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Metaphor, between semantic innovation and conceptual transfer

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There is a common element to studies that in recent decades philosophers, psychologists and linguists have devoted to the question of metaphor: all point out that the metaphor is not simply a rhetorical device, a way to make the language more lively and attractive, but is instead a cognitive tool, a process that has to do with the thought as much and perhaps more than with language.

However, just within these studies, we can find a singular oscillation. On the one hand, it is argued that the metaphor is pervasive in everyday life, namely that the metaphor structure how we perceive e how we think, allowing us to conceptualize the less tangibly or less clearly delineated in terms of the more tangibly or more clearly delineated. On the other hand, it is argued instead that metaphor produces an innovation both at the semantic as at the conceptual level, allowing us not only to extend or change the meaning of a term but also to reorganize the existing categories or create new categories *ad hoc*.

This is a contradiction? Or the two theses are compatible with each other? These questions seem very relevant to a didactics of sciences who want to exploit the educational and communicative potentials of metaphor. In fact, if the metaphor involves innovation on the semantic and conceptual, as may facilitate the learning of complex concepts? Not quite likely to further complicate the learning process?

Consider first the theory of conceptual metaphor of Lakoff and Johnson (1980), which is taken up and discussed in the writings of Hans Fuchs just in view of a new science education. For Lakoff and Johnson, the ubiquity of metaphor in everyday life depends on the fact that our ordinary conceptual system, in term of which we both think and act, is fundamentally metaphorical in nature: the same metaphorical expressions that we use usually are nothing more than the manifestation, at the surface level of the language, the underlying cognitive structures, namely the basic conceptual metaphors with which we organize and categorize unconsciously our experience. A technical jargon speaks in this regard of “dead metaphors”, and oppose their conventionality to the originality and creativity of “living metaphors”. Lakoff and Johnson argue that it is still a living metaphors, in the sense that *we live with them*: these metaphors – and this is the most obvious – allow us to speak, to communicate; but them – and it is the aspect that Lakoff and Johnson want to highlight – also reflect the ways in which members of a given linguistic community think the world (Lakoff and Johnson, 1980, p. 55). For example, metaphorical expressions such as “Your claims are *indefensible*”, “He *attacked every weak point* in my argument”, “ If you use that *strategy*, he’ll *wipe you out*” are some linguistic realizations of conceptual metaphor ARGUMENT IS WAR¹. Linguistic

¹ We use here the convention, proposed by Lakoff and Johnson (1980), to bring in CAPITALS examples of conceptual metaphor, to distinguish them from metaphorical expressions of a linguistic.

expressions, in themselves, are neither literal or metaphorical; in the strict sense, we can call metaphors only transfers of conceptual structures from one domain to another (such, as the examples cited, from the domain of WAR to that of ARGUMENT). Arguments and wars are different kind of things verbal discourse and armed conflict; but ARGUMENT is partially structured, understood, performed in terms of WAR. “*The essence of metaphor is understanding and experiencing one kind of thing in terms of another*” (Lakoff and Johnson, 1980, p. 5).

In fact, in subsequent studies to *Metaphors We live By*, the two authors define the metaphor as a *mapping* (in the mathematical sense) from a *source* domain to a *target* domain, through which concepts or experiential areas more vague and abstract are reorganized in terms of concepts or experiential areas more structured and concrete (Lakoff and Johnson, 1999, p. 60 ff.). The metaphorical projection about a relationship, property, knowledge; it is divided into *ontological* correspondences (according to which entities of source domain correspond systematically to entities of target domain) and *epistemic* correspondences (according to which the knowledge and forms of reasoning domain departure are transferred into domain of arrival).

It should be under that conceptual metaphors are not arbitrary: they appear motivated by several factors (Lakoff and Johnson, 1980, pp. 18-19), rooted in our experience both cultural (systems of values or categories, philosophical or religious etc.) that sensory-motor (patterns of perception, interaction with the external environment etc.). The weight played by these factors varies depending on the type of conceptual metaphor: in the structural metaphors (to which we have referred so far, with examples such as ARGUMENT IS WAR) predominate cultural factors, while in the metaphors of orientation (for example MORE IS UP/LESS IS DOWN) and ontological (for example ACTION IS AN OBJECT) predominate physiological-perceptual factors. Compared to structural metaphors, ontological and orientation metaphors have a less complex structure: their transfers cannot mapping in detail the target domain, establishing multiple and precise correspondences with a source domain. But, in addition to having a more universal nature (i.e., they are less culturally connoted), orientation and ontological metaphors highlight the role played by the embodied frames of imagination in the construction of meanings and development of various forms of rationality. In this sense, the theory of conceptual metaphor is joined with the theory of *embodied cognition*.

From what we have seen up to now, it would seem that the theory of Lakoff and Johnson not give any space to the issue of the semantic and categorical innovation produced by the metaphors. Instead, the two authors deal with this issue in two chapters of the volume *Metaphors We Live By*, when they examine imaginative and creative metaphors capable of giving us a new understanding of our experience. What are the characteristics of these metaphors and what makes them different from conventional metaphors that structure our conceptual system more frequently? To clarify this point, Lakoff and Johnson take the example of the new metaphor LOVE IS A COLLABORATIVE WORK OF ART. Each type of metaphor acts as a sort of “filter”: since the mapping is unidirectional (i.e., goes from the source domain to the target domain), each type of metaphor gives us a distinctive representation of the target domain, illuminating some aspects and darkening others (for example, the metaphor LOVE IS A JOURNEY leads us to represent love in a way very different from the metaphor LOVE IS A WAR). However, the novelty of the metaphor LOVE IS A COLLABORATIVE WORK OF ART depends on the fact that it brings into the foreground the active side of love, while suppressing the passive aspects that our conceptual system attaches *conventionally* to love (through metaphors such as LOVE IS A JOURNEY, where the relationship is viewed as a vehicle that is not in the couple’s active control, or LOVE IS MADNESS, which highlights the ultimate lack of control).

