

# An Event Integration Approach to Lexicalizations of Action Correlating Events—A Case Study of “V + Dào” Construction in Mandarin

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**How to cite this paper:** Yu, L. (2021). An Event Integration Approach to Lexicalizations of Action Correlating Events—A Case Study of “V + Dào” Construction in Mandarin. *Open Journal of Modern Linguistics*, 11, 335-360.

<https://doi.org/10.4236/ojml.2021.113027>

**Received:** May 3, 2021

**Accepted:** June 4, 2021

**Published:** June 7, 2021

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## Abstract

This paper investigates the lexicalization patterns of action correlating events from the perspective of Talmy’s Macro-event theory and its revised event integration model. Based on the case study “V + Dào” construction in Mandarin, which is a rather pervasive structure in CCL corpus with high frequency, the event semantics, syntactic properties as well as the event integration patterns of “V + Dào” construction are fully explored by the means of correlation analysis and its visualization. The research results indicate that: 1) Both the internal and external event integration processes indicate the event integration hierarchy “V + Dào” construction in the domain of action correlating event. 2) In the process of the internal event integration, on the one hand, two or three conceptual primitives can be conflated in “V” and “Dào” respectively. On the other hand, both “V” and “Dào” share one common conceptual primitive of “act”, and others provide the elaboration sites with each other in the process of the external event integration. 3) Based on the core schema of “correlation” mainly encoded in the verb root of “V”, this paper claims that Mandarin Chinese, different from the motion event, exhibits the verb-framed language in the domain of the action correlating event. 4) Further, the semantic resonance and its (dis)appearance of “correlation” encoded in the different linguistic components simultaneously deserves further discussion. In a nutshell, these results support the event integration model hierarchically distributed in “V + Dào” construction with the conceptual primitives mapping in common and elaborating with each other between “V” and “Dào”. This study of the action correlating event, covering the term of “reciprocity” of human mutual acts, reflects and provides an insight into human social cognition from the perspective of linguistics.

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## Keywords

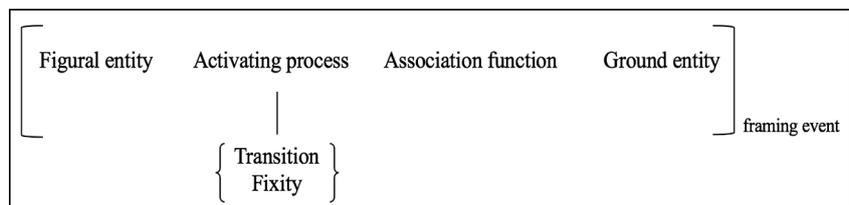
Action Correlating Events, Typological Confusions, In/External Event Integration Model, Correlation Analysis, “V + Dào” Construction

## 1. Introduction

Action Correlation, represented by the human coactivities, lies at the heart of social cognition (Nedjalkov, 2007; König & Gast, 2008; Wierzbicka, 2009; Evans et al., 2011). However, the lexicalizations of action correlation events have received scant attention, especially, in linguistics (Talmy, 2000; Evans et al., 2011). Talmy (2000: p. 253) elucidates that an action correlating event is “a case of coactivity”, in which “a first agency<sub>[Agent]</sub> executing a particular activity is associated with a second agency<sub>[Agency]</sub> whose activity is correlated with the first”<sup>1</sup>.

The action correlating event can be seen as an analogy to the motion event (Talmy, 2000: pp. 254-255). Both motion event and action correlating event are schematized as a macro-event represented in a single clause, which consists of the framing event and co-event, and the latter bears a support relation to the former. We will take the basic components in the framing event and the support relation of co-event as schematic conceptual primitives, and regard the corresponding of these schematic conceptual primitives in different event types as instantiated conceptual primitives. These schematic conceptual primitives in the framing event are represented in **Figure 1**.

In **Figure 1**, four schematic conceptual primitives are subsumed in the framing event (Talmy, 2000: p. 218). 1) The first conceptual primitive is the figural entity, which is currently focused on. 2) The second one is the ground entity, which functions as the background or the reference point in contrast with the figural entity. 3) The third is called the activation process that contributes to the factor of dynamism to the whole event. It contains, by and large, only two values—transition and fixity. For instance, in a motion event, these two values are conceived as “motion” and “stationariness”, and they can also be interpreted as “change” and “stasis” in a state change event. 4) Finally, the last one is the **association function**, which sets a relationship between the figural entity and the ground entity. These four schematic conceptual primitives can be instantiated and reified in terms of different event types.



**Figure 1.** Talmy (2000)’s schematic conceptual primitives in the framing event.

<sup>1</sup>Note that we use the term [Agent] for the first agency and the distinct term [Agency] for the second one.

On the one hand, in a motion event, the figural entity is a physical object and plays the role of Figure in relation to the whole event (Talmy, 2000: pp. 226-227). The figural entity can be agentive or non-agentive. Its ground entity is a second physical object functioning as a reference point, playing the role of Ground in the event. The activating process is a transition between Figure and Ground, and there are two modes of transition, one is motion and the other is stationariness. The association function is related to the activating process, which contains the path for the motion event or the site occupied by the Figure.

The action correlating event, on the other hand, can be metaphorically corresponded to the motion event (Talmy, 2000: pp. 254-255). The figural entity is an Agent's action, while the ground entity is an Agency's similar or related action. Similar to the "Path" in a motion event, the association function can be conceptualized as "In-Correlation-With", and the activating process can be, in specific, termed as "Act". This event includes "concert" (see example [1]a), "accompaniment" (see example [1]b), "imitation" (see example [1]c), "surpassment" (see example [1]d), "demonstration" (see example [1]e), from which the "interaction" between Agent and Agency is the specific property of the action correlating event.

- [1] a. I played the melody **together with** him. (concert)
- b. I played the melody **along with** him. (accompaniment)
- c. I played the melody **in-imitation-of** him. (imitation)
- d. I **out** played him. (surpassment)
- e. I played the melody **in-demonstration-to** him. (demonstration)

(Talmy, 2000: pp. 257-261)

From example [1]a-e, we can find that the coactivities are represented by "together with", "along with", "in-imitation-of", "out-", "in-demonstration-to". The phrases of "together with", "along with", "in-imitation-of" and "in-demonstration-to" are represented by the satellites, while only the morpheme of "out-" is encoded in the verb. However, not everything can be divided into black and white, that is, Talmy's influential typological dichotomy of verb-framed language and satellite-framed language. Moreover, different lexicallization patterns have further revealed the limitations of Talmy's typology across various languages (Acedo-Matellán, 2016; Aske, 1989; Beavers et al., 2010; Chu, 2004; Ibarretxe-Antunano, 2004; Ji, Hendriks, & Hickmann, 2011; Naidu et al., 2018; Li, 2018, 2020; Li, 2020; Pavlenko & Volynsk, 2015; Slobin, 1996, 2004, 2006; Yu & Li, 2018; etc.).

With regard to Mandarin Chinese, there also exist some other linguistic phenomena that could hardly and exactly be matched into Talmy's dichotomy of typology. Talmy's typology also couldn't further explain why some Chinese expressions belong to satellite-framed language (Talmy, 2000; Shen, 2003; Li, 2013, 2017; Liu, 2014; etc.), some belong to verb-framed language (Tai, 2005; Tai & Su,

<sup>2</sup>Equipollently-framed language: Slobin (2004: p. 25) claims that Sino-Tibetan is a kind of equipollently-framed language in which path and manner are expressed by equivalent grammatical forms, such as serial-verb expressions.

2013; etc.), and even some are classified as equipollently-framed language<sup>2</sup> (Slobin, 1996, 2004, 2006; Chen & Guo, 2009; Kan, 2010; etc.). In addition, Talmy's macro-event includes motion event, temporal contouring event, state change event, action correlation event and realization event. Nevertheless, the studies among them are uneven and un-balanced, the research of motion events and state change events can be found in the literature of various areas (Li, 2013). Regarding the typological confusions, we propose that it is necessary to go back and explore the (re)combination of these conceptual primitives, in specific, the processes of event integration beyond the typology. Because the phenomenon of the event integration is indicated in the single clause, and most of them are discussed in Chinese verb complements, we will take "V + *Dào*" construction as a case study in this paper for the following reasons. Above all, "V + *Dào*" construction has its own linguistic specificities, and it is also very controversial to be classified into different classifications of verb complements in traditional Chinese linguistics, such as directional complement, resultative complement and phase complement. In addition, "V + *Dào*" construction is the most prominent one among the verb complements, for it could provide an "ending" meaning in the individualization of events. With the aim to figure out the event integration processes of action correlation events, this paper attempts to answer the following two questions: 1) What are the features of event integration patterns in the case study of "V + *Dào*" construction in Mandarin? 2) How, and to what degree, do the event integration patterns of the "V + *Dào*" construction correlate to its semantic and syntactic properties? Besides the introduction in Suction 1, Section 2 establishes an event integration model of the action correlating event in terms of the motion event, Section 3 introduces the methodology used in this paper as well as the corresponding results and discussion in Section 4, and finally, Section 5 summarizes the conclusions of this paper.

