

‘Arrive’ ‘to’ ‘achieve’: the morphosyntax of *dao* in Mandarin Chinese

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Abstract

Dao, as a multifunctional item in Chinese occurs in a variety of syntactic environments. It can serve as the main predicate as well as combine with another verb to form a complex predicate. It can introduce a locative argument as well as a theme or an extent. It can take a DP as well as a CP as its complement. Following the neo-Constructivist approach to argument structure, we argue that *dao* realizes two underlying syntactic entities. In a motion event, *dao* is basically merged at the P_{PLACE} which further undergoes head movement through P_{PATH} to v , making it similar to both ‘arrive’ and ‘to’. Besides, *dao* is also the phonological exponent of $v_{ACHIEVE}$, a light verb/verbalizer with the semantic feature ‘achievement’. The ‘arrive’ to $v_{ACHIEVE}$ analysis can explain *dao*’s multifunctionality, optionality, its word formation effect, complement selection and the non-violation of manner-result complementarity. It formulates the syntactic encoding of an achievement event by adding one more flavor to the v family in syntax.

1 Introduction

It is known that *dao* in Mandarin Chinese (henceforth Chinese) can assume several different usages. It is a verb with an optional locative argument, as (1a) shows. It can serve as a preposition as ‘to’ or ‘till’ in (1b) and (1c). What is more intriguing is that *dao* can also behave like a suffix, following a lexical item to form a chunk with it. In this case, *dao* can be followed by a nominal as well as a clausal element, see (1d)-(1f).

- (1) a. Keren *dao* (jia) le.
 Guest arrive (home) SFP
 ‘The guest is arriving (home).’
 b. Cong Beijing *dao* Shanghai, zuo huoche yao hua san-xiaoshi.
 From Beijing to Shanghai, take train will take three-hour
 ‘It takes three hours to take a train from Beijing to Shanghai.’

- c. Dao mingtian, shiqing jiu jiejie le.
Until tomorrow, issue already solve SFP
'The issue will be solved until tomorrow.'
- d. Xiaoming zou-dao xuexiao le.
Xiaoming walk-dao school SFP
'Xiaoming walked to school'.
- e. Dahua zhua-dao le yi ge xiaotou.
Dahua catch-dao PFV one CL thief
Dahua caught a thief.'
- f. Ta ku-dao dajia dou hen bunaifan.
He cry-dao everyone all very annoyed
'He cried everyone annoyed.'

At first blush, the suffixal *dao* seems to be a polysemous element as it can occur in different event types and serve different functions: in (1d), *dao* occurs in a motion event and introduce a locative argument, goal. In (1e) it has nothing to do with the argument structure, but more of an (inner) aspect marker, encoding the achievement of the result. Last but not least, it in (1f) is more of a linker for a secondary predicate, aka resultatives. Nevertheless, there is inherently something in common with the three *daos*, namely, achievement, be it a location, an entity or a state.

When investigating the syntactic properties of each *dao*, we run into two puzzling issues. The first one is the optionality of *dao*. In a motion event, suffixal *dao* is optional to introduce a locative argument when combines with some verbs but not others:

- (2) a. Xiaoming pao-*(dao) le xuexiao.
Xiaoming run-*(dao) PFV school
'Xiaoming ran to school.'
- b. Xiaoming hui-(dao) le jiaxiang.
Xiaoming return-dao PFV hometown
'Xiaoming returned the hometown.'

In a non motion event, *dao* is optional to encode the result, again for some verbs but not others:

- (3) a. Nana mai-(dao) le xin shouji.
Nana buy-dao PFV new phone
'Nana bought a new phone.'

- b. Xiaoming zhao (#dao) le yaoshi.
 Xiaoming look-for (-dao) PFV key
 '(Intended meaning) Xiaoming found the key.'

For verbs like '*mai*' (buy), with or without *dao* (3a) entails the same meaning. Nonetheless, for verbs like *zhao* (look for), with or without *dao* (3b) entails different truth condition with regard to whether the key has been successfully found. The optionality of *dao* indicates its interaction with the lexical semantics of the verb and the its involvement in lexicon-syntax interface.

The second puzzle is that *dao* in different event types seems to have different morphological properties. When occurring in a motion event, it can be used as an independent verb, a preposition or a verbal suffix. But the suffix *dao* in achievement events does not have a corresponding verbal/prepositional version:

- (4) a. Xiaoming (zou)-dao xuexiao le.
 Xiaoming (walk)-dao school SFP
 'Xiaoming arrived/walked to school.'
 b. Xiaoming *(mai)-dao kafei le.
 Xiaoming *(buy)-dao coffee SFP
 '(Intended meaning) Xiaoming bought coffee.'
 c. Nana *(xiao)-dao duzi teng.
 Nana *(laugh)-dao stomach hurt
 '(Intended meaning) Nana laughed her stomach hurt.'

The contrast shows us that *dao* is likely to be a 'semi-lexical/functional' item. It is a lexical verb on the one hand but a functional-like element on the other, making us to ponder the relation among the different usages of *dao*.

The sketchy description above depicts a very interesting picture centered around the morphosyntax of *dao*. Situated on the borderline of syntax and lexicon, *dao* is involved in a series of issues such as argument introducing, clause introducing, resultativity encoding, word formation and the like. In addition, the ability for *dao* to occur in different event types provides us with a good opportunity to explore the underlying universality in encoding directed motion events and achievement events, as has been argued in Acedo-Matellán (2012), Folli and Harley (2020), Ramchand (2008), and Talmy (2000), among others.

The questions to be explored concerning *dao* are summarized below:

- i Why is *dao* in some syntactic environments obligatory while in others optional?

- ii What enables *dao* a free morpheme in a motion event while a bound one in non-motion events?
- iii What is the nature of *dao*? Is it possible to give a unified account for this so called multifunctional item?

This research attempts to propose a solution to the above questions...

The structure of the article is as follows: Section 2 gives a detailed description of *dao* in various syntactic environments and its syntax-semantic properties awaiting explanation. The classification of *dao* is based on the event type it encodes, signified by what thematic type of complement does *dao* take, namely, a goal, a theme or a descriptive result. Against such background, Section 3 formulates the model to be adopted in the current research to analyze the multifunctionality of *dao*. The parallel structures between a directed motion event and an achievement event are established through mapping the functional primitive PATH into different categorial domains, paving the way for a ‘quasi’ unified account of *dao*. Section 4 applies the model to the analyses of *dao* and figures out the identity and correlation of *dao* in different event types. Section 6 targets the theoretical implication and the remaining issues and Section 7 concludes the paper.

