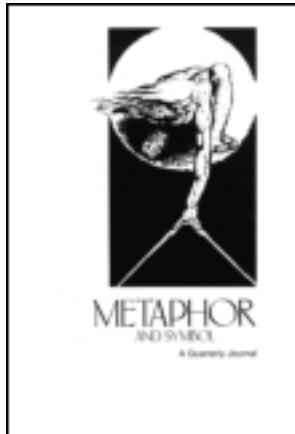


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## The Contemporary Theory of Metaphor: Myths, Developments and Challenges

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## The Contemporary Theory of Metaphor: Myths, Developments and Challenges

Francisco José Ruiz de Mendoza Ibáñez and Lorena Pérez Hernández

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This article discusses some of the claims of the earlier and later versions of the Contemporary Theory of Metaphor (CTM) and addresses some of the criticism that has been leveled against it. It is argued that much of this criticism arises from common misconceptions as to the real claims made by the theory. However, CTM is still in need of further exploration and empirical support. In this connection, we identify some areas where research is still needed and supply our own developments. We argue for a more complex classification of metaphor types, which takes into account various complementary taxonomic perspectives, including the nature of source and target and the genericity and complexity of the metaphoric operation. We also explore metaphor in relation to cognitive prominence and conceptual interaction issues. Finally, we deal with the problem of constraints on metaphor and make a proposal for three complementary kinds of constraint.

The original work on cognitive metaphor by Lakoff and Johnson (1980), known as Conceptual Metaphor Theory or CMT, evolved into the Contemporary Theory of Metaphor or CTM (Lakoff, 1993) in the next decade. From their inception these two theories, henceforth referred to as “the Contemporary Theory of Metaphor,” have been the object of a number of criticisms which arise both from the failure of the CTM proponents to clarify their positions adequately and from the fact that the CTM is still in need of development in a number of areas, especially in relation to its communicative impact (cf. Steen, 2007, 2011) and its grammatical consequences (Ruiz de Mendoza & Mairal, 2007). These dimensions of metaphor theory cannot be adequately dealt with unless we have a better understanding of such issues as what is meant by the notion of “mapping” and of how metaphor works at different levels of conceptualization. With a view to setting the stage for further development in these directions, the present article will try to shed light on some aspects of these two issues. We will first give an outline of the earliest and latest version of the CTM. Then we will discuss some of the criticism leveled against it, especially the criticism that arises from misunderstanding the actual CTM claims. Thus, we will not consider alternative theories that have arisen independently of the Cognitive Linguistics (henceforth CL) approach and that have different aims since they do not affect the essentials of the CTM. A case in point is Glucksberg’s work (cf. Glucksberg, 2001, 2003), which argues that metaphors are best explained

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as “category-inclusion” assertions (e.g., in “*My lawyer is a shark*,” “shark” becomes the name of a figurative type, a category with predatory qualities). But this view is not valid for metaphors based on experiential correlation, such as “*MORE IS UP*,” which are of greater interest for the CTM. In “*MORE IS UP*,” “up” is not the name of a figurative type (i.e., things that are high). For similar reasons, we will not address the relevance-theoretic perspective (e.g., Wilson & Carston, 2006, 2008; Vega Moreno, 2007), which borrows heavily from the category-inclusion notion in order to explain metaphor as a matter of *ad hoc* concept construction through a broadening of a concept (e.g., “shark” can be broadened into “*SHARK*,” which is a new category including people who behave in a ruthless and dishonest way); obviously, this view of metaphor has the same limitations as Glucksberg’s since there is no principled account of the cognitive processes underlying either the creation of a figurative type or of the broadening of a concept. Finally, we will examine the complex nature of metaphor from the vantage point of the different perspectives from which it can be classified, all of them compatible with central CL postulates.

## THE CONTEMPORARY THEORY OF METAPHOR

The CTM was first proposed by Lakoff and Johnson (1980) and was subsequently developed by Lakoff and colleagues (e.g., Lakoff, 1987; Lakoff & Turner, 1989; Lakoff & Johnson, 1999; Gibbs, 1994; Gibbs, Bogdanovich, Sykes, & Barr, 1997; Kövecses, 1990, 2000, 2002, 2005; cf. Dirven & Ruiz de Mendoza, 2010; Gibbs, in press, for assessment on these developments). In opposition to the traditional understanding of metaphor as a rhetorical figure and thus as a tool for the skillful use of language, Lakoff and Johnson (1980) argued that metaphor is not primarily a matter of language but of cognition: people make use of some concepts to understand, talk and reason about others. Metaphor was thus described as a “conceptual mapping” (a set of correspondences) from a source domain (traditional vehicle) to a target domain (traditional tenor). The source is less abstract (i.e. more accessible to sense perception) than the target. A classical example of analysis of conceptual metaphor is “*LOVE IS A JOURNEY*.” In this metaphor, we use the notion of motion along a path towards a destination in order to reason and talk about some aspects of love relationships, as revealed by many common linguistic expressions like those in (1):

- (1) a. “*Our marriage is off to a good start*”
- b. “*We are going nowhere*”
- c. “*It’s been a long, bumpy road*”
- d. “*We are back on track again*”

These and other similar expressions reveal the existence of an underlying system of conceptual correspondences between love and journeys in which lovers developing a love relationship are seen as travelers on a journey. In the mapping, the love relationship is a vehicle, lovers’ common goals are the destination, difficulties in the relationship are impediments to motion, and so on. Linguistic expressions making use of the metaphor usually focus on one of the correspondences but the others remain conceptually accessible so that they can be used in inferential processes when needed (cf. Ruiz de Mendoza Ibáñez, 2002; Ruiz de Mendoza Ibáñez & Pérez Hernández, 2003; see also Gibbs & Tendahl, 2006, and Tendahl & Gibbs, 2008, for a similar perspective). Thus, (1a) places prominence on the beginning of the love relationship and on the bright prospects that the speaker has for it. Possible implications, derived from the rest of the

correspondences in the system, are that the speaker expects his or her marriage to develop with no special difficulties and that he or she judges that his or her partner has the same overall goals and expectations. In contrast (1b), which directly calls upon the lack of a direction to reach the destination, readily gives rise to implications such as the following: at the beginning of the relationship the speaker thought he or she knew how to develop it; at some point he or she realizes that the goals are not clear any more; making manifest this situation to the addressee is a way of calling for the addressee's help in finding a solution. In turn, (1c) works on the basis of the correspondence between difficulties in the relationship and impediments to travel, with the implication that all difficulties have been solved; (1d) exploits the same correspondence but with the implication that the lovers have made adjustments in their relationship which is then developing well again (i.e. there are renewed expectations of positive progress).

These metaphors can be elaborated further thus having an impact from a discourse organization perspective, as is evident from the following expansions of (1b):

- (2) a. *"We are going nowhere this way. We should go back to where we started"*
- b. *"We are going nowhere like that, but I don't want give up on our relationship"*
- c. *"We are going nowhere and if we keep on like this we will soon burn out"*

The expansion in (2a) draws on the idea that one way to fix a problem in a relationship is to redirect the lovers' attention to the time when the relationship was beginning and could be expected to work. In a similar fashion, one way for a traveler to find his way to his destination is to go back to a previous, more familiar, point on his journey where he was confident he knew what do to and thus have an opportunity to rethink his traveling strategy. In (2b) the focus is on the speaker's desire to go ahead with the relationship, which corresponds to a situation in which a traveler is unwilling to stop his journey even if he is unable to find the right way to his destination. One further implication that follows from this situation is that the lover (like the traveler) will need a new plan to achieve his goals. The expansion in (2c) is a reflection on the effects (extreme tiredness and hopelessness) that the problematic relationship invoked by "*We are going nowhere*" has on the two lovers.

Other metaphorical systems that were proposed in the first studies on metaphor are:

**"ANGER IS HEAT"**: an angry person is a (generally pressurized) container that holds a hot substance (the anger) in its interior; the pressure of the substance on the container is the force of the anger on the angry person; keeping the substance inside the container is controlling the anger; releasing the substance is the expression of anger; external signs of heat are external signs of anger. Examples of this metaphor are: "*You make my blood boil*"; "*He blew his top*"; "*He got steamed up*"; "*He got red/hot under the collar*"; "*Let him stew*".

**"THEORIES ARE BUILDINGS"**: theories can be built, pulled down, demolished, buttressed, etc.; building tools are instruments to formulate a theory; building materials are elements in the theory (e.g. "*These facts are the bricks and mortar of my theory*").

