Embodiment and Bidirectional Mapping of Metaphor Generation- Empirical Analysis Based on Female Love Metaphor

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Abstract: The embodied nature of metaphor is not limited to direct physical experience, but also affects the generation and understanding of metaphor by the relevant indirect experience and belief of the cognitive subject. Under the influence of this kind of embodiment, the one-way cross-domain mapping mode from source domain to target domain inevitably has its limitations, and the guidance and restriction of the cognitive subject's knowledge of ontology on the metaphorical process should not be ignored. The process of metaphor realization is not only one-way "matching" and simple "generic", but also bidirectional metaphorical mapping, which makes metaphors in real life colorful enough. In this article, through the experimental investigation of female college students based on their experience and belief of love metaphors and mapping structure, and analyzes the metaphor of the relevant experience and belief influence on metaphor, thus further empirical metaphor generated by the body and the mapping of the biphasic and emphatically discusses the interaction of body side of target side effects.

Keywords: Metaphor; Mapping; Embodiment; Interactive; Women;

1. Introduction

Metaphor, an important topic in linguistics, has always been concerned by researchers from the traditional rhetoric research object to the important cognitive activities of human beings. For nearly half a century, people have devoted themselves to the study of the cognitive process of metaphor. One of the most important achievements is the study of metaphor mapping. Lakoff&Turner (1987) clearly defined metaphor mapping as "the corresponding set between two concept domains". Such correspondence between members of two sets is generally regarded as one-way [1-2], such as structure mapping model [3], metaphorical career model. Most of the discussions on the properties of mapping focus on dynamics and innovation, such as concept integration theory [4], relevance theory [5], etc.

Generally speaking, metaphorical expression is to use the attributes with higher significance in the source domain to activate the corresponding attributes with lower significance in the target domain. Source domain and target domain respectively refer to the conceptual domain corresponding to the simile body and ontology. These attributes exist in both the simile body and ontology, but the significance is

higher in the simile body and lower in the ontology. However, using such "matching" and "two correspondences" to explain some metaphors in reality will encounter many difficulties. If it is acknowledged that metaphor is based on body experience, then the cognitive subject's experience and cognition of noumenon and simile should play an important role in the process of metaphor. Although metaphor has always been one of the main concerns of metaphor research, there seems to be a lack of attention on ontology. We believe that the guidance and restriction of the cognitive subject's knowledge of noumenon on the metaphorical process should not be ignored.

In addition, methodologically, most relevant researches focus on introspection and corpus research. Although psychological experiment has gradually become an important research method in metaphor research in recent years, there is still a lack of observation and research on metaphorical subjects, especially vivid subjects in real life.

In view of this, this paper, on the basis of grasping the research process of metaphor, tries to explore more possibilities of metaphor research, and focuses on the concept of "love". "Love" has always been an important subject concerned by sociology, psychology and other disciplines. Many scholars have conducted relevant studies on objects of different countries, nationalities and ages. For example, Simon, Eder, & Evans (1992) investigated the norms of early American adolescent women's feelings towards romantic love through observation and interviews, and established norms of five dimensions. On the basis of norms established by Simon et al., Nan Jian (2015) investigated Japanese college students' understanding of love and the correlation between these understanding and metaphor from six dimensions [6]. The methods of psychological experiments conducted by Ami are instructive, but we believe that there are still several improvements that can be made: first, the subjects are mixed and may have grown up in different regions; Second, there is some overlap in the established dimensions; The third is the lack of specific metaphor category analysis; Fourth, there is no further attention to the cognitive activities reflected behind the corpus provided by the subjects. In order to further investigate the relationship between the metaphorical subject and metaphor, explore the embodiment and mapping process of metaphor, we defined the subjects as female college students with certain similar background and re-established the dimension of investigation, so as to fully explore the relationship between the metaphorical subject and metaphor and its mapping process. In our investigation and research, we find many metaphorical expressions which are difficult to be explained clearly by previous metaphor theories, exposing the shortcomings of existing researches in metaphor and mapping. We believe that these examples reflect the interaction of metaphor and bidirectional mapping in metaphor process.

2. Research problems and methods

2.1 Research Questions

Due to the lack of relevant research, this paper intends to use the survey and statistical methods in psychological experiments to explore the influence of human experience and normative belief on metaphor generation, and investigate the metaphorical conceptual structure of contemporary Chinese female college students about love. (b) Analyze the relationship between these structures and the subject's specific beliefs and experiences through statistical methods, so as to further demonstrate the embodiment of metaphor. (c) We will also make a more specific analysis of the metaphors that embody the bidirectional mapping in the experimental materials, and explore the interactive influence of noumenon and metaphor in the metaphorical process.