2 The syntactic distribution of *dao*

2.1 *Dao* with a goal argument

Dao in motion events is always followed by a locative argument: goal. This *dao* is grouped into the so-called ‘directional verbs’ in previous Chinese linguistic research (Lamarre, 2003, 2009; Li & Thompson, 1989; J. Lin, 2019; Y. Liu, 1998; Lv, 1980). Directional verbs refer to the verbs that denote the direction of a motion and can take a locative argument, such as ‘*lai*’(come), ‘*qu*’(go), ‘*shang*’(ascend), ‘*xia*’(descend) and so on. *Dao* is different from other directional verbs in that it does not refer to any specific direction information. Rather, it encodes the ending of the path, namely, arriving, and it optionally takes a goal argument.

Besides being a verb, *dao* can be suffixed onto a direction or a (manner) of motion verb, jointly encode a motion event. As (some of) the above mentioned directional verbs can take a goal argument per se, *dao* seems to be optional when co-occurring with them. Notably, *dao* is only compatible with a directional verb whose locative argument is a goal. For instance, ‘*shang*’ (ascend) can take a locative argument which is a ground or a goal. But for it to be combined with *dao*, only the latter is licensed, see (5a). ‘*Chu*’ (exit) is a directional verb only taking a source argument and is incompatible with *dao*, see (5b).

In this regard, *dao* is not optional but determinant for the thematic role of the locative argument.

- (5) a. Xiaoming shang-dao le shan *(ding).
 Xiaoming ascend-dao Asp mountain-top
 'Xiaoming ascended the top of the mountain.'
- b. Xiaoming chu-(*dao) jia-men le.
 Xiaoming return-dao house-gate SFP
 '(Intended meaning) Xiaoming exit the gate.'

For manner of motion verbs, *dao* is obligatory to introduce the goal argument to encode the endpoint of the motion. Such a motion event can be a spontaneous or a caused motion event (Talmy, 1991, 2000), depending on the syntax-semantic property of the verb. To illustrate, an unaccusative or unergative verb, when combining with *dao* encodes a spontaneous motion event but a transitive/ditransitive verb brings a causative motion event. For the former, the subject is the theme (figure) of motion and the object a goal.

- (6) a. Shui liu-dao le dishang.
 Water flow-dao PFV floor
 'The water flows onto the floor.'
- b. Xiaoming (guyi) zou-dao le xuexiao.
 Xiaoming purposefully walk-dao PF school
 'Xiaoming walk to school and he did that purposefully.'

Interestingly, for an unergative verb denoting manner like 'zou'(walk), 'pao'(run), or 'fei'(fly), *V-dao* denotes an agentive motion event (indicated by the agentive adverbials in (6b)) whose subject seems to play two thematic roles: the theme which undergoes the change of location is also the initiator of the motion. Agentive motion event can be viewed as a internal causative (aka.self causation) motion.

For an external causative motion event, the verb co-occurring with *dao* has to be transitive/ditransitive and packages an agent/causer and a theme per se; *dao* contributes the goal argument. In the motion event with *dao*, the agent/causer causes the theme to move and arrive at the goal, with or without itself moving along the path. With a causer, a theme and a goal, the argument configuration can be various: either it shows a double object pattern or a postverbal PP pattern:

- (7) a. Xiaoming ban-dao le jiaoshi san-xiang-shu.
 Xiaoming carry-dao PFV classroom three-CL-book
 'Xiaoming carried three boxes of books to the classroom.'
- b. Xiaoming ban le san-xiang shu dao jiaoshi.
 Xiaoming carry PFV three-CL-book dao classroom
 'Xiaoming carried three boxes of books to the classroom.'

The former shows the suffix usage of *dao* and the latter the prepositional usage.

To sum up, *dao* in a motion event assumes several categories: a verb, a preposition and a suffix, depending on the syntactic environment it appears. As the sole predicate in the sentence, it is the verb 'arrive'. When co occurring with another verb, it either suffixes onto the verb or follows the VP(V+theme), forming a PP. The consistent function of *dao* is to express the endpoint of the motion as *dao* can introduce the goal argument, unless the verb preceding it is directional and takes a goal argument, too.

2.2 *Dao* with a theme argument

Besides motion events, *dao* can also occur in an achievement event, signified by that *dao* being followed by a theme argument rather than a goal. In this syntactic configuration, *dao* does not introduce an argument but marks the situation type of the event. Traditionally, this *dao* is labeled as a special subtype of resultative complement, i.e, phase complement in Chinese (Chao, 1965; Dong, 2017; Z. Liu, 2006; Lu et al., 2019; Xuan, 2008). They are special in that the so called 'resultative' element does not specify the final state (of the theme) but marks the completion of the action, usually with the achievement reading. To be specific, (8a) or (8b) doesn't mean 'the book or package arrived', but the process of looking for /buying it has been completed with the achievement of the book/package. Similar to *dao*, 'wan'(finish), 'zhu'(stay), 'hao'(good), 'diao' (fall) can also directly mark the completeness of the action without explicitly specifying the resultative state of the theme.

- (8) a. Xiaoming mai-dao na-ben-shu le.
 Xiaoming buy-dao that-CL-book SFP
 'Xiaoming bought that book.'
- b. Xiaoming shou-dao le yi-ge-baoguo.
 Xiaoming receive-dao PFV One-CL-package
 'Xiaoming received a package.'

According to the lexical semantics of verb with which *dao* is combined, the *V-dao* chunk can be divided into three subgroups. The first type includes transitive verbs or ditransitive verbs which can implicate gaining or receiving something, like 'zhua' (catch), 'zhao'

(find) or ‘*jie*’ (borrow), ‘*shou*’ (receive). When adding *dao*, the event is completed with the achievement of the theme. The second type is perceptual verbs like ‘*kan*’ (look), ‘*ting*’ (listen) or cognitive verbs like ‘*xiang*’ (think), ‘*meng*’ (dream). These verbs denote the mental or cognitive process but adding *dao* means such cognitive/mental activity achieves the theme. To wit, the difference between ‘*kan*’ and ‘*kan-dao*’ resembles the difference between ‘look at’ and ‘see’. See more examples below:

- (9) a. Xiaoming *ting-dao* le gesheng.
 Xiaoming listen-dao PFV sound
 ‘Xiaoming heard a sound of singing.’
 b. Xiaoming *meng-dao* le jiaixiang.
 Xiaoming dream-dao PFV hometown
 ‘Xiaoming dreamt of the hometown.’