**"ARGUMENT IS WAR"**: we see arguing as engaging in battle, people arguing as enemies, arguments as weapons, and winning or losing as military victory or defeat respectively. An example of this metaphor that combines some of these elements is found in "*All our arguments were shot down and we were defeated*".

In addition to defining metaphorical systems in this way, some preliminary efforts were made to classify metaphor types. Lakoff and Johnson (1980) distinguished *ontological*, *structural*, and

*orientational* metaphors. Ontological metaphors have a physical world entity in the source and an activity (e.g., “*He put a lot of energy into his attack*”), emotion (e.g., “*He has fear*”) or idea (e.g., “*We have a problem*”) in the target. Structural metaphors are those in which one concept is expressed in terms of a different structured, sharply defined concept, as is the case with the “*ARGUMENT IS WAR*” mapping. Orientational metaphors are those in which concepts are spatially related to each other, as in “*HAPPY IS UP*”/“*SAD IS DOWN*” (e.g., “*I’m feeling up*”). This latter type of metaphor is grounded in our physical experience. Thus, an erect posture is typically associated with positive emotional states, while a drooping posture goes with sadness and depression. Later Lakoff and Turner (1989) added *image metaphors* and redefined ontological in terms of a folk model about nature called the *Great Chain of Being*, which specifies physical and behavioral attributes of human beings, animals, plants, natural objects, and artifacts. Examples of such metaphors are “*PEOPLE ARE ANIMALS*” (e.g., “*Achilles is a lion*”), “*PEOPLE ARE PLANTS*” (e.g., “*She is a tender rose*”), and “*PEOPLE ARE MACHINES*” (e.g., “*My boss is a bulldozer*”). Image metaphors map images onto images, which means that they do not map concepts onto concepts, but only the structure and visual attributes (e.g., color, shape, curvature) of a conceptual domain onto the structure and visual attributes of another domain (e.g., “*A horse with a mane made of short rainbows.*” maps the visual attributes and structure of a rainbow onto a horse’s mane).

In more recent years, Lakoff and Johnson (1999) have developed a more complex version of the CTM. This version is constructed on the basis of the integration of Christopher Johnson’s (1999) theory of *conflation*, Grady’s (1997) theory of *primary metaphor*, Narayanan’s (1997) *neural theory of metaphor*, and Fauconnier and Turner’s (1996) theory of *conceptual blending*. According to Johnson (1999) there are two stages in developing a conceptual metaphor. First, there is a conflation stage during which the source and target domains are co-activated since the two concepts tend to co-occur in experience. At a later stage the concepts are differentiated. For example, seeing and knowing are conflated in our minds because visual input is crucial for getting information. In Grady’s theory, complex metaphors (e.g., “*LOVE IS A JOURNEY*,” “*THEORIES ARE BUILDINGS*”) are made up of primary metaphors that develop through conflation (the experiential association of discrete conceptual domains). In this theory, journey metaphors are complex forms of the primary metaphor “*PURPOSES ARE DESTINATIONS*,” and “*THEORIES ARE BUILDINGS*” is the complex form of the more basic metaphors “*ORGANIZATION IS PHYSICAL STRUCTURE*” and “*PERSISTING IS REMAINING ERECT*.”

There are two advantages of an account based on primary metaphors: (a) it has a stronger generalizing power (e.g., “*LOVE/A BUSINESS/A CAREER/A TASK, ETC. IS A JOURNEY*” are better accounted for in terms of “*PURPOSES ARE DESTINATIONS*”: cf. “*We are going nowhere*,” as said by a businessman about his latest business venture, students doing teamwork, a couple in crisis, a frustrated athlete that has been trying in vain to beat a record and his coach); and (b) the account finds the roots of metaphor in the conflation of concepts arising from co-occurring events in primary experience and can thus be straightforwardly linked up with research in psychology and the brain sciences (cf. Grady & Johnson, 2002).

Examples of primary metaphors are (Lakoff & Johnson, 1999):

“*AFFECTION IS WARMTH*”: “*She gave me a warm embrace*” (based on feeling warm while being held affectionately).

*"CHANGE IS MOTION"*: "She's going from bad to worse" (we tend to correlate certain states with certain locations; e.g., being cool in the shade, warm in bed, safe at home).

*"IMPORTANT IS BIG"*: "He's a big wheel in the company" (large objects exert major forces and dominate our visual experience more than small objects)

*"INTIMACY IS CLOSENESS"*: "They are really close friends" (being intimate usually involves physical closeness).

*"KNOWING IS SEEING"*: "I see what you mean" (seeing is a crucial way of getting information)

*"MORE IS UP"*: "Prices are soaring"; "World stocks have plummeted overnight" (levels rise and fall as quantity, e.g. of a fluid, increases or decreases).

*"SIMILARITY IS CLOSENESS"*: "These two colors are very close" (often similar objects cluster together).

*"UNDERSTANDING IS GRASPING"*: "He was unable to grasp the notion of intersubjectivity" (holding and touching an object allows us to get information about it).

The Neural Theory of Metaphor is a very strong hypothesis according to which conceptual mappings across domains correspond to neural connections in the brain. The hypothesis rests on the observation that many languages make use of the same conceptual metaphors, which are grounded in common motor-sensory experience. Blending theory, in turn, explores how different elements of conceptual structure (or mental spaces) are integrated with one another through a subconscious process known as conceptual blending. Blending, which is ubiquitous in everyday thought and language, lies at the root of creative thinking.

## CRITICISM OF THE CONTEMPORARY THEORY OF METAPHOR

The CTM has aroused a lot of enthusiasm in linguistic theory. But because of its radical break with previous traditions in metaphor, conceptualization and semantic theory, it has also naturally been the object of sharp criticism. Some of the concerns have been addressed against the earlier version of the CTM (i.e., Conceptual Metaphor Theory or CMT). However, as will be seen, the developments in the CTM have generally addressed the initial problems in a satisfactory way. Still, the later version of the CTM has also been criticized. While some of the new criticism is unjustified, here it will be argued that the CTM still requires further improvement. We will conclude this article with an outline of possible developments in the theory.

### Circularity

The CTM has been accused of circularity in postulating conceptual metaphor. The purported circularity problem can be stated as follows: in "*LIFE IS A JOURNEY*," we talk about life in terms of journeys because we think of life in terms of journeys; and we know we think of life in terms of journeys because we talk about life in terms of journeys (McGlone, 2001). However, cognitive linguists do not claim that people think of life, love, careers, and so forth, in terms of journeys because people talk of these concepts in terms of journeys; rather, the claim is that

analysts postulate that people think of life, love, and other concepts in terms of journeys because they find linguistic evidence that that is the case. The same kind of criticism has been voiced, within Relevance Theory, by Vega Moreno (2007, p. 139), who argues that “conceptualizing life as a journey would imply we cannot think of life without thinking of journeys,” which is obviously not true. This is simply a straw man argument and a misunderstanding of the flexibility of the CL position often found in the context of Relevance Theory circles, where the CTM is generally disregarded on the grounds that there are no special interpretation mechanisms for metaphor different from those involved in other non-descriptive (i.e., interpretive) uses of language (cf. Wilson & Carston, 2006, 2008; Sperber & Wilson, 2008). However, the actual position defended by cognitive linguists is not that people conceptualize life as a journey, but that *some aspects* of life, especially those that have to do with achieving goals, can be understood in terms of *some aspects* of journeys. Of course, we can, and we often do, think of life without thinking of it as if it were a journey (cf. Ruiz de Mendoza Ibáñez, 2009).

