ON ASPECTS OF METAPHORICAL MAPPING

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1. Introduction

Since Lakoff and Johnson advocated “conceptual metaphors” in their monograph Metaphors We Live by, the cognitive-linguistic theory of metaphor has developed through various demonstrative studies and established its fundamental view that characterizes metaphor as “mappings” between the source and target domains. Many in the field have been awaiting a study that shows the overall picture of this cognitive-semantic view of metaphor; Zoltán Kövecses’ book under review exactly meets that need.

Kövecses has contributed to the development of the theory of conceptual metaphor, and is known for a series of studies concerning metaphor and metonymy in emotion terms (Kövecses (2000)); in fact, Lakoff’s (1987) case study on “anger” owes a great deal to Kövecses’ work. Readers will also find that the observations he has made thus far constitute the basis of this book, and thereby add a unique nuance to this

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faithful overview of the current cognitive-linguistic theory of metaphor.

This book consists of seventeen chapters, each of which deals with an important issue for metaphor theory and contains an adequate amount of explanation for it. The exercises at the end of a chapter also pose intriguing problems, and will be helpful for readers to confirm and develop the views that have just been presented. The structure of the book is roughly as follows: Chapters 2 and 3 introduce basic ideas of conceptual metaphors, and Chapters 4 and 5 prove the existence of such conceptual metaphor beyond the linguistic-theoretical area: literature, and non-verbal expressions such as art, myth, politics, social matters and so on. Chapters 6 through 10 argue in detail, from the author's viewpoint, how metaphorical mappings occur between the target and the source domains. Chapter 11 comments on metonymy, a form of trope based on contiguity, and shows how metonymy collaborates with metaphor in ordinary language and conceptualization. Chapters 12 and 13 attempt a typological study of metaphor, and consider the universality and cultural variations of conceptual metaphors. Chapters 14 and 15 show further applications of the currently proposed metaphor theory to the linguistic analysis of idioms, grammatical constructions, modality and so forth. After referring to the relevance to blending theory (Fauconnier (1997)) in Chapter 16, the final chapter offers a summary of this book as well as elaboration on the prospects of the cognitive-semantic theory of metaphor.

This review article focuses on the fundamental mechanism of metaphorical mapping discussed mainly in Chapters 6 through 10, where Kövecses presents his own elaborations of the general theory proposed by Lakoff and Johnson (1980), Lakoff (1993) and so forth. I would like to examine the validity of his proposal in light of several relevant theories of metaphor. Before entering into the discussion of these matters, let us take a look at how the current metaphor theory has developed as the basis of the argument in Kövecses and the present article as well.

2. The Basic Stream of Metaphor Studies

2.1. The Origin of Conceptual Metaphor

This section first offers a brief outline of the theoretical development in cognitive semantics. First, in 1980, Lakoff and Johnson revealed that metaphor is not just a figurative linguistic device but constitutes the
foundation of our thought and conception. They call it "conceptual metaphor," out of which our ordinary linguistic usage emerges, and propose the following three kinds of conceptual metaphor as listed below: structural metaphor, orientational metaphor and ontological metaphor. In each case, the capitalized "A is B" form represents a conventionalized conceptual metaphor. The linguistic expressions in (1)–(3) are all cited from Lakoff and Johnson (1980):

(1) structural metaphor
   a. LOVE IS A JOURNEY:
      We’re at a crossroads. This relationship is a dead-end street. We’re just spinning our wheels. (pp. 44–45)
   b. THEORIES ARE BUILDINGS:
      Is that the foundation for your theory? The argument is shaky. We need to buttress the theory with solid arguments. (p. 46)
   c. IDEAS ARE FOOD:
      There are too many facts here for me to digest them all. I just can’t swallow that claim. Now there’s a theory you can really sink your teeth into. (pp. 46–47)

(2) orientational metaphor
   a. HAPPY IS UP; SAD IS DOWN:
      I’m feeling up. My spirits rose. I’m feeling down. I fell into a depression. (p. 15)
   b. MORE IS UP; LESS IS DOWN:
      The number of books printed each year keeps going up. My income rose last year. His income fell last year. (pp. 15–16)

(3) ontological metaphor
   a. STATES ARE CONTAINERS:
      He’s in love. We’re out of trouble now. He entered a state of euphoria. (p. 32)
   b. THE MIND IS A MACHINE:
      My mind just isn’t operating today. I’m a little rusty today. We’ve been working on this problem all day and now we’re running out of steam. (p. 27)

One will notice that none of the linguistic expressions above can be perceived to be figurative; however, taking (1a) for example, we conventionally talk about affairs concerning love by using terms of a journey, and could not find their exact counterparts if asked to paraphrase them
without recourse to expressions concerning a journey. Lakoff and Johnson claim that the ordinary expressions exemplified above "literally" encode our metaphorical recognition of love as a journey, and that metaphor is therefore not simply a matter of language but rather of conceptualization.

With regard to the structural metaphor in (1), there is no objective similarity between "love" and "journey," since the former is a psychological phenomenon while the latter corresponds to spatial movement. Although they belong to quite different kinds of experience, we detect a certain similarity of love and journey with respect to their structure—having a starting point, process and goal, possibly including difficulties in the process that prevent us from reaching the goal and so forth. That is, we subjectively find similarity in the two different kinds of experiences and therefore conceptualize "love" as a "journey." This is called "perceived structural similarity" by Kövecses, as will be argued later.