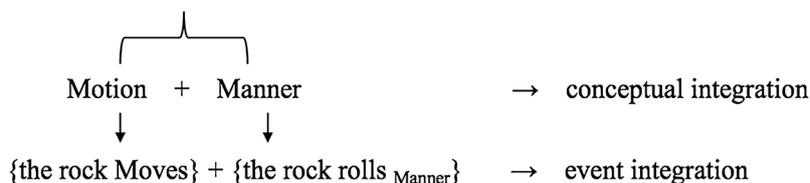
## 2. An Event Integration Model of Action Correlating Events

Since this paper is guided by the macro-event theory and its processes of event integration, and the action correlating event is derived metaphorically from the motion event, the first step is to figure out the conceptual primitives of Figural Entity, Ground Entity, Activating Process, Association Function in the framing event and Support Relation in the co-event. With regard to the analogy between motion events and action correlating events, the next step aims to establish an event integration model of the action correlating event in this section.

Event integration refers to the cognitive process of reconceptualization that involves the conceptual integration or conflation of events (Talmy, 2000: p. 216). In event integration, a verb root can integrate several conceptual components or events. For instance, the verb root "roll" in example [2] integrates two events, one expresses the "Motion" of the rock by the clause of "the rock Moves", and the other describes the "Manner" of the rock's motion by the clause of "the rock rolls<sub>(Manner)</sub>". Therefore, the verb root "roll" integrates two conceptual compo-

nents of “Motion” and “Manner”, and their corresponding two events expressed by two clauses are integrated as a complex event represented by a single clause.

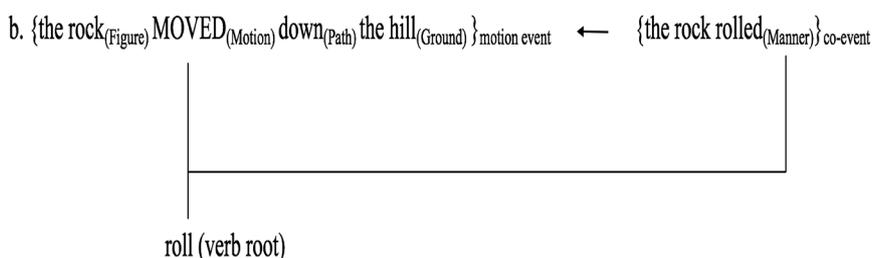
[2] The rock **rolls**.



A complex event is also termed a macro-event (Talmy, 2000: p. 216), which consists of a framing event as the main event and a co-event as the subordinate event (ibid: 216-220). The framing event constitutes a particular event schema, which can schematize five different semantic domains—an event of motion or location in space (motion event), an event of contouring event in time (temporal contouring event), an event of change or constancy among states (state change event), an event of correlation among actions (action correlating events), and an event of fulfillment or confirmation in the domain of realization (realization event) (ibid: 217-218). In general, the co-event bears a support relation to the framing event. To be more specific, the co-event, as a subordinate event, constitutes an event of circumstance in relation to the macro-event as a whole and performs the function of support in relation to the framing event (ibid: 220). Moreover, the co-event functions to fill in, elaborate, add to or motivate the framing event, such as “cause”, “manner”, etc. (ibid: 220).

We will take the motion event as an instance of a framing event (see example [3]). A motion event contains the conceptual components of Figure, Ground, Motion, and Path, and it can be associated with a co-event (ibid: 25-26).

[3] a. The rock rolled down the hill (Talmy, 2000: p. 30).



The macro-event in example [3]a consists of the motion event expressed by the clause of “the rock MOVED down the hill” and the co-event expressed by the clause of “the rock rolled” in [3]b. As a motion event, “the rock” is a physical object whose path requires characterization and it plays the role of Figure. “The hill” bears the role of Ground, and it is a second physical object functioning as a reference point with respect to which the Figure’s path is characterized. “Down” refers to the Path followed by the Figure “the rock” with respect to the Ground “the hill”. The transitional Motion is represented by the deep morpheme “MOVE”

that consists of a transition by the Figure with respect to the Ground. In the co-event, “the rock rolled” bears the support relation of “Manner” to elaborate the deep morpheme “MOVE” in the motion event. Therefore, the motion event with “Motion” and its co-event with “Manner” are integrated in the verb root “roll”. However, Croft (2012) also takes the resultative or the directional phrases as the subevents.

[4] Kay wiped the counter.

[5] a. Kay wiped the counter clean.

b. Kay wiped the fingerprints from the counter.

c. Kay wiped the polish onto the table (Croft, 2012: p. 324).

Example [4] is a state change event, in which the state of the counter is changed from “not being wiped” to “being wiped”. The verb root “wipe” in example [8] integrates two subevents represented by the conceptual components of “change” and “manner”. In addition, some additional subevents in the satellites can also be added to the main verb “wipe” as indicated in example [5]. The state change satellite “clean” in [5]a represents a subevent expressed by the clause “the counter’s becoming clean”; in [5]b, the path satellite “from” indicates a subevent expressed by the clause “the movement of the fingerprints off the counter”; and in [5]c, the path satellite “onto” signifies a subevent expressed by the clause “the movement of the polish onto the table” (Croft, 2012: p. 324). Therefore, the satellite not only delimits the event described by the main verb, but it per se also refers to a subevent added to the previous event represented by the main verb. Since the verb-resultative construction and the verb-directional construction are the typical verb complexes, the subevent(s) expressed by the main verb together with the additional subevent(s) expressed by the satellite can yield a richer event as a macro-event represented by the verb complex. In other words, the conceptual components either in the main verb or in the satellite can all be regarded as the subevents of the macro-event represented by the verb complex.

With the purpose to distinguish from Talmy’s event integration, we will use “internal event integration” to refer to Talmy’s event integration that occurs either in the main verb or in the satellite, and “external event integration” to refer to the event integration occurring between the main verb and the satellite. Their definitions are proposed as follows.

*If two or more conceptual components (subevents) are integrated or conflated either in the main verb or in the satellite per se, it is the internal event integration.*

*If the conceptual components (subevents) are integrated or fused between the main verb and the satellite, it is the external event integration.*

As mentioned above, “internal event integration pattern” is proposed to represent the possible organizations of the conceptual components that are conflated either in a main verb or in a satellite of a verb complex, and “external event integration pattern” is referred to the possible organizations of conceptual components that are integrated between the main verb and the satellite of a verb

complex.

As indicated in Section 1, apart from the schematic and instantiated conceptual primitives of the framing event in **Figure 1**, the schematic conceptual primitive of co-event functions as a “support relation” with regard to the framing event, and these specific relations subsume “precursion”, “enablement”, “cause”, “manner”, “concomitance”, “purpose”, and “constitutedness”, in which “cause” and “manner” are the most frequent support relations (Talmy, 2000: p. 220). In addition, the support relation of co-event in the temporal contouring event and the action correlating event bears a “constitutive” relation to the framing event (Talmy, 2000: pp. 232, 255). To recap, the schematic and instantiated conceptual primitives of macro-event in different event types can be preliminarily summarized in **Table 1**.

The conceptual primitives between the motion event and the action correlating event in **Table 1** can help make clear the semantic distribution of the action correlating event in the case study of “V + Dào” construction in Mandarin, investigate and figure out how the internal and external event integration work in the action correlating event.

### 3. Methodology

This paper takes “V + Dào” Construction as a case study to explore the conceptual primitives in the distribution of the action correlating event in terms of the internal and external event integration with the following steps, including data collection, coding, statistical analysis and visualization.

#### 3.1. Data Collection of “V + Dào” Construction

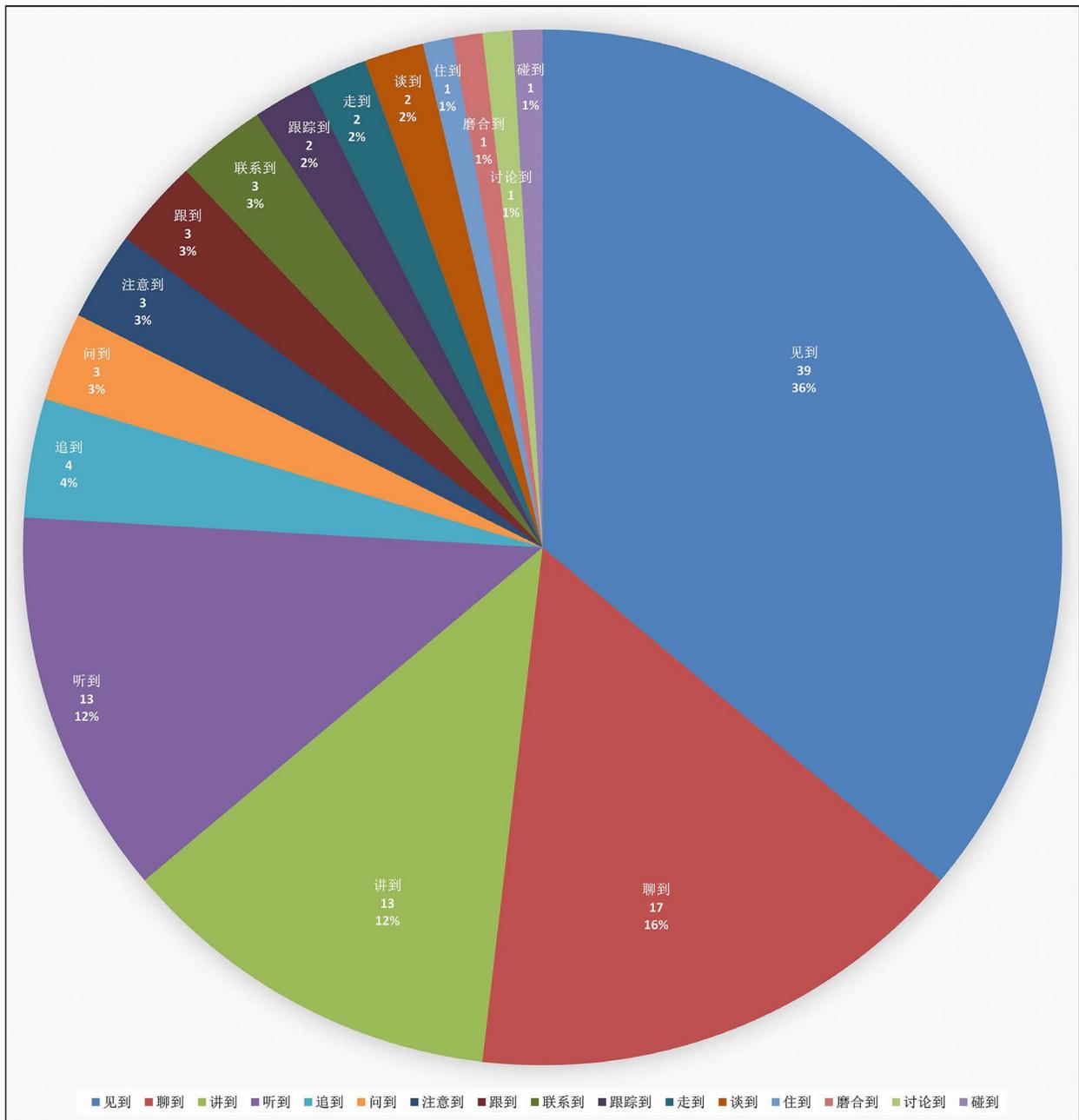
The first step is to select the data, which contains three requirements of the data. 1) The first requires the data to be *colloquial* in style, rather than literary, stilted, and so on; 2) the second requires the data to be *frequent* in occurrence of speech, rather than occasional; 3) the last requires the data to be *pervasive*, rather than limited—that is, a wide range of semantic notions are expressed in this type (Talmy, 1985: p. 62; 2000: p. 27). Therefore, we choose “Spoken Language” from the corpus of Center for Chinese Linguistics of Peking University (CCL), and the sources of “Spoken Language” come from the transcriptions of “Beijing Dialect Survey Data in 1982”, twenty-one dialogues of various mediums, and five TV