### Metaphor or Analogy?

The accusation here is that many conceptual metaphors are mere cases of analogy or simile, but not real metaphors. Thus, although life is like a journey in some respects, it is not a journey (it does not take place on a bus or a train, we do not buy tickets to embark on it, etc.; Haser, 2005; Vega Moreno, 2007). If we are to understand analogy in a narrow manner as a simile, one may wonder where the analogy is between such concepts as life, love, or careers and journeys. There is no resemblance. Of course, it is possible to broaden the notion of analogy, as is modernly done by some cognitive scientists (cf. Gentner, Holyoak, & Kokinov, 2001), to make it cover any form of alignment between structures. In fact, this idea is very close to the notion of conceptual mapping propounded by Lakoff and his followers. But it is also possible to see analogical reasoning in a narrow sense in some cases of metaphor. For example, a pump is to a hydraulic system as the heart is to the blood circulation system. This analogy licenses the metaphor whereby we think of the heart as if it were a mechanical pump (e.g., “*Galen was unaware that the heart pumped blood through the arteries and veins*”). The analogy is so rich and accurate that we can classify the heart as a kind of (non-artificial) pump. Note that the “kind-of” relationship can be extended to most relevant elements of the blood circulation system: the heart is a (kind of) pump, the blood is a (kind of) fluid, blood pressure is (a kind of) fluid pressure, the blood flow is (a kind of) fluid flow, the circulatory system (veins and arteries) is (a kind of) hydraulic system. There are other cases of analogy-based metaphor where there is no such “kind-of” relationship between target and source elements. Think of animal metaphors, like the well known ‘lawyers are sharks’ example, which is used to refer to lawyers that appear to be ruthless, dishonest and greedy. There is analogy in the sense that in their professional context lawyers behave to people like sharks to their prey, although the analogy is naturally partial (note that we can think of real sharks as “ruthless” to the extent that they appear to be stubbornly unyielding in their role as predators, but we cannot think of sharks as dishonest or greedy, which are semantic implications that directly arise from the target). So, metaphorical thought can be based on analogical reasoning. This should not be a problem since, as has been pointed out previously, there are many metaphors that are not based on analogical resemblance relations between source and target, but rather on experiential correlations. Thus, there is no analogical reasoning in “*KNOWING IS SEEING*” or in “*IMPORTANT IS BIG*.” We talk about knowing in terms of visual perception because seeing is a way of providing

information to our brains. But there are no grounds for a potential analogy of the kind A is to B as C is to D, so A is (a kind of) C (i.e., it is not possible to reason that ‘knowing is to B as seeing is to D, so knowing is seeing’). A similar reasoning applies to the correlation between importance and size: we talk about important objects in terms of large size because of the greater impact that they have on our perceptual experience in comparison to small ones. But there are no grounds for an analogy that licenses the ‘important-big’ connection. However, “*LIFE IS A JOURNEY*,” which is cited by critics as evidence that proponents of conceptual metaphor are not discussing metaphor but analogy, is a different and interesting case. In principle, “*LIFE IS A JOURNEY*” is a complex metaphor constructed on the basis of the primary metaphor “*PURPOSES ARE DESTINATIONS*,” which correlates purposes and destinations on the grounds of common experience (when people move towards their destination they are at the same time achieving the goal of reaching their destination). But, even though “*LIFE IS A JOURNEY*” has an essentially correlational nature, it is also sensitive to the ‘kind-of’ analogical reasoning according to which someone’s destination is to a journey as someone’s goals are to life and reaching one’s destination is a kind of goal. The reason why “*LIFE IS A JOURNEY*” has this special twofold nature is easy to see: while the experiential correlation is central to the metaphor, it only supplies one of the correspondences in the “*LIFE IS A JOURNEY*” system or in the other related systems that exploit the idea that purposeful activities are journeys (e.g., “*LOVE/A CAREER/A BUSINESS IS A JOURNEY*”). This correspondence, which is central to these systems, is the primary metaphor “*PURPOSES ARE DESTINATIONS*. ” The other correspondences are supplied by specifications of the purposeful activity involved; since both motion to a destination and love, a career, a business, and the like, are purposeful activities, there is resemblance between the rest of source and target elements. This analysis suggests that analogy is a more complex phenomenon than correlation and that it may make use of either resemblance or a combination of correlation and resemblance operations to give rise to some kinds of metaphorical thought. Other kinds of metaphor are purely correlational and are therefore not based on analogy.

### Faulty Typologies

Szwedek (2007) has argued that the distinction between ontological, structural, and orientational metaphors is not well grounded. For orientation and structure to exist we need objects (entities), so metaphors are fundamentally ontological. In response to this accusation, it is first necessary to point out that typologies can be improved both in terms of the number of categories and their interrelations, which we will attempt to do in a later section. Second, metaphors are not fundamentally ontological. The Lakoffian standard view is that image schemas (put forward in the earlier version of the CTM) and primary concepts (which include image schemas, propounded in the later version of the CTM) are more basic than other concepts. In fact, the notion of object is itself an image schema. This suggests that much of metaphorical thought (to what extent is still something to be determined) and consequently a large part of our reasoning processes, as Lakoff himself once postulated (Lakoff, 1990, 1993) is ultimately image schematic.

### Primary Metaphor, Conflation and Neural Connections

Murphy (1996) argues that there is confusion in the CL literature as to whether it is possible to think of the target independently of the source or both are conflated into one single representation.

Can we think of an argument without thinking of war? Can we think of time without thinking of space? However, rather than a problem, this is a virtue of postulating experiential conflation: people may be able to think of (i.e., have personal insight about) time without thinking of space but people generally use space (or other primary categories such as objects) to reason about time (how can we express the meaning of “*Tomorrow never comes*” without using space?); in other cases, such as “*GOALS ARE DESTINATIONS*,” even if experiential conflation is at the base of the metaphor, it is easier to “deconflate” the two domains: for example, “*I have my goals in life*” does not make use of the metaphor.

Another piece of criticism on the notion of conflation is found in Haser (2005). She argues that some expressions commonly explained in terms of experiential correlations cannot really be traced to conflation (Haser, 2005, p. 216). A case in point would be “*THEORIES ARE BUILDINGS*,” where “buildings” are seen as “erect physical structures”: the concept “building” contains features that are not present in the notion of “erect physical structure” but that may be used to create a metaphor; thus, constructing a theory is *similar* to constructing a building since it involves time, effort and planning. So it is possible to argue that “*THEORIES ARE BUILDINGS*” is based on similarity rather than conflation. But the argument is flawed. Primary metaphor is a basic conceptual correspondence grounded in experiential correlation. Entrenched correlation is at the base of conceptual conflation, but we do not need to postulate conceptual conflation every time we have a case of experiential correlation (e.g., the time–space correlation may more easily give rise to conflation than that of goals– destinations. Primary metaphors are basic layouts that can be enriched with other more specific concepts in order to match the full range of meaning implications that speakers want to convey. In the case of “*THEORIES ARE BUILDINGS*,” some metaphorical expressions may focus on the organizational part (“*They put together a new theory*”), others on the idea of persistence (“*Sustain/uphold/support a theory*”). Other elements may be brought to bear as needed if they are subservient to the notions of “physical structure” and “being erect”: “*These two observations are the brick and mortar of his theory*” makes use of the idea that building materials give physical structure and consistency to a building; *His theory is as solid as a rock* focuses on consistency; “*His plans rest on shaky ground*” calls upon the idea that an earthquake can destroy the physical structure of buildings and bring them down.

Organizing ideas involves effort as much as any action, and planning as much as any goal-directed action; organizing physical structure also requires effort and planning. But these elements are not enough to construct “*THEORIES ARE BUILDINGS*” on the basis of similarity. There is no aspect of a building that perceptually resembles a theory. That is why theories have no windows, walls, tenants, etc. These elements are not part of either of the two primary metaphors.

In close connection with the notion of conflation, Haser (2005, p. 210) has voiced her concern on the plausibility of postulating neural connections for metaphorical mappings. Her point is that the entrenched association of two concepts gives rise to a neural connection, but neural connections are not metaphors and cannot involve selecting one element as the source domain. It is true that there is nothing in postulating neural connections paralleling conceptual associations that pre-determines the *kind* of association. However, if there is a conflation of two domains of experience, it would be natural to expect some kind of neural substrate reflecting the degree of entrenchment of the association, thus licensing the possibility for metaphor to arise; this is a plausible hypothesis to be explored further.

## AREAS IN NEED OF DEVELOPMENT

In our view, there are other areas of the CTM than those identified by its critics that await either clarification or development. We have chosen the following: the taxonomic issue, the question of the relationship between abstract thought and metaphor (which in our view has implications for grammar), the problem of determining the constraining factors in metaphor production and the way metaphors combine into metaphoric complexes. The remainder of this article dwells on these topics and is organized as follows: In the section titled “Metaphor Types,” we offer a classification of metaphors attending to different criteria (e.g., the nature of the source domain, the level of genericity of source and target, the degree of complexity of the metaphoric operation, and the nature of the mapping); at the same time we attempt to shed some light on some grammatical implications of metaphor theory and discuss the issue of metaphorical complexes. The section titled “Constraints on Metaphorical Mappings” is devoted to exploring some of the factors that constrain metaphorical thought and therefore the linguistic production of metaphorical expressions.

