Metaphorical Thinking and Comparison Cognition

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Abstract

Metaphor in language is the manifestation of metaphorical thinking. Although metaphor has been studied from different perspectives with different focuses, systematic researches on metaphor have seldom been conducted from the angle of metaphorical thinking. Approaching from the perspective of thinking, this paper aims to elaborate the cognitive mechanism of metaphor and claims that comparison cognition generates metaphorical thinking which is a dynamic process consisting of some cognitive links that constitute an organic whole.

Key words: Metaphor; Metaphorical thinking; Comparison cognition

INTRODUCTION

In the studies of metaphor different perspectives have been adopted. From rhetoric perspective, metaphor is often assumed as one kind of tropes which are more or less ornamental devices used in the rhetorical style. This position holds that metaphor is an ornament which can beautify language like making language concise, vivid, humorous, impressive, etc.. From traditional semantic perspective, metaphor is regarded as semantic controversion or deviance of normal language. This viewpoint argues that metaphor differs from ordinary language in that a literal reading of a metaphor produces a false statement or violates the semantic rules. As far as pragmatic perspective is concerned, Searle (1979) emphasizes that the problem of metaphor concerns the relations between word and sentence meaning, on the one hand, and speaker's meaning or utterance meaning, on the other. He asserts that metaphorical meaning is always speaker's utterance meaning. According to him, when we hear someone say "Sally is a pig", we know that the speaker does not mean what he says literally, and instead he is speaking metaphorically. Morgan (1979) expresses that he endorses Searle's opinion that metaphor can only be understood by close attention to the distinction between sentence meaning and utterance meaning. Metaphor is also studied from a cognitive perspective. Black (1979) treats metaphors as cognitive instruments, which provide new angles for us to observe the world. Lakoff and Johnson (1980) proclaim that metaphor is a matter of thought and action and only derivatively a matter of language. In their opinion, our language is metaphorically structured and human thought processes are largely metaphorical. Lakoff (2009) contends that metaphor is a normal, and mostly unconscious, mechanism of thought. Actually, metaphor itself is not a mechanism of thought. Metaphorical expressions in language can mirror the way of thinking or conceptualizing things on the grounds that they leave a lot of traces of thinking for us to detect. Through metaphor, we can discover the truth of metaphorical thinking. But what is the metaphorical thinking behind metaphor? About this question, little research has been done from a comprehensive angle. Although a lot of studies of metaphor have been carried out, different theories on the nature of metaphor have different focuses. Therefore, this paper attempts to deal with metaphorical thinking from a systematic perspective,

trying to grasp the essence of metaphorical thinking through the appearance of metaphor.

1. REEVALUATION OF THE THEORIES ON METAPHOR

1.1 Traditional Views

Human interest in metaphor has undergone a long history. Among the traditional theories on metaphor, the most representative two are the comparison theory and the substitution theory. Aristotle is the source of the comparison view of metaphor (Glucksberg & Keysar, 1993, p.422) and he most valued metaphor based on analogy because he regarded analogy as important for reasoning (Kittay, 1990, p.3). According to Aristotle's view, metaphor involves an analogy or similarity between two or more objects. But in Aristotle's framework of rhetoric, metaphor is mainly treated as a special lexical means for achieving rhetorical effect. In the 1st century, Quintilian put forth the theory of substitution which takes metaphor as the substitution of one metaphoric expression for one literal expression with the same sense. For example, in "Tom is a lion", the word "lion" is used in place of its equivalent literal expression "a courageous man".

Traditional theories have attached much importance to the rhetorical and ornamental functions of metaphor, but some cognitive elements can be found in traditional theories. Aristotle has realized there exists some relation between metaphor and comparison, especially has sensed the important role of similarity and analogy in metaphor. Although the substitution theory fails to give an explanation of how to substitute, the substitution link may be necessary, that is, after a series of correlated thinking activities which lead to the generation of metaphor, we will use the known or familiar to substitute the unknown or unfamiliar. In fact, this substitution is a result of conceptual integration, not the simple substitution between two words or two expressions. From the above discussion we can see that in the process of metaphorical thinking at least the following cognitive elements are included, such as comparing, finding similarity, analogizing and substituting.