**Table 1.** The conceptual primitives in the motion event and the action correlating event.

Macro-event Types	Conceptual Primitives	Framing Event			Co-Event
	Figural Entity	Ground Entity	Activating Process	Association Function	Support Relation
Motion Event	a physical object	a second physical object as a reference point in space	motion or stationariness	path or site	Precursion; Enablement; Cause; Manner; Subsequence
Action Correlating Event	agent’s action	agency’s action	act	correlation	Constitutedness

interviews such as “Dating with Lu Yu”. After data searching, checking and selecting, we find only 108 concordances (Tokens) with 16 categories (Types) are matched with the action correlating event, see **Figure 2**.

**Figure 2** exhibits all 16 categories of “V + Dào” constructions in the action correlating events. They are listed with regard to their frequencies and proportions, including “见到 (meet, frequency = 39)”, “聊到 (talk, frequency = 17)”, “讲到 (talk, frequency = 13)”, “听到 (listen, frequency = 13)”, “追到 (chase, frequency = 4)”, “问到 (ask, frequency = 3)”, “注意到 (notice, frequency = 3)”, “跟到 (follow, frequency = 3)”, “联系到 (contact, frequency = 3)”, “跟踪到



**Figure 2.** The visualization of Chin\_VD in action correlating events.

(tail after, frequency = 2)”, “走到 (walk, frequency = 2)”, “谈到 (talk, frequency = 2)”, “住到 (live, frequency = 1)”, “磨合到 (adjust, frequency = 1)”, “讨论到 (discuss, frequency = 1)”, “碰到 (meet by chance, frequency = 1)”. These Chinese “V + Dào” constructions are all represented in a single clause where the processes of event integration can be derived by the (re)combination of their conceptual primitives with the following data coding.

### 3.2. Data Encoding

The 108 concordances of “V + Dào” constructions are encoded in terms of three aspects—event semantics (conceptual primitives within the macro-event theory), syntactic properties, and event integration patterns as well.

As indicated in **Table 1**, the event semantics of “V + Dào” constructions can be encoded with the concrete valuables and their corresponding values. In addition, the agency and animacy of the figural entity are also taken into consideration with the purpose to find out correlations with their event integration patterns, see **Table 2**.

Since the “V + Dào” construction is taken as a verb-complement structure, based on **Chao’s (1968: pp. 350-358)** comments, the verb complements include free complements, bound complements, and bound phase complements. If “Dào” is a free complement of the “V + Dào” construction, “V” and “Dào” are independent of each other, such as “来到故乡” (have come to hometown), for “来故乡” (come to hometown) and “到故乡” (arrive in hometown) are grammatical and acceptable. In bound complements, “V” and “Dào” are bounded to each other, such as “碰到一件怪事” (have met a strange thing), we can neither say “\*碰一件怪事” (\*meet a strange thing) nor “\*到一件怪事” (\*arrive a strange thing). Concerning bound phase complements, “Dào” is subordinate to “V”. For example, in “挣到钱” (has earned the money), “挣钱” (earn the money) is acceptable, but “\*到钱” (\*arrive at the money) is not. However, as **Lyu (1980: p. 16)** mentions, sometimes the directional verb can be the main verb of a verb-directional construction, which means “V” can be subordinate to “Dào”, for instance, in “走到张家” (walk to the Zhangs’), we can say “到张家” (arrive at the Zhangs’) but not “\*走张家” (\*walk the Zhangs’). Therefore, apart from free complements (FC) and bound complements (BC), we divide Chao’s bound

**Table 2.** The variables and their values in the action correlating event.

Variables	Values
Figural Entity	[±agentive]; [±animate]
Ground Entity	[action]
Activating Process	[confirmation]
Association Function	[correlation]
Support Relation	[constitutedness]
Macro-event Types	[action correlating event]

phase complements into forward bound complements (FBC) and backward bound complements (BBC). As for the syntactic properties of “X”<sup>3</sup>, based on [Lyu \(1980: pp. 151-152\)](#) and [Zhu \(1982: pp. 130-132\)](#), “X” can be a noun, a clause or be omitted with the non-text (NoT). In detail, when “X” is a noun, it can be – a locative noun (LocaN), such as “家乡 (hometown)” in “他回到了家乡 (he came back his hometown)”; a temporal noun (TempN), such as “明年暑假 (next summer vacation)” in “等到明年暑假 (waiting until the next summer vacation)”; a patient noun (PtienN), such as “你说的 (what you said)” in “办得到你说的 (can achieve what you said)”; a degree noun (DgreN), such as “十分严重的地步 (a very serious situation)” in “事情已经发展到十分严重的地步 (things have developed to the degree of a very serious situation)”; a stimulus noun (StimuN), such as “歌声 (the sound of singing)” in “听到歌声 (hear the sound of singing)”. When “X” is a clause, it can be – a temporal clause (TempC), such as “唱到吃晚饭 (sing until eating the supper)”; a stimulus clause (StimuC), such as “考虑到天气不好 (consider that the weather is not good)”; a degree clause (DegreC), such as “删到只剩下五百字 (delete until it only has five hundred words)”. However, when we are dealing with the data, we find that “X” can be a locative clause (LocaC), such as “就是这个楼 (it is this building)” in “带到就是这个楼 (bring to somewhere that it is this building)”, and a patient clause (PtienC), such as “你去买什么东西 (you are going to buy something)” in “拍到你去买什么东西 (captured that you were going to buy something)”. Moreover, “X” can also be a stimulus adjective (StimuA), such as “开心 (happy)” in “感到开心 (feel happy)”, a temporal adjective (TempA), such as “很老 (very old)” in “演到很老 (act until someone is very old)”; and a degree adjective (DegreA), such as “最好 (the best)” in “做到最好 (do the best)”.

With regard to event integration patterns, we focus on the internal event integration pattern in “V” (IEI\_V) and in “Dào” (IEI\_D) respectively. In the external event integration patterns, we concentrate on the semantic representation of the “V + Dào” construction in general (EEI\_VD), including motion event (MoEvt), temporal contouring event (TempConEvt), state change event (StaChanEvt), action correlating event (ActCorEvt), and realization event (ReaEvt). We also take into account the semantic types of the “V + Dào” construction (EEI\_Type), including Verb-Directional construction (VDir), Verb-Resultative construction (VRes), and Verb-Phase construction (VPha).

To recap, the data encoding of “V + Dào” construction can be characterized in [Table 3](#), regarding the three perspectives of event semantics, syntactic properties and event integration patterns as well.

The data coding contains three aspects of the “V + Dào” construction in [Table 3](#)—event semantics, syntactic properties, and event integration patterns, and each level contains its own variables and values. Some of the variables are independent while others are not. In addition, the variables at the level of syntactic

<sup>3</sup>We regard the component after the “V + Dào” construction as “X”, which is also taken as the “V + Dào + X” construction in a more holistic sense.

