical concepts. An empirical concept derives from the sensations, through comparison with the objects of experience.

The point that Eco (1999: 89) stresses, which is even more troublesome, is "what happens when we must construct the schema of an object that is as yet unknown"?

Eco runs through the Kantian doctrine of the reflective judgment in order to underline the schema's constructed character. In the *Critique of Judgment* Kant singled out two kinds of judgements. Judgement is the faculty of thinking of the particular as part of the general. If the general is already given, judgement is determinant. But if only the particular is given and the general must be sought for, judgement is reflective. Thus, the reflective judgment seeks to constitute a general concept to subsume a particular phenomenon and it is thus a precursor of the Peircean notion of abduction.

Eco proposed the notion of the "cognitive type" (CT), that is a sort of perceptual schema allowing the "mediation between the concept and the manifold of the intuition" (Eco 1999: 190). In the example of the horses for the Aztecs the CT is elaborated after the first perceptual process that occurs during the first appearance of the horse (including for instance the horse's general outline, the smell and so forth). The CT, even if subject to ongoing trail-and-error negotiations, has the property of being a perceptual type, hence, pre-linguistic. CTs may also vary from culture to culture. Furthermore, the cognitive type is, due to its perceptual status, private. The question, how do we guarantee that a cognitive type is in fact present is clarified by the inter-subjective cases of felicitous references. If speakers pragmatically agree in referring to a phenomenon, this must count as a proof of the existence of shared CTs.

The next term that comes in play is the Nuclear Content (NC). It is defined as the set of public interpretants of a CT (and must be supposed to feed back onto

the ongoing shaping of the CT) and becomes the possibility of the attaching of a substantive expression making the content communicable. In the example of the Aztecs, Montezuma could rely, as a way of knowledge to the horses, only on accounts given by his informers. He had at his disposal a series of interpretants given by his messengers in many forms: oral and written accounts, pictograms, gestures mimicking the animal's body movements, sounds mocking its whining and so forth. This set of interpretants is what Eco calls NC. It is important to stress the difference that lies between the two concepts. Eco states that the CT is "a rule, a procedure for constructing the image of the horse rather than a sort of multimedial image. In any case, it is something that permits recognition" (Eco: 131):

> I wish to make clear, yet again, that the CT is private, while the NC is public. We are not talking about one and the same phenomenon: on the one hand, we are talking about a phenomenon of perceptual semiosis (CT) and, on the other hand, about a phenomenon of communicative consensus (NC). The CT – which cannot be seen and cannot be touched – may be postulated only on the basis of the phenomena of recognition, identification, and felicitous reference; the NC represents the way in which we try intersubjectively to make clear which features go to make up a CT. The NC, which we recognize in the forms of interpretants, *can be seen and touched*. (Eco, 1999: 138).

As aptly pointed out by Stjernfelt (2007: 69) "The relation between cognitive type and nuclear content is conceived so that CT acts as disposition for the formation of NC, while the presence of a NC, conversely, counts as a proof of the existence of a CT". The NC gives instructions for the identification of tokens of the type.

Eco's MC (Molar Content) is conceived as a specialized competence of the object that only some people possess. The MC can assume different forms depending on the subject and represents portions of sectorial competence. Returning to the model proposed by Eco, it shows that to establish first recognition and then signification and communication of a certain token, there is the necessity of a zone of common competence that grounds such processes. Given the system of notions CM1 and CM2 that two subjects have regarding a token, say a mouse, different in terms of personal interpretations due to previous experiences, they both agree on an area of knowledge they must have in common. As Eco explains, drawing on Hilary Putnam's "linguistic division of labour", differences occur at the level of Molar Contents. However it seems that Eco is much more concerned with the area of consensus that is given at the level of CTs and NCs.

Returning to the comparison between the Lotmanian and Econian models, our research questions are: Can we understand Lotman by using Eco's approach? Does one model corroborate the other? Are these models compatible or somehow translatable? If so, to what extent? Ultimately, are we talking about the same thing from different perspectives or are we dealing with totally different phenom-

ena? While there are no final answers to these questions, this paper proposes a hypothesis.

Compared to Lotman's communication model, Eco's model focuses on the shared part. Conversely, Lotman, focuses on "the difference that makes the difference" so to say. The first hypothesis would be to consider Eco's as more specific model, inasmuch as, in the example given above, Eco refers only to one token – the recognition, felicitous reference and inter-subjective communication about one token, a mouse – thus it considers the semantic intersection that occurs in this specific lingual communication. However, if we consider Eco's model as general, in the sense of possibly being applicable for any tokens, then the two models tend to overlap. Eco gives further specifications in the sense that he is interested in explaining what happens in the shared area of common competence. Lotman, on the contrary, supports the view that encourages differences, which increase the value of communication. Rather than considering this gap as an impossible translation between the two models we would argue instead for their mutual complementarity. The point is that Lotman's model is certainly a communication model. In the case of Eco, since the crucial issue is the recognition of a token that rests at the level of cognitive types, this seems to be a precondition for communication.

Another crucial question refers to whether the two models actually can be drawn on the same plane. The integrated model renders whole sets of processes of translation that occurs at different levels. First, there is an internal translation inside speakers A and B in the very process of communication. What is important is that speakers both A and B, as Lotman says, have two minimum "inside" languages and by act of communication we have a lot of translation processes (inside A and B and between). This is shown in the following:

> First of all, even the nature of the intellectual act could be described in terms of being a translation, a definition of meaning as a translation from one language to another, whereas extra-lingual reality may be regarded as yet another type of language. [...] it is endowed with a structural organization and the potential to function as the content of a heterogeneous set of expressions. (Lotman 2009: 6).

