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METAPHOR AND LEARNING ACTIVITY¹

The novel "Ardiente paciencia" by the Chilean writer Antonio Skarmeta is actually a novel about metaphors. The plot centers on the story of a friendship between Mario Jimenez, the son of a fisherman in Isla Negra, and the poet Pablo Neruda. Mario, a young man who does seasonal work as a postman, delivers the mail to Neruda daily and always brings his problems along. At the first encounter of the two, a dialogue concerning the question of what a metaphor really is ensues:

"Mario stopped and gesticulated obtrusively with his index finger only a few inches in front of the nose of his famous customer.

"You think that the whole world, I mean the `whole' world, the wind, the sea, trees, mountains, fire, animals, houses, deserts, rain ..."

"... you can just say ,etcetera' if you want to..."

"...the etceteras - Do you believe that the whole world is a metaphor for something?"

Neruda opened his mouth, and his powerful chin seemed to fall out of his face" (Skarmeta 1984, 27).

Here, the metaphor is not a stylistic embellishment of rhetoric. Nor is it an abnormal grammatical expression or phrase. On the contrary, the entire world itself is a metaphor for something. The basis of this view of metaphors is the ability to see something as something else. I will be concentrating on this ability with the following reflections.

First, I will outline a philosophical conception of metaphors - and not a linguistic one or one from a standpoint of literary criticism. Then, I will consider the question of how metaphors can be understood as "modelling ideas" with reference to learning activity.

1. METAPHORS, METAPHORICAL PRINCIPLE, AND METAPHORICAL PROCESS

The following assumptions form the basis of my reflections:

- Metaphors are fundamental for our conception of reality in general. We structure the various ranges of our experiences in a systematical manner with the use of metaphors. With the metaphor, we construct ideas as "visual images" which create manifold relationships between very different and contradictory spheres, phenomena, and processes, and form these into a coherent system.

- In daily life, art, and science, metaphors are instruments for forming systems. Here, they function in various ways as models which orient our activities and cognition.

- The basis of the metaphor as well as of the metaphorical process in the sense of understanding and producing metaphors is the metaphorical principle. This manifests itself in the fundamental competence to see something as something else. This competence requires the structuring of a particular phenomenon, sphere, or process in a certain mode in accordance to the pattern of another.

- The metaphorical principle is not only fundamental for the systematization of experience; it also plays an innovative role in experience's alteration, expansion, or, to put it briefly, in the generation of something new. The limits of a certain range of experience can be altered, expanded, or burst by discovering new systematic relations. In this way, a standardized and mechanical relation to reality can be upset. Metaphors do not change reality, but they make it changeable.

All of this must be explained in a more concrete fashion.

The metaphor "The night is a blue satin blanket" is neither a comparison nor a mere visualization. Nor does it illustrate any similarities between "night" and "blue satin blanket". According to Aristotle, a metaphor proclaims: "This is that" (Rhetoric, III, 2, 10). In every metaphor, one element becomes the predicate of another. H. Weinrich calls these elements "Bildspender", the "donor" of the visual image, and "Bildempfänger", the "recipient" of the image (1963, 325). The "donor" - in this case the "blue satin blanket" -, as the actual metaphorical element, functions as a predicative scheme for the "recipient", that is, for the "night".

In essence, the metaphor is not concerned with understanding the "recipient" with regard to a certain cognitive aspect, but, rather, with perceiving, imagining, and experiencing it within a certain perspective which embraces an entire system of aspects. This perspective can not be reduced to an assigned, standardized lexical meaning. M. Black calls this the "system of associated commonplaces" of a speech community (1962, 40).

By calling the night a blue satin blanket, one evokes the entire "satin system" of corresponding commonplaces such as mystery, splendour, costliness, infinite depth, luxury, and much more. While actuating these commonplaces, the person who attempts to understand the metaphor constructs a subjective system of manifold implications corresponding to the "satin system" with regard to the "recipient". What is activated in a particular case depends upon the concrete situation, the context, and the personal significance of the individual. The "satin metaphor" organizes in a certain mode which is still to be further explicated our perception of night itself. Black describes this function as follows:

"A memorable metaphor has the power to bring two separate domains into cognitive and emotional relation by using language directly appropriate to the one as a lens for seeing the other; the implications, suggestions, and supporting values entwined with the literal use of the metaphorical expression enable us to see a new subject matter in a new way. The extended meanings that result, the relations between initially disparate realms created, can neither be antecedently predicted nor subsequently paraphrased in prose. We can comment upon the metaphor, but the metaphor itself neither needs nor invites explanation and paraphrase. Metaphorical thought is a distinctive mode of achieving insight, not to be construed as an ornamental substitute for plain thought" (1962, 236-7).