Yet the orientational metaphors in (2) are by no means based on similarity; in the case of MORE IS UP, the increase of the amount is never "similar" to the spatial location of UP. What motivates this kind of metaphor is co-occurrence of the two events; for example, if we pour water into a glass, we find the level of water going up. Through such ordinary experiences where the increase of the amount and the upward movement co-occur, the orientational metaphor MORE IS UP is obtained. Thus, Lakoff and Johnson reveal that the semantic basis of metaphor is not limited to similarity; our metaphorical conceptualization is also established by co-occurrence of two different experiences.

Lastly, the ontological metaphor in (3) conceptualizes abstract entities as if they were manipulative objects. This kind of metaphor frequently works as a basis of another structural metaphor. As will be discussed in 3.2 taking the IDEAS ARE FOOD metaphor for example, the motivation for the ontological metaphor should be carefully examined, since the way we perceive similarity between "states" and "containers," or between "mind" and "machines," is not so straightforward as is generally expected.
2.2. Metaphorical Mapping

In 1987, each of the authors of *Metaphors We Live by* independently made significant proposals that led to the development of the current mapping theory. First, Lakoff (1987) proposes the view of "metaphorical mappings" between two different conceptual domains: the source and the target. Thus, Lakoff characterizes metaphor as a set of correspondences of the source and the target, integrating both "similarity" and "co-occurrence" as factors bridging these two domains.

On the other hand, Johnson (1987) introduces an important construct, "image schemas," which correspond to abstractions of recurrent patterns in our bodily experiences, and assumes that metaphor projects an image schema from one conceptual domain onto another. Instances of image schemas include *in-out* orientations of a container and various force-dynamic concepts such as compulsion, barriers of the force, counterforce and so on (cf. Talmy (1985)). As its appellation "embodied schema" indicates, the image schema is essentially rooted in physical and spatial experiences such as locations, movements, and object manipulations. If a pattern repeatedly occurs in such experiences, it will become well-rehearsed and stored in our long-term memory. Such an image schema is also utilized when the same pattern is perceived in another subjective and abstract experience (e.g. emotion, time, states and so on), and the two different kinds of experiences are metaphorically connected via the image schema.

The notion of metaphorical mapping is demonstrated by substantial linguistic analyses such as Sweetser (1988, 1990), and its mechanisms are elaborated by Lakoff (1993), who proposes the "Invariance Principle" as follows:

(4) Invariance Principle

Metaphorical mappings preserve the cognitive topology (that is, the image-schema structure) of the source domain, in a way consistent with the inherent structure of the target domain.

(Lakoff (1993: 215))

The principle above incorporates Johnson's insight that metaphor projects the image schema onto the target domain. Also, the latter half of the statement of the Invariance Principle intends to constrain the mappings occurring between the source and the target and thereby exclude implausible correspondences of the entities in both domains; this constraint is called "target-domain overrides" (Lakoff (1993: 216)), in that the inherent properties of the target domain automatically restrict and
determine the actual correspondences to the entities in the source domain.\(^1\)

As defined in the Invariance Principle, metaphorical mapping is first triggered by the identical image schema of the source and the target. Then correspondences are subsequently made between the entities in both domains (this is what Lakoff (1993) calls “ontological correspondences”), together with knowledge used to make inferences (or entailments) concerning each entity. The following are the mappings of elements and inferences involved in the LOVE IS A JOURNEY metaphor:

\[
\begin{align*}
(5) \quad & a. \text{ The lovers correspond to travelers.} \\
& b. \text{ The love relationship corresponds to the vehicle.} \\
& c. \text{ The lover’s common goals correspond to their common destinations on the journey.} \\
& d. \text{ Difficulties in the relationship correspond to impediments to travel. (Lakoff (1993: 207))}
\end{align*}
\]

Although Lakoff observes that the LOVE IS A JOURNEY metaphor is composed of these ontological correspondences, is the Invariance Principle able to predict what elements are preserved and not preserved in this overall mapping? I would like to return to this issue later.

2.3. Primary Metaphor: Another Trend

More recently, Grady (1997) challenged the view of metaphorical mapping by advocating “primary metaphors.” Grady assumes that primary metaphors are primitive in that they are acquired early in childhood on the direct experiential basis of co-occurrence of two different kinds of events, one of which is physical and spatial experience while the other is subjective and abstract. In addition, these primary metaphors are combined to form complex ones; Grady claims that most of the structural metaphors provided by Lakoff and Johnson (1980) are complex metaphors consisting of a set of primary metaphors, and that the actual motivation for the putative structural metaphors should be

\(^1\) Kövecses states the Invariance Principle as follows: “Given the aspect(s) that participate in a metaphorical mapping, map as much as knowledge from the source onto the target as is coherent with the image-schematic properties of the target.” (p. 103) This is somehow misleading since Lakoff’s original Invariance Principle in (4) does not necessarily refer to the mapping of knowledge (or inferences) in terms of image schemas.
sought at the level of such primary metaphors.