**Table 3.** The data encoding of the “V + Dào” construction.

Three Levels	Variables	Values	
Event Semantics	Figural Entity (FigEnt)	Agentive (Agen)	[True]; [False]
		Animate (Anim)	[True]; [False]
	Ground Entity (GroEnt)	[action] (agent’s action)	
	Activating Process (ActiPro)	[act]	
	Association Function (AssoFun)	[correlation]	
Syntactic Properties	Syntactic Types of “V + Dào” (SynType_VD)	Free Complements (FC); Forward Bound Complements (FBC); Backward Bound Complements (BBC); Bound Complements (BC)	
	Syntactic Types of the Following Component “X” (SynType_X)	temporal nouns (TempN); locative nouns (LocaN); patient nouns (PtienN); stimulus nouns (StimuN); degree nouns (DgreN); temporal clauses (TempC); stimulus clauses (StimuC); degree clauses (DgreC); patient clauses (PtienC); temporal adjectives (TempA); degree adjectives (DgreA); stimulus adjectives (StimuA); non-texts (NoT)	
Event Integration Patterns	Internal Event Integration (IEI)	“V” (IEI_V)	[Activating Process] + [Support Relation]
		“Dào” (IEI_D)	[Activating Process] + [Association Function]
	External Event Integration (EEI)	The Types of Verb-complement Construction (EEI_Type)	“V + Dào” (EEI_VD) <sup>4</sup> Verb-Directional construction (VDir); Verb-Resultative construction (VRes); Verb-Phase construction (VPha)

properties are independent to each other. At the level of event integration patterns, the variables bear some relation with each other, which will be further discussed in Section 4.

### 3.3. Statistical Analysis and Visualization

With the purpose to carry out the statistical analysis, we input the annotated data of the “V + Dào” construction as described above into the operation interface of the R programming, and we also need to change most of the data from strings

<sup>4</sup>This is the semantic representation of each external macro-event type in general. In detail, “EEI\_VD” = “IEI\_V” + “IEI\_D”.

to factors through the function of “stringsAsFactors” in the R code. **Figure 3** below shows us the basic data distribution of 108 concordances of “V + Dào” constructions in terms of their structure and summary.

In this Section, two computational methods are applied by 1) correlation analysis with the linear regression modeling and 2) the visualization of the statistics by using the R package of “ggplot2”. The first method is used in calculating the relationship between different variables in the data so as to find their interactions, meanwhile, the second method can visualize the results of each correlation coefficient. In detail, we will use R packages of “ggplot2”, “energy”, and “car” to compute and visualize the “correlation coefficients” (Levshina, 2015). Since the relationship between different variables in our data is not linear but monotonic, we should use non-parametric correlation statistics, such as Spearman’s  $\rho$  (“rho”) and Kendall’s  $\tau$  (“tau”) (Levshina, 2015). According to Levshina (2015), “if  $r$  is equal to or greater than 0.7 or smaller than  $-0.7$ , the correlation is considered to be strong; if  $r$  is between 0.3 and 0.7 or between  $-0.3$  and  $-0.7$ , it is considered to be moderate; if  $r$  is between 0 and 0.3 or 0 and  $-0.3$ , the correlation is considered to be weak”. The concrete distributions of “V + Dào” constructions and their correlation data among each variable are further discussed in Section 4.

```
> str(EEI_VD_ActCorEvt)
'data.frame': 108 obs. of 13 variables:
 $ Chin_VD : Factor w/ 16 levels "住到","听到",...: 13 13 13 15 15 15 15 14 8 8 ...
 $ FigEnt_Agen: logi TRUE TRUE TRUE FALSE TRUE TRUE ...
 $ FigEnt_Anim: logi FALSE FALSE FALSE FALSE FALSE FALSE ...
 $ GroEnt : Factor w/ 1 level "action": 1 1 1 1 1 1 1 1 1 1 ...
 $ ActiPro : Factor w/ 1 level "act": 1 1 1 1 1 1 1 1 1 1 ...
 $ AssoFun : Factor w/ 2 levels "act+path","act+transition": 1 1 1 1 1 1 1 2 2 2 ...
 $ SuppRel : Factor w/ 2 levels "constitutedness",...: 2 2 2 2 2 2 2 2 2 2 ...
 $ SynType_VD : Factor w/ 3 levels "BC","FBC","FC": 3 3 3 3 3 3 3 2 2 2 ...
 $ SynType_X : Factor w/ 6 levels "DgreN","LocaN",...: 2 2 2 2 2 2 3 6 6 ...
 $ IEI_V : Factor w/ 2 levels "act+constitutedness",...: 2 2 2 2 2 2 2 2 2 2 ...
 $ IEI_D : Factor w/ 2 levels "act+path","act+transition": 1 1 1 1 1 1 1 2 2 2 ...
 $ EEI_VD : Factor w/ 1 level "ActCorEvt": 1 1 1 1 1 1 1 1 1 1 ...
 $ EEI_Type : Factor w/ 3 levels "VDir","VPha",...: 1 1 1 1 1 1 1 2 2 2 ...
> summary(EEI_VD_ActCorEvt)
Chin_VD FigEnt_Agen FigEnt_Anim GroEnt ActiPro AssoFun
见到 :39 Mode :logical Mode :logical action:108 act:108 act+path : 7
聊到 :17 FALSE:2 FALSE:108 act+transition:101
听到 :13 TRUE :106
讲到 :13
追到 : 4
注意到 : 3
(Other):19

SuppRel SynType_VD SynType_X IEI_V
constitutedness :16 BC : 1 DgreN : 7 act+constitutedness :16
constitutedness+correlation:92 FBC:93 LocaN : 7 act+constitutedness+correlation:92
FC :14 NoT : 3
PtienN: 5
StimuC:13
StimuN:73

IEI_D EEI_VD EEI_Type
act+path : 7 ActCorEvt:108 VDir: 7
act+transition:101 VPha:96
VRes: 5
```

**Figure 3.** Data distribution of “V + Dào” constructions in action correlating events.

## 4. Results and Discussion

In accordance with the research design of this study, “V + Dào” constructions of action correlating events will be explored and discussed in terms of their event semantics, syntax properties, and event integration patterns.

### 4.1. Event Semantics of “V + Dào” Constructions as Action Correlating Events

Action correlating events pertain to the coactivity between the agent and the agency. All the figural entities are inanimate, for they are referred to the “agent’s action” (Talmy 2000: p. 254). However, the agency of the figure (FigEnt\_Agen) can be true or false (true = 106, false = 2). In addition, both AssoFun (“motion + path” = 7, “act + transition” = 101) and SuppRel (constitutedness = 16, act + constitutedness = 101) consist of 2 values. Thus, these variables will be included in our correlation analysis.

[6] 赵薇去哪你们就**跟到**哪。

Zhao Wei qù nǎ nǐmen jiù **gēn dào** nǎ

Zhao Wei goes where you then follow arrive where

Where Zhao Wei goes, you then **follow** there.

In example [6], the action correlating event is reflected in the second clause “你们就跟到哪 (you then follow there)”. The figural entity designates the agent’s action, that is, “你们去哪里 (you go somewhere)”, which is also agentive in the figural entity. The ground entity is the agency’s action, which is referred to the previous clause of “赵薇去哪里 (Zhao Wei goes somewhere)”.

[7] I played the melody together with him (Talmy 2000: p. 257).

In example [7], the conceptual primitive of “correlation” is encoded in the association function of “together with”. In contrast, the “correlation” in Example [6] is conflated with the “motion” and the “constitutedness” in the verb “跟 (follow)”. In short, the support relation in the English verb “play” only encodes the conceptual primitive of “constitutedness”, but the support relation in the Chinese verb “跟 (follow)” can conflate two conceptual primitives – the “constitutedness” of the agent’s action and the “correlation” between the agent and agency’s actions.

The AssoFun of “到 (arrive)” in [6] involves the conceptual primitives of the “act” performed by the agent’s action and “path” in “following to somewhere”. If the semantic parameter of “coactivity” of “跟 (follow)” is removed between the agent and agency in Example [6], “你们就到哪儿 (you just arrive somewhere)” simply becomes a motion event, in which the AssoFun of “到 (arrive)” conflates the conceptual primitives of the “motion” and the “path”. Therefore, Example [6] is an action correlating event, and it is also an overlapping event with the motion event.

[8] 他就**跟踪不到**了。

tā jiù **gēnzōng bú dào** le

he then tails after no arrive ASP<sup>5</sup>

<sup>5</sup>ASP means “了” is an aspectual marker in the sentence.

He then cannot be **tailed after**.

Example [8] is similar to Example [6], in which the SuppRel of “correlation” is also encoded in the double-syllable verb “跟踪 (follow)”. One difference is that the figural entity “his being tailed after” is non-agentive, another difference is that the association function (AssoFun) in it refers to the conceptual primitives of “act” and “transition”. The AssoFun of “到 (finish)” that conflates the “act” and the “transition” indicates that “the act of following him” is achieved. Therefore, example [8] is an overlapping event between the action correlating event and the realization event, even though it is not really fulfilled superficially based on the use of the negative word “不 (not)”.

[9] 我们特别能够聊到一块儿。

wǒmen tèbié nénggòu liáo dào yīkuàier

we very much can talk arrive together

We can **talk together** (or to each other) very much.

In example [9], the figural entity is the action of “my talking”, and the ground entity is the action of “my friend’s talking”. Since the verb “聊 (talk)” indicates that the act of talking involves two or more persons, it can conflate the conceptual primitive of “coactivity”. In addition, the “correlation” is co-encoded in the adverbial phrase of “一块儿 (together)”. Sometimes the “coactivity” can also be encoded in the Chinese conjunctions such as “和/跟/给 (with/to)”. The association function of “聊到一块儿 (talk together)” is similar to the “transition” in the state change event, it describes the state of talking from not being together to being together.