2.2 Research Methods

The content of this survey consists of two parts. The first part is to fill in the blanks. Subjects are asked to complete 1-3 metaphors of "love" in the order they think of, and record up to 3 reasons for each metaphor.

The characteristics of this part are as follows :(a) let the subject generate metaphor without context and physical context, which can better reflect the relationship between the conceptual metaphor of "love" and the cognitive context. (b) Recording the reason for each metaphor can make the "similarity" background of conceptual metaphors about "love" a concrete and analyzable object, so as to determine the mapping structure of these metaphors and avoid subjective speculation by researchers to some extent.

The second part is the multiple choice question, and the Richter scale is used to collect the participants' beliefs, attitudes and experiences about "love". Based on the research of Simon, Eder, & Evans (1992) and minami (2015) [7], and combined with the beliefs and attitudes about "love" collected from the subjects in advance, this paper designed five dimensional questions for the subjects to answer :(a) gender dimension. (b) The exclusive dimension. (c) Mutual love dimension. (d) Input dimension. (e) Frequency dimension.

Each dimension has a set of questions corresponding to each other, and the answer options with 1 as the lowest value (strongly disagree/never so) and 5 as the highest value (strongly agree/always so) constitute a five-degree scale to investigate the belief, attitude and experience of the subjects on this dimension. For example: N3 and N8 are theoretically negatively correlated sets of beliefs and experiences in the exclusive dimension. If a subject strongly approves of N3 (value 5), then theoretically she should have had little or no experience with N8 (value 1 or 2).

2.3 Research Procedure

In this paper, 110 female students from a university in Zhejiang province were selected as subjects for an offline anonymous questionnaire survey. A total of 103 valid questionnaires were collected except the 7 ones that only filled in multiple choice questions. On the basis of voluntary principle and confidentiality principle, the respondents were confirmed in the subject group, and some respondents were visited back. In order to minimize the influence of other variables on the survey results, we limited the respondents to women born in 1999-2000 who have studied and lived in the same city area for the past six years, so as to ensure that the respondents kept a certain degree of consistency in their growing environment.

3. Data statistics and results discussion

3.1 Embodiment of metaphor generation

After calculating the belief, attitude and experience of each subject, we obtained the average value of each group of questions, and calculated the total average value of the two groups on the basis of the average value of each group. As follows (Table 1):

Table 1 Mean and standard deviation of each group

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
The average	3.25	3.43	3.24	4.23	3.29	1.48	1.66	1.73	1.93	2.49
The standard deviatio	0.81	1.00	1.10	0.67	0.86	0.93	1.04	1.11	1.06	1.30

n										
Empirical mean=3.49					Total mean of belief=1.86					

In the table 1, the total mean value of experience is 3.49, which is higher than the median value (2.50), and the total mean value of belief is 1.86, which is lower than the median value (2.50), reflecting that the subjects' overall understanding of love is relatively standard, but their experience is relatively low, which is consistent with their age characteristics. In the table, the standard deviation of belief dimension is relatively low, while the standard deviation of experience dimension is relatively high, indicating that these subjects are relatively unified in the understanding of norms, with obvious differences in experience.

We ranked the total mean and divided the subjects into four groups based on the size of the total mean. They are: strong normative belief group, weak normative belief group, strong experience group, weak experience group. Then, we observed the characteristics of love metaphors generated by each group of subjects, and the relationship between these characteristics and normative beliefs and experience strength.

We found that there were several kinds of metaphors in the strong and weak experience groups that were not found in the opposite experience group, as well as some metaphors that were found in all groups.

In the weak experience representative group, there were "stars", "myth", "forest" and other metaphors. Although the reasons given by the subjects were different in expression, such as "mysterious and distant", they all had the meaning of "non-reality". It can be seen that there are the following mappings in these metaphors (Figure 1):
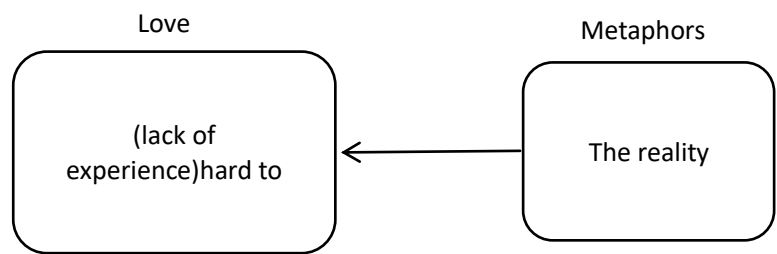

FIG. 1 Mapping diagram

This mapping fully demonstrates the important influence of subjects' physical experience on the process of metaphor selection and feature highlighting. Here we classify these metaphors as "mysterious" metaphors. Due to the attribute "lack of experience" in the concept of "love", there are "insipid" metaphors and "fragile" metaphors. The former is represented by "water" and "blue sky and white cloud", while the latter is represented by "foam", "glass" and "fireworks", all of which have not appeared in the group with strong experience.

