

RESEARCH ARTICLE

Research on Motion-emotion Metaphor and its Social Cognitive Mechanism—A Case Study of Chinese Mandarin, Yi Language and **English**

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Abstract: Chinese motion-emotion metaphor and its social cognitive mechanism are explored, for the first time, with a comparison between Mandarin Chinese, the Yi language and English. The interaction between motions and emotions is the key to do the research from the perspective of cognitive functionalism. Cognitive functionalism argues that language reflects people's consciousness, and the cognitive aspect of language interacts with the communicative function of language very well. According to this argument, motion-emotion metaphor, as a popular language phenomenon, can testify to such interactions. The comparative analysis of motion-emotion metaphors, from the perspective of cognitive functionalism, in this paper has proved to take the following aspects into consideration: the subjects' experiences of physical motions and their effects on objects; the universality and the specificity of such experience; the emotions' observable traits and their related motions; the common knowledge and normal beliefs among the motions' subjects and their surrounding contexts.

Keywords: Motion-Emotion Metaphor; Cognitive Functionalism; Intersubjectivity; Social Cognition; Interaction

1. Introduction

Metaphor is a prevalent part of everyday life. The topic of metaphor has drawn intellectual interest since remote antiquity and can be traced back to the ancient Greeks, who listed rhetoric as one of their seven Liberal Arts and metaphor as one of the paramount rhetorical devices. Smart methods have been tried in studying metaphor, viewing it syntactically, pragmatically, and cognitively.

In cognitive linguistics, there are three prevalent theoretical perspectives of metaphor study: (universal) conceptual metaphors (Lakoff & Johnson, 1980), discourse metaphors, and language-consciousness interactionism. Trying to discover the evidence of support for these positions, Zlatev, Blomberg, and Magnusson (2012) conducted an empirical study to compare motion-emotion metaphors (MEMs) in English, Swedish, Bulgarian, and Thai, focusing on the source domain MOTION, showing some support for all three perspectives. A considerable degree of overlapping of MEMs among the four languages supported the universalism of conceptual metaphor theory, while clear differences supported a more cultural-specific approach. When taking all these results into consideration, there is strong support for the interactionist view (Zlatev, Blomberg, & Magnusson 2012:425-426).

Furthermore, cognitive functionalism holds that language reflects not only people's consciousness, but also pragmatic and communicative functions. Cognitive and communicative functions are equally important in understanding languages and scientific research of them (James J. Mischler 2013:1-2).

In the west, previous studies on emotional metaphors, from Jim Averill (1980) to Zoltan Kovecses (2000), and to

the Conceptual Blending Theory (1997), have provided effective tools for the construal of metaphorical constructions. In China, the study of emotional metaphors originated also has a long history, traced back to the first collections of poems *Shijing* (1059 B.C.E. - 476 B.C.E.) (Cheng, 1985). Chinese linguists began to introduce cognitive methodologies since the 1990s, which threw light on the emotional metaphor in a more cognitive way. Later specific studies on such emotional metaphors of anger, happiness, sadness, sorrow, and etc., with comparisons between Chinese and English, have explored the cultural overlap and cultural specificity; Ning Yu (1995) was a good example. Recently, a result of the comparative study on motion-emotion metaphor in four languages by Zlatev, et al. (2012), in which motion is the source domain and emotion the target domain, demonstrates the language-consciousness interactionism with full evidence and, furthermore, implies socio-cognitive functionality.

Motion-emotion metaphor, in which objectively observable motion descriptions have been used to metaphorically refer to subjective emotions, seems to have accomplished an impossible mission in this "transferring from motion to the emotion" process, but it exists in a large number of real languages. This strongly demonstrates how intersubjectivity vividly binds the two different categories of behavior and emotion together. From the perspective of cognitive functionalism, some motion expressions can express emotions metaphorically in essence, because: we first need to express our subjective feelings; and secondly, we often use our subjective experience to express these feelings. These objective experiences themselves can be perceived and felt by us through physiological reactions, and thus can be observed and experienced as a third party. This is the inter-subjectivity. It is this intersubjectivity that enables us to explain how the MEM realize the interaction among the actors, emotions, acts and emotions, and the surrounding social environment, especially the linguistic environment.