### Metaphor Types

Metaphor is a complex cognitive phenomenon. For this reason, the original taxonomic criterion provided by Lakoff and Johnson (1980) and Lakoff and Turner (1989), which was essentially based on an analysis of the ontological nature of the source domain, is insufficient. A metaphor is a mapping system, which sets up correspondences whose nature has to be understood. The complexity of the mapping system and the possibility of constructing complex metaphors on the basis of more basic ones are additional issues, which will also be discussed.

*Classification of metaphors according to the nature of the source domain.* In the section “Faulty Typologies,” we have briefly referred to the first taxonomic criterion. This criterion has been revised by Ruiz de Mendoza Ibáñez and Otal Campo (2002) as shown in Figure 1. The basic division is between structural and non-structural metaphors. The former have more complex source domains than the latter. Generally, the source of a structural metaphor consists of entities plus their attributes and their interrelations or of topological abstractions over a set of attributes of an entity or a number of interacting entities. In contrast, the source domain of a non-structural metaphor focuses on one attribute of a physical entity or on a non-complex topological abstraction, such as spatial orientation.

Because of their more simple nature, non-structural metaphors, unlike structural metaphors, work by highlighting one attribute or a tight-knit cluster of related attributes that are perceived to be similar across domains (e.g., “*He is a machine that does not work*,” which highlights the idea that the protagonist is unproductive). Traditional ontological or Great Chain of Being metaphors (Lakoff & Turner, 1989) are clear cases of non-structural metaphors. Lakoff and Turner argue that in these metaphors there is a “quintessential” attribute of the source that is highlighted and used to talk about a corresponding attribute of the target. In this process, the structural relationships between the attribute and the rest of the conceptual domain to which it belongs are kept intact. In their example, “*Achilles is a lion*” the quintessential feature is “courage”: the warrior’s

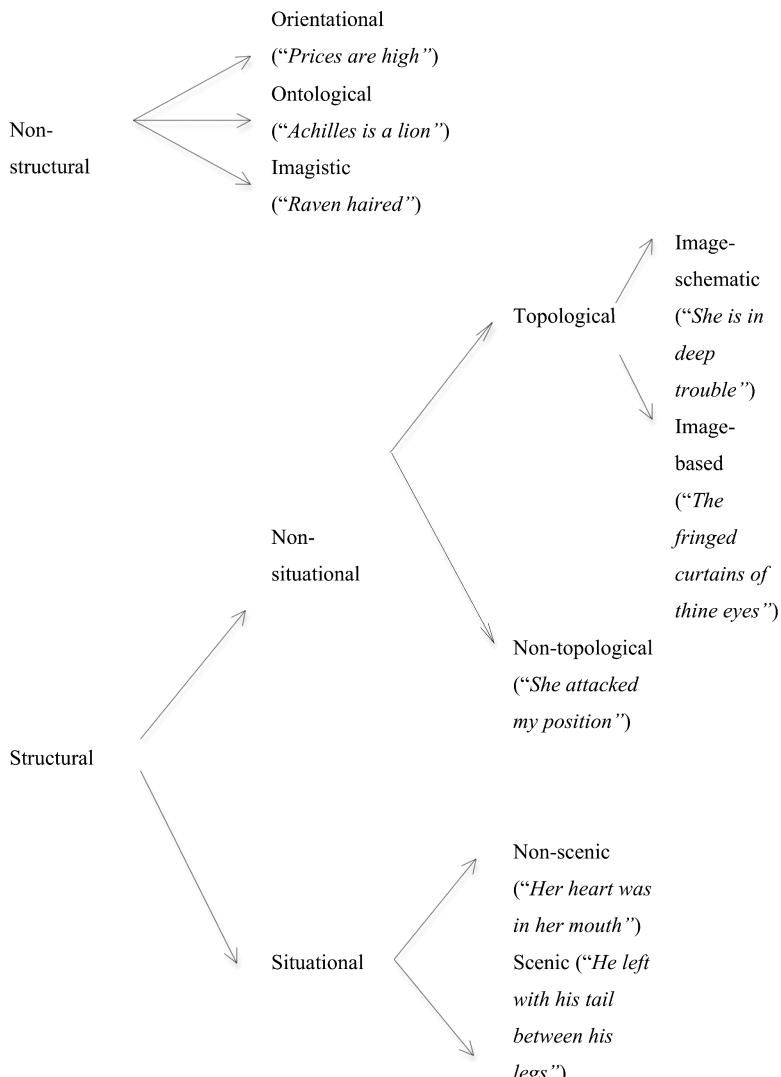


FIGURE 1 Metaphor types according to the nature of the source domain.

courage is understood in terms of a lion's attributed courage (since "courage" is a human property, there is a previous metaphor whereby we see a lion's fierce and instinctual behavior as being "courageous"). In a more refined analysis, we may observe that what the metaphor does is help us to see the kind of "courage" that Achilles has when engaged in battle: his courage is fierce and instinctual in the same way as a lion's corresponding behavior when it is fighting other animals or when chasing its prey. Thus, the "Achilles–lion" metaphor singly maps animal behavior onto human behavior; other attributes such as physical appearance and apparel are irrelevant unless

we have a context where these attributes contribute to a better understanding of the behavioral feature that is highlighted.

Structural metaphors work differently. In them, the structure of the source domain is not simply used to contextualize (i.e., put into perspective) a quintessential attribute of the source that has to be mapped to the target. Rather, the structure and logic of the source is used to reason about the target wherever a correspondence is plausible. For example, within the “*ARGUMENT IS WAR*” system, a sentence like “*I thought I was going to be defeated*” suggests that the speaker had difficulties to win a debate. Possible extensions of this expression that make use of the same metaphor show that the rest of the correspondences in the system are at work: “*But I wouldn’t surrender so I kept fighting and finally I could bring down all their arguments.*” Similarly, metaphors based on image schemas also lend themselves to complex reasoning. Consider a container metaphor such as “*She is in deep trouble,*” where a problematic situation is conceptualized as a container; in this metaphor the container walls are the figurative boundary between the situation and a different state of affairs, people inside or outside the container are people being affected or not by the situation; finally the depth of the container maps onto the difficulty to find a solution to the problematic situation. On the basis of the logic inherently associated with containers, it is possible to reason in connection to the state of affairs depicted by “*She is in deep trouble*” as follows: “*She is trapped by the situation;*” “*It will be hard for her to get out;*” “*But she could be deeper inside.*” These and other sentences could provide appropriate discourse extensions of our example since they exploit the logic of the container and show that the source domain is used to reason about the target. This is not the case with orientational metaphors such as “*MORE IS UP/LESS IS DOWN,*” as in “*Gas prices are too high,*” which singly maps height onto quantity. For these mappings to be part of a richer logic system they need to interact with other metaphors, such as those based on the notion of motion along a (vertical) path. This interaction facilitates reasoning: “*Gas prices have been going up too fast; we hope they will come to a halt as soon as the market stabilizes; then they will gradually slope down until they reach a plateau.*”

A unique case of structural metaphor is *image* metaphor (Lakoff & Turner, 1989). In image metaphors both the source and target domains consist of concrete images that are put in correspondence on the grounds of visual similarity (Grady, 1999). Some examples are: “*a veil of haze,*” where the dust, smoke and other dry particles that obscure the clarity of the sky are seen as a (probably thin, dark grey) veil that similarly blocks our view of objects; “*the tears of the clouds,*” to refer to rain in virtue of the clouds resembling a person’s eyes and the droplets of rain resembling tears; “*Tears were streaming down his cheeks,*” which maps a heavy flow of water on the ground onto the abundance of tears on someone’s face; “*a raven-haired woman,*” where the extremely dark blackness of a raven’s body is mapped onto the blackness of a woman’s hair. These metaphors are very close to non-structural metaphors in that there is a contextualized “quintessential” feature of the source that maps onto a corresponding feature of the target; the difference is that in image metaphors the feature is visual: the appearance of a veil, of tears, of a stream, and of a raven’s plumage play a crucial role in our previous examples. However, image metaphors, as noted by Caballero (2003, 2006) and Deignan (2007) may also have a less imagistic, more conceptual nature. For example, consider Prospero’s words to his daughter Miranda in the following excerpt from Shakespeare’s *The Tempest* (I, ii):

*The fringed curtains of thine eyes advance.  
And say what thou see’st yond.*

This metaphor puts in correspondence the image of Miranda's closed eyes and the image of a stage with a lowered curtain. The eyelids are the curtains and the eyelashes are the fringes. This metaphor allows us to reason that by opening her eyes Miranda will allow Prospero to see himself reflected on them as he were on a stage. Evidently, this metaphor is not based on picking out a quintessential feature of the source that can be applied to the target. There are several correspondences at work. Additionally, the focus of attention shifts from the two corresponding images to the implications of the eyes-stage mapping in terms of the experiential correlation (which is also metaphorical) between visual perception and mental awareness. Since there is no quintessential feature of a theatre that maps onto Miranda and since the metaphor lends itself readily to reasoning about the target in terms of the source, we may safely regard it as a case of what we shall call—to differentiate this metaphor type from pure image metaphors—*image-based structural metaphor*.