The last type is causative psych verbs which take a theme as its external argument and an experiencer as the internal one. For instance, ‘*xia*’ (frighten). When adding *dao*, it indicates the psychological effect of frightening someone has been achieved. More examples are provided below:

- (10) a. Xiaohong *jintian mei-dao* wo le!
 Xiaohong today beautiful-dao me SFP
 ‘I was amazed by Xiaohong’s beauty today!’
 b. Ni *de wenti nan-dao* wo le.
 You POSS question difficult-dao me SFP
 ‘Your question made me feel difficult.’

The above two examples are worthwhile to pay extra attention, since the so-called “causative psych verbs” before *dao* do not really obtain such verbal usage in modern Chinese. To elaborate, ‘*mei*’ (beautiful) and ‘*nan*’ (difficult) are adjective per se. After combining with *dao*, we form a verb with achievement meaning, namely, ‘successfully making one feel...’. This observation indicates us that *dao* seems to be a categorizer which anchor the verbal environment and determines its extended projection.

More evidence to back up this argument can be provided. Firstly, *dao* can be combined with a bound morpheme which cannot stand by itself but has to be combined with *dao* to form a verb, as in (11a) and (11b). Secondly, adding *dao* can change the category or the meaning of the preceding element, as has been illustrated in (10a) and (10b). In effect, (9b) is another instance falls in this case: *meng* (dream) is a noun when used alone, whereas combining with *dao* make it a verb. ‘*Yishi*’ is another one, which means “awareness”

as a boun, but when *dao* is added, “*yishi-dao*” together means ‘realize’. The above data suggest that *dao* possibly categorizes or recategorizes a morpheme to form a new verb. To put it differently, *dao* provides the syntactic environment for these morphemes to become a verb. In this regard, *dao* can be used as a derivational suffix which is involved in word formation.

- (11) a. Xiaohong yu*(-dao) le Xiaoming.
 Xiaohong meet-dao PFV Xiaoming
 ‘Xiaohong met Xiaoming.’
 b. Dahua zao*(-dao) le juda daji.
 Dahua suffer-dao PFV huge defeat
 ‘Dahua suffered from the huge defeat.’

Furthermore, adding *dao* does not only form a new verb by providing the verbal feature, it also brings in the following new syntax-semantics properties. Through a comparison of the bare verb(root) without *dao* and the one with it, it is found that (i) *dao* modifies the thematic role of the external argument by stripping off agentivity; (ii) *dao* alters the situation type of the predicate by forming an achievement verb, punctual and telic.

V-dao is agentiveless, which is suggested by the fact that they are incompatible with agentive oriented adverbs like ‘guyi’(deliberately), even if the subject is animate and volitional, as in (12).

- (12) Xiaoming guyi mai(*-dao) le na-ben-shu.
 Xiaoming deliberately buy-dao PFV that-CL-book
 ‘(The intended meaning) Xiaoming bought that book deliberately.’

The non agentive property also prevents them from being used in imperative sentences.

- (13) Kan (*-dao) na-zhi xiaoniao!
 See-dao that-CL bird
 ‘(The intended meaning) look at the bird!’

In the above examples, the agentive adverbial and the imperative force are safe unless *dao* is added. With *V-dao*, the external argument, although can initiate the action, seems to be incapable of determining whether the result can be successfully achieved. Thus, they are deviating from the proto type agent(Dowty, 1991)but more of an undergoer of the event.

V-dao is processless despite the bare verb tends to be a durative, activity verb. In this regard, adding *dao* changes the lexical aspect: stripping off the process of the event and highlight the ending point, namely the achievement. A commonly used diagnostic for

punctuality is the compatibility with the progressive aspect (Dowty, 1979; Vendler, 1957), which targets the process of an event. In addition, adverbs such as ‘almost’ can be used to test the availability of a bounded event with process (MacDonald, 2008; Rothstein, 2008). For accomplishments, ‘almost’ gives rise to ambiguity with respect to whether the action is not ended or not initiated. Whereas achievements with ‘almost’, no such ambiguity rises. That *V-dao* is punctual is suggested by its incompatibility with progressive aspect and non ambiguity with ‘cha-yi-dianer’ (almost) in Chinese.

- (14) *Nana zhengzai zhao-dao yaoshi.

Nana PROG find-dao key

‘(The intended meaning) Nana is looking for the key.’

- (15) Nana cha-yi-dianer zhao-dao yaoshi.

Nana almost find-dao key

‘Nana almost found the key.’

V-dao is telic, as a natural entailment of its processless (Beavers, 2012, 2013; Vendler, 1957). This is the core semantic function of *dao*, as a ‘non standard resultative complement’. From the comparison in (16a) and (16b), it is not difficult to find that with *dao*, the achievement of the natural result is truth conditionally entailed, which cannot be cancelled. More evidence for telicity comes from its compatibility with time span adverbials, the counterpart of ‘for three minutes’ rather than ‘in three minutes’ in Chinese. By contrast, a bare verb without *dao*, merely denotes an unbounded event whose result is unspecified. In this respect, *dao* can systematically encode the lexical aspect information, to wit, telicity.

- (16) a. *Nana zhaodao le na-ben-shu, keshi hai bu-zhidao shu zai nali.

Nana find-dao PFV that-CLF-book, but still NEG know book at

‘Nana found that book, but she still had no idea where the book is.’

- b. Nana zhao le na-ben-shu, keshi hai bu-zhidao shu zai nali).

Nana find PFV that-CLF-book, but still NEG know book at

‘Nana looked for that book, but she still had no idea where the book is.’

- (17) a. *Nana zai san fenzhong zhinei zhao le yaoshi.

Nana in three minute in find PFV key

‘(the intended meaning) Nana found the key in three minutes.’

- b. Nana zai sanfenzhong zhinei zhaodao le yaoshi.