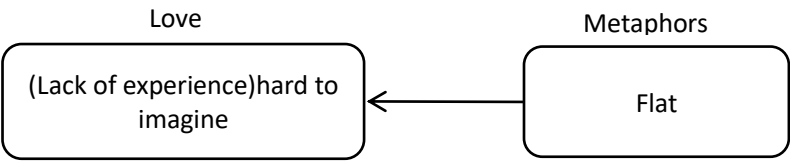The "insipid" metaphor has a common mapping (Figure 2):

Love   Metaphors

(Lack of experience)hard to imagine   ←   Flat

FIG. 2 Mapping diagram

The "fragile" metaphor has a common mapping (Figure 3):

Love   Metaphors

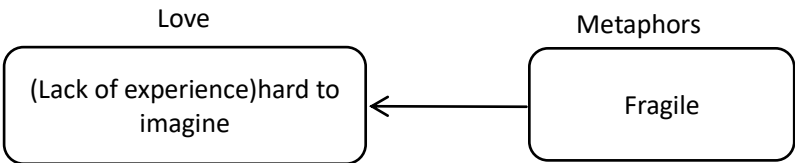(Lack of experience)hard to imagine   ←   Fragile

FIG. 3 Mapping diagram

Perceptions such as "love is fragile" did not appear in the strong experience group, but in the weak experience group. Through the return interview of the subjects, we found that the subjects in the low-experience group expressed more "unimaginable" about love, and most of them agreed with the understanding that "love is fragile", while the subjects in the high-experience group paid more attention to the meaninglessness of love rather than vulnerability, despite having experienced many breakups. This difference may be one of the reasons for the above experimental phenomenon.

In the group with strong experience representation, there were also metaphorical types that did not appear in the group with weak experience representation, which were "necessary" category, "addictive" category, and "filthy" category. The representative metaphors are as follows (Table 2):

Table 2 represents the metaphor

Metaphor type	The required class	The "addiction" category	"Filth" class
metaphors	Three meals, air, milk tea	Drugs, poppies, cigarettes	Garbage, excrement, flies

Based on the follow-up, we find that these three metaphors represent a continuous understanding. Subjects who generated "necessary" metaphors mostly expressed views similar to the following in the return interview:

(a) "Although I have had several failed relationships, I think falling in love is a process that people at our age must go through. We should not stop dating just because we have bad memories."

These subjects still believe that being in a relationship is necessary and desirable despite several failed relationships.

Subjects who generated "necessary" metaphors mostly expressed views similar to the following in the return interview:

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(b) "I'm happy to be in a relationship. I don't like being single. Even a cheating philanderer doesn't stop me from being in a relationship."

Although these subjects experienced a number of failed relationships, their dependence on love did not diminish, but sometimes showed signs of deepening.

Subjects who generated "dirty" metaphors mostly expressed views similar to the following in the return interview:

(c) "Being in a relationship is not fun. Men's mouth is a liar. It's a waste of time."

These subjects also experienced several failed relationships, but they were significantly more resistant to love than the first two groups.

The mapping of the above three metaphors can be represented by the following Figure 4, Figure 5, Figure 6:
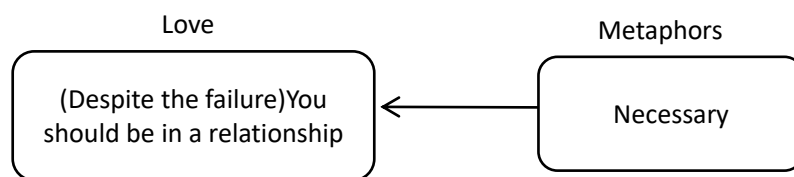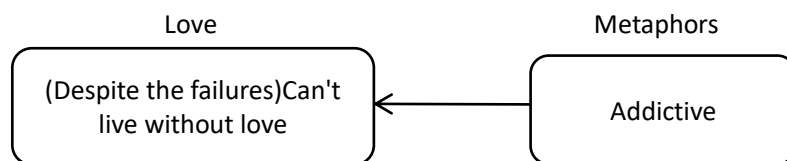

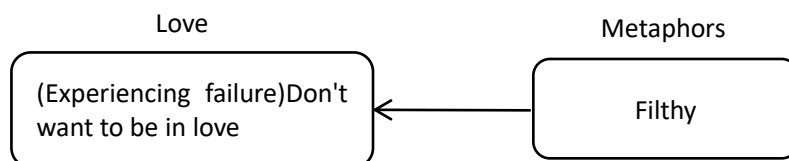FIG. 4 Mapping diagram

FIG. 5 Mapping diagram

FIG 6 Mapping diagram.