Thus, this metaphor gives new meaning to love and at the same time, through the network of its entailments, provides a coherent structure to the experience of love: “What we experience with such a metaphor is a kind of reverberation down through the network of entailments that awakens and connects our memories of our past love experiences and serves as a possible guide for future ones” (Lakoff and Johnson, 1980, p. 140). Furthermore, the innovative/creative metaphors focus an element that characterizes each type of metaphor: the ability to create the similarities rather than reflect similarities existing (Lakoff and Johnson, 1980, pp. 147-155). The difference lies in the fact that the similarities originated by the conventional metaphors are often based on correlations that we perceive already in our experience, while the similarities created by innovative metaphors are based on correlations built ad hoc: in the latter case, without the metaphor, a certain range of experiences does not exist for you as being an identifiable and coherent set of experiences.

Consequently, for Lakoff and Johnson, if the metaphor allows us to conceptualize the less tangibly or less clearly delineated in terms of the more tangibly or more clearly delineated, it also allows us to innovate both at the semantic as at the conceptual level. The two operations are indeed associated with each other by a same fundamental function: “The primary function of metaphor is to provide a partial understanding of one kind of experience in terms of another kind of experience. This may involve preexisting isolated similarities, the creation of new similarities, and more” (Lakoff and Johnson, 1980, p. 154).

Let us now consider a theory that has paid particular attention to innovation semantics produced by the “living” metaphor (mainly understood as a poetic-literary metaphor), considering it an open window on the enigma of creativity : it is the theory developed Paul Ricœur in *La Métaphore vive*, 1975 (English translate: *The Rule of Metaphor*, 1977). To characterize the function and the understanding’s mode of the metaphor, Ricœur takes up the notion of *semantic impertinence* formulated by Jean Cohen (1966), according to which grammatically correct sentences may be meaningless if the predicate does not appear relevant in relation to the subject. For example, the expression of Mallarmé “The sky is dead” is a flagrant predicative impertinence, since the predicate is dead is compatible only with individuals belonging to the category of living beings. For Cohen, the metaphor would then be the procedure to reduce this gap by changing the meaning usually associated to certain words. In fact, according to Ricœur, metaphor is an innovation both at the lexical as at the predicative level; indeed, it is precisely here that comes into play the particular strategy related to the understanding of metaphor: it gives rise to a new semantic pertinence on the ruins of the literal, producing sense from non-sense. Consequently, the gain in meaning “is inseparable from the tension not just between the terms of the statement, but also between two interpretations – a literal interpretation restricted to the established values of words, and a metaphorical interpretation resulting from the ‘twist’ imposed on these words in order to ‘make sense’ in terms of the statement as a whole”. Namely that “the semantic innovation is not separable from the switching back and forth between the two readings, from their tension and from the kind of stereoscopic vision this dynamism produces” (Ricœur, 1975; English translation, 1977, p. 296).

However, the semantic innovation produced by the metaphor is a *rule-governed* innovation, i.e. an innovation produced from the rules of linguistic code. To understand a metaphor, I must know this code and, reciprocally, the understanding of a metaphor (especially if it is a creative metaphor) promotes a better understanding of the linguistic code. But the metaphor does not only enhance our knowledge of the language; according to Ricœur, it also enhances the knowledge of reality. It is a joint significant in relation to didactics of sciences proposed by Hans Fuchs (2010), and by Hans

Fuchs and Federico Corni (2013), because the contribution of metaphor connects with the contribution may come from the narration of a story.

Ricœur comes to the definition of metaphor as *re-description* of reality by passing through the theory of scientific models developed by Max Black (1962). The Black's central argument is that, with respect of to the relation to reality, metaphor is to poetic language what the model is to scientific language. In scientific language, the model is a heuristic instrument that seeks, by means of fiction, to break down an inadequate interpretation and to lay the way for a new, more adequate interpretation. An example of a model of this kind (called by Black "theoretical model") is the Maxell's representation of an electrical field in terms of the properties of an imaginary incompressible fluid. The important thing is that one can operate on an object that on the one hand is better known and in this sense more familiar, and the other hand is full of implications and in this sense rich at the level of hypotheses. In this case, the recourse to scientific imagination does not signal a deflection of reason, but the verbal power of trying out new relationships on a described model. As noted by Ricœur, this imagination mingles with reason "by virtue of the rules of correlation governing the translation of statements concerning the secondary domain into statements applicable to the original domain" (Ricœur, 1975; English translation, 1977, p. 241).

Ricœur also notes that what on the poetic side corresponds exactly to the model is a complex network of metaphorical statements, which we can find in a poem or a story. Referring to Aristotle's *Poetics*, Ricœur reconsiders the two fundamental components of the tragedy, the *mimesis* (i.e. the imitation) and the *mythos* (i.e. the story). If poetry is an imitation of human actions, this *mimesis* passes through creation of a story, a plot, which shows signs of composition and order lacked by the dramas of everyday life. The metaphoricity of the story consists, as in the case of models, in describing a less known domain – human reality – in the light of relationship within a fictitious but better known domain – the tragic story – utilizing all the strengths of semantic "deployability" contained in that story.

In conclusion, we can argue that the metaphor does not present any real contradiction between its ability to innovate thinking and language, and its ability to expand our knowledge of the world (so let us also learn new things). For a science education, the metaphor may therefore represent rightly an expression of that imaginative rationality that often makes us better known and more.

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