Structural metaphors such as "*ARGUMENT IS WAR*," some image metaphors, and non-orientational image-schematic metaphors are essentially non-situational. But structural metaphors may have a situational nature. A situation is a dynamic state of affairs where entities interact at a certain place and/or time. Consider "*Her heart was in her mouth*" and "*He left with his tail between his legs*." The former, which is a case of what we will call *non-scenic* metaphor, captures a situation in which the protagonist has an internal and subjective experience that is hardly detectable by an external observer. The target is an emotional reaction of anxiety and concern that is associated with a physiological reaction whereby the heart seems to pound so wildly that it can be felt as if inside the mouth, which is the figurative idea expressed in the source. The latter, on the other hand, is an example of what we will classify as a *scenic* metaphor; it depicts part of a situation that can be observed from the outside. In the example given, the source has a dog that has been beaten and runs away in order to avoid further confrontation and potential damage. Obviously, the source has been constructed metonymically since the linguistic expression only gives us part of the situation. The target has a person that has been humiliated and chooses not to face his psychological aggressor (see Figure 1).

Grady (1999), in an attempt to reinstate the relatively neglected notion of resemblance into metaphor theory, introduced the nature of the relationship between source and target as an additional classificatory criterion. The basic distinction is between *correlation* and *resemblance* metaphors. In the case of resemblance we look for similarities between source and target. As is evident from our previous discussion of other metaphor types, resemblance is at work in the case of ontological, imagistic, image-based, and situational metaphors. The rest of the metaphor types (orientational, image-schematic, and non-topological or propositional) are correlational, namely, based upon the correlation between two experiential domains.

*Classification of metaphors according to their level of genericity and implications of high-level metaphor for grammar.* We will distinguish three levels of conceptual categorization (or cognitive modeling) that are reflected in language. First, there is a low level, which we will define as the non-generic level of conceptual representation created by making well-entrenched, coherent links between elements of our encyclopedic knowledge store. For example, our knowledge that mothers give birth to children and take care of them, my knowledge that Napoleon Bonaparte was a 19th Century French emperor, or my knowledge about how people brush their teeth belongs to this level. Second, there is a primary level, which in consonance with Grady's (1997) work, is regarded as the (non-generic or generic) level of conceptual

representation directly grounded in bodily experience. A person's knowledge of how he sits on a chair or how he walks down the stairs are non-generic examples of primary conceptualization. More abstract spatial notions such as image schemas (container, motion, path, part-whole, etc.) and other non-spatial concepts directly arising from our interaction with the environment such as temperature, color, smell, and size, or more subjective bodily experiences such as emotions are cases of generic conceptualization at the primary level. Third, we distinguish a high level, which is the generic level of conceptual representation created by deriving structure common to multiple low-level models. For example, our knowledge about actions as being dynamic controlled states of affairs that have an agent, a patient, and an instrument, or about states as being non-dynamic and uncontrolled states of affairs, are high-level forms of categorization.

Metaphor, like metonymy, can work at different levels of genericity. Generic or high-level metonymies have been investigated in detail by Ruiz de Mendoza Ibáñez and Pérez Hernández (2001) on the basis of fragmentary proposals by Kövecses and Radden (1998) and Panther and Thornburg (1999, 2000). In turn, Ruiz de Mendoza Ibáñez (2007) and Ruiz de Mendoza Ibáñez and Mairal Usón (2007) have discussed high-level metaphors. High-level metonymy occurs when the matrix domain of a metonymic mapping abstracts away from a number of more concrete conceptual domains, whether low-level (e.g., specific actions, objects and situations or events) or primary level (i.e., directly arising from bodily experience). For example, the notion of "action" results from finding generic conceptual structure that is common to a number of specific actions that are characterized by being dynamic and controlled; actions typically consist of an agent, an object, and an instrument (there may also be a manner element). In English it is possible to present a controlled action as if it were a process in such a way that the process stands for the action. This is the case of the inchoative and middle constructions, as in "*The door opened*" or "*These clothes wash well*," where it is respectively evident that some agent or some force opened the door and that the washing is done by some agent (cf. Ruiz de Mendoza Ibáñez, 2008, for a detailed analysis of the metonymic motivation of middle constructions in English). Another interesting case is the high-level metonymy "*OBJECT/RESULT FOR ACTION*," which licenses a grammatical phenomenon that Jackendoff (1997) has labeled *enriched composition*. Some verbs such as *enjoy* and *begin* canonically subcategorize a non-finite verb as their complement (e.g., "*She enjoyed/began reading the book*"); however, they can also be found with a noun phrase as a complement instead of the non-finite verb (e.g., "*She enjoyed/began the book*"). Obviously, the cases where the nominal complement is used in this way are problematic in terms of compositionality since the kind of action that one can enjoy or begin with respect to a given object has to be determined on the basis of the context: "*He enjoyed/began reading/studying/printing the book*." One solution to this problem, which preserves the notion of compositionality but requires postulating a semantic-syntax interface, is to consider the non-typical pattern an enriched variant of the canonical pattern. Another solution, more in keeping with the standard Cognitive Linguistics assumption that conceptual phenomena motivate grammar (cf. Langacker, 1987, 1999, 2009; Talmy, 2000) and with the idea that semantics maps directly onto syntax, thus avoiding the need to postulate an interface, is to postulate a licensing factor for the cases where a noun phrase seems to complement the verb. This licensing factor is a high-level metonymy whereby either an object that is within the scope of an action ("*OBJECT FOR ACTION*") or the result of an action ("*RESULT FOR ACTION*") stands for the whole action itself. In the case of "*She enjoyed/began the book*," "*the book*" stands for the "action of reading

the book"; in the case of "*She enjoyed/began the book*," "the dance" stands for the action of dancing.

High-level metaphors also underlie grammatical phenomena. Some high-level metaphors, such as "*STATES ARE LOCATIONS*" ("He is in trouble"), "*ACTIONS ARE TRANSFERS*" ("The police gave him a beating"), "*STATES ARE POSSESSIONS*" ("He has quite a lot of fear"), have already been identified by Lakoff (1993). As we saw previously, states are easily seen as locations and as possessions through experiential conflation: different locations are often associated with different states (we feel warm in the sunshine, cool in the shade, comfortable in our home, frightened in a dark, solitary street, etc.). Actions can be seen as transfers of possession if the object of the action is directly affected by the action, probably because we associate the effects of the action with the result of transferring the possession of an object, possession being the "effect" of a transfer. This vision of the "*ACTIONS ARE TRANSFERS*" metaphor, which refines the one proposed by Lakoff (1993), is treated in detail in Ruiz de Mendoza Ibáñez (2007). Let us now take a more interesting case of high-level metaphor. Consider the sentence "*The audience laughed the actor off the stage*," studied in Ruiz de Mendoza Ibáñez and Mairal Usón (2007, 2008), which makes use of the caused-motion construction, as discussed by Goldberg (1995, 2006). It would be natural to say that "someone pushed the actor off the stage," since *push* is a caused-motion predicate, but the verb *laugh* is not. This verb denotes an activity without a direct impact on an object, so we may wonder why it can be used with the caused-motion construction. The literature (e.g., Michaelis, 2003; Goldberg, 2006) treats non-natural uses like this as cases of constructional coercion over the verbal predicate. But the notion of coercion is not sufficient by itself to account for why not any verbal predicate that can have an object can be coerced into the caused-motion construction (e.g., "*They described the actor off the stage*") or for why some intransitive verbs can also be used in this construction (e.g., "*They practically coughed me out of the computer area*"). One solution is to think of coercion as a constrained conceptual phenomenon. In the previous examples, the constraint is a metaphor whereby we see one kind of object as if it were another kind of object. While *push* has what we may call an effectual object (i.e., an object that directly receives the effect of the action), *laugh* can only have an experiential object (i.e., one that feels that the action has been directed to him or her and may thus react accordingly). In "laugh someone out" the experiential object or the activity of laughing is metaphorically seen as if it were the object of an effectual action causing motion as a result of its impact on the object. Additionally, the metaphor interprets self-instigated motion resulting from an emotional reaction in terms of motion resulting from physical impact. We may summarize these correspondences under the label "*AN EXPERIENTIAL ACTION (RESULTING IN SELF-INSTIGATED MOTION) IS AN EFFECTUAL ACTION CAUSING MOTION*."

