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Caused-Motion Constructions in Chinese: A constructional-cognitive analysis

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ABSTRACT

This paper adopts the tenets of Cognitive Construction Grammar [1,2] and Cognitive Grammar [3,4] and applies them to the Caused-Motion Constructions in English and Chinese, which has not been effectively studied in the field. This comparative study attempts to fill the research gap. Simultaneously, this paper also challenges the traditional assumption that the Construction in Chinese is a verbal compound, and argues that it involves a Catenative structure and that it signals subordinate event structure. As such, this article considers the advantages of this approach by examining its major theses and principles.

1. Introduction

1.1. Aims of the paper

For the last three decades there has been an influential approach to linguistic analysis – Construction Grammar, invented by Fillmore et al. [1] and developed by Refs. [2,3] and significantly by Refs. [4,5]. There are variants of the approach but they share some tenets with Cognitive Grammar chiefly associated with Langacker (e.g Refs. [6,7,8]. Goldberg's variant is called Cognitive Construction Grammar [5]. Other versions of Construction Grammar include Radical Construction Grammar [9]; 2013), Theory of Lexical Concepts and Cognitive Models [10] and Jackendoff's Conceptual Semantics and Parallel Architecture (e.g. Refs. [11–13]. On the other hand, cognitive-based theories include Talmy's Cognitive Semantics (e.g. Refs. [14–16]. An overview of the enterprise can be found in the some recent handbooks [17–19].

This paper attempts to show the usefulness of the constructional-cognitive orientation in describing the structure of language and because of this, I will make use of any ideas within this broad orientation as long as they are applicable to the analysis of the Caused-Motion Constructions as they demonstrate different properties of the constructions. It is not my aim to conflate different models per se. For example, we will analyze and show how the Caused-Motion Constructions in Chinese and English are represented and construe their meaning using box diagrams adopted in Construction Grammar. The use of ideas from different models aims to explicate the properties of the constructions, and I do not mean to confuse them.

First of all, this paper will discuss some general cognitive principles relevant to language adopted in a constructional-cognitive-based approach and then it will consider the data of Caused-Motion Constructions in English and Chinese attempting to understand their structures and functions. Specifically, we will discuss the constructional schemas of the Constructions and some variants of the prototypical Caused-Motion Constructions in Chines. These variants are argued to demonstrate the mental process of conceptual blending [20]. We then examine the headship of the constructions in the motion events suggesting further evidence from English and Chinese that they are indeed satellite-framed [14,15]. This is further supported by our Catenative Analysis (e.g. Refs. [21,22]) and by the evidence that the Construction signals subordination.

1.2. Previous studies of Chinese Caused-Motion structure and general problems

There have been many descriptions of the motion structure in Chinese (e.g Refs. [14,21,23–29]) and most of them argue that the Caused-Motion Construction is essentially a verbal compound with the motion verb and the directional verbs. This is what I see as the major problem with them. In this paper, we will argue for a "Catenative Analysis" of the Construction.

In general a compound exhibits several features such as inseparability, disallowance of internal modification or movement of part of the compound (see, for example [30],: Chapter 1). In English, for example, the compound *blackbird* (a special type of bird) is not the same as the item *black bird* (a bird in black), which cannot be separated by an adjunct such as *black American bird* or modified by an adjunct such as *very blackbird* (*very* modifying *black*). Nor can a part of it be moved like *the bird that is black* or coordinated as in *a black and white bird*. The

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status of *blackbird* as a compound is quite obvious.

Similar arguments can be made for the status of the Chinese construction *tui jin* ('push enter'), and notably the modification of the directional Verbs strongly suggests that this construction is a larger syntactic construction. For instance, in this example *John BA ta tui jin lai* 'John pushed her so that she came in' the sequence of Verbs *tui jin lai* ('push' 'enter' 'come') will usually be analyzed as a verbal compound, and yet the negative marker *bu* 'not' occurs inside it as in *tui bu jin lai* 'cannot push (her) into'. If this construction is a genuine compound, it is a puzzle why the adjunct can appear inside it and separate the sequence of Verbs. In addition, the construction also allows another adjunct *de* 'able' modify the second Verb such as *tui de jin* ('push' 'able' 'jin'), suggesting that *tui jin* is a syntactic structure larger than a compound. This argument can also be extended to the directional Verbs. The directional Verbs *jin lai* can also be separated by *bu* and *de* as in *jin de/bu lai*, which suggests that the item *jin lai* is not a compound as traditionally classified. Further, the item *jin lai* can be moved away from the Verb *jin* and coordinated with other directional Verbs as in *John BA ta tui jin lai bushi chu lai*.