Apparently, even for the same word, it can be addressed quite differently. The verb “聊” belongs to a state change event when occurring in “刚才我们聊到诸子百家的第一家 (just now we mentioned the first school in the hundred schools of thought)”, and it can express a temporal contouring event when occurring in the sentence like “这次我们就聊到这里 (this time our introduction is introduced here)”. Thus, the polysemy of the verb “聊 (talk)” should be translated differently in various event types. It can be translated as “mention” in the state change event, and it can also be translated as “introduce” in the temporal contouring event. The verb “聊 (talk)” in the state change event and the temporal contouring event cannot conflate the “coactivity” between the agent and the agency.

[10] 我要见到刘招华。

wǒ yào jiàn dào LiuZhaohua

I need to meet arrive LiuZhaohua

I need to **meet**<sup>6</sup> LiuZhaohua.

[11] I met John (Talmy 2000: p. 254).

In Example [10], the judgment is based on the context of the sentence. The background is that Liu Zhaohua was prisoned in the jail, but “我 (I)” still have many questions to ask him. Before “my meeting” with him, “I” should expect

<sup>6</sup>Here the meaning of “到” can hardly find its corresponded translation in English, because it means to achieve the act of meeting.

rience a series of procedures, and “he” also should agree to see me. If both Liu Zhaohua and I agree to meet each other, then both of us can be involved in the “coactivity” of meeting each other. Similarly, in example [11], Talmy (2000) explains that in “I met John”, it “requires John also engage in the action of meeting me”. However, he does not further discuss the conceptual primitives of the association function and the support relation in “met”, and this example is different from his other classic action correlating examples such as that in [7]. The support relation in the Chinese verb “见 (meet)”, in our viewpoints, has conflated the conceptual primitives of “constitutedness” and “correlation”. The association function of “到 (arrive)” conflates the conceptual primitives of “act” and the “transition” type. Since the verb “见 (meet)” indicates the “intention”, it is an overlapping case with the realization event.

Regarding the correlations between the event semantic variables and Chin\_VD, the distribution of the “V + Dào” construction bears little correlation with FigEnt\_Agen ( $t = -0.005$ ,  $p < 0.05$ ), but it has a moderate correlation with Asso-Fun ( $t = -0.36$ ,  $p < 0.01$ ) and SuppRel ( $t = -0.33$ ,  $p < 0.01$ ).

#### 4.2. Syntactic Properties of “V + Dào” Constructions as Action Correlating Events

Syntactic properties consist of the variables of SynType\_VD and SynType\_X in action correlating events. The variable of SynType\_VD contains 3 values, including bound complements (BC), forward bound complements (FBC) and free complements (FC). And the variable of SynType\_X subsumes 6 values, including degree nouns (DgreN), local nouns (LocaN), patient nouns (PtienN), temporal nouns (TempN), stimulus nouns (StimuN), stimulus clauses (StimuC), and non-texts (NoT).

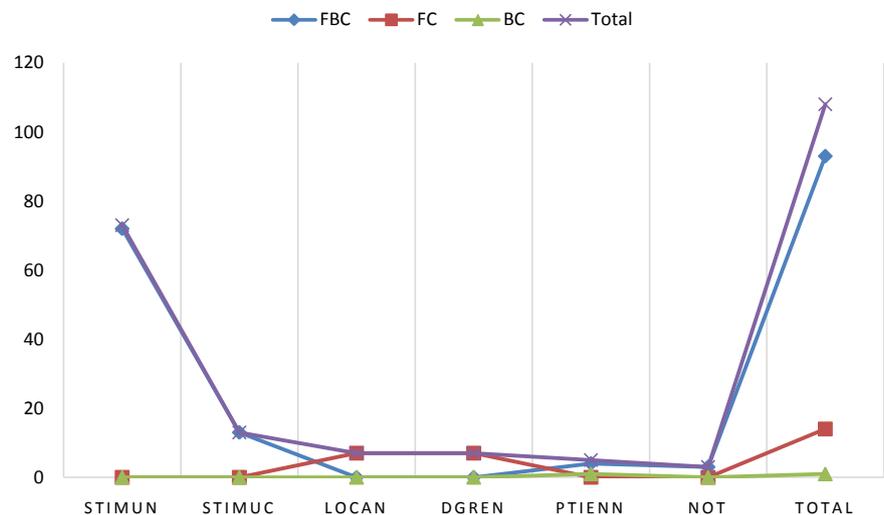
Table 4 and Figure 4 provide the general distributions between the variables of SynType\_VD and SynType\_X.

In Table 4 and Figure 4, we find that the FBC in the SynType\_VD is the most frequent value, the stimulus noun (StimuN) in the SynType\_X is the most frequent value. The most frequent value of SynType\_X in FBC is the stimulus noun (StimuN), in FC it is the stimulus clause (StimuC), and in BBC it is the local noun (LocaN).

In the previous Example [6] to [10], firstly, the value of SynType\_VD in [6] is FC, for “跟到哪 (follow to somewhere)” can be alternatively expressed by “跟哪

**Table 4.** The distribution of syntactic properties in action correlating events.

SynType_VD \ SynType_X	StimuN	StimuC	LocaN	DgreN	PtienN	NoT	Total
FBC	72	13	0	0	4	3	93
FC	0	0	7	7	0	0	14
BC	0	0	0	0	1	0	1
Total	73	13	7	7	5	3	108



**Figure 4.** The line chart of syntactic properties in action correlating events.

(follow somewhere)” and “到哪 (to somewhere)”. In addition, the SynType\_X in it is a local noun (LocaN). Secondly, the value of SynType\_VD in [8] or [10] is FBC, and the SynType\_X is represented by the non-text (NoT) in [8] and a patient noun (PtienN) in [10]. For instance, we can only say “见到刘招华 (achieve the ac of meeting Liu Zhaohua)” and “见刘招华 (meet Liu Zhaohua)”, but not “\*到刘招华 (\*arrive Liu Zhaohua)”. Finally, the value of SynType\_VD in example [9] is FC, because either “能够聊一块儿 (can talk together with each other)” or “能够到一块儿 (can be together with each other)” is acceptable. And the SynType\_X in [9] is a degree noun (DgreN). In these examples, if SynType\_X is a local noun (LocaN) or a degree noun (DgreN), the value of SynType\_VD is supposed to be FC.

[12] 后来你再碰到张国荣的时候。

hòulái nǐ zài pèng dào Zhang Guorong de shíhòu

later you again meet Zhang Guorong the time

Later when the time you met Zhang Guorong again.

Example [12] is a sketch of an interview. In normal circumstances, “碰到 (meet by chance/experience)” is not involved in the “coactivity” between the agent and agency, for instance, “碰到这种人/这种情景/这种话 (experience this kind of person/situation/words)”, it is only a state change event. If we add the semantic parameter of the agent’s attention, for example, “我就想碰到几个老的 (I just want to see some of the olds)”, it becomes a realization event. No sentences in both the state change event and the realization event concerning “碰到 (meet by chance/experience)” indicate the agency’s “coactivity” with the agent’s action. However, Example [12] is about such a situation in which the woman (Mo Wenwei) and the man (Zhang Guorong) are involved in the “coactivity” of making the film together, and they plan to meet with each other together at first. In this sense, “碰到 (meet)” in [12] is an alternative expression of “见到 (meet)” as in example [10]. As we can neither say “\*再碰张国荣的时候 (\*when the time you touch Zhang Guorong again)” nor “\*再到张国荣的时候 (\*when

the time you arrive Zhang Guorong again)", the SynType\_VD is BC, and the SynType\_X is the patient noun (PtienN).

In terms of the correlation coefficients between the SynType\_VD/SynType\_X and Chin\_VD in action correlating event, the distribution of the "V + Dào" construction bears a weak correlation with SynType\_VD ( $t = 0.20, p < 0.05$ ), but not correlated with the distribution of SynType\_X ( $t = -0.05, p > 0.05$ ). SynType\_VD and SynType\_X are moderately correlated to each other ( $t = -0.60, p < 0.01$ ).

### 4.3. Event Integration Patterns of "V + Dào" Constructions as Action Correlating Events

In this Section, we will discuss "V + Dào" constructions of action correlating events in terms of internal or external event integration patterns.

In the internal event integration, IEI\_V has 2 corresponding values: "act + constitutedness" (frequency = 16) and "act + constitutedness + correlation" (frequency = 92). Meanwhile, IEI\_D also contains 2 values: "act + path" (frequency = 7) and "act + transition" (frequency = 101). **Table 5** exhibits the internal event integration patterns of IEI\_V and IEI\_D in action correlating events.

In **Table 5**, the internal event integration patterns of IEI\_V can be formatted as "2" or "3", which means two or three conceptual primitives are conflated in it. IEI\_D can take "2" as the format of its internal event integration patterns, in which two conceptual primitives can be conflated.

In the external event integration, EEI\_VD can contain 3 ways of combinations between IEI\_V and IEI\_D – "(act + constitutedness) + (act + transition)", "(act + constitutedness + correlation) + (act + transition)", and "(act + constitutedness + correlation) + (act + path)". These combinations in EEI\_VD can be formatted as "2 + 2" or "3 + 2".

The variable of EEI\_Type in "V + Dào" constructions has 3 values in action correlating events. When the action correlating events are overlapped with the motion events, then they are classified as the verb directional constructions (VDir). When they are overlapped with the state change events or the realization events, they can be taken as the verb resultative constructions (VRes) or the verb phase constructions (VPha).

As **Table 5** indicates, on some occasions no "correlation" is integrated either in IEI\_V or in IEI\_D. See the following examples from [13] to [15].