A similar phenomenon has been observed involving speech act verbs (Pérez Hernández & Ruiz de Mendoza Ibáñez, 2011, p. 111). Thus, the compatibility of speech act predicates, such as *order*, with the caused-motion construction, as in "*I instantly ordered him out of the room*," is not arbitrary but motivated by a high-level metaphor of the type "*A VERBAL ACTION (RESULTING IN SELF-INSTIGATED MOTION) IS AN EFFECTUAL ACTION CAUSING MOTION*." It should be noted that the predicate *order*, by itself, does not express caused motion, but just someone's forceful attempt to manipulate someone else, who is the goal of "ordering." This verb, therefore, cannot be used in the caused-motion construction unless we understand the goal element of ordering as if it were the physical object of caused motion. Such metaphorical process licenses the use of *order* with this particular grammatical construction. Other speech act predicates in

which the verbal action does not necessarily result in self-instigated motion, such as *request* or *suggest*, are not compatible with the construction (cf. ??*I requested him out of the room*, \**I suggested him out of the room*, \**I recommended him out of the room*). This further proves that the workings of the aforementioned high-level metaphor have grammatical consequences.

Self-instigated motion (whether literal or figurative) will usually occur with non-effectual verbs that are goal-oriented, such as *stare* ("She stared him out of the seat"), *beg* ("He begged me into business"), *listen* ("I listened him into investing"), *smile* ("A French immigration official smiled me into Europe"), *love* ("The Athabascans loved me into their lands"), *tempt* ("What tempted him into the whirlpool?"). On the contrary, self-instigated motion is either impossible or hardly possible with verbs that do not have this kind of object: *describe* (\**She described me out of the room*), *own* (\**They owned me out*), *read* (\**People read the playwright into fame*), *kill* (\**They killed him into a tomb*), *catch* (\**They caught John out of his hiding place*), *rob* (\**The thief robbed him out of where he was*).

*Classification of metaphor according to the degree of complexity of the metaphoric operation and the issue of metaphoric complexes.* Grady (1997) introduced the distinction between *primary* and *compound* metaphors. In this article we will refine this distinction and first postulate a basic division between *primary* (or non-complex) and *complex* metaphors, and then a subdivision of complex metaphors into *compound* and *non-compound*. In Grady's work, primary metaphors are metaphors whose source domain is directly grounded in our experience. Interestingly enough, primary metaphors arise from experiential conflation, so they are correlational in nature. Primary metaphors have the ability to combine with others of the same kind in order to create compound metaphors. A clear example of this phenomenon is the 'conduit' metaphor, which interprets communication as the encapsulation of thought into objects that move from sender to receiver. This metaphor combines:

- "*CONSTITUENTS ARE CONTENTS*" (e.g., "The main idea in what he said")
- "*BECOMING ACCESSIBLE IS EMERGING*" (e.g., "His innermost musings finally surfaced")
- "*TRANSMISSION OF ENERGY IS TRANSFER*" (e.g., "Give a speech")
- "*ACHIEVING A PURPOSE IS ACQUIRING A DESIRED OBJECT*" (e.g., "I can't grasp that argument").

Another example of compound metaphor is THEORIES ARE BUILDINGS. This metaphor can be broken down into "*ORGANIZATION IS PHYSICAL STRUCTURE*," as in "*He put together a new theory*", and "*PERSISTING IS REMAINING*" erect, as in "*He pulled down all my arguments*." Each of these two more basic metaphors arises from our experience with physical objects in the world (we see that, in nature, objects are arranged into various patterns and we have the experience of objects, e.g., trees, walls, falling down as they are destroyed). Evidently, each of the two primary metaphors gives prominence to a specific aspect of part of our experience with objects, but very interestingly the two aspects often co-occur; for example, when a wall falls down and breaks into pieces, its physical structure is altered at the same time that it stops being erect. Since buildings are erect physical structures and theories (and ideas in general) are characterized by being internally consistent and by their continuity over a period of time, it is only natural that we have compounded "*THEORIES ARE BUILDINGS*."

An important property of compound metaphors like the “conduit” metaphor and “*THEORIES ARE BUILDINGS*” is that, because of its complex experiential grounding, the whole system of primary metaphors is somehow active whether we focus on one or the other. Thus, in “*He pulled down all my arguments*” the focus is in the lack of continuity of a set of ideas but at the same time it is readily taken for granted that the set of ideas is no longer a coherent whole. In “*He put together a new theory*” the focus is on the internal consistency of the theory, but the continuity of the theory is presupposed too. In some uses both metaphors may receive the same degree of prominence, especially when we have verbs that designate all aspects of construction and destruction at the same time: “*He built/put up the theory in three different stages*”; “*He destroyed/demolished my theory*.”

There are, however, cases of complex metaphor, which do not involve compounding. Consider the well-known mapping “*LOVE IS A JOURNEY*,” which is constructed on the basis of the primary metaphor “*PURPOSES ARE DESTINATIONS*. ” In fact, “*PURPOSES ARE DESTINATIONS*” underlies other journey metaphors too: “*LIFE IS A JOURNEY*,” “*A CAREER IS A JOURNEY*,” “*A BUSINESS IS A JOURNEY*,” and in general any metaphor were we talk about purposeful activities (Lakoff, 1993). These metaphors, unlike the ‘conduit’ metaphor and “*THEORIES ARE BUILDINGS*,” are not the result of compounding several primary metaphors. Rather, the different correspondences in them are but specifications or parametrizations of the more abstract elements of “*PURPOSES ARE DESTINATIONS*”: people involved in a goal-oriented activity are travelers (i.e., entities moving along a path), the partnership of these people is the means of transportation, progress in the activity is motion along a path, difficulties to achieve goals are impediments to motion, stages in progress and landmarks along the path, achieving goals is reaching the destination. Thus, the expression “*We are at a crossroads*,” in the context of “*LOVE IS A JOURNEY*,” has two lovers that come to a point of uncertainty in their progress towards their common destination; in the context of A “*BUSINESS IS A JOURNEY*” it has two or more business partners that find themselves in a similar moment of uncertainty as to how to proceed in their common venture. In our view, this means that the metaphors “*LOVE/LIFE/A CAREER/A BUSINESS IS A JOURNEY*” and the like are *complex* but not compound. They are built on a primary correspondence that is more central than the others, but they do not combine several primary metaphors into a single compound system. Note that in journey metaphors, the primary concept “destination” presupposes motion along a path. In “*THEORIES ARE BUILDINGS*,” however, physical structure does not presuppose an upright position or the other way around. For example, we may think of a flat flagstone patio where the slabs follow a regular pattern or of an upright post with no apparent organizational pattern.

Still another case of compound metaphor is provided by what Ruiz de Mendoza Ibáñez (2008) has called *metaphoric chains*, which, according to Ruiz de Mendoza Ibáñez and Mairal Usón (2011), result in *metaphoric complexes*. Consider the case of the sentence *She got the idea across to me*, which builds “*UNDERSTANDING AN IDEA IS PERCEPTUALLY EXPLORING AN OBJECT*” into “*IDEAS ARE (MOVING) OBJECTS*. ” The chain is a requirement of the first metaphoric target, which demands a more refined elaboration of the basic correspondence between understanding and receiving an object, since just having the object does not involve understanding (i.e., full knowledge of its characteristics’ see Figure 2).