Just as Jordan Zlatev et al. has put forward in his previous studies, there are two main problems to be solved around the interaction between language and consciousness: one is what role subjective experience plays in MEM; the other is what role language or culture specificity plays in MEM (Jordan Zlatev 2012:424). Here we have a third question, that is, how can the psychological process be smoothly carried out from physical behavior to subjective emotion? Therefore we took a comparative analysis of Mandarin Chinese, the Yi language, and English (as a meta material), to illustrate the how the MEM realize its social cognitive mechanism.

2. Hypotheses and Specific Questions

Initially, from a socio-cognitive perspective, we bring forth some hypotheses on the study of motion-emotion metaphor: first, the interaction can be processed within a culture and across cultures as well; second, the understanding these metaphors, no matter intercultural or cross-cultural, share a lot of common traits with body experiences and mental representations on the one hand, but preserves their language/culture specificity on the other hand (Zlatev, Blomberg & Magnusson, 2012); third, the degree of the overlap of MEMs is in direct proportion to the degrees of the interaction; last, the effect of such interaction can be testified through the understanding of MEMs cross-culturally. To test these hypotheses, we made a case study on Chinese MEM, and a cross-linguistic study later with specific questions concerning the following:

- a. How to choose the corpus (sources, steps, principles)?
- b. What are the roles of the participants in the interaction?
- c. How about the frequency of the occurrences of organs in the source domain?
- d. What about the frequency of positive emotions and negative emotions in the target domain?
- e. Is there some correspondence in other languages, and what are their similarities and differences?

3. Classification of MEMs

3.1 Classification of "motion" in MEM

Here is a reasonable definition to motion: "the experience of continuous change in the relative position of an object (the figure) against a background, in contrast to stasis – where there is no such change –and in contrast to a dis-continuous change, as when a light suddenly lights up in position A, 'disappears' and then appears in position B(Zlatev et al 2010: 393)." To further define, the "motion" we are discussing here refers to the change of relative position caused by motion, which includes the action of external force and the motion under its own action. The change of relative position refers to the spatial change of reference, including the lateral and vertical, displaced and non-displaced motion changes. Including direction and path. Based on this, Jordan Zlatev et al. classified motions into three categories: translocative/non-translocative motion; bounded/unbounded motion; self-caused/caused motion (Jordan Zlatev 2010: 389-418).

3.1.1 Translocative/non-translocative motion

According to the special framework of reference, the behavior of continuous change relative to the average position occurs, that is, translocative behavior, while the behavior without such change belongs to non-translocative behavior, such as break, tear, wave, swing, knock, float, tear, shake, etc.. According to different reference points, we have three different translocative motions: Geocentric (referring mainly to Vertical or Horizontal), Viewpoint-centered (speaker or listener) and Object-centered (figure or landmark) with moving objects or backgrounds as reference points. For example:

(1) He turns left. (Viewpoint-Centered, speaker)

(2) Please go away. (Viewpoint-Centered, hearer)

(3) He walked up. (Geocentric, vertical)
(4) He walked west. (Geocentric, horizontal)
(5) I push the car into the garage. (Object-centered, figure)

(6) I push the car forward. (Object-centered, landmark)

This classification is basically applicable to verbs in Mandarin:

(7) 他向左转了。 (Viewpoint-Centered, speaker)

(8) 请向左转。 (Viewpoint-Centered, hearer)

(9) 他站了起来。 (Geocentric, vertical)

(10) 汽车一直往西开。 (Geocentric, horizontal)

(11) 我把车推进了车库。 (Object-centered, figure)

(12) 大家一起把车向前推。 (Object-centered, landmark)

This classification is also applicable to the verbs in the Yi language.