The metaphorical type tendency presented in the normative belief group was not as easy to observe as that in the empirical group, but some categorical metaphors were also obviously related to the subject's normative belief. Such as "bound" metaphor, "game" metaphor. The "bound" metaphor only appeared in the strong normative belief group. Through the follow-up interview, we found that all the subjects who used the "bound" metaphor indicated the moral and moral requirements or the consciousness of rules in love. We simulated the correlation mapping as follows (Figure 7):
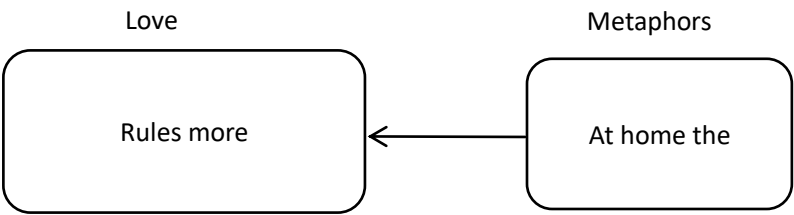
Love   Metaphors

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┌─────────────────┐          ┌─────────────────┐
│                 │          │                 │
│   Rules more    │ ◀─────── │   At home the   │
│                 │          │                 │
└─────────────────┘          └─────────────────┘
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FIG. 7 Mapping diagram

The "game" metaphor only appeared in the weak normative belief group. In the return visit, the relevant subjects all showed the concept of pursuing "entertainment" and ignoring rules. We simulate the correlation mapping as follows (Figure 8):
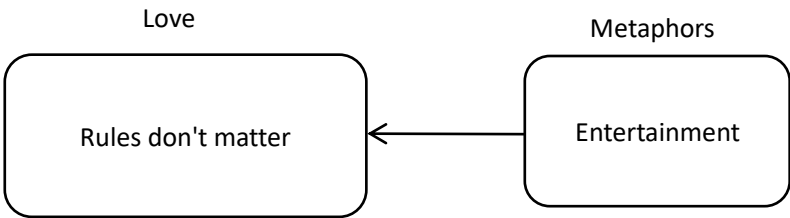
Love   Metaphors

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┌─────────────────┐          ┌─────────────────┐
│                 │          │                 │
│ Rules don't     │ ◀─────── │  Entertainment  │
│    matter       │          │                 │
└─────────────────┘          └─────────────────┘
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FIG. 8 Mapping diagram

The subjects also had strong or weak opposition based on normative belief in the knowledge that "love is changeable". Also is compared "love" to "change", while the intensity of normative beliefs different categories will be "love" to "weather", "water" and other things, full of "change" but strong normative beliefs generated set of metaphors in appeared a special kind of "change" things - things "growth" as the significant semantic of "change", and relative, There is also a special kind of "changing" things in the metaphor of the weak normative belief group, which takes the "beginning and end" of things as its significant semantic meaning. For example, in the strong normative belief group, subjects with "tree" and "fruit" as metaphors highlighted their "ability to grow", while in the weak normative belief group, subjects with "flower", "bubble" and "rainbow" as metaphors highlighted their "will eventually die". There are obvious differences between them in the perspective of understanding love change.

In addition, some subjects also generated obvious metaphors influenced by the combination of experience and normative beliefs. For example, the subject numbered 47 is highly normative and experiential, and the generated metaphor of "smoke" (" addiction ") and "chain" (" bondage "), which are "hard to quit and hurt the body", vividly reflects the subject's normative beliefs and body experience. For example, subject no. 52 has high standardization and low experience. Inexperienced No. 52 chose "fragile" and "sudden" as the mapping source. After recalling the love experience he had experienced indirectly through the TV series, he chose the negative attributes that were contrary to his own standard beliefs as the mapping source. The conflict between subjective normative belief and indirect love experience can be seen from the subjects' derogatory words.

