

Manual Action Metaphors in Chinese

A Usage-Based Constructionist Study

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Abstract This article examines Chinese manual motor metaphors involving manual object manipulation as the source domain. Specifically, we use corpus data to investigate two transitive constructions, [抓紧 *zhuājǐn* ‘grab tightly, clutch’ NP] and [把住 *bǎzhù* ‘grasp firmly’ NP], and a causative construction, [把 *bǎ* NP 捧 *pěng* COMPL] ‘lift NP with deliberation’, where the referent of the NP does not lend itself to manual manipulation in the literal sense and must be interpreted as metaphoric in the unity of semantic domains. Results from both quantitative and qualitative analyses show that the two transitive grasping actions are systematically used to abstract actions requiring a keen sense of urgency and/or importance, and that the causative action of lifting systematically conceptualises over-promotion of an undeserving entity. The findings point to the bodily origin of social cognition and the embodiment of conceptualisation.

Keywords Manual Motor Metaphor. Object Manipulation. Embodiment. Chinese.

Summary 1 Introduction. – 2 Data and Methods. – 3 Results. – 4 Discussion. – 5 Conclusion.



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1 Introduction¹

Metaphor is not just a phenomenon of language. It is a way of knowledge representation. This idea was articulated by Jakobson as early as 1956 (Jakobson [1956] 2003) and was subsequently elaborated by Lakoff and Johnson (1980) in a systematic and theoretically significant way that gave rise to the Conceptual Metaphor Theory (CMT). The essence of CMT in terms of experientialism or the bodily basis of abstract thought is now the consensus on metaphor as a cognitive phenomenon, supported by research over the last three decades in cognitive linguistics and cognitive science. More recent work on the relationship between conceptualisation and sensory perception has further consolidated the notion of embodiment understood as the grounding of conceptualisation in physical and perceptual experiences (Johnson 2017; Barsalou 1999, 2008; Gibbs 2006; Gallese, Lakoff 2005).

Manual object manipulation requires the coordinated use of the hands and the arms as the effectors of action. As a tool-using species, humans have evolved extraordinary manual dexterity and sophisticated skills of manual praxis (Darwin 1871). There is accumulating evidence that human manual praxis is closely related to the evolution of the human brain and the development of vocal language (Bradshaw 1991; Gibson, Ingold 1993; Steele, Ferrari, Fogassi 2012). Iriki and Taoka (2012) attribute the development of abstract cognitive functions in humans to cortical plasticity that enabled the recruitment of cortical areas originally involved in computing sensorimotor transformations for reaching and grasping actions to serve higher cognitive functions, including language.

The evolutionary significance of manual object manipulation leaves stamps on languages. To get a sense of the conceptual reach of manual actions in language, one need to look no further than the vocabulary of English. The verb *hold* is one of the most polysemous verbs in English, with over two dozen essentially metaphoric senses ranging from 'control' to 'sustain' to 'continue', all derived from the basic manual meaning of "grasp, carry, or support with one's arms or hands" (www.dictionary.com) and used in a rich array of phraseological configurations. Similarly, we use *grasp* metaphorically when talking about *grasping* an idea or concept. These examples have counterparts in other languages. Germans speak of *eine Idee begreifen* 'to comprehend an idea' whereby *begreifen* is a complex verb derived from the manual action verb stem *greifen* 'grasp'. In fact, the abstract noun *Begriff* 'concept' itself is derived from the same verb denoting grasping.

¹ The glosses follow the general guidelines of the Leipzig Glossing Rules. Additional glosses include: ASSOC = 'associative'; OM = 'object marker'. Further in-text abbreviations include: COMPL = 'complement'; NP = 'noun phrase'.

Another German compound verb, *ergreifen*, which also features the manual action verb stem *greifen* ‘grab’, frequently collocates with *eine Chance* ‘a chance, an opportunity’. Similarly, in Korean, the manual action verb 잡다 *jabda* ‘hold, grasp, catch’ can be used metaphorically in collocation with the abstract noun 기회를 *gihoeleul* ‘opportunity’.