Let us briefly observe Grady’s analysis of a structural metaphor THEORIES ARE BUILDINGS, which is reduced to the following two primary metaphors:

\[(6) \quad \begin{align*}
&\text{a. ORGANIZATION IS PHYSICAL STRUCTURE} \\
&\text{b. VIABILITY IS ERECTNESS}
\end{align*}\]

(Grady (1997: 46))

According to Grady, these primary metaphors evade the problems THEORIES ARE BUILDINGS would imply. First, THEORIES ARE BUILDINGS lacks an experiential basis because we do not have the simultaneous experience of theories and buildings. Secondly, there are “gaps” in mappings, in that some outstanding elements in the source domain (BUILDING) cannot be mapped onto the target domain (THEORIES), as in (7):

\[(7) \quad \begin{align*}
&\text{a. ?This theory has no windows.} \\
&\text{b. ?The tenants of her theory are behind in their rent.}
\end{align*}\]

(Grady et al. (1996: 178))

If the conventional expressions in (1b) are actually motivated by the primary metaphors in (6) rather than by THEORIES ARE BUILDINGS, it will be reasonable that the metaphorical expressions in (7) are excluded due to a lack of motivation.

This view is incorporated into Lakoff and Johnson (1999), as evidence of embodiment of conceptual metaphors in a neurobiological term: primary metaphors are physically motivated in the sense that they are learned by co-activation of neural connections of two different experiences. Kövecses also adopts the view of primary metaphors, but there are some significant differences from Grady’s view, as will be discussed later.

3. Kövecses’ Treatment

Kövecses neatly surveys the fundamental theoretical issues observed so far. In particular, there are a couple of points worth noticing: first, Kövecses shows how the detailed process in which metaphorical mappings are achieved; secondly, he closely examines the problems as to the selection of source/target concepts—in fact, a single source concept can be employed for an array of target concepts (e.g. LOVE IS A JOURNEY; AN ARGUMENT IS A JOURNEY) while a single target can be characterized metaphorically in terms of multiple source concepts (e.g. LOVE IS A JOURNEY; LOVE IS WAR; LOVE IS MADNESS and so forth). In this section,
let us observe Kövecses’ argument concerning the core of the mapping system in some detail.

3.1. Partial Nature of Mappings and Primary Metaphors

In Chapter 7, Kövecses deals with the issue of the partial nature of metaphorical mappings, and characterizes the phenomenon as “partial utilization” of the source domain and “partial highlighting” of the target domain. That is, selected aspects of the source and the target are connected via metaphorical mappings. As an illustration, the conceptual metaphor THEORIES ARE BUILDINGS utilizes the following aspects of the source domain:

(8) a. construction
    b. structure
    c. strength of the structure

By the utilization of the aspects of the source described above, the corresponding aspects of the target domain (THEORIES) are highlighted, others being hidden simultaneously, as sketched in the diagram below:

![Diagram](image)

Figure 1: partial utilization and highlighting

This leads to the restriction of the range of linguistic expressions based on this metaphor, and the further mapping system will be discussed in 3.2.

Based on Grady’s view of primary metaphors, Kövecses tries to answer the question of why some aspects in (8) are selected and utilized while others are not. According to Kövecses, if we assume that THEORIES ARE BUILDINGS is actually motivated by the primary metaphors in (6), the mappings will be restricted to those aspects in (8), as Grady
argues.

However, the discussion that follows is not fully compatible with the analysis above. In Chapter 9, Kövecses observes the case where a single source concept characterizes multiple target concepts, as shown below:

(9) a. THEORIES ARE BUILDINGS:
    Increasingly, scientific knowledge is constructed by small numbers of specialized workers; Our view, he said, is that these claims are entirely without foundation.

b. RELATIONSHIPS ARE BUILDINGS:
    Since then the two have built a solid relationship.

c. CAREERS ARE BUILDINGS:
    Government grants have enabled a number of the top names in British sport to build a successful career.

d. A COMPANY IS A BUILDING:
    Ten years ago, he and a partner set up on their own and built up a successful fashion company.

e. ECONOMIC SYSTEMS ARE BUILDINGS:
    There is no painless way to get inflation down. We now have an excellent foundation on which to build.

(p. 108)

Kövecses generalizes the conceptual metaphors above into COMPLEX SYSTEMS ARE BUILDINGS, and claims that the source concept "building" has the following "main meaning focuses":

(10) a. creation
    b. structure
    c. strength and stability of the structure

One will notice that these three meaning focuses are eventually the same as the partial utilization of the source seen in (8). According to Kövecses, the main meaning focuses of a source concept are predetermined since they represent its basic knowledge shared in the speech community, and one can tell what such meaning focuses are in a given community by looking at the conventional metaphorical expressions.

Furthermore, Kövecses argues that the mapping of COMPLEX SYSTEMS ARE BUILDINGS itself is achieved via the constituent mappings as follows:

(11) a. foundation → basis that supports the system
    b. framework → overall structure of the elements that make up the system
c. additional elements to support the framework → additional elements to support the structure of the system
d. design → logical structure of the system
e. architect → maker/builder of the system
f. process of building → process of constructing the system
g. strength → lastingness/stability of the system
h. collapse → failure of the system

(p. 111)

These mappings are generalized as the following “central mappings” which concern the main meaning focuses of the source concept:

(12) a. building → creation/construction of the system
b. physical structure → abstract structure
c. physical strength → abstract stability/lastingness

(ibid.)

One will find that the central mappings in (b) and (c) correspond to Grady’s primary metaphors listed in (6), as Kövecses himself admits.