(13) cy³³ vy³³ tco³⁴ tco³³ o³³ (他向左转了)。

(14) $vy^{33} he^{21} ta^{33} tco^{33} hA^{33}$ (请向左转)。

(15) $\text{cy}^{33}\text{te}^{21}\text{ko}^{33}\text{hi}^{55}\text{o}^{33}$ (他站了起来)。

(16) $tshə^{33}tsv^{33}bu^{33}dxi^{33}tso^{33}he^{21}ta^{33}kh3^{33}ko^{33}se^{34}$ (汽车一直往西开)。

(17) tshə³³tsy³³na³³di²¹ta³³de²¹da³³ (我把车推进了车库)。

$$(18) t he^{33} t y^{33} no^{21} di^{21} nho^{33} bho^{33} li^{33}$$

(大家一起把车向前推)。

3.1.2 Bounded and unbounded motion

The so-called bounded means that the behavior itself must lead to the state-transition, such as the change of path: the starting point of action (S), the mid-point (M), and the end point (G).

- (19) He left the company at 5 o'clock pm. (S)
- (20) They moved to California. (G)
- (21) The train will pass that small town. (M)
- (22) The train has left from Copenhagen to Frankerfort. (S+G)
- (23) Go across the river to the church! (M+G)
- (24) They left from school across a church to the railway station. (S+M+G)
- (25) The tree was split into two halves by the thunder. (state change)

Some people may disagree with (25), because the verb split has neither displacement nor specific path, but it causes the tree to change its state (into halves), so (19) is also a description of motion.

This kind of behavior has corresponding description in Mandarin:

- (27) 孩子们从教室里跑了出来。 (S)
- (28) 孩子们跑到了操场上。 (G)
- (29) 他一下子跳过了那条沟。 (M)
- (30) 孩子们从教室里跑到了操场上。 (S+G)
- (31) 他穿过那片小树林来到了小山下。 (M+G)
- (32) 他从屋子里跑出来穿过那片小树林来到了小山下。 (S+M+G)
- (33) 他把柴一下就劈成了两半。 (state change)

There are also corresponding expressions with example 27 to 33 in the Yi language:

- (34) $A^{33}zi^3yo^{34}mha^{55}zi^{33}ko^{33}ta^{33}du^{33}la^{33}$ (孩子们从教室里跑了出来)。
- (35) A³³zi³³yo³³bo⁵⁵bE³³ge³³de³³ko³³xi³³ (孩子们跑到了操场上)。
- (36) sti³³ sti³⁴lo³³mu³³tche³³la³³da³³tho⁵⁵ŋga³³ (他一下子跳过了那条沟)。
- (37) $A^{33}zi^{33}yo^{33}mha^{55}zi^{33}ko^{33}ta^{33}bo^{55}ge^{21}bE^{33}de^{33}xi^{33}$ (孩子们从教室里跑到了操场上)。
- (38) sti³³si³³tco³³A³³tsi³⁴ma³³ηga³⁴du³³lo³³bo³³ze³³xy³³xi³³(他穿过那片小树林来到了小山下)。
- (39) sti³³i³³go³³da³³bo⁵⁵ si³³teo³³A³³tsi³⁴ma³³ŋga³⁴du³³lo³³bo³³ze³³xy³³xi³³ (他从屋子里跑出来穿过那片小树林来到了小山下)。

3.1.3 Self-caused and caused motion

This kind of verb is well understood to refer to the actions we can feel under the influence of external forces or our own forces. The latter also includes the forces of nature itself, such as the drop, fall, fall, fall due to gravity. Take English and Yi language as an example:

- (40) He pushed the car forward. (Caused)
- (41) 我们冒雨一起推车。 (Caused)
- (42) $\eta o^{21} ma^{33} ha^{33} tei^{21} ko^{33} chy^{21} tse^{33} di^{21}$ (Yi language)
- (43) The cup dropped. (Self-caused)
- (44) 大家纷纷从车上跳下来。 (Self-caused)

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(45) khe^{33}di^{33}\eta i^{33}hi^{55}teo^{33}mu^{33}tshe^{34}tsy^{33}ko^{33}da^{33}tehe^{33}la^{33}. (Yi language)
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To sum up, the "motion" discussed in this paper can be grouped into the following eight categories: "caused translocative bounded, caused translocative unbounded, caused non-translocative bounded, caused non-translocative unbounded, self-caused translocative bounded, self-caused unbounded, self-caused non-translocative bounded, self-caused non-translocative unbounded". In order to correspond to the "motion" discussed earlier, we define "emotion" as "change in affective consciousness", which must emphasize change rather than a static state of emotion (Jordan Zlatev 2012: 434).