Futhermore, when it comes to comparing Chinese with other languages such as English, this treatment of verbal compound may not fully bring out the intricacies of the syntactic and semantic properties of the similar constructions typologically. Imagine the supposedly expressed meaning of the construction is to cause or make something or somebody to move to a different direction or a place and is probably involved with similar mental mechanism in the mental process. As such, we would like to propose a different model of analysis of the construction.

Following [21,23,28] and Huddleston and Pullum [22], I propose a Catenative Analysis of the Caused-Motion Construction in Chinese, which also signals both syntactic subordination and conceptual subordination. Structurally, the motion Verb in Cantonese is analyzed as a Catenative Verb, which licenses its clausal complements headed by the directional Verb, for example, *John* [$_{\text{Catenative}}$ *zou* [$_{\text{Complement}}$ *jin wuzi*]] ('John walked into the house'). There is a similar construction in English such as *John let go of Mary* (or *come see me*), where *go of Mary* can be analyzed as a subordinate clause to the main clause headed by *let*. Between the verbs, there is no overt subordinate marker as such. Givón [31] deals with such a construction with the notion of clause union, but he treats the situation expressed by the example as a case of co-lexicalization, while we consider it as the phenomenon of subordination. This will go a long way towards understanding the structure and function of the Construction.

2. Major concerns in the constructional-cognitive approach

2.1. A construction as a symbolic assembly

This paper does not consider all variants of the models that can be described as "constructional", "constructionist" or "cognitive". Rather, it focuses on two major influential models – Cognitive Construction Grammar, as developed by Refs. [4,5] and Cognitive Grammar as invented and developed by Langacker (e.g. Refs. [6,7,8] but it also draws insights from other related variant frameworks such as Talmy's Cognitive Semantics (e.g. [14,15]). The very first idea that these two models Cognitive Construction Grammar and Cognitive Grammar share is the view of a linguistic expression as a construction, that is, a form-function/meaning pairing or a symbolic assembly. As such, I consider them to be able to describe Chinese and English adequately and particularly in terms of the Caused-Motion Constructions, which have been under intensive research in the two models. Although linguists have different interpretations of what counts as a construction, Goldberg [5]: 5) defines it very explicitly as follows:

> Any linguistic pattern is recognized as a construction as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist. In addition, patterns are stored as constructions even if they are fully predictable as long as they occur with sufficient frequency.

There are two ideas worth commenting on in this definition. First, a construction cannot be predicted from its component parts. Second, an item that occurs so frequently and maybe predictable can also constitute a construction. The second requirement was not part of the definition of a construction in Goldberg's [4]: 4) earlier work. Constructions occur at different levels of language – morphemes, words, phrases and clauses. These different levels are stored as constructions as part of the speaker's knowledge of language, which we may dub "constructional competence" – that is, a speaker's knowledge of language is knowing the constructions in his/her language.

For cognitive linguists such as [6,7]; a construction is a symbolic assembly, whose "symbolic structures are not distinct from sematic and phonological structures, but rather incorporate them" (2008:15, 2013: 15). Thus, a symbolic assembly embraces "symbolic complexity" (2008: 16, 2013: 16), which suggests analyzability of items. A word, for example, which is a construction by itself, can be analyze into further linguistic components. The word *wonderful* contains the morphemes *wonder* and *ful*, and so *wonderful* is symbolically complex. Recognizing a construction as a symbolic assembly, Langacker's Cognitive Grammar is also usage-based model similar to Goldberg's. Also echoing Goldberg's "sufficient frequency" requirement for linguistic expressions to be constructions, Cognitive Grammar holds that linguistic expressions "are abstracted from usage events through reinforcement of recurring commonalities" [6]: 458). Furthermore, new expressions are "subject to entrenchment and conventionalization, becoming conventional units" [6]: 459). Usage is important not only in the actual use of language by adults but also in acquisition and learning by children. The learning process generally takes place throughout our lives.

2.2. Cross-linguistic comparison

The description of a language relies on an accurate account that reflects the facts of the language, but representing the facts also implies using a certain theoretical framework within which the language can be described. Common grammatical concepts such as subject and object used to mark the syntactic relations in a clause already suggest that they exist in the language described. However, it is not the case that all languages possess the same grammatical relations or any other structures. Thus, constructions are language-specific, while universals lie in the conceptual structure of languages [9]: 109). This raises the issue of the validity of cross-linguistic comparison. In my view, the constructional-cognitive approach to language can provide us with a useful framework within which linguistic structures of different languages can be compared. In fact, a variant of such an approach, Radical Construction Grammar [9], aims at just that – examining the structures of different languages. An entirely framework-free description seems to be quite difficult (but see Ref. [32] for arguments against adopting a linguistic theory for language description).