With the metaphor, "recipient" and "donor" do not somehow become mixed or amalgamated. Rather, the metaphor asserts that "this is that". At the same time, we realize that "this is not that". In this way, an equation (The night is a blue satin blanket) and, at the same time, a disparity are asserted. Anyone who understands this metaphor is conscious of the fact that the night is not at all a blue satin blanket. Because of this simultaneous equation and disparity, we often say: "This is only a metaphor".

This semantic incongruence is not dissolved or neutralized, but, rather, remains present as a source of tension and contradiction. The metaphor can be understood as the result of a tense interaction between heterogeneous and contradictory elements. Within the realms of this interaction, the relationship of the individual elements to one another is not fully arbitrary; they do not supplement each other in some undefined manner. The metaphor is strictly complementary, that is, the individual elements are presuppositions of each other as far as their tension and contradiction is concerned.

With the following remarks, I can only discuss those aspects of this complementary relationship which are of particular importance for epistemology and didactics, namely, the complementary relationship between visual image and concept and between subject and object. I can only refer in passing to the relations between coherence and incongruence, cognition and emotion, visualization and reflection, intuition and knowledge.

The Complementary Relationship Between Visual Image and Concept:

Metaphors can not be reduced to a visualization, an elaboration, or to the function of an example. Where Aristotle says that the metaphor "sets [a thing] [...] before our eyes", he means a productive process. In understanding as well as in producing metaphors, we actively take part in the

development of a new dimension of meaning which proceeds from the interaction of heterogeneous and contradictory elements. Within this process, the picturesque, vivid, visual aspect - which can be termed the iconic aspect - plays a decisive part.

The iconic aspect enables us not only to maintain the contradiction of the heterogeneous elements, but also to let this contradiction become productive. In this way, the heterogeneous meanings "night" and "satin blanket" remain in such a tense relation to each other that a picturesque structure - the iconic aspect - is developed, which, in turn, supports and sustains the conceptual-semantic incongruence. The diversity of a metaphor depends upon the quality of the iconic aspect. The "donor" "blue satin blanket" develops sense-related, aesthetic, but also emotional correspondences and connotations. These guarantee and insure the similarity and, thus, support the heterogeneity with regard to meaning.

Thus, the metaphorical process can be understood as an essentially imaginative act. It realizes a similarity on the visual level which sustains the incongruence on the level of meaning.

By no means does the iconic aspect forfeit its aesthetic and sense-related quality, its material and formal independence, to the "recipient" during this process. That was demonstrated in an ingenious manner by Picasso's collages.

The artist understood especially his sculptures as plastic metaphors. Instead of forming his figures from traditional materials like plaster, he fashioned them primarily from such rubbish as old baskets, vases, bicycle parts, and so on. In his study "Visual Metaphor", V. C. Aldrich notes that metaphors in a work of art are made more apparent by compositions of which the individual parts are objects with their own identity and qualities. According to Aldrich, the metaphor is aimed in two directions if, for example, instead of moulding plaster into the chest of a goat a wicker basket is placed where the ribs would normally be. The result is a wicker basket that is to be regarded as the goat's chest. In the reverse manner, if the entire body of the goat is examined, its ribs can be seen as a wicker basket - thus, a compound metaphor with two lines of sight. If the ribs were made of plaster, the view would only go in one direction. Moulded plaster would be seen as the chest of a goat (Cf. Aldrich 1968, 73). And Picasso himself remarked that he traced the way back from the basket to the chest, from the metaphor to reality. He maintained that he made reality visible because he used the metaphor (Cf. Gilot/Lake 1964, 296-7).

The iconic aspect of the metaphor is fundamental for the analogy, for the similarity which the metaphor employs in order to evoke precisely the incongruence. The tension between visual image and concept becomes productive for the development of something new, of a new dimension of meaning.

The Complementary Relationship Between Subject and Object:

Metaphors refer to the priority of content in a specific way and, at the same time, they radically focus on the subject as the subject of the activity.

Their assertions are apodictic and can not be dissolved in a discursive manner. The truth of a metaphor is spontaneously acceptable and intuitively convincing. Its assertion is not extensional in the sense of formal logic, but, rather, always intensional, aimed at essentials.