Neuroimaging studies in cognitive neuroscience provide evidence that brain regions of sensory and motor perception are activated when participants read metaphors with sensory motor actions as source domain. Desai et al. (2011) compared neural responses to descriptions of literal action (e.g. *grasped the flowers*), metaphoric action (e.g. *grasped the concept*), and abstract mental action (e.g. *understood the concept*). They found that sentences describing literal and metaphoric actions but not abstract actions activated motor regions involved in action planning. In particular, metaphoric action sentences recruited secondary sensory-motor regions and less familiar action metaphors engaged primary motor regions, suggesting a role of metaphor conventionality in motor activation. Boulenger, Shtyrov and Pulvermüller (2012) conducted a MEG study on the time-course of cortical motor activation during the comprehension of literal and figurative sentences involving arm and leg action verbs. They reported early motor activations to both figurative and literal action sentences whereby arm action verbs (*scrape, pick, and catch*) more reliably recruited the corresponding motor region than leg action verbs (*kick, walk, and jump*). In a subsequent fMRI study that aimed to clarify how the extent to which the figurative stimuli are conventionalised influences sensory-motor activation, Desai et al. (2013) also included idiomatic action sentences with conventionalised action metaphors, comparing four experimental conditions involving the verbs *grasp* and *lift*: (1) literal (e.g. *grasping the steering wheel very tightly/lifted the pebble from the ground*), (2) metaphorical (e.g. *grasping the state of the affairs/lifted this nation out of poverty*), (3) idiomatic (e.g. *grasping at straws in the crisis/lifted the veil on its nuclear program*), and (4) abstract as control (e.g. *causing a big trade deficit/wanted the plan for a nuclear program*). Their results showed a trend of decreasing sensory-motor activation from literal to metaphoric to idiomatic to abstract action sentences. Similarly, Romero Lauro et al. (2013) conducted an fMRI study of literal, metaphoric, and idiomatic action sentences in Italian, with abstract mental action sentences as a control condition. They found that the degree of cortical motor activation was a function of the degree of perceived concreteness of the motor action, a result consistent with Desai et al. (2013). Interestingly, their results also indicated a stronger motor activation effect for arm actions than leg actions, converging with Boulenger, Shtyrov and Pulvermüller (2012). The authors interpreted this effect as consistent with the perception that arm motions are more concrete and specific than leg motions.

These neurolinguistic studies show that the motor system facilitates the processing of linguistic representations of motor actions, including metaphorical motor actions, albeit with reduced effect of activation correlating with a higher degree of conventionality. What stands out from these studies is the prominence of motor actions involving the hand/arm in the way their linguistic representations trigger activations of cortical motor regions. This comes as no surprise given the fundamental role of primate tool use in the co-evolution of the human brain and language (Steele, Ferrari, Fogassi 2012).

The Chinese lexicon has been shown to lexicalise abstract experiences based on manual action effectors including the hand, the palm, and the finger as metaphoric and metonymic sources. For example, Yu (2003) discussed the extensive presence of 手 *shǒu* 'hand' not only in compound nouns that refer to aptitude, means, manners, and people, but also in compound verbs that describe operations, transactions etc. by way of metaphor and metonymy. Yu (2000) showed how Chinese compounds and idioms involving the morphemes 指 *zhǐ* 'finger' and 掌 *zhǎng* 'palm' that conceptualise abstract experiences are grounded in the acts of pointing and holding. Specifically, 'finger' is involved in verbs of abstract actions such as demonstrating and designating, while 'palm' is found in compound verbs denoting control. Gao (2001) offers a broader coverage of the bodily foundation of physical action verbs in Chinese. While not directly focusing on the metaphoric uses of action verbs, Gao argues that the semantic patterning of action verbs mirrors the anatomical limitations of the body parts employed in executing the actions, which has implications for the embodiment of conceptualisation. These studies shed light on the role of body parts in the metaphorical and metonymical conceptualisation of abstract experiences in Chinese. What remains largely unexplored, but equally intriguing, is how manual actions as a basic experiential domain contribute to the conceptualisation of abstract actions and behaviours.