The overall systems of the mapping can be summarized in the diagram below:

```
source (BUILDINGS)       target (COMPLEX SYSTEMS)
main meaning focuses:
  • creation    →     • creation of the structure  
  • structure    →     • abstract structure
  • strength    →     • abstract stability
          central mappings

                   constituent mappings
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Figure 2: central mappings in COMPLEX SYSTEMS ARE BUILDINGS

Here arise a few problems with respect to the elaborate system proposed by Kövecses. First, one may wonder which comes first, central mappings or constituent mappings. For Kövecses’ argument can be interpreted in two ways: the central mappings in (12) are gained by generalization of constituent mappings, or central mappings derive the constituent mappings. The former possibility clearly contradicts Grady’s definition that primary metaphors (i.e. central mappings in Kövecses’ terminology) are acquired first and then motivate the overall complex metaphor. Even if we adopt the latter possibility, there is
another problem: does it sanction the implausible instances in (7) or not? If the central mappings (including primary metaphors) trigger the constituent mappings and allow for their derivations and extensions without any condition, this view could not adequately restrict the range of possible linguistic expressions, and therefore the explanatory effect of primary metaphors we saw earlier will be largely lost.

In either event, the "compositional" view such as Kövecses' central mappings and Grady's primary metaphors can be problematic when it comes to the matter of "novel" metaphorical expressions. How will it explain the non-conventional (but fully interpretable) expressions below?

(13) a. His theory has thousands of little rooms and long, winding corridors.
    b. He prefers massive Gothic theories covered with gargoyles.
    c. Complex theories usually have problems with the plumbing.

(Lakoff and Johnson (1980: 53))

These are based on the conceptual metaphor THEORIES ARE BUILDINGS, since they include terms relevant to a building. Grady's theory would fail to analyze them because it claims that the complex metaphor, THEORIES ARE BUILDINGS, does not actually motivate linguistic expressions. In this regard, Kövecses observes as follows:

(14) ... we talk about partial metaphorical utilization in the course of conventional thought and language use. When we think and speak unconventionally, we can extend our conventional patterns of thought and language into what we called "unutilized parts of the source." (p. 82)

Since the utilized part of the source is essentially equivalent to the main meaning focus in Kövecses' argument, the statement above implies that the main meaning focuses of the source may also increase. However, unless the conditions that allow for such extensions are articulated, the primary-metaphor theory cannot constrain the range of possible mappings as it is intended to.

Also Kövecses' treatment of the primary and complex metaphors is different from Grady's. Since Kövecses presumes that the "main meaning focuses" of the source domain directly lead to the central mappings, the source concept of a complex metaphor ("building" in the case of THEORIES ARE BUILDINGS) should be given first. In contrast, Grady assumes that what really exist are primary metaphors alone, and a com-
plex metaphor emerges because of a certain prototype effect: the prototype of "physical structure" in the primary metaphor (6a) corresponds to a building in general. Thus, although central mappings in Kövecses and primary metaphors in Grady look identical, their definitions and functions differ in a slight but significant way.

Although the mapping system depicted in Figure 2 is meant to be an alternative to the Invariance Principle, it should be kept in mind that the target domain is provided first, and that an appropriate source domain is selected to make the target more understandable. This means that the properties of the target basically determine the elements mappable from the source domain, as stated in Invariance Principle; in other words, the Invariance Principle has an effect of restricting implausible mappings, without excluding the possibility of novel mappings as in (13).

3.2. Entailments and Ontological Correspondences

Next, let us look into the issue of the level at which metaphorical correspondences occur. In connection with the partial mappings, Kövecses proposes the steps in which correspondences occur as follows:

(15)  
   a. source domain(s) for a given target  
   b. aspects of the source  
   c. elements of aspects  
   d. rich knowledge about the elements

(p. 94)

(15c) corresponds to what Lakoff (1993) calls "ontological correspondences," i.e. the mappings in the object-level. When the objects in the source and those in the target are connected by one-to-one mapping, inferences (or entailments) concerning each object are also mapped as much as possible under the Invariance Principle.

Certainly this process works in many metaphorical mappings, but note that there can be the opposite course of mapping. Consider the case of the IDEAS ARE FOOD metaphor exemplified in (1c). As pointed out by Lakoff and Johnson (1980) and Kövecses himself, this metaphor is first motivated by the ontological metaphor by which abstract notions are given object-like status. However, it is still unclear why this metaphor selects "food" as its source among other objects, despite the fact that there is no perceivable similarity between food and ideas in isolation. Rather, I would like to suggest that the source "food" is selected due to the set of rich knowledge or inferences concerning the target "ideas," as described below:
(16)  a. x is incorporated into the inside
    b. the purpose of taking x is usually to get a benefit from x
    c. in order to be incorporated, x should be decomposed and absorbed (however, these processes may or may not succeed, due to the property of x)

Note that the variant x can be fulfilled either by "ideas" or by "foods." Thus, "ideas" are comparable to "foods" because of their similarity in their purposes in (16b) and processes in (16c), rather than any object-level similarity. The former is regarded as "pragmatic similarity," which utilizes a certain similar goal shared by the source and the target (see Suzuki (1996) for details).