Juri Lotman's communication model

Lotman's *Culture and Explosion* envisaged cultural polyglotism as prerequisite for communication. The Russian scholar posited the tenet according to which, in order to establish any meaningful communication act and even for semiosis to occur at all, at least two different languages are needed. Lotman's view on com-

munication is both powerful and simple. The author starts the second chapter of his monograph by analyzing the well-known model of communication theorized by Roman Jakobson. Lotman's take on this model is different from the original version of it in as much as it takes its own compositional elements the following quartet: addresser, text, language and addressee, whereas the initial version of the Jakobsonian model presupposed a more complex articulation of six elements (addresser, context, message, contact, code, and addressee) and six functions (referential, poetic, emotive, conative, phatic, metalingual). This is a strategic move that Lotman follows in order to support his critique of Jakobson's model. Lotman points out three main pitfalls present in the Jakobsonian model:

1) It's abstraction, which entails the full identity between addresser and addressee;
2) Identity of code shared by the parties of communication;
3) Identity in terms of the addresser and addressee's memory capacity.

Lotman is correct in noting that in Jakobson's view, the parties of communication share the same code. In fact, Jakobson pointed out that "the efficiency of a speech event demands the use of a common code by its participants" (Jakobson & Halle 1956:72). However, Lotman's indication and accuracy of the extent by which such a code is shared by the participants of the communication act becomes imprecise. It is worth mentioning, for clarity's sake, that Lotman's claim of the full identity of code is only partially accurate inasmuch as Jakobson stated that the code does not have to be necessarily *fully* identical but it has to be at least *partially* shared. This is clear from the following passage:

> The *addresser* sends a message to the *addressee*. To be operative the message requires a *context* referred to (‚referent' in another, somewhat ambivalent, nomenclature), seizable by the addressee, and either verbal or capable of being verbalized, a *code* fully, or at least partially, common to the addresser and addressee. (Jakobson 1960: 353).

What is important to note is that in the revised version of the Jakobsonian model, J. Lotman substitutes the term "code" with "language". Lotman explains this difference in the following passage:

> The term "code" carries with it the idea of an artificial, newly created structure, introduced by instantaneous agreement. A code does not imply history, that is, psychologically it orients us towards artificial language, which is also, in general, assumed to be an ideal model of language. "Language", albeit unconsciously, awakes in us an image of the historical reach of existence. Language – is a code plus its history. (Lotman 2009: 4).

This shift from *code* to *language* represents an important point in Lotman's semiotic theory. Starting from these premises, in fact, Lotman postulates the principle according to which "in normal human communication and, most of all, in the normal functioning of language, a pre-supposition is made as to the initial non-identity of speaker and hearer" (Lotman 2009: 5). This presupposition yields to a model in which an area of intersection within the space of language is needed in order to ground the communication between the speaker and hearer/listener.

This operation of "doubling", that is, "the role of no fewer than two languages as a minimal unit of semiotic meaning generation" (Andrews and Maksimova 2008: 259) echoes Lotman's claim given a few pages earlier in the introductory chapter, entitled "Statement of the problem". As the author articulates:

> The idea of the possibility for a single ideal language to serve as an optimal mechanism for the representation of reality is an illusion. A minimally functional structure requires the presence of at least two languages and their incapacity, each independently of the other, to embrace the world external to each of them. (Lotman 2009: 2).

In order to make sense of the abovementioned claims, we ought to distinguish, explicitly, between at least two functions of language, that is:

1) language as primary modelling system and the relationships that it entails in translating the extra-semiotic space that lies outside of language;

2) language seen in terms of dialogical communication act, referred to as "lingual communication" which entails the non-identity of speaker and hearer and thus emphasises the differences that are of great value for communication as such.

As we see it, these are also two aspects of the translation of the untranslatable or the expression of the inexpressible. On the one hand, in a more general sense, we have the impossibility to grasp or model reality using one single language; on the other hand, in a more specific sense, a full identity between the parties of an act of communication yields to the impossibility of communication in its entirety.

Lotman pointed out that in his model "the space of intersection between A and B becomes the natural basis of communication" (Lotman 2009: 2). He goes on by arguing that at least two cases can be singled out from the abovementioned model. The first one is the case in which there is no intersection at all between A and B and therefore communication cannot occur. On the other hand, Lotman argues that, although it may seem to be an ideal condition for communication and understanding, a full intersection of A and B in reality renders the communication "insipid" (Lotman 2009: 5), that is, devoid of content, meaning that a "total overlap yields a maximum redundancy (i.e., no new information)". In the

latter case the value of information exchanged is minimal, limited or non-existent.

To sum up, the "doubling" operation put forward by Lotman-the minimum requirement of at least two languages for meaning generation and the nature of communication as essentially bilingual process, creates an everlasting *tension* within the process of communication itself. This "tension" indicates the existence of a double oppositional tendency. On the one hand, there exists a drive towards omologation which works in direction of a simplification of communication in the sense that it renders the transfer of information null or it impoverishes the dialogical exchange. On the other hand, an opposite tendency encourages differ-ence which itself improves that value of communication as such at the expenses of an increasing of the degree of mutual untranslatability that inevitably renders the communication more arduous. In conclusion, despite Eco's and Lotman's models stem from different theoretical backgrounds, they present som remark-able similarities.

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