1.2 Interaction Theory

The treatment of metaphor at the level of lexis went unchallenged until the 1930s when Richards proposed the interaction theory which is considered to be a transition stage from traditional to cognition. For Richards (1936), when we use a metaphor we have two thoughts of different things active together and supported by a single word, or phase, whose meaning is a resultant of their interaction. Richards suggests that metaphor is not just a verbal matter, a shifting and displacement of words, rather, it is the by-product of human thought process.

"Thought is metaphoric, and proceeds by comparison, and the metaphors of language derive therefrom." (Richards, 1936, p.94) Richards failed to elaborate how the interaction worked, but he confirmed the role of comparison in metaphor. Black (1979) developed the interaction theory on the assumption that we needn't have to know the similarities of the two distinct subjects, i.e. a principal subject (tenor) and a subsidiary one (vehicle), before metaphorical understanding and that similarities can be created via the interaction of the two subjects. The systems of the subsidiary subject and the principal subject interact with each other in the metaphorical understanding. During this process, the related commonplaces of the subsidiary subject organize and select the features of the principal subject system. According to Black's interaction view of metaphor, the metaphorical meaning results from a projection of features of the source (or vehicle) domain onto the target (or tenor) domain.

To sum up, Richards's and Blacks' interaction view breaks away from the traditional treatment of metaphor as a lexical deviation. This theory tells us metaphorical thinking is a dynamic process in which, according to Black, the thinking links of selection and projection should be included, that is, the metaphorical meaning results from the selection of features of the source domain and projection of the features of the source (vehicle) domain onto the target (tenor) domain. In the interaction theory, metaphor is no longer only a means of decoration, but a process of thinking. Since Richards, metaphorical study has begun its cognitive turning. And this theory lays a firm foundation for the followers of the cognitive view on metaphor.

1.3 Metaphor in Cognitive Linguistics

The cognitive nature of metaphor had not been further explored until the conceptual metaphor theory (CMT) was established by Lakoff and Johnson (1980), and not comparatively fully perfected until the blending theory (BT) was proposed by Fauconnier & Turner (1996, 1998, 2002). The conceptual theory argues that conceptual metaphors are systematic mappings across conceptual domains: one domain of experience, the source domain, is mapped onto another domain of experience, the target domain. The source domain is typically more physical or concrete than the target domain. All in all, a metaphor is a mapping of the structure of a source domain onto a target domain. In the blending theory, conceptual blending involves the temporary construction of simple cognitive models and the establishment of cognitive mappings between different mental spaces. The typical conceptual blending model consists of two input spaces structured by information from discrete cognitive domains, an optional generic or schematic space built by the abstract relational schemas common to input spaces, and a blended space that is an emergent structure containing selected aspects of structure from other spaces. Blending

involves the establishment of partial mappings between cognitive models in different spaces, and the projection of conceptual structure from space to space.

CMT and BT share many features with each other, as Grady, Oakley and Coulson (1999) put it: Both approaches treat metaphor as a conceptual rather than a purely linguistic phenomenon; both involve systematic projection of language, imagery and inferential structure between conceptual domains (mental spaces); both propose constraints on this projection. CMT and BT explain the complex and inextricable relationship between thought and language, having interpreted the process in which we can see how metaphor is produced and how meaning is constructed, but BT is more persuasive. As we know, mapping in CMT is unidirectional from the source domain to the target domain, and there is no interaction in a real sense. From the interaction theory, we know that metaphorical thinking is a dynamic process in which the metaphorical meaning results from selection of features of the source domain and projection of the features of the source domain onto the target domain. Although CMT emphasizes the projection or mapping function, it is only a thinking link of the metaphorical thinking. Another failure in CMT is mapping simply occurs in the two-domain model, while BT allows for two or more mental spaces and in BT the mapping is multidirectional in that projection can happen from the input spaces to the blend. In the blending process, connections are first made between corresponding elements in the separate input spaces. After the establishment of connections, a generic space appears which contains what the inputs have in common (Fauconnier & Turner, 2002, p.41). The final step in the blending process is to transfer the common information into the blended space. This space is the final output and it contains generic structure captured in the generic space. As the blend inherits partial structure from each input space, it develops emergent content of its own, which results from the integration of elements from the inputs. From BT, we can infer that the conceptual blending model is a powerful cognitive system which offers a better account for the production of metaphor. The model provides us with a dynamic picture: mappings in the typical four mental spaces are multidirectional; connections are built up between the two input spaces; similarities between the two input spaces are abstracted into the generic space, and then all the information are blended in the blend space and finally into an output space. All the spaces interact with each other and the interaction is really realized; in this cognitive model, the blending link is the most important and prominent in producing metaphor.