The process in which ideas and food are decomposed strongly motivates the IDEAS ARE FOOD metaphor, since "drinking" seldom works as the source of the "ideas," despite the fact that it is also taken into body and brings some benefit. This is because drink usually does not require a process of decomposition such as biting into pieces to get through the throat.

This holds for ontological metaphors in general; for example, in the STATES ARE CONTAINERS metaphor there are neither similarity in attributes nor co-occurrence between the state and the container. Nevertheless, one's state is easily captured and interpreted in terms of a container, if it has temporal limits and allows for the change of its content: the states describable via this metaphor are restricted to temporary, not permanent ones; "in love," "in trouble," "out of trouble," and so on.

The observation here implies that the mappings at the object-level are not necessarily required as Kövecses expects. In the next section, I would like to propose that what is crucial to metaphorical mapping is relational similarity rather than the object-level similarity, in terms of the structural-mapping theory of analogy. Taking such relational and structural similarity into consideration will offer a key to the solution of what seems problematic in the analysis of Kövecses, and of Grady as well.

4. Analogy and Relational Similarity in Metaphor: An Alternative

As is generally accepted, analogy and metaphor are closely related to each other since both pertain to the similarity of two things that are essentially of different kinds. Here, let us observe some significant theories of analogy, though quite briefly due to the space limitations of the
4.1. Analogy Theories

Among the most significant and persuasive theories of analogy is the "structural-mapping" by Gentner (1983). This theory proposes that what plays the most important role in analogy is higher-order similarity, rather than lower, object-level similarity. What underlies this view is the following syntactic distinction used for the representation of knowledge of external situations:

1. object (and its attribute)
2. first-order (lower-order) relation: predicates taking two or more objects as arguments: \([x \text{ cuts } y]\)
3. second-order (higher-order) relation: predicates taking propositions as arguments: \([[x \text{ cuts } y] \text{ CAUSE } [y \text{ goes to } z]]\)

Based on such distinctions, Gentner explicitly observes as below:

(18) An analogy is a comparison in which relational predicates, but few or no object attributes, can be mapped from base to target. (Gentner (1983: 159))

To see how this works, consider one of the tasks which require analogy to satisfy the variant in the form of “A: B = C: x.” The variant x is correctly fulfilled, first by detecting a relation that holds between A and B, and then by adapting it in parallel between C and x. As an illustration, to solve the formula “hand : arm = foot : x” we need to extract the part-whole relation on the left, and adapt it to the right; of course x should be fulfilled by “leg.” That is, this task resorts only to similarity in relation, not in the object-attributes of any of A, B, or C.

Holyoak and Thagard’s multi-constraint theory is more flexible in that it accepts the utilization of not only relational but object-level similarity for analogy. However, they also note that the relational, system-level correspondence strongly motivates the analogy and has the most powerful effect, as shown below:

(19) Although sensory and semantic similarities are often useful in analogical thinking, sophisticated use of analogy depends on the constraints of structure and purpose in addition to that of similarity. […] Mappings can be supported by similar attributes, similar first-order relations, and similar higher-order relations. The richest analogies employ system map-
pings involving relations between propositions.

(Holyoak and Thagard (1995: 37–38))

Some research has shown that object-level similarity, available as it may be, often confuses the analogy and results in wrong inferences. For example, Goswami and Brown (1989) prove that, although it has been considered that younger children are poor at the analogy task “A : B = C : x,” even 3-year-olds can solve this task if they have already learned the abstract relation to be extracted from the left of the formula: “chocolate bar : melting chocolate = snowman : melted snowman,” in which the causal relation of melting is familiar to the children. Otherwise, they fail to get the correct answer since they pay attention to the attributes of the object involved, on which they depend for their inferences. The study of Goswami and Brown reveals that what counts in analogy is not similarity in object-attributes but rather relational similarity, and also suggests the importance of the ability of abstraction in analogy, as is discussed in the next section.

4.2. The Importance of Abstraction in Analogy and Metaphor

The theories we have seen so far seem to agree on the recognition that the driving force of analogy is relational similarity abstracted away from the object-level attributes. Thus, the perception of such relational similarity inevitably presupposes the mental processing of “abstraction,” by which a certain schematic commonality is extracted. This view is also compatible with Suzuki’s (1996) “quasi-abstraction” that plays a role of mediating the source and the target. According to Suzuki, the quasi-abstraction available in analogy forms such a functional and semantic unity as to contribute to the achievement of the goal of analogy.

Here, I would like to propose that what guarantees such relational similarity includes an image-schematic structure. Although the theories of analogy are constructed in terms of propositions (relations) and their variants (objects) following the tradition of predicate logic, it is not impossible to assume that non-propositional schemas also contribute to the perception of relational and structural similarity. And the gestalt nature of an image schema matches the property of Suzuki’s quasi-abstraction as a semantic and functional unity. In fact, not a few of the structural metaphors suggested by Lakoff and Johnson (1980) are motivated by similarity in image schemas. A typical example is the LOVE IS A JOURNEY metaphor; since the source domain (JOURNEY) is a
kind of physical movement, it easily evokes the image schema of SOURCE-PATH-GOAL, which is mapped onto the target domain (LOVE):