Given the above consideration, we propose a comparison of the argument structure constructions in English and Chinese rather than a comparison of grammatical relations. Chinese, arguably, does not possess the same grammatical relations as English does [33]. Figs. 1 and 2

Topic	Comment		Information
Agent		Patient	Semantics
Subject	Predicator	Object	Grammatical Relations
NP	V	NP	Syntax
John	*kicked*	*the ball*	

Fig. 1. English transitive construction [34,35].

Topic	Comment		Information
Agent		Patient	Semantics
NP	V	NP	Syntax
John	*ti*	*qiu*	

Fig. 2. Chinese transitive construction.

illustrate the argument structure of the Verb *kick* in English and Chinese Transitive Constructions. Notice that in the Chinese representation, there is no grammatical relation tier, as I follow LaPolla's observation. However, the Verb in Chinese could be assigned the role Predicator, if necessary. While we compare English and Chinese, we certainly do not want to nudge one language's structure into another's.

Although we do not explicitly analyze the linguistic constructions in a Radical Construction Grammar perspective, we implicitly agree with Croft ([36]: 214) that "the distribution of a syntactic unit is actually defined over a set of constructions", and variants of Construction Grammar recognize "the existence of constructions". Also in line with Croft, we consider the constructions to be language-specific and that "there are no grammatical categories independent of constructions, since each construction defines its own distribution" ([36]: 216). Thus, the representation of the Chinese Transitive Construction in Fig. 2 does not indicate grammatical relations [34,35].

There is a further advantage of examining the Chinese argument structure construction instead of the traditional way of analyzing the sentence structure. For one thing, the notion of a sentence in Chinese is not entirely linguistic but conventional. For the other, the punctuation such as a full-stop does not really mark a clausal boundary. However, in analyzing the argument structure of a predicate we can rely on such a representation as Fig. 2 that provides the syntactic and semantic information of the predicate concerned, from which a clause can then be analyzed.

3. Caused-Motion Constructions in English and Chinese

3.1. Representations of Caused-Motion Constructions

Apart from the Transitive Construction illustrated in Fig. 1, there exists a construction in English similar to the Ditransitive Construction, which licenses two Complements (or Objects), that is, the Caused-Motion Construction. The evidence for this Construction in English lies in the fact that the Verb does not have to have a sense of "cause", as in (1). However, the Verb *kick* occurs in the Caused-Motion Construction will have a causative meaning, as in (2) [4]: 153).

1 *John kicked the dog.*

2 *John kicked the dog into the house.*

Fig. 3 below visually represents the Caused-Motion Construction in English –*John kicked the dog into the house*:

The semantics and the syntax align in Fig. 3. The roles of the Construction are Cause, Goal and Theme, which are fused with the roles assigned by the Verb [4]: 50). The Goal is not obligatory, and so this representation can accommodate Examples (1 and 2), without postulating two different lexemes of *kick*. Further, Example (1) shows the typical English Transitive Construction while Example (2) the Caused-Motion Construction in English.

Sem	CAUSE-MOVE	<	**cause**	goal	**theme**	>
R: instance	KICK	<	kicker	▼	kicked	>
Syn	V		Subj	Obl	Obj	

Fig. 3. Constructional Representation of *kick*.

Another item of evidence for the Caused-Motion Construction is that speakers of English will understand the meaning of the Construction even though they may not know what the Verb exactly means. The meaning of Example (3) does not depend upon the Verb and speakers will know that it refers to some kind of cause leading to some movement of the dog into the bathroom.

3 **John frept the dog into the bathroom.*

Experiments such as testing subjects for the meaning of a sentence has been done. Goldberg [4]: 35) created the nonsense word in this sentence *She topamased him something*, and found that six out of ten subjects considered the nonsense word "topamased" to mean "give", which shows that the word has this meaning because it occurs in this construction, like a Ditransitive Construction.

The Caused-Motion Construction also expresses events, with participants and processes. To ensure that meaning of the event structure is represented properly, two Principles can be used [4]: 50):

The Semantic Coherence Principle: Only roles which are semantically compatible can be fused.

The Correspondence Principle: Each participant role that is lexically profiled and expressed must be fused with a profiled argument role of the construction.

What they mean is that a kicker, for example, is a kind of Cause, and so they are fused. Also, as in (1) the Verb does not have a second Complement and it is not lexically profiled, that is, it is optional.

In addition to these two Principles, I would like to propose the use of the notions Figure and Ground as they are employed in Talmy (e.g. Ref. [14]. Figure, in Langacker's term, receives primary focal prominence and Ground secondary focal prominence. They are useful when we compare the Caused-Motion Constructions in English and Chinese below.