3.2 Classification of MEMs

In order to delimit the material for the study and to unify all MEMs we have selected in English and Chinese, the following selection criteria were used as adapted from those mentioned by Zlatev, et al. (2012):

- a. the sentence in which the MEM occurs does not express actual motion;
- b. Substitution of figure expression in the MEM can lead to actual motion in a sentence.
- c. Motion is expressed by the verb-root and not only in a satellite or preposition.
- d. The expression of the figure denotes the self or a part of the self in a MEM.
- $e.\ Both\ source\ (motion)\ and\ target\ (emotion)\ meanings\ are\ accessible\ to\ speakers.$

Based on this, many candidate motion-metaphors were removed from the analysis. For example:

(46) He trembled with anger.

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(47) 四姨太太便马上<u>拉下脸</u>
Lia xia nian
Pull down face
≈ got angry
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(48) They were filled with joy and happiness.

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(49) 你务必把这件事<u>放到心里</u>!
... Fang dao xin li
... Put arrive heart inside
≈...put it in your heart!
```

We can see that there is actual motion in (46), and according to criteria a, 46 is not the MEM. While (47) is a MEM with non-actual motion. In examples like (48), what moves are emotions (joy and happiness are filled in) and not the self, based on criteria d, while (49) is not a MEM because it is some other agent that moves, and not the self, either.

3.3 Corpus Gathering and Analysis

In previous studies made by Zlatev, et al. (2012), a method based on native or near-native speaker knowledge has been mainly used to identify MEMs. In this study, speaker intuition has mostly been used to direct the search, whereas all expressions (except the English MEMs taken from the Zlatev et al. (2012) study), are actual examples found in current language corpora, to a large extent in Acdemia Sinica Balanced Corpus of Modern Chinese with 10 million words. The dictionary of XDHYCD2005FifthEd accounts for another part, checking and providing some authentic examples for the selected motion verbs. Some online dictionaries, such as Webster, Oxford, Longman, Xinhuazijian, and cihai have also been consulted, especially in the search of creative metaphors.

Theoretically, the starting point for the investigation was to make a list of all motion verbs in the Zlatev, et al. (2012) study and to find the corresponding Chinese ones with overlapping semantics. Actually, we started from all possible expressions from 10,418 Chinese sentences with both motion and emotion expressed in the meantime, primarily aiming at identifying metaphors in a running text and a discourse, not for searching for specific metaphors. Therefore, a mixture of intuition and observation methods was used in the search and selection of metaphors. During this course, we try to discard word-to-word translation. Sometimes, new MEMs have been discovered, and we test them in the corresponding dictionaries.

Using the taxonomy of motion situation types of Zlatev, et al. (2010), all selected 56 MEMs (see table 1) in Chinese were also classified into 8 types on the basis of their source domain: self-caused translocative bounded (10), self-caused translocative unbounded (6), self-caused non-translocative bounded (3), caused translocative bounded (7), caused translocative unbounded (15), and caused non-translocative unbounded (5).

	Self-caused	Caused motion
	(1) F 掉进 LM (F falls into	
	LM)	(20) 4 11/4 12 13 13 13 13 13 13 13 13 13 13 13 13 13
	(2) F 落进 LM (F falls into	(23)A 吹 F 上 LM (A blows F up to
	LM)	LM)
	(3) F陷入 LM (F sinks into	(24)A 捧 F 到 LM (A carries F to LM)
	LM)	(25) A 放 F 在 LM (心上) (A puts F
