István Pálinkás: The Development of the Senses
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The Development of the Senses:

Metaphorical Extension or Conceptual Integration?

Abstract

Cognitive semantics offers two basic algorithms that attempt to characterize how humans are able to obtain understanding and meaning from language: *metaphorical extension* (Grady 1997, Lakoff 1987, Lakoff & Johnson 1980, Lakoff & Turner 1989) and *conceptual integration* (Fauconnier & Turner 1998, 2000, 2002). Since both seem to run into trouble with certain instantiations of language, I argue that in particular cases sense development is best described in terms of metaphorical extension (e.g. English modals), while the comprehension process of other linguistic phenomena (e.g. verbal irony) seems to be more sensitive to an analysis within a conceptual integration framework. Thus, in sharp contrast with the basic tenets of metaphor proponents, I question the ubiquitous nature of metaphors in sense development, all the more so because I consider conceptual integration as an interim stage in metaphor comprehension, giving blending processes a perhaps more universal role in sense development.

My main objective in the present paper, thus, is to make a brief synopsis of the two sense-developing mechanisms mentioned, revealing uncertainties as for their applicability to processes of speech comprehension. Also, I make suggestions concerning a mechanism in metaphorical extension to set up correspondences between isomorphic conceptual structures of ontologically distant or unrelated concepts. This mechanism is probed through blending operations, revealing an alignment-projection type of relationship between conceptual integration and metaphorical extension.

1 Linguistic background

1.1 Shortcomings of Generative Linguistics and the Objectivist View of Meaning

Generative linguistics is committed to viewing language in terms of “formal grammars”, systems of combinatorial mathematics of the sort first characterized by the mathematician Emil Post. In such a framework, general principles of language not describable in terms of formal logic were not taken as true linguistic principles and hence were not required to be part of a complete description of language. Such “nonfinitary phenomena” included, among others, image schemas, mental images, general cognitive processes, basic level categories defined partly in sensorimotor terms, the use of neural foundations for linguistic theory and prototype phenomena.

Thus, *metaphoric mapping* is also excluded from the generative description of language, primarily because the descriptive apparatus available to generative linguistics is not capable of stating general principles governing such phenomena.

It should consequently come as no surprise that a radically different approach to language was needed to be able to treat “nonfinitary phenomena” as true linguistic principles.

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Objectivism, the traditional cognitive approach to meaning, does not seem a more effective framework to characterize metaphorical extension, since, as Johnson (1989) argues:

> [in an objectivist framework] meaning is fundamentally literal. Literal concepts or terms are, by definition, simply those entities whose meanings specify conditions of satisfaction for the objects, properties and relations they designate. It follows that there can be no irreducibly figurative or metaphorical concepts, because metaphorical projections cut across basic experiential domains, and such cross-categorial projections are held to have no counterparts in the real world, which supposedly has discrete and definite categorical boundaries.

A somewhat related shortcoming of the objectivist framework is that it cannot provide any role for *mental spaces*, cognitive constructions that characterize blending theory. As Lakoff (1987) argues, since mental spaces are conceptual in nature, they have no ontological status outside of the mind; thus, a mental space is not the sort of thing that the real world or some aspect of it could be an instance of. Consequently, mental spaces cannot function in a theory based on the relationship between symbols and mind-independent objective reality.

1.2 Lakoff's Experiential Realism

One of the first linguists to start from a cognitive experiential approach to metaphor comprehension is George Lakoff in Metaphors We Live By (1980), written together with the philosopher Mark Johnson. In their view metaphor is seen as a means of categorizing facts of experience in terms of features of already familiar experience. In our cognitive system we construct categories which are idealized cognitive models (ICMs) of given elements in our experience. These ICMs help us to categorize new experience and the cognitive link between the two is made possible through metaphors.

There is a class of metaphors, however, for which this hypothesis might not seem, at least to me, without problems: the spatial representation of more abstract domains. That is, subjects' estimates about the passage of time do seem both to depend upon the particular spatial metaphors for time prevalent in their native language, and to be affected by non-verbal spatial information[1]. My concern here is that there is no inverse dependence of spatial representations upon temporal metaphors (Casasanto 2005). However, as Camp (2006) argues, it is highly unlikely that the relevant asymmetry in direct cognizability obtains: our experiences of these topics are at least as embodied as concrete, and are accessible at least as early in life, as our experiences of the domains in whose terms we characterize them metaphorically.