Nana in three minute in find-dao PERF

‘Nana found the key in three minutes.’

The above examples suggest *dao*’s function in telicity: the appearance of *dao* brings telicity into the picture. Recall the optionality of *gei* in terms of result (telicity) encoding. To recap,

for verbs like *mai*(buy), *jian*(pick) or *zhuan*(earn), *dao*'s presence is optional for telicity encoding. Merely using verbal *le* ensures the successful achievement of the result, which is not cancellable. However, adding *dao* still changes the situation type by make the event no longer durative. In this sense, *dao* is not totally optional.

To summarize, when *dao* is followed by a theme argument, it only obtains the suffix usage. Although it does not involved in argument introducing, *dao* can help with forming a new verb which is agentiveless, punctual and telic. To wit, *dao* contributes to the encoding of an achievement predicate. This makes it quite different from the 'arrive' *dao* in motion event. Instead of 'arrive', we have an 'achieve' *dao*.

2.3 *Dao* with a clausal complement

The characteristic of the last usage of *dao* is that it can introduce a non nominal element, be it an AP, an VP, a Small Clause (SC) or a full CP. Semantically, the complement of *dao* denotes a descriptive result or degree which can be achieved through the action. In (18), that Xiaoming becomes full is the resultative state/situation he achieved through eating. If the result is within a measurable scale, the degree reading becomes prominent, as when *dao* is combined with a gradable adjective. In (19), the height of the building reaches the degree to which we cannot see the roof. Adjectives in Chinese, when used independently, express a comparative reading (C.-S. L. Liu, 2018). To get the standard reading, 'hen' (very) or other degree adverbs are required to be added to help anchoring the property along the measuring scale (Grano, 2012). Nevertheless, if *dao* as well as the complement clause is adopted, a degree adverb becomes redundant or even forbidden in the sentence. *Dao*'s correlation with degree renders the analysis of this *dao* as the introducer of the "extent complement", as in Z. Liu (2006).

- (18) Xiaoming jintian bu jianfei, dasuan chi dao bao.
 Xiaoming today NEG diet, plan eat-dao full.
 'Xiaoming is not on diet today, he plans to eat until he is full.'
- (19) Zhe dong lou (*hen) gao-dao gan-bu-jian ding.
 This Cl building (*very) high-dao look-not-see roof
 'This building is so high that we cannot see its roof.'

An interim summary so far. Although *dao* in different syntactic contexts have their own properties, the above descriptions also generate a semantic generalization on *dao*: it encodes the "achievement of the goal". In a motion event, the goal is the final location of the motion, thus *dao* is 'arrive' or 'to'. In an achievement event, the goal is the theme

argument or some descriptive result and *dao* manifests the ‘achieve’ component in the lexical semantics, of an entity or a new state. ‘Achieving some location, some entity or some state’ can be the semantic core of *dao*. Such a semantic core calls for a unified analysis of *dao*.

3 Toward a unified account of *dao*

3.1 Dissolving the multicategorical label of *Dao*

Dao’s semi-functionality, namely both as a lexical and a functional item is attributed to different categorial labels in previous analyses. Researchers labeled *dao* as a verb, a preposition, a coverb or a particle in different syntactic contexts to account for its multifunctionality. As has been mentioned, *dao* in a motion event is argued to be a directional verb or a preposition (J. Lin, 2019; Y. Liu, 1998; Lv, 1980; Zhu, 1982; among others). In an achievement event, it is said to be a completive marker/particle/linker (Chao, 1965; Dong, 2017; Xuan, 2008; among others), whose categorial nature is underspecified. Nevertheless, it is a consensus that the different usages share the same origins and is a result of grammaticalization (Z. Liu, 2006). The question is, how do these different *daos* correlated with each other synchronically? Is it possible to give up the different categorizing labels and provide a unified account of *dao*? The universal semantic core, namely “achievement of the goal” seems to provide some hint, as it suggests that different usages of *dao* can be summarized to a single event structure.

In order to capture the universal semantic core of *dao* underlying such multifunctionality, a natural and possible approach is to assume different categorial labels are not born with *dao*, but a result of syntactic derivation. This is in line with the constructivist approach to syntactic structure (Marantz, 2013), represented by Distributed Morphology (DM, see Bobaljik, 2017; Embick, 2010; Embick and Noyer, 2007; Halle et al., 1993; Harley and Noyer, 2014; Marantz, 1997, 2007). DM respects the ‘Syntax all the way down’ hypothesis and believes that merge, is the only engine for derivation. In this sense, there is no such distinction between derivational and inflectional morphology; all is compositional, including lexical items, or words, which is viewed as a combination of a root and categorizer. Categorizers such as *v*, *n*, *a* are functional heads in the syntactic structure which is responsible for forming a verb as well as constructing the argument structure. All the grammatical information of a word, such as C selection, thematic information, argument structure, situation type and so on is constructed in the syntactic structure.

The DM approach provides us a new perspective to reanalyze the issues of the multifunctional *dao*, enabling us to extract the semantic core of *dao* out of its multifunctionality,

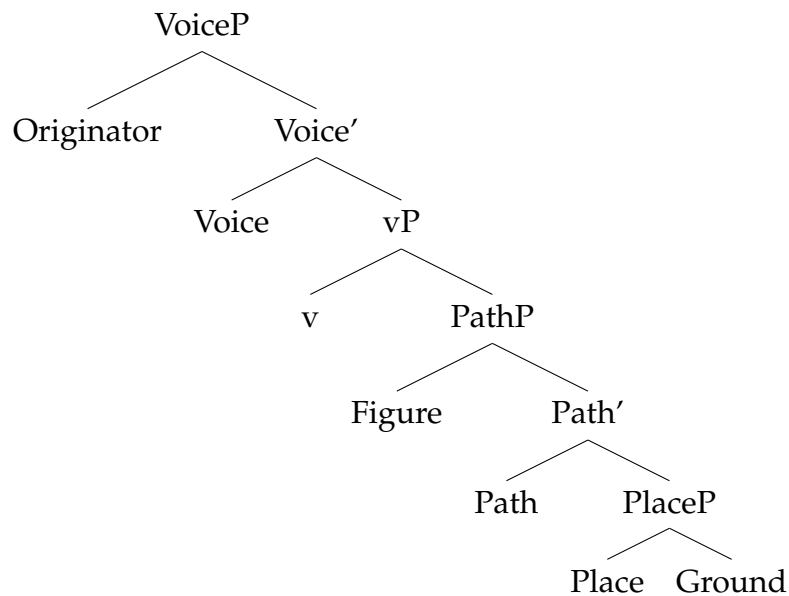
focusing on the contribution of the event structure. As *dao* occurs both in motion events and achievement events, a unified account is supposed to address the structural correlation of the two types of events.