Thus, a metaphor can not be replaced by expressions which state what is actually meant. We can, of course, attempt to explain the statement about the night in the metaphor "The night is a blue satin blanket" with the use of paraphrasing, examples, and comparisons. At its best, this would be an approximation, but never the semantic basis of the metaphor. Exactly because of its intensionality, the metaphor can provide much food for thought without becoming totally arbitrary. The intensionality is especially apparent in metaphors we use for acoustic, visual, and taste-related phenomena in order to articulate experiences of synaesthesia, for example, "dark tones", "warm colors", "dry wine", and so on.

The intensionality of metaphors has a fundamental theoretical function in the history of science. "Field", "power", "wave", "inertia", "atom" have become widely-accepted theoretical concepts; their metaphorical quality is effective now only below the surface, but it still determines the further development of theory (cf. Kuhn 1979; Boyd 1979; Ortony 1979).

Furthermore, the intensionality of the metaphor also establishes its indirect relation to the object involved or to reality. The metaphor organizes a broad active perspective of a scope of matter and never dissolves into a direct reference. Only by activating its inner system of tensions and contradictions can the content of the metaphor be generated as a new dimension of meaning. In this way, it provides an important link to so-called theoretical concepts, for which the indirect relation to reality is also fundamental. The content-related core of a theoretical concept functions as a means of its own development and differentiation. It can be related to a particular sphere of reality only in combination with systematic connections to other concepts (cf. Dawydow 1977).

The priority of content as the object-related part of the metaphor places certain demands on the subject and his activity. In his "Rhetoric", Aristotle considers the metaphor as a sort of syllogism of which the middle term must be found, developed, or constructed by the listener (or observer) in order to understand the metaphor. Thus, the metaphor requires a maximum of intellectual activity: if A is B in a metaphorical sense, then there must be some middle term T so that A is to T what T is to B. Where Shakespeare lets Romeo cry out: "Juliet is the sun!", this T is unexhaustable in the abundance and diversity of its aspects of meaning - life-bestowing warmth, glowing embers, a light in the darkness ... (cf. Danto 1981).

A metaphor must not be confused with a complete, static picture. It organizes seeing as an activity which creates a special relation to the world. In contrast to the other senses, vision allows perception from a distance. The ability of the sense of sight to cover distances caused Kant to designate it as the noblest of all the senses because it is "the farthest removed from the sense of touch, the most limited condition of perception" (cf. Kant 1963). With sight, we not only have a certain relation to the objects around us, but we also view this relationship itself.

In summary, one could say that the metaphor is objective and subjective at the same time. Its objectivity has to do with the intensionality of its assertion. By means of this priority of content as a matter to be developed, the metaphor involves the subject and his subjectivity. Here, subjective does not mean left to the will of the individual, but, rather, concerns the subject of the idea, experience, and cognition.

The metaphorical competence of seeing something as something else implies the development of a perspective of a scope of reality and, thus, presupposes consciousness of this standpoint. With the complementary relationship of subject and object, the metaphor can be considered as a classical example of that "subjective universality" which Kant describes in his "Critique of Judgment" (cf. Fichtner 1977).

With its complementary relationships, the metaphor corresponds to the diversity of reality and, at the same time, to the manifold intentions and perspectives of this reality.

2. THE METAPHOR AS A "MODELLING IDEA" IN LEARNING ACTIVITY

Usually, we associate with learning the idea of a process which elapses in time and can be divided into phases or segments. From this point of view, an inner determination results from the relationships and regularities among the segments, whereas the totality of the process can only be established from the outside. It is then a result of the reciprocal action between this process and something else. With regard to the specific quality of learning itself, above all with regard to its content, this process scheme remains peculiarly abstract. On the basis of this scheme, learning can not be comprehended as an activity. This is due to the fact that temporal succession bears no essential meaning for the entirety of the functional components of an activity. Here, quite different circumstances are of importance.

The Soviet philosopher and system theorist Judin attempts to clarify the functional components of an activity with the role of the means employed. According to Judin, the analysis of an activity with regard to its means focuses interest on the object of the activity. Furthermore, the importance of the historical, concrete context for the activity can become a subject of investigation as a result of a precise description and specification of the means. In addition, Judin stipulates that only from an examination of the means can activity be described as activity of a concrete individual whose characterization can then no longer be neglected (cf. Judin 1978).

Judin describes the means employed in an activity with reference to their systematic relationship with the use of a hierarchy of levels or functions. These include:

- theoretical arguments,
- modelling ideas,
- and procedures.