		at/in LM)
	(4) F 坠入 LM (F falls into	
	LM)	
+translocative/	(5) F 出 LM (风头) (F goes out of	
+bound	LM)	
	(6) F下LM(台) (F steps	
	down LM)	(26)A 冒 FP(火) (A sends out FP)
	(7) F 过 LM (坎) (F crosses	
	LM)	(27)A 撒 FP(气) (A lets out FP)
		(28) A 泄 FP (气) (A lets out FP)
	(8) FP (心) 回 (FP returns)	(29) A给 FP to LM (A gives FP to
	(9) FP(心) 落 LM(地) (FP falls to	LM)
	LM)	LM
	(10)FP (心意) 到 (FP arrives)	(30) A 交 FP(心) (A gives FP)
	(10)11 (128) 23 (11 milles)	
+translocative/	(11)FP (心) 沉 (FP sinks)	(31) A 吹捧 F (A blow carry
-bound	(12) ED [5]	with both hands F)
-Dound	(12) FP 倒 (FP falls)	(32) A 牵挂 F (A pulls hangs

	(13) FP (气) 来 (FP comes)	F)
	(14) FP(心)落 (FP falls)	(33) A 牵动 F (A pulls moves
	(15) FP 涨 (FP rises)	F)
	(16) FP(心)飞走 (FP flies away)	(34) A 吸引 F (A attracts F)
		(35)A 吊 FP(胃口) (A lifts up FP)
		(36) A 拉下 FP (脸) (A pulls down
		FP)
		(37)FP(心)提 (FP lifts up)
		(38) A 放松 F (A lets F go and loose)
		(39) A 安 FP(心) (A stabilizes FP)
		(40) A 刺伤 FP(心)(A stabs wounds FP)
-translocative/ +bound		(41) A 分 FP (心) (A divides FP)
		(42) A 放 FP(心) (A puts aside FP)
	(17) F 崩溃 (F cracks breaks down)	(43) A 关 FP (心) (A closes FP)
	(18) F 爆发 (F explodes)	(44) A 静 FP (心) (A stabilizes FP)
	(19) FP (心) 碎 (FP breaks to pieces)	(45) A 开 FP (心) (A opens FP)
	(20) FP (肺) 炸 (FP explodes)	(46) A 偏 FP(心) (A tilts FP)
		(47) A 撕 FP (心) (A tears FP)
		(48) A 释 FP(手) (A lets FP go)
		(49) A 翻 FP(脸) (A turns over FP)
		(50) A 断 FP (念头) (A cuts off FP)
		(51) A 扫 FP(兴) (A clears away FP)
		(52) A解 FP(气) (A removes FP)
-translocative/		(53) A 打动 F (A beats stirs F)
-bound	(21) FP(心)飘 (FP floats)	(54) F 动摇 (F stirs shakes)
	(22) FP(心)荡 (FP swings)	(55) A 担 FP (心) (A shoulders
	(==, == (=, ==, ==, ==, ==, ==, ==, ==,	FP)

(56) A 动 FP(心) (A stirs FP)

Table 1. Motion-emotion Metaphor Types in Chinese; F = Self is Figure, FP = Part of self is Figure, LM = Landmark, A = Agent

4. An Analysis of the Interaction between motion and emotion in MEM

Theoretically, observable motions and perceived emotions are the key to explain the interaction between them, falling into the following three aspects:

Firstly, MEM involves emotions which are commonly experienced in our daily life and has cultural uniqueness;

Secondly, the emotions here involved in MEM are all belong to human's basic emotions, and also has the unique characteristics of a specific individual.

Thirdly, when people express their emotions, they usually consider the physiological changes that are usually involved in these emotional changes, which can be directly observed and experienced by the cognitive subject. Many of these physiological changes are common and basic experiences, such as blood circulation acceleration, shortness of breath, staring, blushing, muscle tightness in the whole body when people are angry, shrinking, clenching and other behaviors noticed by the third party, and understood by the observer because of the common experience. This is what we call intersubjectivity.

It is because of the intersubjectivity mentioned in the third process that we can use the basic behavioral experience of the people mentioned in the first part to express emotional changes, and from these basic behavioral expressions we can understand the metaphorical meaning of the basic human emotional changes associated with them. In this way, the behavior of the subject, others (observers), society and subject interact in the MEM, realizing the mapping from the behavioral domain to the emotion domain.

In Table 1, we summarize and analyze the basic types of MEMs that we can find in Chinese. Now we discuss the interaction from the perspective of concrete behavioral expressions.

First, all the acts involved in the expression are not the acts which actually happened by the agent.