3.2 The syntactical skeleton of a transition event

Cross-linguistically, the syntactic structure of a directed motion event and a change of state event are oftentimes parallel to each other. They show similar patterns in typological generalizations, syntax and semantic formulations and particularly, telicity encoding and is argued to share the same event template in formulating their syntactic structure (Acedo-Matellán, 2016; Beavers, 2013; Beavers et al., 2008; Folli & Harley, 2005, 2020; Hale, Keyser, et al., 1993; Ramchand, 2008; Snyder, 2001; Talmy, 1985, 2000; Tenny, 1994). To put it differently, directed motion event can be viewed as a subtype of ‘change of state’ in a broad sense, with the final result (state) being a new location. *Dao*, as an element occurring in both event types, can also shed some light on the underlying similarity the two event templates. Next we will review Acedo-Matellán (2016)’s work as the starting point to formulate such similarity.

The insight of Acedo’s work is to mirror the Talmian typology into the syntactic structure. The author argues that each semantic component in Talmy’s theory, to wit, PATH, MOTION, MANNER, FIGURE and GROUND, has a corresponding syntactic projection in the event structure, which he termed as a ‘transition’ event. To be specific, the structure of a (causative) transition event can be formulated with a functional head Voice, which introduce the external argument, Originator(Causer), *v*, which encode MOTION and a layered projection, PATH and PLACE. FIGURE(theme) locates in the specifier of PATH and GROUND as the complement of PLACE. This event structure can explain the syntax of both directed motion events and change of state events.

(20)



The decomposition of PP into a layered projection, say a *p* and P, or PATH and PLACE is not rare to see in the literature, as in Den Dikken (2010), Koopman (2000), Svenonius (2008, 2012), Wood and Marantz (2017), and Zwarts (2008). In a motion event, the upper layer is responsible for the path, or the process of the motion (Vector or deictic) and the lower one encodes the location, or the endpoint of the motion. Acedo-Matellán (2016)'s idea is to mirror such a motional progress-endpoint relation to the change of state in general. That is to say, PATH and PLAVE are not limited to P domain. The projection of PATH (selected by *v*) is interpreted as the process of change and the Path head takes a PlaceP as complement, it introduces a transition and inducing telicity by encoding the final state (result) of change.

Such an approach is appealing to account for the facts related to *dao*. At the first blush, it seems that *dao* is PATH, as it always entails the achievement of some endpoint, be it a location, a theme or a state. Although this captures the semantic core of *dao* it is syntactically insufficient: *dao* in motion events and achievement events show asymmetrical morphosyntactic properties: if they are the same PATH, how come *dao* in motion event can behave as an independent verb or a preposition, but never do so in achievement events? How come *dao* in an achievement event can take a clausal complement but never do so in a motion event?

Such asymmetries suggest that *dao* in different event types, although both correlates with PATH, could be different syntactic entities. This calls for an analysis in which the same semantic component, here the PATH, being realized as different categorematic element. By this means, we can formulate the differences in syntax without losing the insight that they share the same semantic core in essence.

4 Dao in motion events

a verb? a preposition? or a suffix?

4.1 The syntactic nature of *dao* in motion events

Based on the previous description, we can see that *dao* has the following properties in motion event. In terms of syntactic behaviors, it can serve as a single predicate(the verb), a part of a predicate chunk (the suffix), as well as a single preposition with the PP following the locative object.

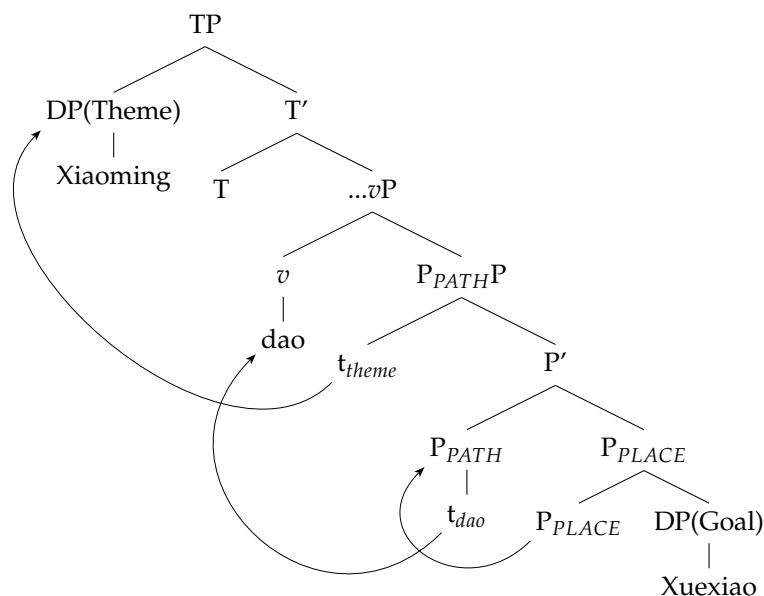
- (21) a. Xiaoming dao xuexiao le.
 Xiaoming arrive school SFP
 ‘Xiaoming arrived at school.’
 b. Xiaoming zou-dao le xuexiao.
 Xiaoming walk-dao PF school
 ‘Xiaoming walked to school.’
 c. Xiaoming tui le yi liang che dao xuexiao.
 Xiaoming push PFV one CL cart to school
 ‘Xiaoming pushed a cart to school.’