Their relationship to one another is one of mutual effect. Here, hierarchy means that the means of a higher level direct the lower ones, but that the former can be produced and corrected by the latter. Within this hierarchy, "modelling ideas" operate in an important way as a sort of "hinge". They insure the totality, the content-related connection of procedures, operations, and active processes by being founded upon "generalizations", "theoretical arguments", or aspects thereof. A "modelling idea" is, however, always the idea of a concrete individual. It tells us something about how theories and their contents appear to this individual and how important they are with respect to his activity. A "modelling idea" is linked to practice as well as to theory.

What does it mean to understand the metaphor as a "modelling idea" for learning activity? Current research on the ontogeny of metaphorical competence can be instructive for the answer to this question. Within the scope of psycholinguistics, this has developed into an important field of research (cf. the survey provided by Augst et al. 1981). If metaphorical competence is comprehended as the ability to understand, produce, and explain metaphors, then only the assumption that a child does not fully attain the ability to explain metaphors until the age of eleven has gained wide acceptance under researchers.

Statements about when children can understand and produce metaphors are very controversial. Many American researchers assume that even small children of the age of two or three can already form metaphors (cf. Gardner 1974, 1975, Leondar 1975, Billow 1975, Smith 1976, Winner 1979). Usually, all non-literal designations attributed to things by children are regarded as metaphors from this point of view. But when a child uses a toothbrush as a car in play and names it accordingly, then the toothbrush is a car to this child and by no means a metaphor (cf. Augst 1981).

I doubt very much that small children can master the complexity of a metaphor. This skill presupposes a full reorganization of the lexicon, a meta-level or a particular perspective which allows the simultaneous equation and disparity of two meanings to become accessible. Every metaphor has a certain "theoretical potential". This does not develop naturally and automatically in learning.

Empiricist theories of learning assume that learning is a process which leads from the concrete, something given and perceptible, to something imperceptible and abstract. Here, pictures are simply stations along the way to real knowledge which, however, must be made concrete by means of visualizations. This standpoint is based upon a problematical understanding of generalization because it presupposes that something concrete can be perceived isolated from something in general and that the former must even become the basis of the latter. However, the mediated character of human insight consists in the mediation between concrete and abstract.

For learning activity, this mediation between concrete and abstract presents itself as the general tension between "empirical" and "theoretical" concepts (Dawydow 1977). Precisely here, metaphors exercise a particular function if they are not simply reduced to pictures or parables, that is, to visualizations: They relate the mediation between abstract and concrete to that between subject and object in learning activity. In this way, metaphors exhibit "theoretical potential".

In conclusion, this potential can be further elaborated with the following arguments.

Metaphor and the Selection of One's Own Standpoint:

Common sense presupposes a fixed and assigned relation between object and description, between meaning and sign. The acquirement of a "theoretical concept" in learning activity requires that the learner dissolve this fixation and develop a personal attitude with regard to the knowledge to be attained, that is, the selection of his own standpoint and, thus, real initiative on his part ("Selbsttätigkeit"). As a perspective, every metaphor is centered on the subjectivity of the individual. My argument is that, for the acquirement of theoretical concepts, metaphors have a particular potential for the development of perspectives to the object of the concept involved - the metaphor as a "modelling idea" which avoids the naive and direct reification of knowledge which common sense undertakes.

Metaphor and Indirectness:

A metaphor can not be reduced to a simple view or a simple perspective. Its meaning is not directly exhausted in some momentary usage. The metaphor is a perspective which removes itself from its object in an explicit manner. Its indirectness can provide a "link" to the acquirement of "theoretical concepts". These are never directly related to an object. They are formal and structural systems, explications of a particular way of relating to reality. "Theoretical concepts" can never be fully dissolved into elements of their employment, that is, into procedures, operations, and algorithms.

Metaphor and Totality:

As a modelling idea, the metaphor orients the learner to totality. Two heterogeneous spheres are transformed into components of a new systematically organized total meaning. This involves a connection between visual image and concept. Metaphors are not illustrations of empirical facts, but, rather, "visual images of theoretical relationships" and, thus, means of reflection. With metaphors, perception is very closely connected to reflection. In the mediation between object and subject, they also connect emotion to cognition, seeing to thinking, insight to intuition. The dominance of content of the metaphor is always somehow compelling. A metaphor must be spontaneously acceptable and intuitively so convincing that thinking can proceed from it.

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¹. This paper is dedicated to Maria Benites Moreno.