![Figure 3: the SOURCE-PATH-GOAL schema in LOVE IS A JOURNEY](image)

Note that what is primarily responsible for linking these two domains is the SOURCE-PATH-GOAL schema, which subsequently brings in the ontological correspondences listed in (5). These ontological correspondences are impossible if one compares them solely at the object-level; for example, lovers and travelers differ in that the lovers are always a couple of people while the travelers may be more than three, and the enduring period of love is usually much longer than a journey. These come into correspondence by virtue of the precedent mapping of the image-schema structure, which renders these essentially differing elements "similar" in a certain way.

Also motivated by an image schema are various metaphors utilizing the concept of a container; its image schema has the structure with *in-out* orientation, allowing for the spatial movement of its content either into or out of the container.

The idea that relational and structural similarity motivates metaphors is advantageous when it comes to the question of the "sufficient amount" of the individual ontological mappings to establish a certain metaphor: one may wonder to what extent the elements in the target and the source should be mapped if not all are connected. This will not matter if the mapping between the source and the target is achieved by their correlation at the relational and structural level; the more ontological correspondences occur subsequently, the richer the mapping will be.

As shown so far, Kövecses’ argument has room for incorporating the function of relational similarity perceived through abstractions such as image schemas. Of course there are various forms of abstractions

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2 What Kövecses calls the “perceived structural similarity” eventually corresponds
other than image schemas, and they are also available in metaphorical mapping. For example, it has been proven that more complex abstractions such as scripts, scenarios and plots are available in analogical mapping. The conceptual metaphor ARGUMENT IS WAR is also considered to be based on the script of the two events (cf. Lakoff and Johnson (1980: 80–81) in which “experiential gestalts” actually correspond to the scripts of war and argument). Nevertheless, the image schema seems the most powerful and versatile, given its nature and the fundamental principle of conceptualization, i.e. “embodiment,” as is discussed in the next section.

5. Great Chain Metaphor versus Embodiment

In Chapter 10, Kövecses offers an interesting attempt to show that the metaphors of various kinds are governed by a couple of systematic, generic metaphors. He points out that entities in our external world are classified into either “things” or “relations” among things (this observation is fully compatible with the cognitive-grammar view that grammatical categories are mainly reduced to things and relations (Langacker (1987))). Accordingly, the metaphors concerning them are reduced to two kinds: the Great Chain metaphor for things, and the Event Structure metaphor for relations. In this section, I would like to focus on the Great Chain metaphor and examine the extent to which this really works, and then propose an alternative treatment of this phenomenon.

5.1. The Great Chain Metaphor

Let us begin by introducing the Great Chain metaphor, which was originally proposed by Lakoff and Turner (1989). This metaphor primarily concerns the Christian folk model of hierarchy called “The Basic Great Chain (of being),” where entities in the external world are ordered as follows:

(20) Basic Great Chain of Being:
    humans > animals > plants > complex objects > natural physical things

According to Kövecses, (20) becomes a metaphorical system when a
to the kind of similarity based on image-schemas, but it is not revealed how such structural similarity is perceived in reality.
target of a certain level of the chain is employed to understand a source at another level (pp. 126–127). As an illustration, Kövecses analyzes how the target domain “abstract complex systems” including “theory,” “society,” “organization,” and “human relationships” is metaphorically characterized using the “Extended Great Chain”:

\[(21)\] Extended Great Chain:

\[
\text{God} \succ \text{cosmos/universe} \succ \text{society} \succ \text{humans} \succ \text{animals} \ldots
\]

Kövecses tries to account for various kinds of metaphors pertaining to “abstract complex systems” as listed below, by suggesting that they are all subsystems of the Extended Great Chain metaphor in which the target (an abstract complex system) is understood in terms of things at lower levels (humans, inanimate objects and so on):

(22) a. AN ABSTRACT COMPLEX SYSTEM IS THE HUMAN BODY:
Politicians are being blamed for all the ills of society.
Few of them have the qualifications or experience to put an ailing company back on its feet. (p. 129)

b. ABSTRACT COMPLEX SYSTEMS ARE BUILDINGS:
Since then the two have built a solid relationship.
The truth is that standard economic models constructed on the evidence of past experience are of little use. (p. 130)

c. ABSTRACT COMPLEX SYSTEMS ARE MACHINES:
The authorities now seem to be finally setting in motion the legal machinery. (p. 131)

d. ABSTRACT COMPLEX SYSTEMS ARE PLANTS:
Please turn to the local branch of the organization.
She has grown a lot as a scholar lately. (p. 99)

As a matter of fact, the originally proposed mechanism of the Great Chain metaphor is far more complicated in Lakoff and Turner (1989) than in Kövecses. Lakoff and Turner observe that the Great Chain metaphor is composed of the following four aspects:

(23) a. The Basic Great Chain
b. The Nature of Things
c. Generic-Is-Specific metaphor
d. Maxim of Quantity

Among these, (23a) and (23b) are commonsense folk models of the world and (23d) is one of the pragmatic principles provided by Grice (1975). What renders the Great Chain metaphoric is the Generic-Is-Specific metaphor in (23c), which singles out a generic-level schema
among specific schemas and projects it onto a higher-level target.

The Nature of Things in (23b) pertains to the behavior that comes from the attributes in the Great Chain, which assumes that the higher-level thing subsumes the properties of lower-level ones. As a result, the following hierarchy is established:

```
  higher-order attributes     higher-order behavior
    [humans]
  instinctual attributes     instinctual behavior
    [animals]
  biological attributes      biological behavior
    [plants]
  structural attributes      functional behavior
    [complex objects]
  natural physical attributes behavior
    [natural physical things]
```

Figure 4: The Basic Chain of Being and The Nature of Things

Then, the Maxim of Quantity restricts the properties available in such a way that what matters is the highest-ranking property of the level we are referring to. For example, suppose that we refer to something at the animal-level. Although the animal has instinctual, biological, structural, and natural physical attributes, the property that matters is the instinctual one; if our concern were directed at lower-level attributes such as the structural one, the reference to the animal-level would provide us a superfluous amount of information, violating the Maxim of Quantity.

To illustrate the Great Chain metaphor, Lakoff and Turner deal with the interpretation of proverbs. In general, a proverb only contains descriptions of the source domain alone, but the intended target domain (often of human events) is easily understood even without any context. In the case of “Big thunder, little rain,” this depicts a natural phenomenon in which a certain causal event (big thunder) leads to a result much smaller than expected (little rain). This works as proverb when we adapt such a causal relation to various human events, giving rise to a nuance of admonition. Lakoff and Turner explain the interpretation of this proverb in terms of the Great Chain metaphor, as follows:
(24) a. The Basic Great Chain links the storm and human beings.

b. The Nature of Things picks out the causal relation in the attributes and behavior in the levels of storms and human beings.

c. The Maxim of Quantity selects the highest-ranking property at each level.

d. By Generic-Is-Specific metaphor, the generic-level structure is extracted from the specific-level knowledge about storm, and is mapped onto the target domain (human beings).

Now let us return to Kövecses' argument in this regard. Since his explanation lacks the adaptation of the Generic-Is-Specific metaphor, there can be, as Kövecses observes, two directions in which the mappings of the Great Chain metaphor occur: a lower-level source to a higher-level target, and conversely, a higher-level source to a lower-level target. The latter corresponds to personification of animals or inanimate objects, though Kövecses himself notes that the former direction is more general. Nevertheless, in subsuming the mapping from higher to lower, Kövecses' Great Chain metaphor contradicts the original one proposed by Lakoff and Turner.

5.2. Generic-Is-Specific Metaphor versus Abstraction

Then, will it work if Kövecses' analysis incorporates the Generic-Is-Specific metaphor? In fact, the Generic-Is-Specific metaphor itself is doubtful since it is too broad and generic to capture the behavior of the individual conceptual metaphors. As for the instances given by Kövecses, we might gain super-ordinate metaphors such as ABSTRACT COMPLEX SYSTEMS ARE HUMANS, INANIMATE OBJECTS, PLANTS and so on; however, these would tell nothing about the reason why the target domain (abstract complex systems) is understood in terms of, for example, "machines" among other inanimate objects.

Instead, I maintain that what is intended by the Generic-Is-Specific metaphor actually corresponds to our mental operation of "abstraction" and "projection," provided that the Generic-Is-Specific metaphor extracts a certain generic-level structure from specific images and projects it onto the target domain.

In this regard, Turner's (1996) observation is worth mentioning. He shows that the image schemas, abstract patterns extracted from basic
physical experiences such as movement, movement of an object and object manipulation, are flexibly employed and projected at various levels, from proverbs to parables. In the light of Turner’s analysis, the proverb “Big thunder, little rain” we saw earlier contains an image schema of a causal relation in which the cause fails to bring about the expected result. The natural and environmental phenomena this proverb refers to are so familiar in our experiences that we can utilize them as the source domain. By mapping the image schema onto another domain, the phrase in question works as proverb. Thus, Turner’s analysis has advantages over Lakoff and Turner’s in that its adaptation is not limited to the interpretation of a proverb, and that it presupposes just a simple cognitive principle of flexible projection of the extracted schema, without recourse to the complex system of the Great Chain presented by Lakoff and Turner.³

5.3. Embodiment

Then, let us return to the metaphors of “abstract complex systems” observed by Kövecses; as I observed earlier, the question of why this target domain takes as its source domains the human body, the machine or the plants remains unsolved. Also, it is unclear whether the hierarchical nature of the Great Chain is reflected in these metaphors.

What is useful for characterizing the direction of mapping appropriately is the notion of “embodiment” (Lakoff and Johnson (1999)), which regards our bodily experiences as constituting the basis of conceptualization. Specifically with respect to metaphors, it is reasonable for physical experiences to function as the source domain, since they are employed to make a better understanding of the target, which is abstract and less familiar than the source.

Note that the abstract complex system metaphors all pick out as their source something manipulative for human beings, while the targets such as society, politics and economy are higher-level entities subsuming

³ As for the interpretation of a proverb, Fukuda (2001) shows that the reference to basic-level objects makes it easiest to extract and evoke a relevant schematic structure. That is, the schematization to be employed for further projection is more difficult if the given stories are too specific or too generic. This also suggests the structural metaphors function as cues for mappings more efficiently than primary metaphors that are quite generic in nature.
these objects. Thus, it is assumed that the human body, machines and plants function as source domain because they are familiar, readily accessible elements in our physical experiences and meet the requirement of embodiment, not because they are "lower" than the target in the Great Chain.

Although Kövecses himself refers to the embodiment in metaphor somewhere else, his definition does not seem sufficient. Concerning the PRESSURIZED CONTAINER metaphor for anger, Kövecses observes as follows:4

(25) When a metaphorical concept has such an experiential basis, it can be said to be embodied. However, not all metaphorical concepts have such clear bodily motivation (in the sense of physiological) as in the case of the pressurized container metaphor for anger. It can be suggested that there are other kinds of correlations in experience that can motivate other metaphors, including perceptual, cultural, category-based, etc.