As for the suffix *dao*, its optionality is detected with some directional verbs like ‘*shang*’ (ascend) or ‘*xia*’ (descend) but such optionality is never found with a manner verb. Despite these surface differences, there is a consistent property regarding argument structure: *dao* always introduces a locative argument which is the endpoint of the motion. In this sense, it is closely related to the PLACE element, which encodes destination of motion. Another semantic property of *dao* is that it always entails the existence of the PATH. To sum up, whenever *dao* is involved, the motion event expresses the information such that the object has undergone a path and has reached the destination. Additionally, the Path information denoted by *dao* is pure in the sense that it only denotes that a motion along the path is involved, while the exact direction is underspecified. Adopting the syntactic skeleton of a motion event formulated in Acedo-Matellán (2016), we postulate the following hypothesis concerning *dao*:

- (22) In a motion event, *dao* is a functional item inserted in the PATH head which has a PLACE element incorporated into it.

Under the framework of DM, *dao* is the PF exponent of a feature bundle [PATH, PLACE]. It indicates the existence of a Path and its destination.

(23)



In the above structure, the Place head moves to the Path head, resulting in the clustering of the two features on the single Path head. We follow the basic spirit of late insertion of DM by assuming that features do not have phonological forms; after narrow syntax derivation is completed, at PF, vocabulary items are inserted in the terminal nodes to serve as the phonological exponents of the feature bundles. After syntactic derivation, *dao* as the phonological exponent of the Place and Path feature, is inserted in the Path head at the stage of late insertion. This then immediately explains why the occurrence of *dao* always involves a locative argument serving as the destination and why *dao* always expresses dynamic motion (i.e. change of location) instead a static location meaning.

This hypothesis, as we will show below, provides a unified account for all the motion event constructions involving *dao*. We start from the construction with *dao* as the verb. This happens when the little *v* in (23) is null. After Place moves to Path and *dao* is inserted, it further moves to the little *v* position, where it further takes a verbal feature, hence surfacing as a matrix verb. We believe such head movement happens as a morphological requirement: A categorizer without a root merging with it is exponent defective and cannot be spelt out at PF. Merging with a root gives the functional head a chance to signify itself, since a root, as a standard Saussurean sign (Harley, 2014), is a sound-image pair, thus are always exponent complete. However, when a root is unavailable, head movement at PF will be triggered after PF insertion. The element in the lower functional head, here *dao* will be remerged in the *v* position. The theme argument is originally inserted in the specifier of Path as the undergoer of the change of location. In the further operation in the extended projection (the TP here), the theme argument moves to the subject position. The derivation is illustrated in (23).

This analysis also explains why the verb ‘arrive’ (*dao*) in Chinese, unlike that in En-

glish, is transitive, immediately followed by a locative argument. This is because, as shown above, *dao* already involves a Place feature that is originated in the PLACE head, a head that is responsible for taking a locative argument in its complement position. The English verb ‘arrive’, we tentatively assume, is just a lexical verb that involves no Place feature, which explains why its locative argument should be introduced by a preposition like ‘at’ and ‘in’, which are merged in the PLACE position.

4.2 When *dao* meets another root

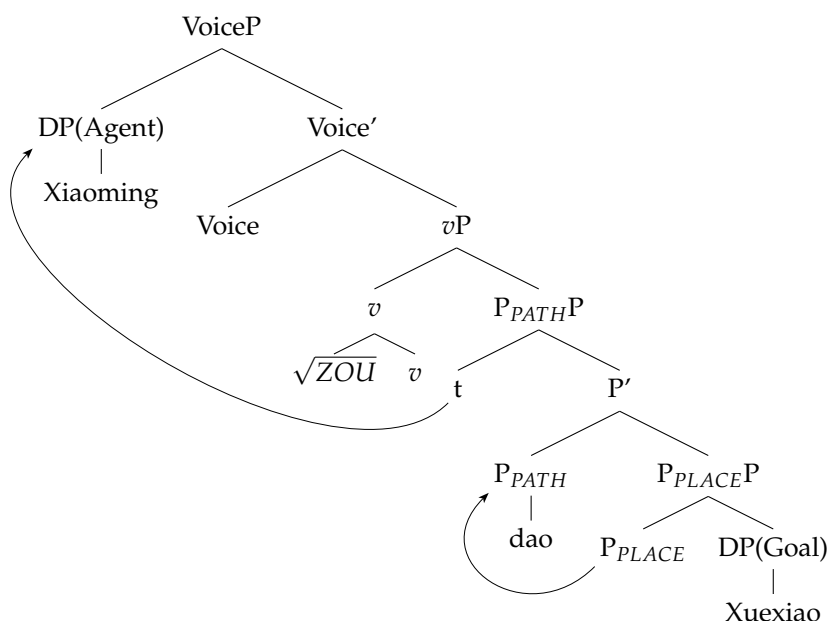
As for the so called ‘suffix’ usage of *dao*, we argue that it shares the identical construction with (23). The crucial difference is that a manner verb(root) is adjoined to the little *v*. This operation, following Harley (2005) and Mateu (2012), in effect, is a root adjoined to *v* to ‘name’ the action, aka ‘manner incorporation’. In our case, a manner verb like ‘zou’ is originally a root, which is adjoined to the *v* position. As already shown in the above derivation, *dao* is inserted in the Path position. We argue that *zou* and *dao* are combined to form a complex head due to the operation of ‘Morphological Merger’ originally proposed by Marantz, 1988: 261):

- (24) Morphological Merger: At any level of syntactic analysis (D-Structure, S-Structure, phonological structure), a relation between X and Y may be replaced by (expressed by) the affixation of the lexical head of X to the lexical head of Y.

(Noyer & Embick 2001: 561)

Affixation of two morphemes might take place at PF before vocabulary insertion, which is therefore completely determined by the hierarchical structure. One example of such Morphological Merger is tense lowering in English. Apart from lowering, Embick and Noyer (2001) and other DM-based studies following it (Bobaljik, 2002) also argue that Morphological Merger might take place at or after insertion of vocabulary items. The Morphological Merger of this type is called ‘Local Dislocation’. At this stage, there is no hierarchical structure. The relationship between exponents X and Y that will determine whether they can be combined into a single word is only the linear adjacency: only adjacent elements have the potential to go through this operation. In the present structure, as shown below, after the theme moves to the higher, subject position, the manner verb and *dao* are adjacent to each other, which can get combined through the Morphological Merger operation, forming the chunk, i.e. a complex word, *zou-dao*; thus the suffix *dao*.