The present study goes above and beyond lexical semantics and takes a usage-based constructionist approach to metaphor analysis. This approach is grounded in the theoretical and methodological integration of Construction Grammar and usage-based linguistics. Construction Grammar treats language as a structured inventory of constructions, which are form-meaning pairings that occupy a continuum from morphemes and lexical units, over phrasal constructions, partially schematic constructions, to fully abstract argument structure constructions and discourse units (Fillmore 1988; Fillmore, Kay, O'Connor 1988; Goldberg 1995, 2006, 2019; Croft 2001). This view effectively blurs the boundary between lexicon and syntax and allows for the accounting of linguistic knowledge in its entirety (Goldberg 2013; Hilpert 2014). Usage-based linguistics views language as emergent from experiences with language use and generalisations over re-

current usage events (Barlow, Kemmer 2000; Tomasello 2003; Bybee 2013). On this approach, linguistic knowledge comprises a vast storage of both specific exemplars and abstract patterns in a linked network whereby frequency of use plays a central role in the representation of linguistic knowledge (Bybee 2006; Ellis 2002, 2013; Gries 2012; Goldberg 2019). The usage-based constructionist approach is optimally suited for the analysis of metaphors if our goal is to explore patterns of conceptual mapping and the prototypes and productivity of those patterns in a systematic way. In particular, Croft pointed out that the syntactic construction is the structural site of metaphorical meaning, which can be identified only by way of the “conceptual unity of domains”, in the sense that “all of the elements in a syntactic unit must be interpreted in a single domain” (Croft 2003, 162). Recent research shows systematic lexical grammatical alignments in metaphorical expressions, systematic correspondences between grammatical dependency within a metaphorical construction, and source-target dependency in metaphorical mapping (Lederer 2019; Sullivan 2013, 2016).

In this study, we examine verbal constructions that encode metaphorical manual object manipulation. We aim to understand the semantic categories of the metaphorical objects collocating with the metaphorical hand actions described by these constructions, as well as the productivity of their uses as manual object manipulation metaphors. One of the constructions in question is [把 *bǎ* NP 捧 *pěng* COMPL] ‘lift NP with deliberation’, such that NP undergoes change of location or state, which is a type of the 把 *bǎ*-construction that dramatises how a definite object undergoes change as a result of the action described by the verb (Jing-Schmidt 2005). The lifting action is described by 捧 *pěng* ‘lift with deliberation on the joint surfaces of both palms’. This verb encodes the deliberate manner of lifting, the spatial configuration of the manual effectors, and implies an underserved assignment of value to the object being lifted (Jing-Schmidt 2010). Consider (1) as an example:

1. 绝不要一高兴起来就把孩子捧上了天
juébúyào yī gāoxìng-qǐlái jiù bǎ háizi pěng-shàng
never once happy-up then OM child lift-up
le tiān
PFV sky
‘Don’t worship the child just because all of a sudden you are in a good mood’

In this example, the description of lifting the child to the sky is not meant to be literal. We can tell this from the conceptual contradiction between the physical domain of lifting a child and the domain of location change described by the postverbal complement 上了天

shàng le tiān ‘up to the sky’. Following Croft (2003), the lifting action involving a child as object and the location change as a result of the action must be interpreted in a unity of the two domains where lifting someone up to the sky hyperbolically conceptualises the act of worshipping or overpraising.

The other constructions included in this analysis are two transitive constructions that involve object grasping/grabbing as the experiential basis on which to conceptualise abstract experiences with intangible objects. They are [抓紧 *zhuājǐn* ‘grab tightly’ NP] and [把住 *bǎzhù* ‘grasp firmly’ NP], each with a compound verb describing a grasping motion and a resultative morpheme describing the tightness of the grip. Because of their similarity in surface lexical semantics, the two manual action verbs may come across as synonyms. However, as our usage-based constructionist analysis will reveal, the semantic categories of the metaphorical objects in the respective constructions are very different.

2 Data and Methods

The corpus data were retrieved from the online BCC corpus (Xun et al. 2016). We used the search syntax 把* 捧* in the balanced subcorpus (多领域 *duō lǐngyù*) to maximally extract all uses of construction [把 *bǎ* NP 捧 *pěng* COMPL]. The asterisk designates any structure of unspecified size that occurs in the respective slots of NP and COMPL in [把 *bǎ* NP 捧 *pěng* COMPL]. A total of 1,667 concordances were obtained from the initial search. Two coders conducted independent annotations of this sample to identify metaphorical uses by eliminating (1) syntactic false positives and (2) semantic false positives. Syntactic false positives contained the target lexemes 把 *bǎ* and 捧 *pěng*, but did not match the structural requirement of the 把 *bǎ*-construction, such as 一把一把地捧了出去 *yībǎyībǎ-de pěng-le chūqù* ‘lift and put outside by the handful’, where 把 *bǎ* is used as a measure word (handful). Semantic false positives are those sentences that meet the structural requirement but describe physical, and therefore not metaphorical, lifting such as 把餐具捧上来 *bǎ cānjù pěng-shànglái* ‘hold the utensils in both hands and bring them up here’. A total of 736 false positives were removed and a total of 931 tokens of the metaphorical uses were obtained. To retrieve tokens of the transitive construction [抓紧 *zhuājǐn* ‘grab tightly, clutch’ NP], we searched for “抓紧n” to extract concordances with the object noun immediately following the verb, and the research returned 8,022 tokens. Two of the authors conducted independent manual annotations to identify metaphorical uses by removing (a) items that describe physical grasping of objects by hand such as 缰绳 *jiāngshéng* ‘bridle’ and (b) syntactically labile words that are tagged in the wrong parts of speech