**Table 5.** The internal event integration of IEI\_V and IEI\_D in action correlating events.

IEI_V \ IEI_D	act + transition ("2")	act + path ("2")	Total
act + constitutedness ("2")	16	0	16 (15%)
act + constitutedness + correlation ("3")	85	7	92 (85%)
Total	101 (94%)	7 (6%)	108 (100%)

[13] 王老师跟我们讲到这个德。

Wáng lǎoshī gēn wǒmen **jiǎng dào** zhègè dé  
 Wáng teacher with us tell arrive this morality  
 Teacher Wáng **told** this morality to us.

[14] (我) 跟儿子住到一起。

(wǒ) gēn érzi **zhù dào yìqǐ**  
 (I) with son live arrive together  
 (I) **live together** with my son.

[15] 1997年(我们)才走到一起。

1997 nián (wǒmen) cái **zǒu dào yìqǐ**  
 1997 year (we) until get arrive together  
 Until 1997 we **got together**.

In [13], the “coactivity” is involved between the agent’s action (the teacher Wang’s telling) and the agency’s action (the students’ listening to the teacher Wang). However, the “correlation” is encoded neither in IEI\_V (讲 “tell”) nor in IEI\_D (到 “transition type of the action”), but it is represented by the Chinese preposition “跟 (with)”. In [14], the “correlation” is projected in the preposition of “跟 (with)” and the adverbial expression of “一起 (together)”; and in [15], the “correlation” is encoded in the adverbial expression of “一起 (together)”. In contrast, the “correlation” in the previous examples can be conflated in the verbs, such as “跟 (follow)”, “追 (chase)”, “讨论 (discuss)” and “见 (meet)”, in which the “coactivity” exists between the agent’s and the agency’s actions. Based on the discussion above, some verbs can innately conflate the conceptual primitive of “correlation”, and these verbs need further exploration in the future. Moreover, some verbs, such as “走 (walk)” in example [15], do not encode the “correlation”, which, however, is represented merely by the adverbial expression of “一起 (together)” and implied by the participants of the subject. Therefore, the linguistic representation of the core schema in action correlating events is not restricted merely by the verb or the satellite in Mandarin. The typology of action correlation events needs to be extended and go beyond the verb-framed or satellite-framed language.

Regarding the correlation coefficients, the distribution of the “V + Dào” construction bears a moderate correlation with IEI\_V ( $t = -0.33$ ,  $p < 0.01$ ) and IEI\_D ( $t = -0.35$ ,  $p < 0.01$ ), and a weak correlation with EEI\_Type ( $t = -0.26$ ,  $p < 0.01$ ).

#### 4.4. Interim Summary and Discussion

In line with the aim and research questions of this paper, some main findings concerning the action correlating event are as follows.

1) The first issue relates to the event integration patterns of “V + Dào” constructions. Based on the discussion above, we find that:

- a) IEI\_V can conflate 2 or 3 conceptual primitives (see **Table 6**);
- b) IEI\_D can conflate 2 conceptual primitives. One value in it is “act + path”

**Table 6.** The verb types of “V + Dào” constructions in action correlating events.

Formats	IEI_V	Chin_VD in IEI_V
2 (Two conceptual primitives are conflated in IEI_V)	act + constitutedness	讲 (tell)
		住 (live)
		走 (develop)
		跟 (follow)
		追 (chase)
3 (Three conceptual primitives are conflated in IEI_V)	act + constitutedness + correlation	见 (meet)
		聊 (talk)
		磨合 (run)
		碰 (meet)
		谈 (talk)
		讨论 (discuss)
		听 (listen)
		问 (ask)
		注意 (notice)
		跟踪 (tail)
		联系 (contact)

when overlapped with motion events, and another value is “act + transition” when overlapped with state change events or realization events;

c) EEI\_VD refers to the action correlating event, and it can be formatted as “2 + 2” or “3 + 2”. The shared conceptual primitive “act” between IEI\_V and IEI\_D, and the rest conceptual primitives in them can provide the conceptual slots for each other so as to be fused as a unitary event of EEI\_VD (see [Table 7](#));

d) EEI\_Type can be the verb-directional construction (VDir), the verb-resultative structure (VRes), or the verb-phase construction (VPha).

2) The second issue pertains to the correlations between the event integration patterns of “V + Dào” constructions and their semantic/syntactic properties in action correlating events. In the action correlating event, we probe into the correlation coefficients of IEI\_V/IEI\_D with other variables in the internal event integration, and of Chin\_VD/EEI\_Type with other variables in the external event integration. Above all, [Table 8](#) provides us with the correlation coefficients with regard to all the variables.

In [Table 8](#), the variable of IEI\_V almost bears few correlations with other variables except Chin\_VD in the external event integration and SuppRel in the internal event integration. In this sense, it is not necessary to visualize the correlation coefficients of IEI\_V.

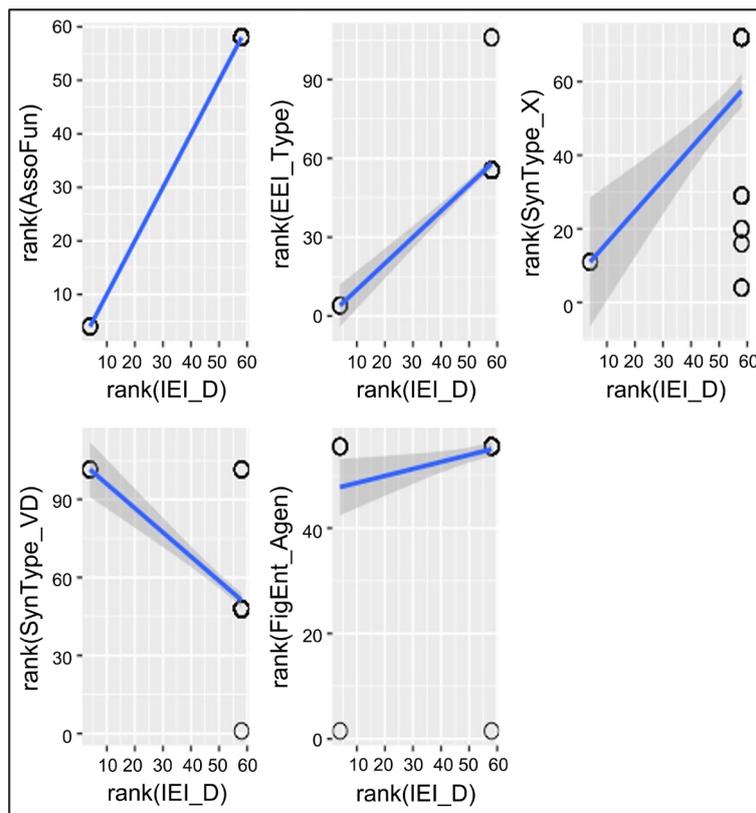
In the internal event integration, the variable of IEI\_D shares a strong correlation with AssoFun and EEI\_Type, a moderate correlation with SynType\_X and SynType\_VD, and a weak correlation with FigEnt\_Agen. Their correlated coefficients can be ordered as “(AssoFun > EEI\_Type) > (SynType\_X > SynType\_VD) > (FigEnt\_Agen)”. See [Figure 5](#) for details.

**Table 7.** EEI\_VD formats and patterns of “V + Dào” constructions in action correlating events.

Formats in EEI_VD	EEI_VD = IEI_V + IEI_D	Examples
2 + 2	(act + constitutedness) + (act + path)	跟到 (follow)
	(act + constitutedness) + (act + transition)	讲到 (mention)
3 + 2	(act + constitutedness + correlation) + (act + transition)	见到 (meet)

**Table 8.** The correlation coefficients among the variables in action correlating event.

IEI_ActCorEvt	VD_Chin	FigEnt_Agen	FigEnt_Anim	ActiPro	AssoFun	SuppRel	SynType_VD	SynType_X	IEI_V	IEI_D	EEI_Type
VD_Chin	1	*-0.005	NA	NA	-0.36	-0.33	0	*-0.05	-0.33	-0.36	-0.26
FigEnt_Agen	*-0.005	1	NA	NA	0.24	*-0.06	*0.03	*0.17	*-0.06	0.24	0.2
FigEnt_Anim	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ActiPro	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AssoFun	-0.36	0.24	NA	NA	1	*-0.11	-0.32	0.42	*-0.11	1	0.77
SuppRel	-0.33	*-0.06	NA	NA	*-0.11	1	*-0.11	*-0.05	1	*-0.11	*-0.02
SynType_VD	0	*0.03	NA	NA	-0.32	*-0.11	1	-0.35	*-0.11	-0.32	-0.27
SynType_X	*-0.05	*0.17	NA	NA	0.42	*-0.05	-0.35	1	*-0.05	0.42	*0.12
IEI_V	-0.33	*-0.06	NA	NA	*-0.11	1	*-0.11	*-0.05	1	*-0.11	*-0.02
IEI_D	-0.36	0.24	NA	NA	1	*-0.11	-0.32	0.42	*-0.11	1	0.77
EEI_Type	-0.26	0.2	NA	NA	0.77	*-0.02	-0.27	*0.12	*-0.02	0.77	1