The notion of metaphorical chaining, in cases of high-level metaphor, is very useful to understand some grammatical phenomena. Let us take the sentence “*He slapped some sense into me*” (“He caused me to acquire some sense by slapping me”; i.e., “He slapped me and in

| SOURCE →  | TARGET                    |
|---|---------------------------|
| Causer of motion                                      | Communicator              |
| Causing motion  | Communicating             |
| Object of caused-motion (moving object)               | Idea                      |
| Destination of motion (receiver of the moving object) | Addressee                 |
| Receiving the moving object                           | Having access to the idea |
| Perceptually exploring the object                     | Understanding the idea    |

FIGURE 2 Low/primary-level metaphorical complex.

| SOURCE →                                | TARGET  | ← SOURCE                        |
|---|---|---------------------------------|
| Causer of motion                        | Effector ('he')   |                                 |
| Causing motion                          | Effecting ('caused to acquire')                                     |                                 |
| Destination of motion                   | Effectee ('me')   | New possessor of an object      |
| Object of caused-motion (moving object) | New property ('some sense')   |                                 |
|   | Resultant state (acquiring the new property of 'having some sense') | Gaining possession of an object |
| Manner of causing motion                | Manner of effecting (slapping)                                      |                                 |

FIGURE 3 High-level metaphorical complex.

so doing caused me to acquire some sense"). Here we have the interaction of two high-level metaphors: "*AN EFFECTUAL ACTION IS CAUSED MOTION*" + "*ACQUIRING A PROPERTY IS GAINING POSSESSION OF AN OBJECT*." The two mapping systems are integrated into one where the effectee is seen both as the destination of motion and the receiver that gains possession of an object. This metaphoric chain licenses the participation of the verbal predicate "slap" in a figurative use of the caused-motion construction with resultative meaning in which the grammatical object of slapping is the property resulting from the action and the semantic object (or patient) is the entity that gains possession of the grammatical object (see Figure 3).

*Classification of metaphors according to the nature of the mapping system: one-correspondence versus many-correspondence metaphors and the issue of cognitive prominence.* Ruiz de Mendoza Ibáñez (2000) has argued that one of the criteria to relate

metaphor and metonymy is the number of correspondences that the conceptual mapping has. Metaphorical mappings can be made up of one basic correspondence or many correspondences, while metonymy is always a one-correspondence mapping. In one-correspondence metaphorical mappings the source domain contains either a single concept (e.g., “*MORE IS UP*”) or a conceptual cluster that puts in perspective a prominent attribute of the source (e.g., “*PEOPLE ARE ANIMALS*”) that is mapped onto the target thus highlighting a corresponding attribute in the target. In many-correspondence mappings, the source domain consists of a whole set of related concepts each of which allows us to reason about different aspects of the target domain.

It is interesting to note that one-correspondence metaphors are non-structural, while many-correspondence metaphors are structural. The nature of the mapping system of a metaphor naturally correlates with the ontological nature of its source domain. A one-correspondence system is chosen when the metaphoric source is only required to supply a “quintessential” feature to map onto the target; a many-correspondence system will be needed if the metaphoric source is used to reason about the target. This observation has implications in terms of cognitive prominence and processing strategies. It also allows us to understand better the relationships between the two metaphor types here distinguished and metonymy.

Let us begin with the question of cognitive prominence. Concepts, and therefore semantic characterizations, contain elements that are cognitively more prominent than others. There are two ways in which a semantic characterization can be considered cognitively prominent: by default, which is what we shall term *primary focus*, or by highlighting, which we shall refer to as *secondary focus*. Primary focus is the relative prominence of a conceptual characterization acquired by virtue of its intrinsic centrality in terms of its associations with other elements of the domain it belongs to. Secondary focus is the conceptual prominence of a non-central characterization acquired through a highlighting operation. Croft (1993) defines highlighting as the cognitive process whereby a non-central domain is raised to primary status.

Take the case of a window. The most central feature of a window is the fact that it is an opening in a wall, since it is not possible to conceive of a window without an opening. Other elements are not as central, but they have greater or lesser degrees of prominence with respect to one another. Thus, a window has glass, a frame, and a handle; of these non-central elements, the glass is more prominent than the frame, and the frame more than the handle. When we think of a window, the opening is cognitively prominent by default (i.e., the opening receives primary focus); other elements require a special shift of focus, which is attained through highlighting the otherwise secondary features (i.e., the other elements can receive secondary focus when we give prominence to them for some interpretive reason). For example, in “*She broke the window*,” “break” requires an object that is breakable; the most breakable part of a window is its glass, which thus acquires secondary focus.

Centrality is an intersubjective judgment as to the degree to which a conceptual characterization can be conceived without a given meaning element or not. The more central an element becomes the less dispensable it is. This way of understanding centrality is different from the one set up by Langacker (1987), who determines the centrality of a semantic specification as a function of the extent to which the specification is intrinsic (i.e., not defined with reference to other items), conventional (i.e., shared by a given community), generic (i.e., not specific to a particular item), and characteristic of a class of items. As examined in some detail in Ruiz de Mendoza Ibáñez (2000), these criteria of centrality are problematic. They would not all apply

to the centrality of “opening” as a crucial element of windows: while this feature of windows is conventional and characteristic, it is not generic (there are many items that have no openings) and it is not intrinsic (in fact, the notion of opening makes necessary reference to the place where the opening has been made, e.g., a wall). Langacker’s criteria would not allow us to account for why the glass is more prominent than the frame or the handle either. The glass, the frame and the handle are conventional and generic but they are not characteristic of the class of items referred to as windows. So these elements would seem to rank at the same level of centrality. But they do not if we use the conceivability criterion. It is more difficult to think of a window without glass than without a frameset or a handle. Metonymy may use domain highlighting to give primary status on an ad hoc basis to any secondary domain, as in “*break a window*” (“window pane”) or in “*tie your shoes*” (“shoe laces”). But the further away an element is from being central, the more difficult it is to highlight it through metonymy. Contrast the possibility of the metonymy “*RULER FOR ARMY*,” as exemplified by “*Napoleon was defeated at Waterloo*,” but not of “\**RULER FOR BOOTS*”, as in *Napoleon was made of leather* (versus *Napoleon’s boots were made of leather*). So, for a non-central conceptual element to be highlighted on the basis of a metonymic operation, the element needs to be conspicuous, i.e. capable of attracting our attention.

One-correspondence metaphors also work by highlighting a secondary (i.e. non-central in terms of conceivability) but conspicuous element of a conceptual domain. In the case of “*Achilles is a lion*,” the lion’s “courage” is determined by the way in which the lion behaves in certain contexts where its fierceness, aggressiveness, and instinctual determination are evidenced, as is the case of the lion fighting another animal or chasing its prey. While we can conceive of a lion that is not fierce and aggressive (e.g., a tamed lion), its fierceness and aggressiveness are conspicuous behavioral elements. In the metaphor these elements are given conceptual prominence by virtue of their conspicuity, despite the fact that they are not central in terms of conceivability.

In principle, many-correspondence metaphors are sensitive to highlighting whenever prominence is given to a non-central element of the source domain and to its corresponding target-domain counterpart. However, highlighting does not seem to carry any special cognitive or communicative function in many-correspondence metaphors other than shifting the addressee’s attention from the central, default element to a non-central element. In one-correspondence metaphors, in contrast, highlighting is part of the process of bringing a quintessential source feature to bear upon interpretation.

This observation may be illustrated by two different uses of the metaphor “*A PROBLEM IS A LANDSCAPE*.” In this metaphor, the solution to a problem is seen as a hidden object, investigating into the problem is looking for the object and the evidence for truth in research are the physical clues that guide people searching for an object. Since there is no problem if nothing needs to be resolved, the central correspondence, in terms of conceivability, is set up between looking for the solution and searching for a hidden object, which is the case of the sentence “*We’ll keep searching for a solution to the problem*.” This correspondence has primary focus and does not require highlighting. However, the sentence “*We had no clue where the solution was*” does require highlighting of the non-central (but conspicuous) correspondence between intellectual evidence in research and physical clues in finding an object. It is possible to hit upon the solution to a problem by chance in the same way as one can come across a hidden object without any clue of where it is found. Physical clues and intellectual evidence are thus given secondary focus and converted into an ad hoc object of the addressee’s attention.

Finally, because of their different nature, one-correspondence and many-correspondence metaphors call for different processing strategies. In the former, we have access to one special feature of the target in connection to other relevant features of the same domain; we then look for a corresponding feature in the source that has comparable structural relationships with other features within the same domain. Thus, for *Achilles is a lion* we first single out a feature of the target domain, the warrior's courage, which we understand in connection to a warrior's stereotyped behavioral and physical appearance attributes (e.g., his apparel, his war-cries, his way of attacking the enemy with determination); we then put this special feature in correspondence with a comparable feature of lions, their instinctual determination, which clusters with likewise stereotyped behavioral and physical attributes of lions (their impressive mane, frightening roar, together with their way of fighting or preying on other animals and overpowering them). In the latter, we have global access to the whole system of correspondences between source and target and then focus on just one relevant correspondence. Thus, *We had no clue where the solution was* first requires the global activation of the domains of intellectual and physical search, which are made to correspond. We then focus our attention on the specific correspondence between intellectual evidence and physical clues.