Based on the above analysis, we can see that the generation of metaphor is a dynamic cognitive process in which at least the following thinking links are included: Comparison, the establishment of association between two different things or concepts from different cognitive domains by finding similarities or creating similarities, interaction (mapping or projection) among different domains, blending, and these links are closely knitted with one another, of which we cannot lopsidedly emphasize any one and neglect the role of the other ones, and they constitute an organic whole.

2. COMPARISON COGNITION

2.1 Ubiquity of Comparison

According to *the New Oxford English-Chinese Dictionary* (2007), the meaning of "compare" is to estimate, measure, or note the similarity or dissimilarity between. It originates from Old French *comparer*, from Latin *comparare*, from *compar* 'like, equal', from *com-* 'with' + *par* 'equal'; "com-": with; together; jointly; altogether; "comparison" originates from Middle English, from Old French *comparesoun*, from Latin *comparatio(n-)*, from *comparare* 'to pair, match'; "analogize": To make a comparison of (something) with something else to assist understanding; "contrast": To compare in such a way as to emphasize difference. From the above interpretations, we can see that if things are to be compared, they need to be first jointed together or juxtaposed, otherwise, likeness, equal, and difference cannot be found; both "analogize" and "contrast" are born out of "comparison".

In Chinese, coincidentally, there is a Chinese character "比(*bi*)"which can match the English word "compare". "比(*bi*)" is an associative compound[1], as is shown in Picture 1, the left character is its form inscribed on animal bones or tortoise shells in the Shang Dynasty(16[th]BC-11th BC), the middle one carved on ancient bronze objects, and the right used in Chinese seal cutting.

甲骨文　　　金文　　　小篆

Figure 1
Ancient Writing Forms of Chinese Character "比(bi)"

The two parts of "比(*bi*)" indicate that two persons stand close together, or two persons stand side by side, stretching out their arms and legs as if to compare the size. Just because of "standing close together", "close/closeness", "intimate/intimacy", "juxtapose/

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[1] In the light of *A New Century Chinese–English Dictionary* (2004), associative compound is one of the six categories of Chinese characters under which Chinese characters are constituted; a character-formation method in which two characters are combined to form a new character, or two meanings are blended to create a new meaning, e.g.日(sun) and 月(moon) are combined to form 明(bright/brightness),which is related to light, opposed to 暗(dark/darkness).

juxtaposition", "like", and "equal" are often considered to be the original meanings of "比(*bi*)". Then, the meanings of "比(*bi*)" are extended to "compare/comparison", "analogize/analogy", and "contrast". Chinese character "比(*bi*)" has the same usage as the English word "compare", but presents the meaning of "compare" more vividly.

Comparison cognition is pervasive in our life and of great importance. The processes of comparison and mapping are central to all forms of human inference (Burstein, 1986; Collins, 1978; Collins & Loftus, 1975; Collins & Michalski, 1989), comparison underlies categorization (Smith & Medin, 1981), analogies and metaphor are also heavily dependent on the processes of comparison and mapping. From the above remarks, we know that comparison plays a significant role in cognition, but we often treat comparison and mapping as two discrete things without noticing that mapping is part of the whole comparison cognition. Langacker (1987) regards comparison as a ubiquitous phenomenon that occurs simultaneously in different domains and at different level of cognitive complexity. Langacker (1987) contends that the ability to effect comparisons underlies the detection of regularity and the imposition of structure on cognitive activity, without comparison, semantic

analysis concerning conceptualization, mental experience, and cognitive processing cannot go on. Thought is mostly unconscious (Lakoff & Johnson, 1999, p.3), cognitive functioning is largely autonomous (Langacker, 1987, p.112). Thus, often we neglect thinking of "比(*bi*)/comparison" itself.