In Goldberg's [4]: 88) original design Goal is not profiled because, for example, the Verb *kick* in English can be bivalent, taking only two arguments as in Example (1). However, I would like to make it more prominent as it is the Goal that mainly contributes to the creation of the Caused-Motion Construction, without which there is only the Transitive Construction with a fairly general Agent-Patient meaning. In the original formulation of Langacker [6]: 66) "an expression's profile stand out as the specific **focus** of attention within its immedicate scope" (original emphasis). Further, "an expression can profile either a **thing** or a **relationship**" [6]: 67 original emphasis). It is these two ideas that allow us to modify Goldberg's diagram of not profiling the Goal. The Goal specifies the thing and also a relationship between the kicker and the kicked, without which the whole meaning of caused-motion does not realize properly. Otherwise, as in John kicked Mary there is only a relationship between a kicker and a kicked, and there is no suggestion of the caused-motion idea. Another modification I would like to make is that the theme should be the Figure as it traverses from one location to another,[1] and I would reserve "Cause" for the Subject in English, as illustrated in Fig. 4.[2]

3.2. Constructional schemas

Given the characteristics of the Caused-Motion Construction in English, there are constructional schemas or patterns which allow speakers to figure out how they can be applied to the real data. They

[1] This is fairly consistent with the mainstream linguistics that the semantic role theme is something that moves (see e.g. Ref. [13].

[2] I thank the reviewer for making clear this notation to me. Although I follow Goldberg, I would think that the Goal in Chinese is prominent because it contributes to the creation of the construction. I italize it here.

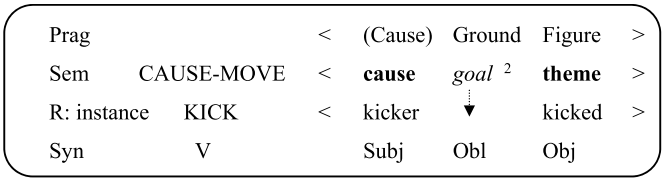

Fig. 4. Constructional Representation of *kick* with Figure and Ground.

must employ both knowledge of the English lexicon and knowledge of the Construction.

The modern history of linguistics has been about how speakers acquire the grammar of their mother tongue, that is, in generative grammar, Universal Grammar, which has been considered to possess a set of principles with binary parameter settings, so as to explain why English phrases are head-initial and Japanese phrases are head-final. To represent the Caused-Motion Construction, it is sometimes advised to remember NP + V + PP [P + NP], as illustrated in Example (2) *John kicked the dog into the house*.

Later research has suggested that children do not acquire their language with pre-wired universal principles. Rather, they acquire or learn their languages by observing how languages are actually used (e.g. [37]). This usage-based approach has been so influential that Construction Grammar and Cognitive Grammar endorse. To exemplify, we can consider the process of chunking, which is "based on the general organization of memory" ([38]: 34). Chunking involves the repetition of linguistic expressions through experiences. Particularly useful for our purposes is the relationship between chunking and the "prefabricated sequences of words" ([38]: 34), as the Caused-Motion Construction is partly "formulaic" and partly productive. Speakers are expected to learn the Construction through their contact with the data, which will become entrenched as a conventional system.

To capture the essence of the usage-based model, cognitive linguists consider constructional schemas for linguistic expressions stored in speakers' long-term memory. Constructional schemas, which are "conventionally established patterns for putting together symbolic assemblies", are more schematic and less specific, "being abstracted from occurring expressions as skeletal representations of shared organizational features" [7]: 168). Fig. 5 can be regarded as such a constructional schema for the English Caused-Motion Construction, illustrated with examples [4].

4 *John cleaned the soap out of her eyes*

5 *John pushed that into the box*

6 *John sneezed the napkin off the table*

Observe that even an intransitive such as *sneeze* can license its Complements, which are provided by the Construction.

The Chinese Caused-Motion Construction differs from the one in English in several respects. First, the Construction can license Directional Verbs in Chinese. Second, there can be two Directional Verbs in a series – the first expressing the Path and the second Deixis. Third, the Goal (or Location) is often optional. Fourth, the Goal can occur between the Path and Deixis. Further, Chinese seems to be more restrictive in using the Motion Verb in the Construction. For instance, (4 and 6) do not work in Chinese, which relies on another Construction – the *BA*-Construction, as in (10). Fig. 6 illustrates the constructional schema of the Chinese Caused-Motion Construction. (7 and 8) are typical examples of this construction.

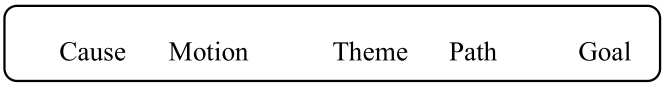

Fig. 5. Constructional schema of English caused-motion construction.