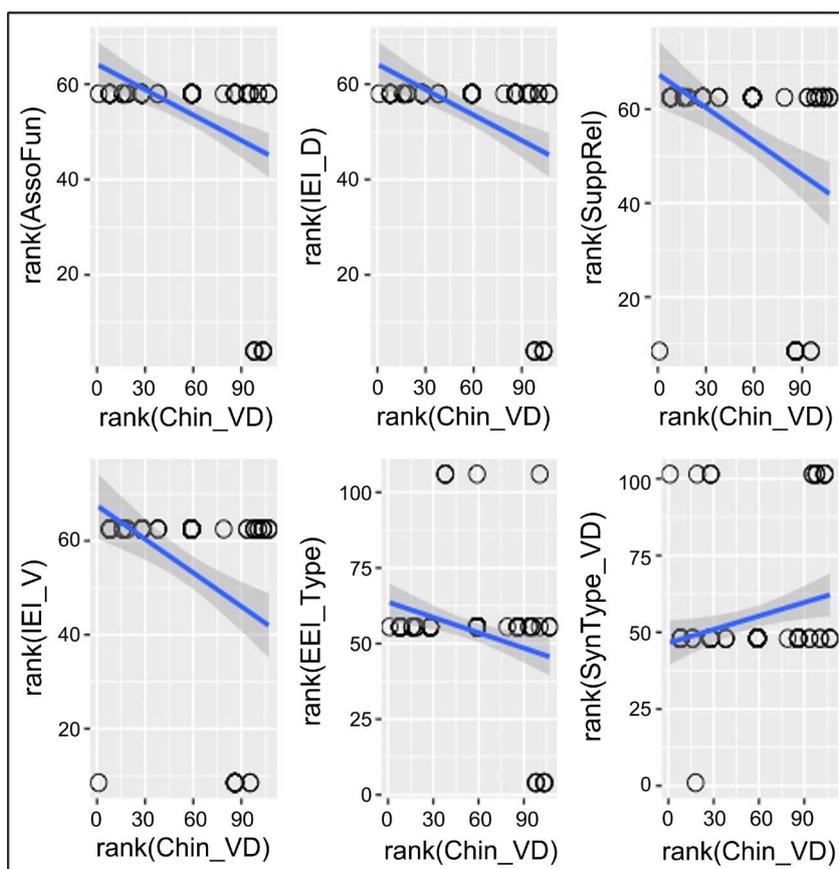


**Figure 5.** The visualization of the correlations between the variables and IEI\_D in action correlating events.

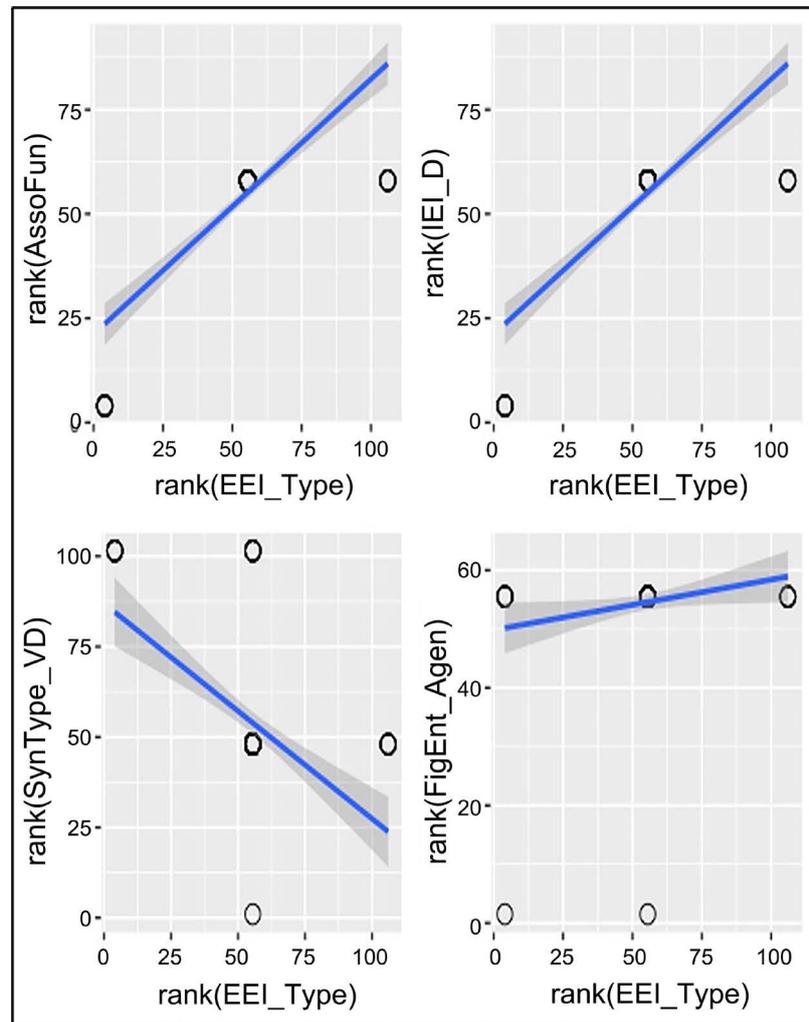
In the internal event integration, the variable of Chin\_VD is moderately correlated to AssoFun, IEI\_D, SuppRel and IEI\_V, and it is weakly correlated to EEI\_Type and SynType\_VD. Their correlated coefficients can be ordered as “(AssoFun > IEI\_D > SuppRel > IEI\_V) > (EEI\_Type > SynType\_VD)”, and they are visualized in **Figure 6**.

In the internal event integration, the variable of EEI\_Type is strongly correlated to AssoFun and IEI\_D, and it is moderately correlated to SynType\_VD and FigEnt\_Agen. Their correlated coefficients can be ranked as “(AssoFun > IEI\_D > SuppRel > IEI\_V) > (EEI\_Type > SynType\_VD)”, and they’re visualized in **Figure 7**.

As **Table 6** and **Figures 5-7** indicate, for one thing regarding the internal event integration, IEI\_V is only strongly correlated with SuppRel, and IEI\_D is fully correlated with AssoFun in the action correlating event. Because SuppRel and AssoFun are embedded and encoded in IEI\_V and IEI\_D respectively, these results, again, shows the concrete existence of the internal event integration in “V” and “Dào” of “V + Dào” construction. Even though the internal event integration patterns of “V + Dào” construction is neural to the agency and animacy of the figural entity, it is determined by the specificity of the action correlating event. That is, the action correlating event is performed by the coactivity of



**Figure 6.** The visualization of the correlations between the variables and Chin\_VD in action correlating events.



**Figure 7.** The visualization of the correlations between the variables and *EEI\_Type* in action correlating event.

agent and agency, both of them are agentive and animate. In this sense, the action correlating event contains the idiosyncrasy of the agency and animacy of the figural entity and the ground entity as well.

From the perspective of the external event integration for another, the distribution of “V + *Dào*” construction (*Chin\_VD*) is both related to *IEI\_V/SuppRel* and *IEI\_D/AssoFun*. This result of the correlation analysis indicates that event integration is not merely occurred inside only “V” or “*Dào*” of “V + *Dào*” construction (that is, the internal event integration), but also twined between “V” and “*Dào*” (that is, the external event integration). Another result, however, exhibits that *EEI\_Type* is only sensitive to the distribution of *IEI\_D/AssoFun*. If *EEI\_Type* is realized by the verb-directional construction, then *IEI\_D* conflates the conceptual primitives of “act” and “path”; when it is represented by the verb-resultative or verb-phase construction, the “act” and “transition” are integrated in *IEI\_D*.

In short, the external event integration works on the basis of the internal event

integration, for they have some conceptual primitives in common and some other conceptual primitives for the complementation with each other, which needs a more fine-grained event integration model to account for.

## 5. Conclusion

With the purpose to investigate the action correlating event within the model of internal and external event integration, this paper takes “V + Dào” construction in Mandarin as a case study, and calculates the correlation coefficients among its semantic and syntactic variables. In this case study of the action correlating event, the research results can be summarized as follows.

1) IEI\_V can conflate 2 conceptual primitives or 3 conceptual primitives; and IEI\_D consists of 2 conceptual primitives;

2) EEI\_VD contains 3 combinations of IEI\_V and IEI\_D, which can be formalized as “2 + 2” or “3 + 2”;

3) EEI\_Type expresses the full range of all the verb-directional construction (VDir), the verb-phase constructions (VPha) and the verb-resultative constructions (VRes);

4) In IEI\_V, the hierarchy of its correlated variables is ranked as “(AssoFun > EEI\_Type) > (SynType\_X > SynType\_VD) > (FigEnt\_Agen)”;

5) In IEI\_D, the hierarchy of the correlated variables is ranked as “(AssoFun > EEI\_Type) > (SynType\_X > SynType\_VD) > (FigEnt\_Agen)”;

6) In EEI\_Type, the correlated variables are ranked as “(AssoFun/IEI\_D) > (SynType\_VD > FigEnt\_Agen)”;

7) Chin\_VD is moderately correlated to AssoFun, IEI\_D, SuppRel and IEI\_V, and it is weakly correlated to EEI\_Type and SynType\_VD.

After the summarization and discussion of these research results, some preliminary conclusions are necessary to be figured out.

1) The phenomena of coactivity are ubiquitous and universal in human social mutual behaviors. From the semantic distribution of “V + Dào” construction, the action correlating event can be overlapped with other macro-event types, such as the motion event and the state change event. We cannot deny the idiosyncrasy of the action correlating event with its specific semantic and syntactic properties, nevertheless, the uneven status of these different macro-event types is still worth taking into consideration. For instance, whether it should be regarded as an independent macro-event or an embedded subevent within other macro-events? To get it much broader, the classification of various macro-events should resort to more fine-grained semantic or syntactic restrictions. This paper proposes that the action correlating event cannot share the same status as other macro-events, but it deserves to be listed out and investigated independently.