2.2 The Cognitive Mechanism of Comparison

In the thinking of "比(*bi*)/comparison" itself, we frequently deal with it as an indivisible whole. But it is an analyzable organic whole composed of some cognitive links. Langacker (1987) divides comparison into some parts such as establishment of correspondences between distinct entities, scanning, selection, abstraction, and recall. Actually, comparison cognition is a dynamic process consisting of closely knitted cognitive links like setting the comparison standard or cognitive reference point, juxtaposing two or more entities, establishing correspondences between two or more things, finding vantage point, scanning, within-domain mapping or cross-domain mapping, and blending.

As Figure 2 shows, Oval A represents the source domain, standing for comparison standard（S）or cognitive reference point；Oval B is target domain (T). According to the conceptual space theory of
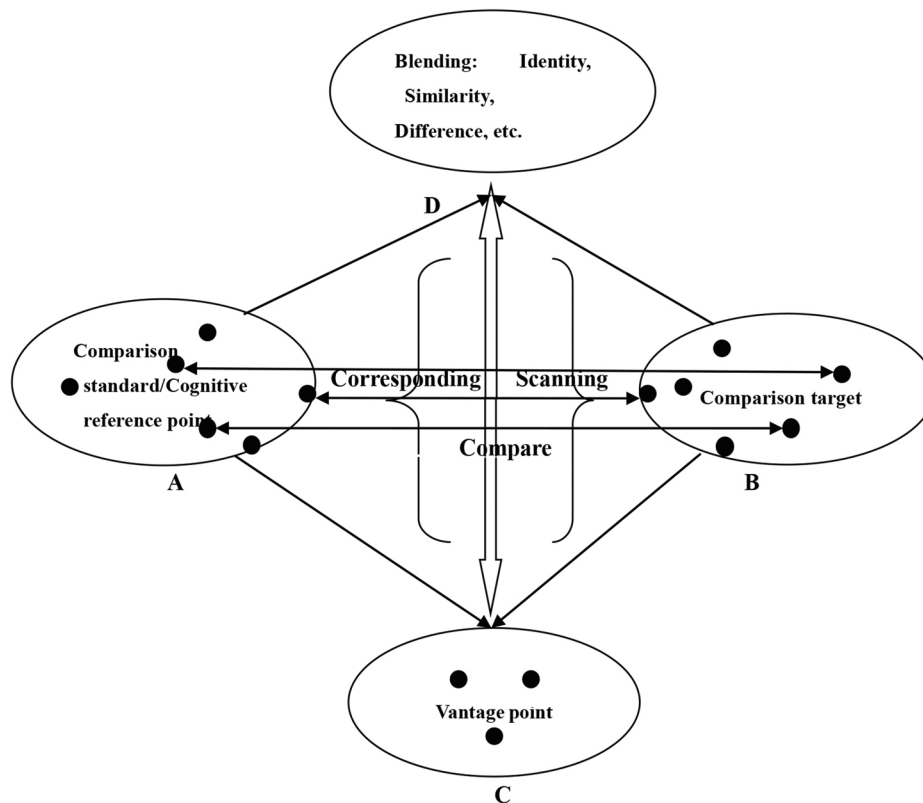

Figure 2
Model of Comparison Cognition

Gärdenfors (2004, 2011, 2014)[2], Oval A and B can also be considered as two conceptual spaces. In Gärdenfors' opinion, information is organized by quality dimensions that are sorted into domains like space, time, temperature, weight, color, shape; domains are endowed with a topology or metric; the dimensions form the framework to assign properties to objects and to specify relations between them. Gärdenfors (2011) argues that a natural property is a convex region in some domain, and a concept is represented as a set of convex regions in a number of domains, together with information about how the regions in different domains are correlated.

Gärdenfors（2011） takes "apple" as an example to explicate the concept of "apple", as Table 1 presents:

Table 1
The Concept of Apple

Domain	Region
Color	Red-yellow-orange
Shape	Roundish
Texture	Smooth
Taste	Regions of the sweet and sour dimensions
Nutrition	Values of sugar content, fibre content, vitamins, etc..
Fruit	Specification of seed structure, fleshiness, peel type, etc..