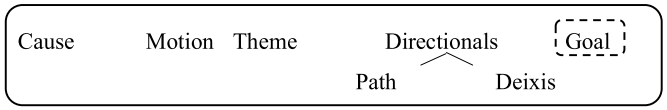

Fig. 6. Constructional schema of Chinese caused-motion construction.

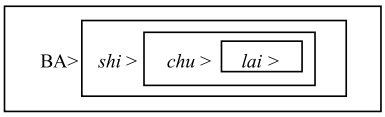

Fig. 7. Conceptual containment of mental spaces.

7 *John tui ta jin lai.*
John push her enter come
'John pushed her so that she came in'.

8 *John tui ta jin wuzi lai.*
John push her enter house come
'John pushed her into the house'.

9 *John ba feizao cong ta yanjing xi chu lai.*
John BA soap from her eye wash exit come
'John cleaned the soap out of her eyes'.

Example (9), which is the Chinese counterpart of (4), needs further comments. This sentence exhibits a more complicated linguistic structure in Chinese. The Verb *xi* ('wash') has the Patient argument *feizao* ('soap') but it is transposed to the position after *BA*, which is treated as different categories in the literature, for example, Verb, Dummy Case Assigner or Preposition ((e.g Refs. [24,29]). However, we consider it as a "Catenative Verb" and it takes a catenative complement. The semantics of the *BA*-Construction typically indicates something being disposed of or affected and thus is often referred to as the "Disposal Form". Hence, in (9) it is the soap being disposed of, that is, being washed out of the eyes. This Construction cannot be predicated from other constructions that exist in Chinese and speakers have to learn the form and meaning of this Construction. Furthermore, the Construction displays a complicated cognitive process employed by speakers. In (9) the Verb *xi* ('wash') indicates the Motion and it specifies the Path and Direction *chu lai* ('come out'), whose mental space is anchored by the referent of the soap. Then it combines with the Causative meaning of *BA*. This mental process is a case of conceptual blending [20], which merges two input mental spaces [20,39] and produces an emergent space that is not entirely predicated from the source inputs. To understand this process of forming mental spaces with this construction relies on the use of the space builder, which "is a grammatical expression that either opens a new space or shifts focus to an existing space" [20]: 40).

Thus, I regard the word *BA* as a space builder that "either opens a new space or shifts focus to an existing space". *BA* is able to shift the focus to the motion to directions. The Construction also shows conceptual containment of mental spaces, as in Fig. 7,[3] which refers to the phenomenon that "one clause is taken as literally being 'inside' another, functioning as an integral part within a larger whole" [40]: 18).[4] This notion is applicable here to both syntactic and conceptual levels. If BA opens a new space to *xi*, which shifts the attention to the motion and direction *chu lai*, the dynamic series is processed as if one action

[3] I thank the reviewer for questioning what is contained in the mental spaces. In terms of notations, I adopt an eclectic approach using box diagrams.

[4] One can imagine that this property reflects the fundamental property of language – recursion (See Ref. [44]).

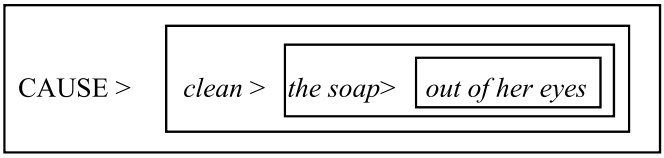

Fig. 8. The Mental Spaces of *cleaned the soap out of her eyes*.

embraces another, since "[each] matrix verb is a **space builder**, introducing a spaces that holds the proposition expressed by the following clause" [40]: 24 original emphasis), as shown in Fig. 7, which is a modified version aiming at further explicitness than the one original conceived by Ref. [39]. The mental processes of course would not consist of physical boundaries of them.

My use of the diagrams are derived from those of Langacker's (e.g. Ref. [40]: 23), and they are modified to be deciphered more easily if compared with those of Langacker's. Fig. 7 indicates some "conceptual containment" rather than "symbolic containment", where we regard it as conceptual subordination in relations to containment. Thus, *lai* 'come' is conceptually subordinate to *chu* 'exit', which is conceptually subordinate to *xi* 'wash', and they are subordinate to *BA* conceptually.

A similar mental process also occurs in English. In Example (4) the Verb *clean* is a typical monotransitive (bivalent) verb and yet there is an Oblique Complement after it because it is licensed by the Construction with the schematic meaning of Cause in it (Fig. 8).

Although we can consider Figs. 5 and 6 as two constructional schemas of the Caused-Motion Constructions in English and Chinese, what we see here is two different syntactic representations in two languages with the same cognitive process. The actual instantiations of the schemas may be different, but speakers of the two languages seem to construe the same situation. We try to understand the happenings in the world around us through construal.