Table 3 Metaphor examples

Serial number	Metaphor1	Reason1		Metaphor of 2	Reason 2		Metaphor of 3	Reason3			
47	Smoke	Difficult to quit	Injury body	The chain	Entanglement	Choking					
52	Bubble	Color of the	A touch is broken	A tornado	Come fast	Go fast	Love deep rain	Greasy	Quarrel	Third party	

As shown in Table 3, the "sweet" and "sudden" metaphors appeared most frequently in the unrelated group, which well reflected the characteristics of the subjects as ignorant adolescent women: generally speaking, they always had a yearning and uneasy understanding of love.

We collated the 587 metaphors collected and classified them according to the reasons recorded by the subjects themselves. 23 metaphor categories are formed by taking metaphors with more than 3 repetition cases, and the summary is as follows (Table 4):

Table 4 Summary diagram

metaphor	The total number of	Belief mean	Empirical mean
1 Life/course	12	3.47	2.25
2 the taste	75	3.48	1.69
A sweet	57	3.43	1.59
B hot	5	3.28	2.08
C the bitter	7	3.43	1.80
D tasteless	6	3.77	1.30
3 beautiful	4	3.10	1.65
4 games	4	2.80	3.25
5 Unreal/fragile	12	3.53	1.57
6 the mysterious	10	3.58	1.24
7 the vast	3	3.60	1.60
8 Complex and difficult to solve	5	3.60	1.88
9 Temperature/light	13	3.69	1.69
10 changes	18	3.60	1.77
11 all of a sudden	20	3.61	2.06
12 short	8	3.53	1.40
13 polyhedron	9	3.40	1.58
14 addiction	12	3.50	2.52

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15 terrors	5	3.12	2.44
16 unclean	7	3.46	2.20
17 bound	3	4.07	2.27
18 burden	3	3.20	4.80
19 pure	10	3.72	1.54
20 for a long time	9	3.44	1.38
21 High value items	5	3.16	1.92
22 necessities	8	3.50	2.45
23 efforts	3	3.47	2.13

As can be seen from Table 4, the metaphor with the highest average experience is "love is burden". The other categories with high experience averages are: "Love is a game," "Love is an addiction," "Love is a necessity," "Love is a horror," "Love is a bondage," "Love is a life/process," "Love is a filth," "Love is an effort," and "Love is a spicy taste." The metaphors with the lowest experience mean were "love is mysterious", and the lower metaphors were "Love is tasteless", "love is long", "Love is short", "Love is pure", "Love is unreal/fragile", "Love is polyhedral" and "love is sweet". The highest metaphor was "love is bondage" and the lowest metaphor was "love is a game". Among the other types of metaphors, the average value of belief was higher than that of "love is pure", while the average value was lower than that of "love is beautiful," "love is terror", "love is burden" and "love is high value".

In conclusion, different groups with strong or weak relevant beliefs and limited experience have different metaphor-generating tendencies. The attention to the same metaphor also varies with different beliefs and experiences, which fully embodies the embodiment of metaphor generation.

3.2 Bidirectional mapping in metaphor generation

The embodiment of metaphor has been observed in the above investigation and analysis. The question is whether this embodiment will be further reflected in the cognitive mechanism of metaphor.

As mentioned in the introduction, metaphorical mapping is generally defined as a projection between two conceptual domains. The correspondence between the members of two concept domains is generally considered to be one-way. However, the existing metaphors may not all be explained by one-way mapping such as "using the attributes with higher significance in the source domain to activate the corresponding attributes with lower significance in the target domain". The mapping process of metaphor is not strict and one-to-one matching, but bidirectional. Sometimes there will be a process of "giving" from "something to nothing", which may be from source domain to target domain or from target domain to source domain, and the latter is rarely discussed. Richards (1965) and Black (1993) paid attention to this kind of interactivity in the last century [8-9]. They believed that metaphorical meaning comes from the interaction between ontology and metaphor, and put forward the interactionism. However, the essence of interactionism is still limited to finding the corresponding components in the noumenon from the meaning of the simile, so as to explain metaphor. It does not further explore the mechanism and direction of interaction, and lacks corresponding empirical research. Fauconnier conceptual integration theory supplements the influence of interactivity in the production of metaphorical meaning, and believes that metaphor is a "synthetic space" formed by the interactive input of "target mental space", "source mental space" and "quasi-mental space". However, the concept integration theory does not explain the target domain as one of the input sources in detail and focuses on some typical metaphors.

At least three types of metaphors in our survey materials demonstrate the bidirectional nature of mapping and the role of target domain as input source from the perspective of generator. One is the "no match" mapping from the high-significance attributes of the target domain to the source domain. Secondly, mapping from high significance attributes of target domain to low significance attributes of source domain; the third is mapping from the high saliency attributes of the target domain to the related sub-cognitive domains of the source domain.