For Gärdenfors (2011), a conceptual space is a collection of quality dimensions divided into domains, but the dimensions of a conceptual space are not fully independent entities, they are correlated in various ways because the properties of those objects modeled in the space co-vary, for example, in the fruit domain, the ripeness and color dimensions co-vary; Concepts are not just bundles of properties, they are also correlations between regions from different domains that are associated with the concept. In Table 1, the "apple" concept has a strong positive correlation between sweetness in the taste domain and sugar content in the nutrition domain, and a weaker positive correlation between redness and sweetness. From Gärdenfors' conceptual space theory, we know that a conceptual space is not only a set of quality dimensions but also a collection of properties and correlations. On one hand, in a conceptual space, the properties may differ from one another or correlate with one another; on the other hand, the collection of quality dimensions and properties in a conceptual space determines its difference from other conceptual spaces. Meanwhile, the quality dimensions

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[2] A conceptual space is built up from geometrical representations based on a number of quality dimensions, and the primary function of the quality dimensions is to represent various qualities of objects, they correspond to the different ways stimuli are judged to be similar or different, for example, one can judge tones by their pitch, and that will generate a certain ordering of the auditory perceptions (Gärdenfors, 2004, pp.10-11).

and properties of a conceptual space can correspond and relate to the ones in another conceptual space. This is the reason why we can find the difference and correlation in and between things, and also the prerequisite of comparison cognition. In Figure 2, the black dots of Oval A and B represent the sets of all kinds of properties and relations in the two conceptual spaces. Through comparison, one or more points can be found which correspond to one another in the two conceptual spaces. These points can be considered as vantage points, which can mirror the angles from which people treat things (shown by virtue of the black dots in Oval C). Comparison juxtaposes S and T, in the process of which, a medium is often needed to join them together. The medium in comparative constructions can be encoded into a comparison mark. For example, in the Chinese sentence "我比他高", "比 (bi)" itself is a comparison mark. And in its English equivalent "I am taller *than* him", "*than*" can be treated as a comparison mark with the role similar to Chinese "比". In the process of juxtaposition, correspondences are established, then, the selection of vantage point is involved, as Oval C shows. Comparison is a dynamic process, where the vantage point is also a vector along which there is in some sense a scanning movement from S to T or T to S. In the movement, mapping may happen, that is, in the process of comparison, in identity/sameness/similarity judgment, mapping will work, but in difference judgment, mapping cannot be successfully completed. In Figure 2, the horizontal double-headed arrows designate corresponding, scanning and mapping. Based on the above mentioned cognitive links, a blending space comes into being (shown in Oval D). The blending is built up on the vantage points which are the prerequisite of blending, presented by the hollow vertical double-headed arrows in Figure 2. And the resultants of blending are the findings of identity, sameness, similarity, difference, etc.. In the course of comparison, by finding identity, sameness, similarity, metaphor can be produced.

2.3 The Functions of Comparison Cognition

We frequently compare the experience we are currently having to memories of earlier episodes, this cognitive capability shows that we can judge, consciously or not, various relations among our experiences (Gärdenfors, 2004, p.4). In particular, we can tell how identical or similar a new phenomenon to an old one, or how different the current experience is from what we have already encountered. We often interpret a novel experience with reference to previous experience, which Langacker (1987) relates to the inherent asymmetry between standard and target in acts of comparison. He holds that the previous experience can be an immediately preceding cognitive event; since the occurrence of an event leaves a temporary trace that facilitates its

repetition, one event naturally tends to be adopted as a standard for evaluating a directly subsequent one; the previous experience can also take the form of a well-entrenched routine activated for the structuring of current sensations. Our proclivity for interpreting new experience by means of previous experience is such that it is difficult for us not to notice the identity, the sameness, the similarity, the difference among things. But how can we find these characteristics among things? Fauconnier and Turner (2002) write:

> The recognition of identity, sameness, equivalence, A=A, which is taken for granted in form approaches, is in fact a spectacular product of complex, imaginative, unconscious work. Identity and opposition, sameness and difference, are apprehensible in consciousness and so have provided a natural beginning place for formal approaches. But identity and opposition are finished products to consciousness after elaborate work; they are not primitive starting points, cognitively, neurobiologically, or even evolutionarily.