To complicate the issue, there is one more subtype of Caused-Motion Construction in Chinese, which makes use of *dao* ('arrive') and can be dubbed "*DAO*-Construction". Similar to our treatment of the *BA*-Construction, this Construction is also considered to be a Catenative Construction – *DAO* being the Catenative Verb. According to Goldberg [4]: 173), Example (10) is anomalous because "the direction of force only implies that the theme argument moves out of, or away from, its present location" [4]: 172).

10 *#John frightened Mary under the bed.*

11	*John*	*xia*	[*dao*	*Mary*	*duo dao*	*chuang*	*di*].
	John	frighten	arrive	Mary	hide arrive	bed	under

'John frightened Mary to the extent that she hid under the bed'.

While Example (10) is not very felicitous, we can make sense of it in a particular context. It takes the same linguistic form as a Caused-Motion Construction in English, but its counterpart in Chinese employs the *DAO*-Construction for speakers to construe the same situation. On top of the schematic abstract meaning of CAUSE this Construction further blends the mental space anchored by DAO – the extent. Fig. 9 illustrates the *DAO*-Construction without the detailed internal layers within it, which also show separate mental spaces anchored by the Verbs *duo* ('hide') and *dao* ('arrive'). It seems that while English allows one general constructional schema of the Caused-Motion Construction to construe situations, Chinese allow different Constructions or constructional schemas to construe the caused-motion events. Alongside the canonical Chinese Caused-Motion Construction, we will need to postulate the *BA*-Construction and the *DAO*-Construction. In Lakoff's terms [2] the prototypical Chinese Caused-Motion Construction can be regarded as a "radial category" with the *BA*-Construction and the *DAO*-Construction as its variants. See Ref. [23,28] for the arguments that BA is a radial category.

The characteristics of the Caused-Motion Constructions in English and Chinese seem to confirm our observation that the chunking of

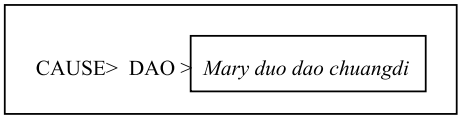

Fig. 9. *DAO*-construction and mental spaces.

linguistic expressions is "based on the general organization of memory". Thus, speakers of English and Chinese store the constructional schemas of the Caused-Motion Construction in a different pattern in their long-term memory and apply them to real-world data.

3.3. Chinese as satellite-framed

Already implicit in our proposal of the Catenative Analysis of the Chinese Caused-Motion Construction is the recognition of the fact that Chinese, similar to English, is satellite-framed (e.g. Refs. [14,41]). Talmy [14,15] has proposed the typology of languages and argued that there are two broad types – verb-framed and satellite-framed languages, in which English and Chinese are classified as the latter type [21]. provides further arguments for this classification.

> Languages that characteristically map the core schema into the verb will be said to have a framing verb and to be verb-framed languages … 'languages that characteristically map the core schema onto the satellite will be said to have a framing satellite and to be satellite-framed languages [14]: 222).

Following [15,21]; we consider Chinese to be satellite-framed. "The term 'satellite' named a constituent in construction with the main verb (root) and syntactically subordinate to it as a dependent to a head" [15]: 135). Hence, in Talmy's framework the Chinese Directional Verb and the English Preposition can be viewed as the "satellite" of the Motion Verb. In terms of the characteristics of the Chinese Caused-Motion Construction, we revise Talmy's framework and add one more Satellite for Chinese, as Fig. 10 shows. Examples 5 and 7 are repeated here as 12 and 13, respectively.

12 *John pushed that into the box.*

13	*John*	*tui*	*ta*	*jin*	*lai.*
	John	push	her	enter	come

'John pushed her so that she came in'.

Revising Talmy's typology a little, we could regard the situation in Chinese as "Double-satellite Construction" in Chinese [21]. Given the fact that either satellite 1 or satellite 2 can occur with the Motion Verb, we simply refer to this as satellite-framed, following Talmy. However, notice the strict linear order of the satellites.

14 *John tui ta jin lai.*

15 **John tui ta lai jin.*

The choice of the satellites depends on the Motion Verb and the Caused-Motion Construction, which provides the constructional schema for the Verbs, as Fig. 6 shows.

Talmy's typology of motion events is also theoretically significant in another respect. It predicts that there exists temporal iconicity in the motion events indicated by the Motion Verb and the satellite. Usually,

Motion	Satellite1	(Satellite2)
push	*into*	
tui	*jin*	*lai*

Fig. 10. Revision of Talmy's framework.

the motion event is the cause and the path, direction and goal come after the cause. In Example (12), however, the action *push* is the cause and it is simultaneously moving on the path to the goal *into the box*. The two co-events are co-extensive. If this is so, they can be considered to constitute a macro-event [14]. Otherwise, if two co-events occur one after another, the first one is often viewed as the cause and the second the effect. Example (13) can be construed in two different ways. First, the pushing and the entering are conceived as co-extensive, as constituting one macro-event. Alternatively, the pushing stage can be construed as starting earlier than entering and thus this constitutes two events. The interpretation of the Example will depend upon the context. In this regard, it seems that Chinese offers more flexibility in the construal of the motion events. This phenomenon reflects the Scene Encoding Hypothesis [4]: 39):

> Constructions which correspond to basic sentence types encode as their central senses event types that are basic to human experience.