The first type is "no match" mapping. Take "Love is a bubble." We summarized all of the generated expressions. As shown in Table 5.

Table 5 "Bubble" metaphor

Metaphors	Reasons		
Bubble	It's nice in the sun	Weak	Disappear
Bubble	Colourful	Fragile	
Bubble	So fast	Blow hot and cold	

Bubble 1 and Bubble 2 are "normal" mappings. The significant attributes of "bubble" in the source domain, such as "colorful", "fragile" and "burst", matched with the attributes of "love" in the target domain, such as "rich experience", "prone to problems" and "non-sustainable".

Bubble 3's mapping is quite different. The first reason is the source domain "bubble" significant attributes "pop up" to the target domain "love" of "sudden" match, and the second reason for "hot and cold" obviously not "bubble" has its own properties, even in the cognitive domain associated with "bubble" can also be difficult to find similar properties, but belong to a very low correlations "temperature" attributes in the cognitive domain. How do two loosely related cognitive domains map? We believe that the inducing factor is the target domain or related sub-cognitive domain. The significant attribute "sometimes loving sometimes not loving" in the target domain "love" (to the generator) is mapped to the source domain through the "temperature" domain as an intermediary, even though there are no attributes in the source domain that can be directly compared and matched. There are two preconditions that can be considered: first, there is already a matching mapping to ensure the progress of this kind of "no matching" mapping; Second, the relevant attributes in the target domain are significant enough for the producer, so that the mapping still occurs even if there is no corresponding attribute in the source domain. The mapping process of "Bubble 3" is shown as follows (Figure 9):
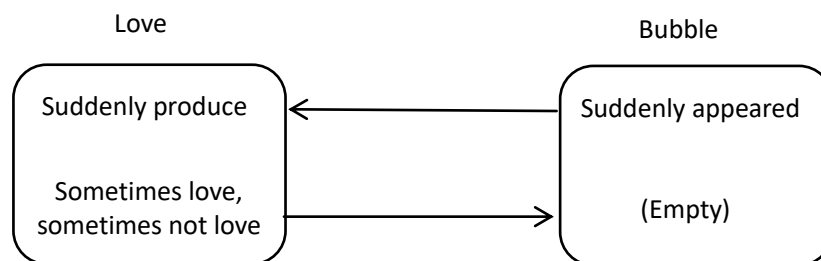

FIG. 9 Mapping diagram

If the subject uses this metaphor in an appropriate communicative context, it is undoubtedly a "novel metaphor" from the receiver's point of view, requiring the construction of a temporary concept

"bubble" containing a newly created structure. This "bubble" is not only "out of nowhere", but also capricious, and may also arouse the imagination of other modes. In order to present such a novel metaphor well, rich linguistic context or multi-modal media images are probably needed.

As in the following generation example (Table 6):

Table 6 Metaphor of "Clear spring"

Metaphors	Reasons		
A spring of fresh water	Sometimes sweet	Sometimes bitter	Simple and beautiful

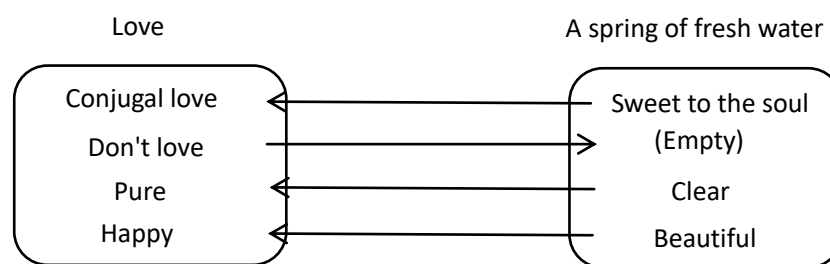The mapping of "love is a clear spring" is as follows (Figure 10):

FIG. 10 Mapping diagram

The gustatory attribute of "clear spring" is "sweet" or "tasteless", there is no "bitter" "clear spring". But for the generator, "love" is clearly "sometimes loving, sometimes not loving." The significant attribute of noumeon, "unlove", is mapped to the metaphorical body through the intermediary of activating the relevant attribute of the cognitive domain of "taste", "endows" the metaphorical whole with a new attribute of "bitterness" that the original metaphorical body does not have, thus forming an immediate "clear spring" containing a newly created structure.