```
(50) 我的 心
                                                           了。
       wode xin
                        yao sui
       \eta a^{55} h 3^{33} m A^{33} dz \gamma^{55} l \gamma^{21} t e i^{21} (Yi Language)
                heart will break to pieces PFV
       \approx I feel very sad.
(51) 坠
               λ
                        爱
       zhui ru
                      ai
                             he
       ci<sup>33</sup>la<sup>33</sup>ŋgu<sup>33</sup>yj<sup>33</sup>tsj<sup>21</sup> (Yi Language)
       drop into love river
       \approx to fall into love
(52)别
                   翻
                                      不 认 人
                  fan
                           lian bu ren ren
       s\eta^{33}da^{33} \eta i^{55}phu^{33} co^{33} a^{21}s\eta^{21}ma^{55} (Yi Language)
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Don't **turn over** face not know people

 \approx Please don't turn hostile.

The "xin" in "xin sui" in Example (50) is not actually "broken"; the "love" in "falling in love" in Example (51) does not exist in real life; and the "fan" in Example (52) does not really turn over the face, which is metaphorical expression.

Secondly, apart from the agent, all the acts involved in the expressions are human's experience in daily life. For example, the act of "sui" in "xin sui" really exists in real life, since lasses can be broken and stones can be broken. Similarly, in real life, we also have the experience of falling into rivers and turning over a page of books. That is to say, these actions themselves have been directly or indirectly experienced by people in real life, regardless of who performs these acts or bears them.

Moreover, all the motion expressions involved here are related to emotions, which are subjective, but people can perceive these behaviors themselves via inter-subjectivity. So when these motions occur in our expressions, it's easy for people to understand how they happen, how they end, and what the consequences will be, just like what we have experienced before. Examples might be when something is broken (碎了; sui), it changes the original state of integrity, which can easily make us feel scattered, but mostly not so good; or those behaviors like "落、沉、崩溃、炸、爆" (fall, sink, claps, explode, etc.) are also associated with negative emotions such as "depression, sadness, disappointment, despair"; and "开、放、释 (opening up, letting go, despair, etc.)" and so on, naturally associated with such emotions as "relaxation and reassurance"; the positive and upward behaviors such as "上、涨、提(up, lift and carry, etc.)" are naturally associated with such emotions as "excitement and happiness".

- (53) 我的心终于落地了。
 wode xin zhongyu **luo** di le
 ŋa⁵⁵ hə³³ma⁵⁵ tı⁵⁵da³³ ŋo²¹zu³³ o³³ (Yi Language)
 my heart finally **fall** ground PFV
 ≈ I was relieved finally.
- (54) 我对书爱不释 手
 wo dui shu ai bu **shi** shou
 Dŋa³³ the²¹z₁³³ hɛ³³vu³³ lo⁵⁵ a²¹ ci³³ (Yi Language)
 I for book love no **let go** hand
 ≈ I loves books very much.
- (55) 我的 心 提 起 来 了
 wode xin **ti** qi lai le
 ŋa⁵⁵ hɛ³³ma⁵⁵ ŋgo⁵⁵tṣŋ²¹o³³0³³ (Yi Language)
 my heart **lift** stand up come PFV
 ≈ I became extremely nervous.

5. Conclusion and Prospect

MEM is a metaphorical expression that expresses emotional changes by means of motion expression. It reflects the interaction of language and consciousness from the way of the interaction of motion and emotion. The comparative analyses of MEM in Mandarin Chinese and the Yi language, and Mandarin Chinese and English, all demonstrate the cognitive mechanism of MEM, the interaction of motion and emotion. From the perspective of cognitive functionalism, the social cognitive study of MEM in Chinese is undoubtedly an attempt and innovation of the paradigm of cognitive linguistics. The interaction between language and consciousness should be further reflected in the comparative analysis

of MEM in other languages. In addition, many words in Chinese are not usually understood separately, such as: 担心, 放心, 崩溃, 冒火, 牵挂 (worry, rest assured, collapse, anger, concern, etc.), but if they are considered separately, it is difficult to find corresponding partners in other languages, and with an infeasible result.

The result of the research illustrated a social-cognitive approach to metaphor, aiming to study the interaction of social cognition and personal/individual cognition in the process of construing metaphors; MEMs within a specific language, Chinese for example, and a cross-linguistic study of them between Chinese and English, can both testify such interaction within one specific language and across different languages.

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