In this case, it is the causing event and the motion event that are basic to human experience.

4. Communicative functions and unpredictable chunking

As has been considered, the constructional-cognitive model is usage-based, that is, it is concerned with actual functions of linguistic expressions or constructions. Haiman [42] proposes the Principle of Maximized Expressive Power that "the inventory of constructions is maximized for communicative purposes" [4]: 67). The English Caused-Motion Construction follows this Principle closely in that all the conceptual elements are present, namely, Cause, Motion, Theme, Path and Goal, while Goal in the Chinese counterpart is not always specified, and thus, relying on the speaker's inference.

Communicative functions also involve identifying what is prominent and what is not. In Cognitive Grammar prominence is achieved in several ways, one of which is through the use of trajector/landmark alignment. In this paper we adopt the terminology of Talmy and use Figure/Ground instead. The Figure is the most prominent "entity construed as being located, evaluated, or described" [7]: 70). Thus, it receives the primary focus; the Ground, however, "is made prominent as a secondary focus". Thus, the Ground (i.e. Goal) in the Chinese Caused-Motion Construction may not receive the focal prominence.

While English allows the Caused-Motion Construction to have the primary focus and the secondary focus, respectively, the Chinese counterpart may not have the secondary focus as there may not be a Ground, as in Example (7). In other words, English speakers have to perspectivize the all the participants in the event, while Chinese speakers may only perspectivize the Cause and the Figure. This is particularly clear in Example (6), where the Verb sneeze is a typical intransitive Verb that does not take a Complement, but now it perspectives the Goal. This point of communicative functions is important because conveying meaning or making sense is primary for our human activities.

Another element worth emphasizing is the fact that Motion is construed as Cause and Path and Goal as outcome or result. Thus, the Ground (secondary focus) is part of the outcome. Remember Cognitive Grammar regards linguistic expressions as items that "are abstracted from usage events through reinforcement of recurring commonalities" [6]: 458). Knowledge of the Caused-Motion Construction includes not merely knowledge of its form but also knowledge of its functions, which is understood broadly to embrace knowledge of discourse and pragmatics.

As Figs. 5 and 6 show, the constructional schemas of the Caused-Motion Constructions in English and Chinese contain different configurations. Speakers must of course master the constructional schema; and by doing that, they do not merely store the schema in their long-term memory but also need to find out the verb classes that typically occur in the pattern, as the classes in Chinese are less productive and more restrictive (with a limited number of Directional Verbs). Those Verbs occurring in the Construction very frequently are more likely to be entrenched and then become part of the speaker's linguistic competence.

For example, while the Verb sneeze is intransitive, some transitive Verbs in the Caused-Motion Construction take a further Complement.

16 *John sliced the cheese onto the plate.*

The Verb slice is a transitive Verb taking an Object the cheese, but the motion of slicing causes the cheese to fall onto the plate. Thus, onto the plate is not a Complement of the Verb.

17 *John sliced the cheese.*

18 **John sliced onto the plate.*

Again, it is not much use to consult a learner's dictionary, where will list slice as "Transitive", but probably not "Ditransitive" (taking two Complements). Therefore, it is the composite Caused-Motion Construction speakers have to learn. The Chinese counterpart of (16) would have to make use of the DAO-Construction such as John qie zhishi **dao** panzi li.

5. Subordinate event structure

We human beings observe the world and events occurring around us through our experiences with the world. We tend to perceive events as dynamic, that is, they tell us 'who-does-what-to-whom'. However, we do not passively accept all we perceive; rather, we construe the world in our own way, playing attention to some processes or participants. The Caused-Motion Construction provides us with a means to view the one of the commonest events that occurs around us – the caused-motion event. Thus, we see a macro-event which subsumes two co-events [14] – cause and movement, as shown in Fig. 11.

Although speakers of English and Chinese see the same event, as in Fig. 4, Chinese expresses the event differently from English in that it employs two or three Verbs to show the co-events. Further, Chinese speakers can construe whether the Theme or the Goal to be more prominent, as the Goal is often optional, which makes the Theme prominent, having more attention.

19 *John pushed Mary into the house.*

20	*John*	*tui*	*Mary*	*jin*	*wuzi.*
	John	push	Mary	enter	house

'John pushed Mary into the house'.