in the corpus, such as 移民 *yímín* ‘emigrate’. After removal of a total of 693 false positives, 7,335 tokens remained, out of which 1,000 tokens were selected as a sample for the analysis. The same search process was conducted for the construction [把住 *bǎzhù* ‘grasp firmly’ NP] and a total of 655 concordances were retrieved. Independent manual annotations by two of the authors removed 143 false positives that describe physical grasping of objects by hand, such as 舵 *duò* ‘rudder’ and 方向盘 *fāngxiàngpán* ‘steering wheel’. A total of 512 metaphorical uses were retained for the analysis.

Both quantitative and qualitative analyses were adopted in this study. The quantitative analyses focused on measuring the productivity of the three constructions. One way to measure productivity is to count the type frequency of the open slot(s) in a construction. Type frequency is the “number of distinct lexical items that can be substituted in a given slot in a construction” (Ellis 2002, 166). It has been argued that high type frequency in the input facilitates the formation of a schematic pattern and productive expansion of the pattern to novel uses (Goldberg 1995; Bybee 2006; Ellis 2011). In fact, Goldberg’s (2006, 5) definition of ‘construction’ has evolved to include “sufficient frequency” of use as an independent criterion of constructionhood. Gries (2012, 505) considers the skewness of the type-token distributions with a Zipfian power tendency as a way to ‘operationalise’ Goldberg’s notion of sufficient frequency. Following this proposal, we analysed rank-frequency distributions of the open slot(s) in each construction to identify skewness as a measure of productivity. Quantitative data processing, analysis, and graphing was conducted in R (3.6.2) and R-studio (1.2.5033) with the additional software packages *stringr*, *qdapRegex*, *dplyr*, and *fs*.

The qualitative analysis aimed to investigate the mutual selection of the verb and the open object and/or complement slot(s) in each of the constructions with a focus on identifying the semantic subclasses of these open slot(s) based on the patterns identified in the quantitative analysis. This focus was informed by the theoretical insight that semantic coverage plays a role in providing confidence in generating new instances in language use (Osherson et al. 1990; Goldberg 2006). From a usage-based perspective, semantic subclasses are generalisations over usage events at the level of knowledge representation. Similar items used in an open slot of the same construction “are classified together by general categorization processes” and novel items are used based on perceived similarity to members of existing clusters (Goldberg 1995, 133).

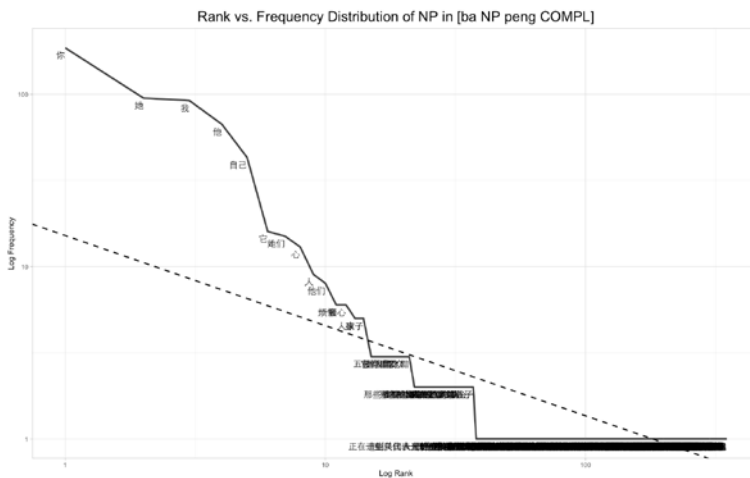


Figure 2 Power Distribution of NP in [把 *bǎ* NP 捧 *pěng* COMPL]

ure 2 [fig. 2]. The Zipfian certainty and reduced entropy as seen in the rank-frequency distributions suggest that the NP and the COMPL slots are productive and can readily admit new items. Together, the high type frequencies and the Zipfian power distributions of the open NP and COMPL slots in [把 *bǎ* NP 捧 *pěng* COMPL] demonstrate the productivity of the metaphorical uses of this construction.