### Constraints on Metaphorical Mappings

Not anything can be set in correspondence with anything. This is a fairly obvious statement. However, in Cognitive Linguistics, where most of the work has focused on metaphor, little attention has been paid to the problem of overgeneration, i.e. producing impossible and/or infelicitous metaphorical expressions on the basis of a pre-existing mapping that is used to construct acceptable examples.

One initial step to providing a solution to the overgeneration problem was taken by Lakoff (1993) with what he called the *Invariance Principle*. According to this principle, a metaphoric mapping always preserves the topological or image-schematic structure of the target domain in a way that is consistent with the topological structure of the source domain. Imagine, by way of illustration, that we map a tree onto a person: the top of the tree will be made to correspond with the person's head, the branches with his arms, the roots with his legs or feet, and so on. However, as it stands, the Invariance Principle, cannot be applied to metaphors that do not involve image schemas. Since image-schematic structure is basic experiential structure that underlies many different forms of conceptualization, it is a form of generic-level structure. This observation has inspired Ruiz de Mendoza Ibáñez (1998) to propose a more refined version of the Invariance Principle, which he terms the *Extended Invariance Principle*. This version of the Invariance Principle ensures that the generic-level structure of the source and target domains of a conceptual mapping is always preserved. It may be more accurately formulated as follows: all meaning effects motivated by a low-level cognitive operation will preserve the generic-level structure of the domains involved in the operation in a way consistent with their inherent structure. Think again of the ontological metaphor "*PEOPLE ARE ANIMALS*," where animal behavior maps onto human behavior. There is no image-schematic structure involved; still, there is generic-level structure of the source and of the target that is maintained intact in such a way that behavior maps onto behavior, and physical attributes onto physical attributes.

As a corollary of the Invariance Principle, it is not possible to map a source domain element that has no corresponding element in the target. For Lakoff, this corollary of the Invariance

Principle explains why in the metaphor “*He gave John a kick*,” where an action is seen as a transfer of possession, the person who figuratively receives the kick does not have it afterwards. The Invariance Principle would seem to constrain the mapping in such a way that the possession element from the transfer schema has to be discarded since there is no corresponding element in the target. The rest of the target elements seem to have perfect matches in the source: the agent is the giver; the patient is the receiver; and kicking is giving. There is a problem with this account, though, since one of the crucial meaning effects of “giving a kick” is that the person who “gets the kick” is affected by it (i.e., the person does not have the kick but rather the effects of the kick). A solution to this problem that respects the Invariance Principle is to postulate the existence of a metonymic mapping from “kicking” to the “effects of kicking” in the target. This metonymy would act on just one of the correspondences of the metaphoric target and would enable us to preserve the possession element in the metaphoric source.

In “*He gave John a kick*,” the metonymy takes place because it is helpful in order to exploit all possible elements of the target domain. It thus becomes evident that there is at least one more principle at work whose function is to generate all possible correspondences in the mapping. Or, to put it differently, this principle ensures that no item in the target will be discarded if there is a way to find a corresponding item in the source. This may require making use of additional mappings. We shall refer to this principle as the *Mapping Enforcement Principle* (see Figure 4).

Another constraining factor in metaphor is the *Correlation Principle* (Ruiz de Mendoza Ibáñez & Santibáñez Sáenz, 2003). Let us take the “*LOVE IS A JOURNEY*” metaphor again. The source domain seems to be much more complex than what is exploited metaphorically. Thus, when we think of the vehicle mapping onto a love relationship, we may invoke the wheels, as in “*We are spinning our wheels*,” or the kind of vehicle (e.g., “*We have to bail out*,” “*Our love is on the rocks*”). However, other parts of the vehicle (e.g. the windscreen wipers) or some vehicle types (a bicycle, a buggy, a roller skate) may scarcely be used. In any case, it is the target

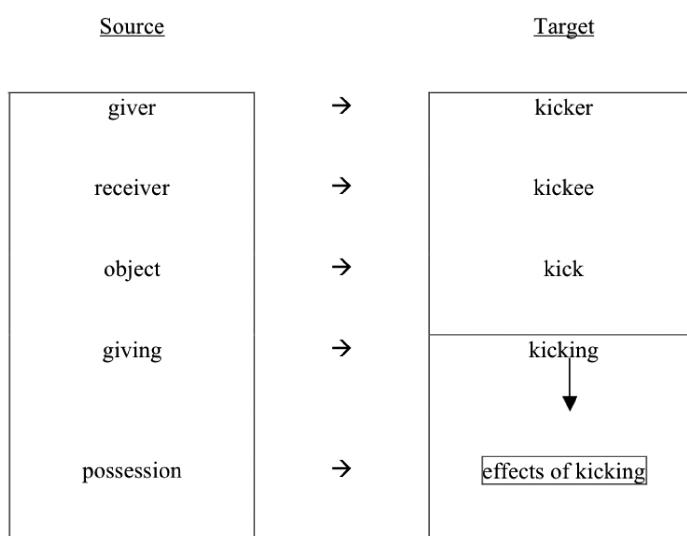


FIGURE 4 “AN ACTION IS A TRANSFER OF POSSESSION”.

domain structure, i.e. what we need to talk about, that determines what we have to look for in the source domain. Thus, in “*Our relationship crashed right after takeoff*,” the target is about a relationship that looked strong and promising, but has been abandoned in a dramatic, surely unwanted way. The source domain could hardly have a vehicle other than an airplane to yield the right meaning effects. This kind of vehicle is powerful and can cover very long distances in very little time, which readily maps onto the idea that the love relationship was expected to grow strong and achieve success in a comparatively short period of time. But this expectation is thwarted.

According to the Correlation Principle, for a source item to qualify as a target domain element counterpart, it needs to share all of the relevant implicational structure of the target in the context in which it is produced. In our previous example, the target has a promising love relationship that develops fairly quickly but is rather abruptly and unexpectedly finished. The source counterpart needs to share these features in the context of travel, which crucially constrains the number of felicitous options. Thus, we could have had the space shuttle in the source of this metaphor, but with slightly different effects.

Note that in “*LOVE IS A JOURNEY*” we do not compare the love relationship to a vehicle but we find common structure at the generic level between the two concepts. In non-correlational metaphors, in contrast, the Correlation Principle works by finding direct similarities between source and target. For example, the small hole at one of the ends of the needle through which thread is passed is called an “eye” by virtue of some topological characteristics that the hole and the eye socket share in terms of their comparable contours. The rest of the conceptual structure in the source, i.e. other functional and physical characteristics, has to be discarded in application of the Correlation Principle.

As observed in Ruiz de Mendoza Ibáñez (2005), sometimes the Correlation Principle works by combining correlation and comparison operations simultaneously. In the sentence “*The population bulge of boomer parents has been expanding the market*,” the expression “the population bulge” is metaphorical and refers to a sudden but temporary increase in the amount of people. Physical size maps onto quantity on the basis of an experiential correlation by which the greater the size of an object the larger the amount of material it has. However, in this use of “bulge” there is more than just this correlation. Non-metaphorically a bulge is a lump on a surface that is normally flat (e.g., “*She noticed a bulge in his pocket*”). Since population growth is normally represented by means of curved graphs, with peaks and valleys, there is some additional non-correlational grounding for this metaphorical expression. This observation may explain why it is possible to say “*population bump*,” but not \**population protrusion* (or \**population protuberance*), since the former but not the latter is profiled as a convex curved swelling in the domain of shape. Finally, the target-domain idea of temporary growth has a good source counterpart in the fact that bulges are expected to go flat at some point in time. The Correlation Principle makes sure that all relevant structure in the target has its source counterpart whatever the combination of cognitive operations it may need to use.

## CONCLUSIONS

Our study has revealed that the CTM stands on solid theoretical grounds. Most of the criticism leveled against it arises from common misconceptions as to the real claims of the CTM. However,

the CTM is still in need, as any relatively young theory, of further development and empirical support. Thus, it needs to explore in more detail the notion of domain, especially the questions of domain types and degrees of abstraction in the metaphorical operations. It also needs to explore metaphor by taking into account a number of complementary perspectives, among them, the ontological nature of the domains involved, their level of genericity, the ways in which source and target correspond, and the degree of complexity of the metaphoric operation. In this article, we have addressed metaphor from each of these perspectives and found them productive in terms of their communicative and grammatical potential. We have also been able to explore metaphor in connection to such issues as cognitive prominence and conceptual interaction. In all cases, the communicative potential of metaphor hinges upon the intrinsic nature of the metaphorical operation.

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