The subordination of the Caused-Motion Construction in Chinese in our view also subsumes a structure involving a complex event. Subordination [8]: 436) refers to "a state of affairs whose profile is overridden by the profile of the main clause", and thus in (20) *John tui Mary jin wuzi* ('John pushed Mary into the house'), *tui* ('push') is profiled making it the head of the clause. This profiled state of affairs expressed by *tui* 'push' also has some bearing on temporality. One can imagine that John was pushing Mary and there can be time difference between the time of *tui* 'push'and that of *jin* 'enter', although one can also construe the overlapping of time of the activities [27]: 4). However, I tend to regard this phenomenon as a cause and effect situation. This is in consistence with Croft's Causal Order Hypothesis ([43]: 222 Example 3, see Fig. 12):

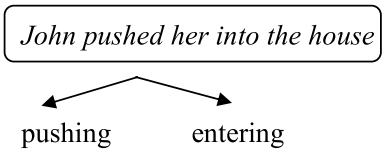

Fig. 11. Macro-event.

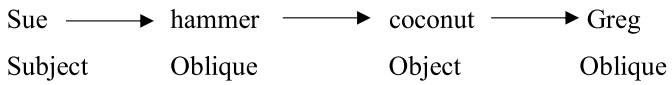

Fig. 12. Causal chain representation.

What is different in (20) is that Chinese does not make use of grammatical relations like Obliques but the causal link is via a Motion Verb and a Path Verb. Thus, the cause is John's pushing Mary and the effect is Mary going into the house. Following our Catenative Analysis, we also propose that the Motion Verb in this case is a Catenative Verb taking *Mary jin wuzi* (Mary enter the house') as its complement. The Motion Verb in (20) *tui* 'push', according to Talmy [15]: 134), designates a co-event. "The co-event mainly represented the Manner or the Cause of the Figure's Motion". Yet, we consider it as a main event for it initiates the motion or activity and leads to some kind of state or result.

Therefore, the motion Verb indicates an activity and the directional Verb *jin* 'enter' indicates a change of state, as in (22), while in English enter subsumes both the activity and change of state. What we suggest here is that both enter in English and *tui jin* 'push into' in Chinese consist of a complex event structure.

Furthermore, (21) involves the DAO-Construction giving the result endpoint, and (22) is a BA-Construction promoting Mary to the position before *tui jin* 'push into'. As has been said earlier, the item BA is considered to be a Catenative Verb taking a clausal complement. Thus, the event structure of (21) and (22) is viewed as complex as that of (20).

21 *John tui Mary **dao** wuzi li.*
John push Mary arrive house inside
'John pushed Mary to the extent that she entered the house'.

22 *John **ba** Mary tui jin wuzi.*
John BA Mary push enter house
'John pushed Mary to enter the house'.

Thus, implicit in our analysis is that a complex structure expresses a complex event. This is particularly true when the Motion Verb and Directional Verb cannot be together and thus a complex sentence has to be used. (23) is difficult example. The Cause sneeze '*dapenti*' cannot license a Directional Verb. The Chinese equivalent would have to involve more than a sentence to express its meaning. In other words, we have to argue that (23) in Chinese consists of a complex event. English can package the information of a complex event in a single item, while Chinese will find another way.

23 *John sneezed the napkin off the table.*
24 **John dapenti shoupai likai zuozi.*
25 **John dapenti ba shoupai likai zuozi.*
26 *!*John dapenti dao shoupai likai zuozi.*
27 ?*John dapenti lingdao shoupai likai zuozi.*

Knowing what is important or prominent in an event is very useful. We can direct people's attention by focusing on a certain element with language. Being aware of the usual requirement of the Goal in the English Caused-Motion Construction is a step towards drawing attention to an event.

6. Summary and conclusion

This paper argues for a constructional-cognitive approach to the analysis of the Caused-Motion Construction in Chinese. We also compared the properties of both English and Chinese Caused-Motion Constructions. With the major principles, the model recognizes different constructions and patterns – form-meaning pairings or linguistic assemblies. In particular, we make use of ideas from Cognitive Construction Grammar [4,5] and Cognitive Grammar [6,7]. We introduced the basic tenets of the two models of cognitive grammar, and illustrated how they could apply to the Caused-Motion Construction, with English data. We also discuss one of the main ideas that speakers store linguistic expressions as constructional schemas in long-term memory, which will be instantiated in the actual uses. Thus, these models are usage-based. Further, we argue for the Catenative Analysis of the Caused-Motion Construction in Chinese, which consists of a complex event. Last but not least, it is hoped that further research could continue applying the constructional-cognitive principles and ideas to other areas of Chinese grammar.

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