Turning now to the semantic subclasses in the NP slot, we found that 267 (77%) of the NP types are human referents, which make a total of 819 (88%) of the 931 tokens. The top five most frequent items are all personal pronouns: 你 *nǐ* ‘you’, 她 *tā* ‘she/her’, 我 *wǒ* ‘I/me’, 他 *tā* ‘he/him’, and 自己 *zìjǐ* ‘self’. The non-human nouns that make up 12% of the dataset refer to human-made cultural products such as literary works, movies, music etc., and abstract concepts such as human behaviours, experiences, accomplishments, performances, ideas, technology etc., all of which are human-generated. As such the objects of the metaphorical action described by the construction [把 *bǎ* NP 捧 *pěng* COMPL] cannot be literally lifted by hand. By the “unity of domains” in Croft’s (2003) terms, the manual action of 捧 *pěng* together with its complement (COMPL) that describes change must be interpreted metaphorically.

Our analysis of the semantic subclasses in the COMPL slot employed the major categories identified for the 把 *bǎ*-construction in Jing-Schmidt, Peng and Chen (2015, 120). These are (i) locative encoding change of absolute location, (ii) directional encoding change of spatial orientation, (iii) resultative encoding change of state and

(iv) metamorphic describing change of identity or appearance. Among these, the locative is the most productive subclass with a type frequency of 106, or 33% of all the distinct types of complement in the data. The most frequently used tokens in the locative type are 在手心 *zài shǒuxīn* ‘in the centre of the palm’ and 上天 *shàngtiān* ‘up to the sky’. The former accentuates the perceived value of a cherished object, as in (2). The latter emphasises the degree of admiration afforded an object of perceived value by way of the hyperbolic use of a spatial metaphor, UP IS GOOD, an example of which is (1) discussed in the previous section. The resultative is the second most productive subclass with 90 different types, or 28% of the total COMPL types. For example, the resultative 红 *hóng* ‘red, hot, popular’ in (3) features a colour metaphor of popularity. The metamorphic complement in the form of 成 *chéng*/为 *wéi* NP ‘become/turn into NP’ is the third most productive subclass with 73 different types, or 23% of the total COMPL types. As illustrated in (4), the complement 成一个神 *chéng yí-gè shén* ‘become a deity’ describes the perceived excess with which honour and praise are afforded the person in question. A close English translation would be ‘put someone up on a pedestal’, which itself is a metaphor of uncritical worship.

2. 把烦恼当宝一样捧在手心
bǎ fánǎo dāng bǎo yíyàng pěng zài shǒu-xīn
 OM distress as treasure same lift in hand-centre
 ‘Hold on to one’s distress like treasure’
3. 我们一定会尽人事, 把你捧红
wǒmen yíding huì jìn rénshì bǎ nǐ
 1PL certainly will exhaust human.affair OM 2SG
pěng-hóng
 lift-red
 ‘We will certainly do everything we can to make you popular’
4. 把任长霞捧成一个神
bǎ Rén Chángxiá pěng-chéng yí-gè shén
 OM Ren Changxia lift-become one-CLF deity
 ‘Put Ren Changxia up on a pedestal’

In general, the construction [把 *bǎ* NP 捧 *pěng* COMPL] represents a systematic and productive conceptual mapping from LIFTING NP WITH DELIBERATION to WORSHIPPING OR CHERISHING NP whereby NP refers to a person or an abstract entity associated with a person.