The second type and the third type actually activate the non-significant properties of the body by the significant properties of the body; the difference is only the activation of the body's own properties or the properties of the related sub-cognitive domain. Therefore, it can be analyzed as follows Table 7:

Table 7 Other metaphors

Metaphors	Reasons		
The blue sky and white clouds	Amorous feelings of uncertainty	Fascinating	
Candy	You'll be fine if you don't have	But it will be better	
The fallen leaves	Beauty	It's beautiful when it opens	Fall down no one cares, humble
The light bulb	In the future	Too far	No light

In the first case, "uncertain style" and "novelty" were non-significant attributes in the source domain of "blue sky and White Clouds", and were matched by activation of significant attributes in the conceptual domain of "love" by the producer with lack of love experience, which obviously reflected the influence from the target domain to the source domain. Similarly, in the second example, "non-essential" is a non-significant attribute of "candy" in the source domain, which can be matched and mapped only when activated by the significant attribute "non-essential" in the generative concept domain of "love", which also reflects the bidirectional nature of metaphorical innuendo.

In the third case, the generator activates the properties of the "flower" domain associated with the "fallen leaves" of the source domain, and the knowledge originally used as background becomes foreground. The triggering of this activation also obviously depends on the prominent properties of the target domain. In the fourth example, the mapping structure of metaphor involves the relevant sub-cognitive domains of complex numbers. The activation of these cognitive domains can also be regarded as a bidirectional mapping from the salient attributes of the target domain to the source domain and the related sub-cognitive domains. The diagram below (Figure 11):
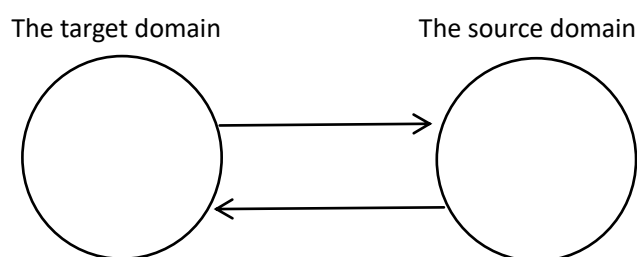

The target domain   The source domain

FIG 11 Bidirectional mapping

In fact, many researchers have explored the cognitive process of metaphor through various psychological experiments, and some of them have noted the bidirectional nature of metaphor mapping, which can be used as evidence of this study. For example, Jostmann et al. (2009) and Liu Yuhong (2015) also conducted two experiments on "importance is weight", which demonstrated this bidirectional mapping between metaphors [10]. Jostmann et al. (2009) verified the influence of the body perception of "weight" on the metaphor of "importance" through four groups of experiments. On this basis, Liu Yuhong (2015) further verified the influence of the concept of "importance" on the judgment of "weight" by calculating the size of "weight" from "importance".

Both focus on the embodiment of conventional metaphor. From the perspective of metaphorical career model, it belongs to the second to the third stage. From the perspective of metaphor development, metaphor career model distinguishes different stages of metaphor, and its mapping is from unstable to stable. The relation between body and noumenon of conventional metaphor is relatively stable. Most of the metaphors involved in this paper are in the novel metaphor stage (the first stage). The diagram below (Figure 12):
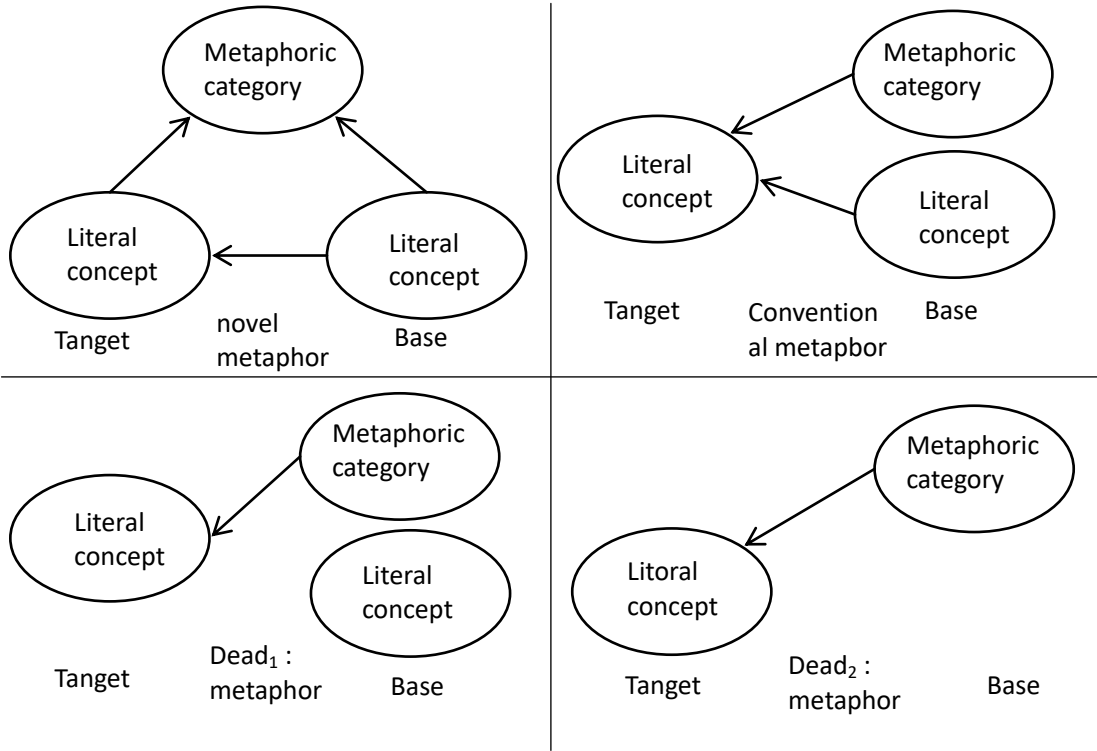
FIG 12 metaphor career model (see Bowdle&Gentner, 2005)