2) The processes of the internal and external event integration, in essence, have developed a continuum of the event integration hierarchy with the interactions of conceptual primitives. Based on the quantitative and qualitative survey of “V + Dào” construction in Mandarin, the mappings between the syntactic

forms and event semantics of “V” and “Dào” can share the same conceptual primitive of “act” in the domain of the action correlating event. While other conceptual primitives, such as “constitutedness”, “transition”, “correlation”, provide elaboration site (Langacker, 1987, 2008) between the slots of “V” and “Dào”.

3) Different from other macro-events, the core schema of “correlation” can be found mainly in the verb root of “V”, therefore, Chinese cannot be classified as a satellite-framed language as English in the domain of action correlating event. Moreover, besides the verb root of “V”, the conceptual primitive of “correlation” can also be encoded in the adverbial phrases of “一块儿 (together)” and “一起 (together)” (see example [9, 15]), the conjunction of “跟 (with)” (see example [13, 14]), and be indicated by the plural subjects, such as “我们 (we)” (see example [9, 15]). The “correlation”, particularly in example [14], appears both in the subjects with the conjunction and the adverbial phrase. This phenomenon of semantic resonance and its (dis)appearance of “correlation” is worth researching in the future.

In a nutshell, this paper concentrates on the action correlating event from the perspective of cognitive semantics, puts forward and investigates how the internal and external event integration model works in the case study of “V + Dào” construction in Mandarin. Besides the corpus-based methodology with correlation analysis, this paper expects to provide a penetrating insight into the further study of the “correlation” with more experimental data in the future, which is also the phenomenon of the “reciprocity” in the domain of human mutual acts.

## Funding

This paper is sponsored by Henan Social Science Foundation project (2019CYY022), entitled “*Event Integration Processes and Cognitive Mechanisms of “V1 + V2” Compound Verbs in Mandarin*”, and Philosophy and Social Science Innovative Team Project of Henan University, entitled “*Foreign Language Talents Training Patterns in the New Era*” (2019CXTD007).

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

## References

- Acedo-Matellán, V. (2016). *The Morphosyntax of Transitions: A Case Study in Latin and Other Languages*. New York: Oxford University Press.  
<https://doi.org/10.1093/acprof:oso/9780198733287.001.0001>
- Aske, J. (1989). Path predicates in English and Spanish: A Closer Look. *The Annual Meeting of the Berkeley Linguistics Society*, Berkeley, 18-20 February 1989, 1-14.  
<https://doi.org/10.3765/bls.v15i0.1753>
- Beavers, J., Levin, B., & Wei Tham, S. (2010). The Typology of Motion Expressions Revisited. *Journal of Linguistics*, 46, 331-377. <https://doi.org/10.1017/S0022226709990272>

- Chao, Y. R. (1968). *A Grammar of Spoken Chinese*. Los Angeles, CA: University of California Press.
- Chen, L., & Guo, J. (2009). Motion Events in Chinese Novels: Evidence for an Equipollently-Framed Language. *Journal of Pragmatics*, *41*, 1749-1766.  
<https://doi.org/10.1016/j.pragma.2008.10.015>
- Chu, C. (2004). *Event Conceptualization and Grammatical Realization: The Case of Motion in Mandarin Chinese*. Honolulu, HI: University of Hawaii.
- Croft, W. (2012). *Verbs: Aspect and Causal Structure*. Oxford: Oxford University Press.  
<https://doi.org/10.1093/acprof:oso/9780199248582.001.0001>
- Evans, N., Gaby, A., Levinson, S. C., & Majid, A. (2011). *Reciprocals and Semantic Typology*. Amsterdam/Philadelphia, PA: John Benjamins Publishing.  
<https://doi.org/10.1075/tsl.98>
- Ibarretxe-Antunano, I. (2004). Language Typologies in Our Language Use: The Case of Basque Motion Events in Adult Oral Narratives. *Cognitive Linguistics*, *15*, 317-350.  
<https://doi.org/10.1515/cogl.2004.012>
- Ji, Y. L., Hendriks, H., & Hickmann, M. (2011). The Expression of Caused Motion Events in Chinese and in English: Some Typological Issues. *Linguistics*, *49*, 1041-1077.  
<https://doi.org/10.1515/ling.2011.029>
- Kan, Z. (2010). A Typological Approach to the Lexicalizations of Chinese Motion Events. *Contemporary Linguistics*, *12*, 126-135+190.
- König, E., & Gast, V. (2008). *Reciprocals and Reflexives: Theoretical and Crosslinguistic Explorations*. Berlin/New York: Mouton de Gruyter.  
<https://doi.org/10.1515/9783110199147>
- Langacker, R. W. (1987). *Foundations of Cognitive Grammar: Theoretical Prerequisites*. Vol. 1, Stanford, CA: Stanford University Press.  
<https://doi.org/10.1093/acprof:oso/9780195331967.001.0001>
- Langacker, R. W. (2008). *Cognitive Grammar: A Basic Introduction*. Oxford: Oxford University Press.
- Levshina, N. (2015). *How to Do Linguistics with R: Data Exploration and Statistical Analysis*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Li, F. (2013). Two Systematic Errors in Macro-Event Research. *Foreign Language in China*, *10*, 25-33.
- Li, F. (2017). The Path in the Representations of the Classical Motion Event. *Foreign Language Education*, *38*, 1-6.
- Li, F. (2018). Extending the Talmyan Typology: A Case Study of the Macro-Event as Event Integration and Grammaticalization in Mandarin. *Cognitive Linguistics*, *29*, 585-621. <https://doi.org/10.1515/cog-2016-0050>
- Li, F. (2020). Macro-Event Hypothesis and Its Empirical Studies in Mandarin. *Foreign Language Teaching and Research*, *52*, 349-360.
- Li, T. (2020). A Study of the Lexicalization Patterns of Motion Events in Chinese. *Contemporary Linguistics*, *22*, 395-4140.
- Liu, L. (2014). How Chinese Codes Path of a Motion: A Typological Study of Motion Events in Modern Chinese. *Chinese Teaching in the World*, *28*, 322-332.
- Lyu, S. (1980). *Eight Hundred Words of Modern Chinese*. Beijing: Commercial Press.
- Naidu, V., Zlatev, J., Joost Van De Weijer, Devylder, S., Duggirala, V., & Blomberg, J. (2018). Holistic Spatial Semantics and Post-Talmyan Motion Event Typology: A Case Study of Thai and Telugu. *Cognitive Semiotics*, *11*, 1-27.

<https://doi.org/10.1515/cogsem-2018-2002>

- Nedjalkov, V. P. (2007). *Reciprocal Constructions*. Amsterdam: John Benjamins.  
<https://doi.org/10.1075/tsl.71>
- Pavlenko, A., & Volynsky, M. (2015). Motion Encoding in Russian and English: Moving beyond Talmy's Typology. *The Modern Language Journal*, 99, 32-48.  
<https://doi.org/10.1111/modl.12177>
- Shen, J. (2003). The Resultative Construction in Chinese: A Typological Perspective. *Chinese Teaching in the World*, 65, 17-23+12.
- Slobin, D. I. (1996). Two Ways to Travel: Verbs of Motion in English and Spanish. In M. Shibatani, & S. A. Thompson (Eds.), *Grammatical Constructions: Their Form and Meaning* (pp. 195-219). Oxford: Clarendon Press.
- Slobin, D. I. (2004). The Many Ways to Search for a Frog: Linguistic Typology and the Expression of Motion Events. In S. Strömquist, & L. Verhoeven (Eds.), *Relating Events in Narrative: Typological and Contextual Perspectives* (pp. 219-257). Mahwah, NJ: Lawrence Erlbaum.
- Slobin, D. I. (2006). What Makes Manner of Motion Salient? Explorations in Linguistic Typology, Discourse, and Cognition. In M. Hickmann, & S. Robert (Eds.), *Space in Languages: Linguistic Systems and Cognitive Categories* (pp. 59-81). Amsterdam/Philadelphia, PA: John Benjamins. <https://doi.org/10.1075/tsl.66.05slo>
- Tai, J. H. (2005). Conceptual Structure and Conceptualization in Chinese. *Language and Linguistics*, 6, 539-574.
- Tai, J. H., & Su, S. (2013). Encoding Motion Events in Taiwan Sign Language and Mandarin Chinese: Some Typological Implications. In G. Cao, H. Chappell, R. Djamouri, & T. Wiebusch (Eds.), *Language and Linguistics Monograph Series 50—Breaking Barriers: Interdisciplinary Studies in Chinese Linguistics and Beyond* (77-98). Taipei: Institute of Linguistics, Academia Sinica.
- Talmy, L. (2000). *Toward a Cognitive Semantics: Typology and Process in Concept* (Vol. II). Cambridge, MA: The MIT Press. <https://doi.org/10.7551/mitpress/6848.001.0001>
- Wierzbicka, A. (2009). "Reciprocity": An NSM Approach to Linguistic Typology and Social Universals. *Studies in Language*, 33, 103-174. <https://doi.org/10.1075/sl.33.1.05wie>
- Yu, L., & Li, F. (2018). An Event Integration Approach to the Variation of "V + Dao" Construction in Verb Complement Typology. *Foreign Languages and Their Teaching*, 298, 72-83.
- Zhu, D. (1982). *Grammar Handouts*. Beijing: Commercial Press.