3.2 The Construction [抓紧 *zhuājǐn* ‘grab tightly, clutch’ NP]

The metaphorical uses of this construction make up 91% of the entire sample of 1,000 tokens. This is strong evidence that [抓紧 *zhuājǐn* ‘grab tightly, clutch’ NP] is much more productive in its metaphorical sense than in its literal sense. Its productivity as metaphor can also be seen in the type frequency of NP and its distributions. Specifically, a total of 196 types of NP were identified in the 1,000 tokens. Notably, as shown in figure 3, the top three items make up nearly 80% of the dataset whereby the top-ranked item 时间 *shíjiān* ‘time’ takes the lion’s share, forming an entropy-reducing spike with 70% of the entire dataset [fig. 3]. On the other hand, 84% of all the 196 types form a long tail of *hapax legomena*. This is a highly skewed distribution pattern that fits a Zipfian power law, suggesting that the construction [抓紧 *zhuājǐn* ‘grab tightly, clutch’ NP] is highly productive in its metaphorical use.

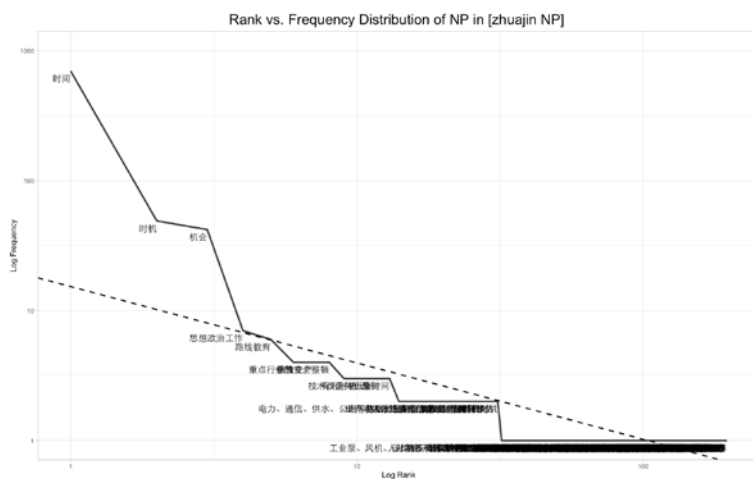


Figure 3 Power Distributions of NP in [抓紧 *zhuājǐn* NP]

In terms of the semantic subclasses of the NP, two observations can be made. First, the concept of time or timing stands out as the dominant semantic subclass. In addition to the top-ranked type 时间 *shíjiān* ‘time’, there are 17 time-related types referring to units of time, such as 分分秒秒 *fēnfēn miǎomiǎo* ‘minutes and seconds’ and 每一天 *měi yī tiān* ‘every day’. There are 11 types referring to opportunity, which is defined in terms of timing and the perceived possibility it holds. Both the second and third ranked nouns, 时机 *shíjī* ‘opportunity’ and 机会 *jīhuì* ‘opportunity, chance’, belong to this subclass. Second, all the other abstract nouns form a semantic cluster

that can be characterised as referring to tasks or activities of perceived importance and urgency, such as 建设 *jiànshè* ‘construction’, 改造 *gǎizào* ‘reform’, 生产 *shēngchǎn* ‘production’, 训练 *xùnliàn* ‘training’, 工作 *gōngzuò* ‘work’, and 教育 *jiàoyù* ‘education’, most of which are deverbal nominals. Examples of these usages are in (5)-(7):

5. 抓紧时间, 学习, 学习, 再学习
zhuājǐn shíjiān xuéxí xuéxí zài xuéxí
grab.tightly time study study again study
‘Hurry up, study, study, and study some more’

6. 要提高, 就要抓紧一切机会学习
yào tígāo jiù yào zhuājǐn yíqiè
want improve then must grab.tightly all
jīhuì xuéxí
opportunity study
‘If we want to improve, we must grab every opportunity to study’.

7. 抓紧党内的思想教育
zhuājǐn dǎng-nèi-de sīxiǎng jiàoyù
grab.tightly party-inside-ASSOC thought education
‘Act urgently on thought education within the Party’

From the analysis of the semantic subclasses, it is obvious that the manual object manipulation metaphor [抓紧 *zhuājǐn* ‘grab tightly, clutch’ NP] profiles conceptually intangible entities such as time, opportunities, and priorities as moving physical objects that may escape our grip unless grabbed tightly. On the other hand, it makes sense to grab something that is precious but does not often come along. Therefore, it is reasonable to suggest that the ACTING WITH URGENCY AS GRABBING metaphor, especially the subclass that profiles time and opportunity as objects, invokes two ontological metaphors: TIME AS A MOVING OBJECT and TIME AS A COMMODITY, as discussed in Lakoff and Johnson (1980).