The experiment of Giora&Fein (1999) proved that in the process of metaphor processing, the dominant and first accessible meanings are always those that do not depend on the immediate context, namely salience meaning. This kind of significance is generally regarded as lexicalized literal meaning [11-12]. However, the investigation materials show that when the code-activated concepts involve those concepts with strong identity, the knowledge of individual differences solidified by different body experiences of language users may also be included in significance. As far as the metaphors discussed in this chapter are concerned, the salience of the body can be regarded as the relatively stable common knowledge of lexicalization, while the salience of the language user's knowledge of the metaphorical noumenon can be regarded as individual knowledge. We believe that the bidirectional nature of the mapping from the significance of metaphorical noumenon to the metaphorical body reflects the ecocentrism in verbal communication [13-14]. Even if the same language form is used, there will be different results if the individual experience and cognitive tendency of language users are greatly different. Especially in the early stage of discourse generation and understanding, language users tend to give priority to individual knowledge and neglect common knowledge. As far as metaphor is concerned, the metaphor generator chooses some individual experience and cognition about the metaphorical noumenon to map as significance meaning, which completely accords with the dominant influence of self-centrality in the early stage of discourse generation. When the self-centrality of the metaphor generator is satisfied or the correction feedback is received in the communication process, the priority of the lexicalized meaning of the metaphor and the recognition of the metaphor receiver will be increased. Also the metaphor in Table 5, for example, "love is a spring of fresh water, is sometimes sweet and sometimes bitter" such of the knowledge of significant lies producer, but not necessarily exist in the metaphor in the recipient's

knowledge, only when generator generates metaphor, at least in the early stages tend to satisfy the ego centricity, preferred their own knowledge about the significance of "love" mapping, Even if there is no matching knowledge in the conceptual domain of a simile, it does not affect the construction of the metaphorical category. At this stage, the producer is not necessarily concerned with whether the recipient can accurately understand the meaning of the metaphor. Attention to the recipient occurs more in the later stages. This is also one of the cognitive bases for the occurrence of "empty" mappings in the source domain as shown in Table 5.

4. Summary

In a word, metaphor has embodied itself from its generation stage. This kind of embodiment is not limited to direct physical experience, but also affects the generation and understanding of metaphor by the relevant indirect experience and belief of the cognitive subject. Under the influence of this embodiment, the guidance and restriction of the cognitive subject's knowledge of noumenon to the metaphorical process should not be ignored. The widely used unidirectional cross-domain mapping from source domain to target domain cannot explain some metaphors obviously influenced by embodied identity. The significant attributes of ontology can either directly or through mediation give the metaphorical whole the attributes that the original body does not have, or activate the non-significant attributes of the original body or the non-significant attributes of the relevant sub-cognitive domain. Because of the bidirectional nature of metaphor mapping, it is not necessary for the mapping to always rely on the significant attributes of the source domain, but sometimes can rely on the attributes of the target domain or the attributes of the sub-cognitive domain with low relevance, which makes metaphors in real life sufficiently colorful. The process of metaphor realization is not only one-way "matching" and simple "generic". Metaphor mapping is bidirectional, and the significant attribute of ontology also plays a large guiding role in the process of metaphor.

Author statement

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