Furthermore, Lakoff often cites the conceptual metaphor ANGER IS HEAT OF FLUID IN A CONTAINER (e.g. in Lakoff 1987: 384-388). But as Ortony et al. (1988) argue, children experience *anger* well before they understand the effects of heat on fluid pressure in closed containers.

Although I agree that metaphors might have a say in making sense of *particular* facts of experience in terms of already existing, more concrete realms of experience, with the above reasoning in mind I query the *general* metaphorical nature of human cognition. Besides these, mainly subconscious processes of analogical reasoning, metaphor is a frequent figurative device, used by the speaker on purpose, in place of some conventional use of language for

[1] Thus, words denoting spatial dimensions such as the adjective *long* and the concept of *space* are mapped to temporal dimensions: a long night or TIME IS SPACE.

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rhetorical, stylistic, poetic (or whatever) considerations. By way of example, instead of saying *He was angry*, you might as well argue that *He blew a gasket* or *That really set him off*.

2 Uncertainties in Defining Metaphor

In some cases, the literature might witness indeterminacies in the understanding of metaphorical extension. As an example, some proponents of metaphor theory see metaphorical extension as a relatively rigid and unmotivated process assuming that it is predictable, is based upon principles of *analogy* and *similarity* and the interplay between full conceptual domains. Grady, Oakley and Coulson (1999), however, argue that there is no obvious sense in which the concepts paired in a few entrenched metaphors are similar or analogous to one another:

(1) Tomorrow is a *big* day for this organization. [i.e. important]
(2) These two colours are not particularly *close*. [i.e. similar]

In their view, being "scalar" in some sense is not sufficient motivation for the metaphors: IMPORTANCE IS SIZE or SIMILARITY IS PROXIMITY partly on the grounds that IMPORTANCE, say, cannot be mapped onto SIMILARITY.

This line of argumentation, however, may suggest that Grady et al. downplay the importance of *structure* or *relationships* holding within the source domain; they might have overlooked the fact that while in IMPORTANCE a property of one entity is directly measured against a scale, in SIMILARITY the properties of two entities are compared first and then the difference is measured against a scale.

It may follow that in (some) metaphors the focus is on relational commonalities, and corresponding objects in the target and base need not be similar (see also Gentner & Clement 1998, Shen 1992).

The same logic can be applied to cases where the relation between the two domains is not "lack of similarity", as in (1) and (2) above, but alleged contrast (Coulson & Matlock 2001):

(3) Titanic: Unsinkable After All

The above headline exemplifies simultaneous reference to the ship, claimed by some to be unsinkable, but which proved otherwise, and the movie about the ship, which proved to be quite successful, both with the critics and the general populace.

Besides this contrast, however, I claim that the two inputs do share relational structure (or topology); in both cases there is an air of *irresistibility* or *success*: similarly to the ship's alleged capacity to voyage through any wave (or whatever) in perhaps the most adverse weather conditions, the movie also ran its course as perhaps one of the most stunning films with its oscars and millions of fans worldwide.

Finally, considering a *blend* as a metaphorical extension in a number of linguistic analyses (e.g. in Brandt & Brandt 2002, Gentner, Bowdle, Wolff and Boronat 2001, Grady, Oakley and Coulson 1999, Vega Moreno 2004) might indicate that even noted linguists are unaware of the true operating principles of metaphors:

(4) This surgeon is a butcher.

I claim that to consider (4) as a "metaphor" is a daring enterprise partly on the ground that, as the Invariance Hypothesis (Lakoff 1990) argues, metaphorical mappings preserve the cognitive topology of the source domain. For lack of an underlying conceptual metaphor in (4), however, no image-schematic correspondence between the inputs might seem to hold.

Taken together, in particular cases metaphor theory has a hard time explaining sense development. The question is whether conceptual integration is a more adequate (or general) tool of 'meaning extraction' or it too is a far-from-perfect sense developing mechanism. The next part makes a start in this direction of analysis.

3 Conceptual Integration Theory

Conceptual integration (or blending) theory posits a system of backstage cognition that includes partitioning, mapping, structure projection and dynamic mental simulation. Central to conceptual blending theory is the notion of the *conceptual integration network*, an array of mental spaces in which the processes of conceptual blending unfold (Fauconnier & Turner 1998). These networks consist of two or more *input spaces*, structured by information from discrete cognitive domains, a *generic space* that contains structure common to all spaces in the network and a *blended space* containing selected aspects of structure from each input space and an emergent structure of its own.