In the quotation above, Kövecses seems to limit the range of "embodiment" to something automatic like physiological experiences. However, the notion of embodiment should be broader. Lakoff and Johnson (1999) define it in terms of bodily experiences, one of which is the spatial relation. For example, in-out orientation arises when our bodies are taken as containers to put something in, or as contents of containers such as rooms, houses, universities and so on. Also important is the spatial movement: we can move by ourselves and move something to another location. And tactile experiences like manual manipulation of an object are fundamental to our embodiment as well. Lakoff and Johnson refer to these as "phenomenological embodiment," while the unconscious bodily basis occurring in the brain is called "neural embodiment." If we adopt the broader view, Kövecses' claim that factors other than embodiment may motivate conceptual metaphors needs careful re-examination, since some of them actually turn to be based on

4 Lakoff (1987: 381–382) briefly summarizes the folk model of physiological effects of anger as follows: increased body heat, increased internal pressure (blood pressure, muscular pressure), agitation, and interference with accurate perception. Kövecses (2002: 159–160) discusses the relationship between these physiological effects and the PRESSURIZED CONTAINER metaphor in some detail.
embodiment, as we will see later.

5.4. Experiential Basis Again

Now, let us consider the fundamental issue of the "experiential basis" of conceptual metaphors. If significant motivation for metaphor is embodiment rather than experiential basis (more strictly, experiential correlations), we can defend the status of structural metaphors against Grady's criticism that they lack experiential bases. In fact, one will find that structural metaphors such as LOVE IS A JOURNEY, IDEAS ARE FOOD, THEORIES ARE BUILDINGS take physical experiences as their sources and thereby satisfy the condition of embodiment. Considering the fact that the emphasis is shifted to the embodied nature of our mind in Lakoff and Johnson (1999), the experientialism Lakoff and Johnson (1980) originally proposed might as well be understood as a source of the embodiment.

With regard to the experiential basis, Kövecses' position is ambiguous since he assumes that both correlations in experience and subjectively perceived similarity serve as experiential bases (p. 76). This is possibly because Kövecses focuses on the fact that the perceived similarity emerges in experiences, not objectively preexisting, as the thesis of Lakoff and Johnson (1980) implies. Thus the notion of experiential bases itself requires an explicit definition, and Kövecses also needs to account for what the "experiential basis" means from his point of view.

6. Typology of Conceptual Metaphors

The notion of embodiment will provide another perspective to the issue of universality and cultural variations of conceptual metaphors discussed in Chapters 12 and 13. Kövecses argues that the universality of conceptual metaphors can be found at the generic-level, while the cultural variations occur at the specific-level. Certainly his proposal sounds reasonable, but we would like now to examine the details therein by bringing "embodiment" to the foreground.

Kövecses' proposal that the universality of conceptual metaphors is found in the generic-level can also be captured in terms of the degree to which human bodily experiences are universal. The basic emotion metaphors Kövecses has dealt with are likely to be universal, since the physiological reactions accompanying emotional experiences are considered to be common regardless of the cultural environment; in the case
of HAPPY IS UP, the upright posture correlates with happiness, but not with sadness. Though such a correlation itself requires further inquiry, the commonality of the bodily experience leads to the universality of the HAPPY IS UP metaphor. Also the metaphor by which the human body is regarded as a container and human mind as the content is quite ubiquitous as Kövecses observes. This is because the human body is a typical “container” and the mind is likely to be taken as its content, since mental phenomena such as ideas, emotions and feelings emerge internally and become accessible to others if put outside the container.5

On the other hand, the specific-level realization of underlying conceptual metaphors may vary from culture to culture. Kövecses suggests that the account for this phenomenon requires “broader cultural context,” and examines the language-specific elements regarding the PRESSURIZED CONTAINER metaphor for anger in some languages: “four humors” in Euro-Americans, “hara” in Japanese, and “qi” in Chinese. What is interesting in these examples is that the specificity can be seen either in the container (as in “hara” in Japanese) or in the content (as in “four humors” and “qi”) of the PRESSURIZED CONTAINER metaphor. That is, Euro-Americans and Chinese metaphorically conceptualize emotions as substances or material, while they do not receive metaphorical interpretation in Japanese. Rather, the Japanese social tradition of politeness has in particular made it a virtue not to blurt out one’s real emotions or intentions in order to save social faces, as Kövecses (p. 187) observes making reference to the distinction of honne and tatemae. Hence, in Japanese it is significant where to put the true intentions; “hara” is selected as their container, since it refers to the cavity in the center of one’s body accommodating stomach, bowels and so on (therefore, the scope of “hara” is broader than “stomach” in English) and can be a typical container to hide one’s intentions in.

Such an observation suggests that the cultural tradition or convention

5 This metaphorical understanding of the mind as the content of a container (namely the human body) is also shown by Johnson (1987), in which the expression “Let out your anger” is given as an illustration of the image schema of the container. In this case, making anger out of the container means revealing it by verbal, facial and behavioral expressions. This also implies that anger is made recognizable and accessible to others by bringing it outside the container, and hence meets an entailment concerning the container image schema that the content object can be hidden by the container from the observer’s view (Johnson (1987: 22)).
further affects actual mappings, as Kövecses (2003: 319) notes that “the linguistic expression of the conceptual metaphor may be influenced or shaped by differences in cultural-ideological traits and assumptions characterizing different cultures.” In this way, we can find a correlation as follows: less-embodied social factors operate in the cultural variation of metaphorical expressions, whereas fundamental physical experiences contribute to the universality of underlying conceptual metaphors. In any case, Kövecses presents a new perspective upon the issue of semantic universality and variations in terms of conceptual metaphors, and suggests further possibilities of typological studies along this line.

7. Conclusion

In this article, we have examined the mapping mechanism in Kövecses by contrasting it with other relevant views. In particular, we have suggested that Kövecses’ work under review can be supplemented with the notions of relational similarity in analogy, image schema and embodiment, and shown some alternatives to his analysis. Although there are several matters that call for deeper explanation and argument, they can be dealt with elsewhere by the author himself or others, considering the introductory nature of this monograph. Nonetheless, it is certain that this book works as a lighthouse shedding light on the cognitive-semantic theory of metaphor, and also as an excellent guide for those who are thinking of studying metaphor not only in linguistics but in areas such as psychology, semiotics and literature, providing them with many insights.

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