3.3 The Construction [把住 *bǎzhù* ‘grasp firmly’ NP]

The fact that 512 (78%) out of a total of 655 tokens of [抓紧 *zhuājǐn* ‘grab tightly, clutch’ NP] retrieved from the corpus are metaphorical suggests the productivity of the construction as a conventional metaphor. Again, this productivity is further confirmed by the type frequency of NP and its type-token frequency distributions. The 512 concordances fall into 272 types. As can be seen in figure 4, the ranked frequencies of the NP fit a Zipfian distribution [fig. 4]. The top ranked four types make up 34% of the entire dataset, whereby the item in the highest rank, 质量关 *zhìliàngguān* ‘quality control checkpoint’, is

more than twice as frequent as the second ranked type, 关口 *guānkǒu* ‘checkpoint, control’, whereas the overwhelming majority (86%) of all the types are *hapax legomena* that cluster into a dark long tail at the bottom of the frequency rank. It is obvious that the construction is productively used in its metaphorical sense.

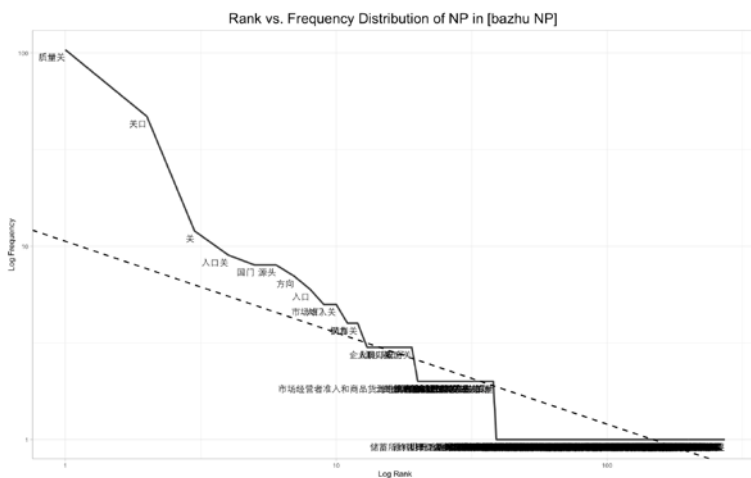


Figure 4 Power Distributions of NP in [把住 *bǎzhù* NP]

Semantically, the NP slot displays a strong preference for nouns that essentially signal control. The primary subclass is metaphorically represented by lexemes such as 关 *guān* ‘checkpoint, control’, 关口 *guānkǒu* ‘checkpoint’, and 入口 *rùkǒu* ‘entrance’ that refer to checkpoint and entrance where tight control is exercised. A related subclass consists of abstract nouns the referents of which are deemed central to organisational policy and are therefore necessary to be kept under control, such as 权力 *quánlì* ‘power’, 大局 *dàjú* ‘overall situation’, 方向 *fāngxiàng* ‘direction’ etc. Underlying all these uses is the GRASPING AS CONTROLLING metaphor, examples of which are shown in (8)-(9):

8. 帮助饲料企业把住质量关
bāngzhù sīliào qǐyè bǎzhù zhìliàng-guān
 help fertiliser company grasp.firmly quality-control
 ‘Help the fertiliser companies to perform firm quality control’.

9. 一些部门把住权力不放
yìxiē bùmén bǎzhù quánlì bú fàng
 some sector grasp.firmly power not release
 ‘Some sectors hold on to power and won’t let go’.

This GRASPING AS CONTROLLING metaphor is similar to the English idiomatic expression ‘to get a (firm) grip on something’ that conveys the abstract idea of taking control of something, as in *get a grip on your finances*. The concept of ‘taking control’ is motivated by and embodied in our physical experience with the functions of the hand as a neuromuscular system of controlling manual motions and forces for automatic object manipulation.