Blending involves the establishment of partial mapping between cognitive models in different spaces in the network and the projection of conceptual structure from space to space. Also, blends include a *compression* of *vital relations* holding among mental spaces (for details, see Fauconnier & Turner 2000).

To illustrate blending operations, consider the *riddle of the Buddhist monk*, a classic puzzle of inferential problem-solving, proposed by Koestler (1964):

> A Buddhist monk begins at dawn one day walking up a mountain, reaches the top at sunset, meditates at the top for several days until one dawn when he begins to walk back to the foot of the mountain, which he reaches at sunset. Make no assumptions about his starting or stopping or about his space during his trips. Riddle: Is there a place on the path that the monk occupies at the same hour of the day on the two separate journeys?

The above riddle can be solved quite easily, if rather than envisioning the Buddhist monk strolling up one day and strolling down several days later, imagine that he is taking both walks on the same day. There must be a space where he meets himself, and that place is the one we are looking for. In this example we have two input spaces. Each is a partial structure corresponding to one of the two journeys. There is partial *cross-space mapping* between the two input spaces, connecting counterpart elements: the mountain, moving individual, day of travel and motion. The generic space contains what the inputs have in common: a moving individual and his position, a path linking the foot and the summit of the mountain and a day of travel. In the blend, the two counterpart identical mountain slopes are mapped onto a single slope. The two days of travel are mapped onto a single day: the two days are fused. While in the generic space and each of the inputs there is only one moving individual, in the blend there are two moving individuals. The moving individuals in the blend and their positions have been projected from the inputs in such a way as to preserve time of day and direction of motion, and therefore the two moving individuals cannot be fused.

There are cases, however, where conceptual integration might fall short of the mark in sense generation, at least as the basic, underlying algorithm in the process. Grady, Oakley

and Coulson (1999) suggest a relation between metaphorical extension and conceptual integration, where conceptual metaphor may serve as an input for blending processes. This might indicate that metaphorical extensions depend upon blending operations. To put it another way, in particular cases Grady et al. might 'overburden' the process of sense development with unnecessary structures of conceptual integration where a 'simple' unidirectional metaphoric mapping would obviously do, as in the *state/nation as a ship* metaphor below:

(5) With Trent Lott as Senate Majority Leader, and Gingrich at the helm of the House, the list to the right could destabilize the entire Ship of State.

Grady et al. argue that sense development in (5) is largely dependent upon blending operations, attributing, in my view, great importance to needless associations in the process: the individuals will predictably cause the ship to list to one side if they handle heavy cargo, or they handle and steer the sails (in whatever fashion) in particular wind conditions, etc.

As for the other input, Grady et al. argue that 'the Senate Majority Leader and the Speaker of the House inevitably have a considerable, direct influence on national policies and the overall political orientation of government.' That is, in blending-theoretic terms, the selective projection from the two inputs yields unlikely interpretations, inconsistent with our understanding of the source: it is actually the *weight* of the two people that causes a ship to list to one side and change its course.

Thus far, I have highlighted the inadequacy of an omnipotent metaphor- or conceptual integration theory in sense development. Also, I have made reference to some sort of a relationship between the two processes mentioned. The next part is meant to scrutinize this relation in some detail, where blending operations might be pivotal as an interim phase in the comprehension of metaphors.

4 Basic Operations in Metaphorical Extension

Similarly to Gentner (2001), I argue that metaphor processing incorporates two basic processes: alignment (or evaluation) and projection (or mapping). The former is a typical multidirectional process setting up correspondences (or related topologies) between ontologically unrelated concepts[2].

Once candidate inferences have been discovered, the extension is evaluated, which involves at least two sorts of judgement: a) factual correctness – to decide whether the inferential analogy is true, false or undetermined in the target; b) relevance – whether the analogical inferences are relevant to the current goals, say the speaker's actual communicative intentions[33].

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[2] Although the concepts in metaphors may be ontologically unrelated on a holistic basis, I argue that there are ontologically related particles and epistemic correspondences across domains. For example, in the *Love is a journey* metaphor, 'lovers' and 'travellers' may have ontological correspondence.

[3] For lack of 'factual correctness' (or incorrectness) see the *nation as state* metaphor, where the two politicians are considered as determining factors in the overall political orientation of government. The *surgeon as butcher* binominal expression in (4), however, might have relevance shortcomings, since no analogy discovered may incorporate the notion of 'incompetence'.

In case of sufficient similarity, projection from the source to target might ensure a full-course metaphorical extension; otherwise the blend might "come to a more or less permanent life of its own".

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