From the above comments, Fauconnier & Turner have noticed that finding identity and opposition, sameness and difference, similarity and dissimilarity among things is not the primitive starting points and behind it there must be backstage cognition which plays a great part. But what is the backstage cognition here? It is comparison cognition—a way of meta-cognition that provides prime power for analogical reasoning, categorization, metaphorical thought, conceptual blend, etc..

Comparison is a medium by which the world is universally connected because it can join two or more irrelated things together to establish correlations between them. Actually, comparison cognition is not only a way of thinking which is generalized and ubiquitous but also a pervasive psychological and social phenomenon. We live by comparison. Through comparison, we can find identity and opposition, sameness and difference, similarity and dissimilarity, etc.. But all of these relations are two sides of the same coin. In the actual process of comparison we often ignore the opposition, difference, dissimilarity when finding identity, sameness, similarity and vice versa. In language, comparison can be encoded into all kinds of comparative constructions including simile and metaphor. In our life, through comparison with things, we can distinguish and recognize them, by finding various relations between them; through comparison with others, we enjoy dominance over others and bias again others, stepping into conservatism and standstill; meanwhile, we can find our own shortcomings and keep an open mind, leading to competition and progress. With comparison, we seek common ground and reserve difference so that we have friends, meanwhile we get rid of dissidents and have enemies; with comparison, we unite or split, even slip into fighting and killing….

3. THE RELATIONSHIP BETWEEN METAPHORICAL THINKING AND COMPARISON

By reassessing the traditional views of metaphor, we find that the traditional views have their own weakness which lies in the lopsided focus on only one of the thinking links in the process of generating metaphor. The interaction theory describes the dynamic characteristic of two thoughts active together in metaphor. Although conceptual metaphors emphasize systematic mappings across conceptual domains, the mapping in CMT is unidirectional, and there is no interaction in a real sense. CMT concentrates on the projection or mapping function, but it is only a thinking link of the metaphorical thinking. Compared with BT, CMT is less comprehensive, and BT provides us with a more dynamic picture: mappings in the typical four mental spaces are multidirectional; all the spaces interact wither each other and the interaction is really realized. Through the study of CMT and BT, we find that in the process of metaphorical thinking the thinking links of mapping and blending should be included. But what makes the blending happens? What is the prime power which leads to the conceptual integration? We cannot find the answer in BT. All that make the conceptual blending work is comparison cognition without which no blending happens at all. On the basis of the previous analysis of metaphorical thinking, we find that metaphorical thinking is a dynamic process consisting of a series of thinking links which are an organic whole.

Lakoff and Johnson (1980) claim that the essence of metaphor is understanding and experiencing one kind of thing in terms of another. But this kind of asymmetry can be considered as a special comparison, thus we can say in fact the essence of comparison is in a fully-fledged sense understanding and experiencing one kind of thing in terms of another. According to *Longman Dictionary of Contemporary English* (1995), metaphor is regarded as a way of describing something by comparing it to something else that has similar qualities, without using the words "like" or "as". Contemporary theorists treat comparison as the basic process underlying metaphor comprehension (Glucksberg & Keysar, 1993, p.422). For example, simile is usually treated as an explicit comparison between two things of unlike nature that share something in common, using a marker such as "like" or "as", for instance, "My son is like a teddy bear". In contrast, metaphor is often viewed as an implicit comparison between two things of different nature that have something in common, using the expressions like "A is B" (My son is a teddy bear), "BA" (my teddy bear son), or simply "B" (my teddy bear). From the discussion above we can see that comparison cognition is more comprehensive than metaphorical

thinking, that is, comparison cognition incorporates metaphorical thinking. Without comparison, no metaphor or metaphorical thinking exists.

CONCLUSION

In conclusion, metaphor in language is only a superficial linguistic phenomenon behind which it is metaphorical thinking that works; metaphor in language is only the result and the manifestation of metaphorical thinking; metaphorical thinking is a way of thinking with a dynamic process consisting of certain cognitive links any of which cannot be lopsidedly emphasized and any of which cannot be neglected; but we should know that all that keeps metaphorical thinking operating is the meta-cognition—comparison.

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