4 Discussion

Taylor and Schwarz noted that “the human hand represents a mechanism of the most intricate fashioning and one of great complexity and utility” (1955, 22). It goes without saying that the hand as an automatic system that governs the motions and forces of manual actions is instrumental to human evolution and individual development (Steele, Ferrari, Fogassi 2012). While the role of Chinese manual body part concepts (e.g. 手 *shǒu* ‘hand’, 掌 *zhǎng* ‘palm’, and 指 *zhǐ* ‘finger’) in lexical semantic representations of abstract human experiences is well documented, manual object manipulation actions have been largely off the radar of Chinese metaphor research. This corpus-based study filled the gap. We demonstrated that the three manual actions LIFTING WITH DELIBERATION, TIGHTLY GRABBING/CLUTCHING, and GRASPING FIRMLY specialise in systematic metaphorical representations of the respective abstract domains of human experience: OVERPRAISING OR WORSHIPPING, ACTING WITH URGENCY, and CONTROLLING. In other words, these metaphors draw on manual motor actions as the sensory motor basis of abstract cognition. The three manual action constructions are not only conventionalised, they are productive in their metaphorical usages and can readily admit new items into their open slots. These results add to the existing and accumulating evidence of embodied conceptualisation, namely that language concepts are rooted in sensory perceptions and motor actions (Barsalou 1999, 2008; Gallese, Lakoff 2005; Glenberg, Kaschak 2002; Grush 2004; Pecher, Zwaan 2005; Simmons et al. 2007; van Dantzig et al. 2008; Kiefer et al. 2008).

Our results are also significant from a crosslinguistic perspective. On the one hand, the findings revealed mapping patterns that have been observed across languages. For example, ‘opportunity’ as a metaphorical object of grabbing is common across languages, as noted in the Introduction. On the other hand, convergence in conceptual mapping is often partial if not superficial. As we have pointed out previously, [把住 *bǎzhù* NP] ‘hold fast, grasp firmly’ is reminiscent of *get a grip on something* in English. Yet the Chinese metaphor clearly attracts nouns referring to matters related to organisational policy rather than personal affairs, which cannot be said of its putative Eng-

lish counterpart. Similarly, although both Chinese and English utilise lifting metaphors to conceptualise uncritical praising and admiring, they draw on different conceptual resources. The Chinese metaphor [把 *bǎ* NP 捧 *pěng* COMPL] employs what Rüschemeyer, Pfeiffer and Bekkering (2010) call a “body schema”, with specifications of hand posture and spatial configuration, whereas English *put someone on the pedestal* relies on our encyclopedic knowledge of ‘pedestal’ as the central element of a culturally motivated imagery as the metaphor source domain. Following from this discussion, the notion of embodiment as a universal cognitive mechanism shall be understood as going hand in hand with, and as being under the influence of, experiences specific to social groups and communities that bear the stamp of culture (Gibbs 1999; Kövecses 2005).

Finally, previous research indicates the flexibility and contextual dependency of embodied representations in the sense that neural activations are relative and non-automatic (e.g. Rüschemeyer, Brass, Friederici 2007; Boulenger, Shtyrov, Pulvermüller 2012; Van Dam et al. 2012). Our results on the proportion of the metaphorical uses in the sample of data on each construction indicate a gradation of conventionality: 55% of [把 *bǎ* NP 捧 *pěng* COMPL], 78% of [把住 *bǎzhù* NP], and 91% of [抓紧 *zhuājǐn* NP] are metaphorical. Will these metaphors vary in their ability to trigger sensorimotor brain areas as a result of their differing degrees of conventionality? By establishing the relative conventionality of these Chinese motor action metaphors, this study lays the groundwork for in-depth experimental research on the involvement of the motor system in the comprehension of Chinese object manipulation metaphors in relation to conventionality and contextuality.

5 Conclusion

This study provides a usage-based constructionist perspective on manual motor metaphors in Chinese. An immediate implication to be drawn from this study is the methodological importance of quantitative usage data in establishing the conventionality, productivity, and semantic subclassification of metaphors encoded in syntactic patterns. The present cognitive semantic analysis of the three constructions lays an empirical foundation for future behavioural and neuroimaging research on the extent to which Chinese verbal metaphors of manual object manipulation engage cortical sensorimotor regions in the brain. Finally, this study holds an implication for language learning and teaching. As Jing-Schmidt (2015) suggested, the usage-based constructionist approach to language provides a toolbox for teachers as well as learners. This is particularly true of the teaching and learning of figurative language the conventionality of which defies

compositionist bottom-up comprehension and acquisition. Exposing learners to the high-frequency tokens, together with the dominant semantic subclasses of a metaphorical construction, can contribute to acquisition by facilitating prototype-based learning.

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