(25)

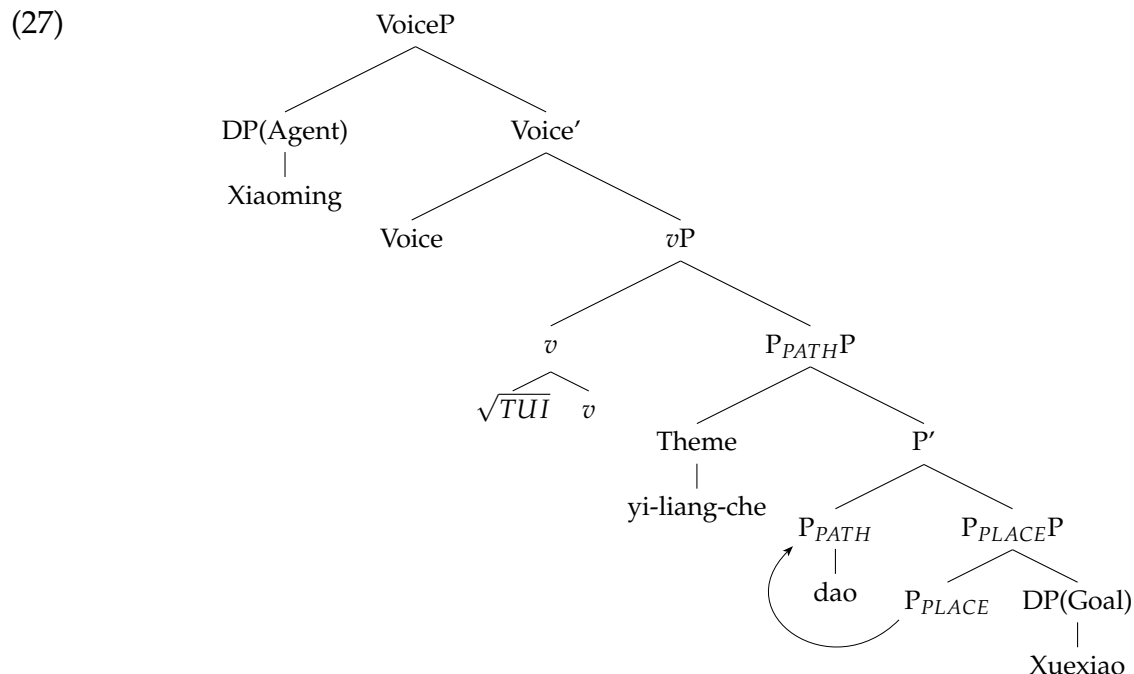


Notably, the manner verb, although seemingly an unergative verb, is not the matrix predicate, but an adjunct adjoined to the matrix predicate *dao*. As for the agentivity of the unergative *V-dao*, we argue that in a Voice head is projected above, introducing a EA position but instead of externally merging an argument, the Theme argument is remerged in this position, deriving the self-causative meaning, namely, the originator is also the undergoer of the motion.

Such a directed motion event can be externally causative with the projection of a Voice head, which can introduce the external argument: originator. Recall that when there are three independent argument, originator, theme and goal, the argument configuration shows different patterns, as in (7a) and (7b), repeated below.

- (26) a. Xiaoming ban-dao le jiaoshi san-xiang-shu.
 Xiaoming carry-dao PFV classroom three-CL-book
 'Xiaoming carried three boxes of books to the classroom.'
- b. Xiaoming ban le san-xiang shu dao jiaoshi.
 Xiaoming carry PFV three-CL-book dao classroom
 'Xiaoming carried three boxes of books to the classroom.'

Correspondingly, *dao* occurs as a suffix and a preposition respectively. Such a flexibility in terms of argument configuration can also be explained in our system.



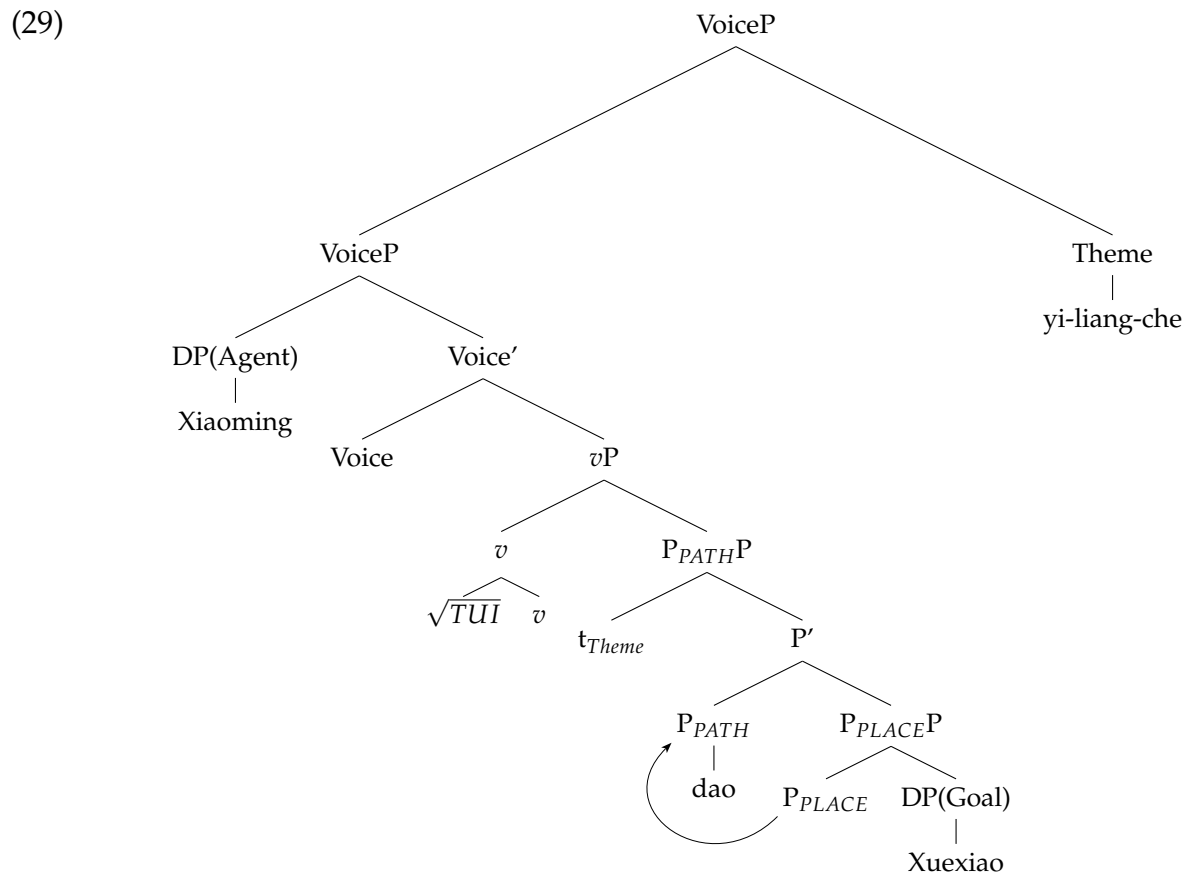
Note that when nothing moves in (27), we have *dao* stays in the Path position and categorized as a preposition, as in (26b). A question is, in this case, can we still have the morphological merger of the manner root and *dao* and get the suffix usage of it? Linguistic fact tells us that simply merging them are impossible:

- (28) a. *Xiaoming tui-dao le yi-liang-che xuexiao.
 Xiaoming carry-dao PFV one-CL-book school
 '(Intended meaning) Xiaoming carried three boxes of books to the classroom.'

The above sentence is the same with the one in (26b) except that *dao* now follows the manner verb, and it is ungrammatical. This impossibility is predicted by our analysis. Recall that the prerequisite for a complex head *V-dao* to be formed via morphological merger after late-insertion is to guarantee that the manner V and *dao* are adjacent to each other. In the above structure after late-insertion, in between the manner V and *dao*, there is the theme argument, bleeding the Morphological Merger.

Nevertheless, one way out is to let the theme argument, via some operation, move out, creating the adjacency between the manner verb and *dao*. This prediction is borne out, when the theme argument undergoes (rightward) heavy NP shift or is preposed via *ba*-construction¹.

¹*Ba* is like a preposition that follows the subject and precedes the verb, and the object is placed in the complement position of *ba* instead of the post-verbal position



(29) shows the derivation of (26a) and very similar process happens with a *ba* construction.

- (30) a. Xiaoming ba san-xiang-shu ban-dao le jiaoshi.
 Xiaoming BA three-CL-book carry-dao PFV classroom
 'Xiaoming carried three boxes of books to the classroom.'

What is crucial to our current proposal is that in the above two scenarios, the theme object is not longer intervening between the verb and *dao*. That V and *dao* form a complex is not only proven by their adjacent positions, but also by the fact that now the perfective particle *le*, which otherwise follows the verb, can only follow the V-*dao* chunk. This behaviour is, as we have shown above, is exactly expected by the current analysis, hence lending more support to our hypothesis.

4.3 When *dao* is optional

So far, we have covered most of the fact concerning *dao* in motion event. One thing has been left is the interaction of *dao* with directional verbs, which might arise a potential

problem: *dao* is optional to introduce a locative argument with them as these verbs are able to take one by themselves:

- (31) a. Xiaoming hui(-dao) le jiaxiang.
 Xiaoming return(-dao) PFV hometown
 ‘Xiaoming returned the hometown.’
 b. Xiaoming lai(-dao) le Beijing.
 Xiaoming come(-dao) PFV Beijing
 ‘Xiaoming come to Beijing.’

In Hu (2020), the author argues that these directional items are generated at the PATH head with a null PLACE incorporated into it, exactly the same as *dao* in our proposal. This would predict that *dao* and these direction items never co-occur with each other, contrary to the fact. Previously, it is mentioned that *dao* and other directional items, although both encode PATH information, are different in terms of meaning: *dao* signifies the endpoint of the path but other directional items specify the direction of the path with respect to the ground. How can we maintain the difference between *dao* and other directional item without losing the insight that they both encode PATH information?

Our solution is as follows: Follows Acedo-Matellán (2016)’s argument on the syntactic formation of concrete prepositions like ‘in’ and ‘on’ as the result of root incorporation. To wit, these prepositions realise the same Place feature, and difference between their lexical meaning lies in the roots which expresses the specific place information. The directional items in Chinese, following the same logic, are also not pure Path functional items but are roots adjoined to the Path head to provide the concrete direction of the path. In this sense, directional items are not pure functional elements which undergo late insertion and spell out the [PATH, PLACE] feature, their formation is in line with a lexical item under DM, by rooting merging with a categorizer, *p*, while, *dao*, we believe, is the overt realization of *p*. This in fact is also consistent with the conflation theory by Harley (2005) and Mateu and Acedo-Matellán (2012): now we see that a root can be adjoined to a *v* head to provide the manner information, and it should be expected that additional information can also be provided regarding the Place and Path of a motion event which can also be implemented by root adjoining. Directional items are these root in the lexicon to provide concrete information for Path. *Dao*, on the other hand, is the PF realization of the Path. Under such mechanism, the co-occurrence of *dao* and other directional items is predicted. These directional items are roots left adjoined to PATH, which are spelt out as *dao* after narrow syntax.

At last, this analysis also explains the optionality of *dao* with these directional items. In our system, this is attributed to the PF realization of the Path head, which can be a

null element as well as *dao*. The difference lies in the contextualization of the thematic role (Wood, 2016; Wood & Marantz, 2017), here the locative argument. With a null PATH (plus Place), the root (the directional item) will condition on the thematic interpretation of the locative argument, which can be a Goal, Source or pure Ground to be traversed. While *dao*, the overt Path will block such a root contextualization and *dao* itself determines the thematic role as a Goal. From another perspective, this also indicates *dao* in such a chunk, still is responsible for the interpretation of the argument, and is the head of the predicate.

To sum up, although *dao* in motion events has various usages, be it an independent verb/preposition or a suffix, it always merges at Path position which incorporates a Place head. The apparent multifunctionality of *dao* is attributed to the different morphosyntactic contexts, the availability of head movement or morphological merger. When there is no other root in the structure, *dao* undergoes head movement to *v* position and realizes the feature bundle [v, PATH, PLACE], getting categorized as a verb. When there is a manner root adjoined to *v*, *dao* is still merged at the Path position, whether realizing as an independent preposition or as a verbal chunk depends on whether morphological merger is possible. A directional root is basically a root adjoined to PATH, which can be realized as *dao* or a null element. This accounts for the optionality of *dao*.

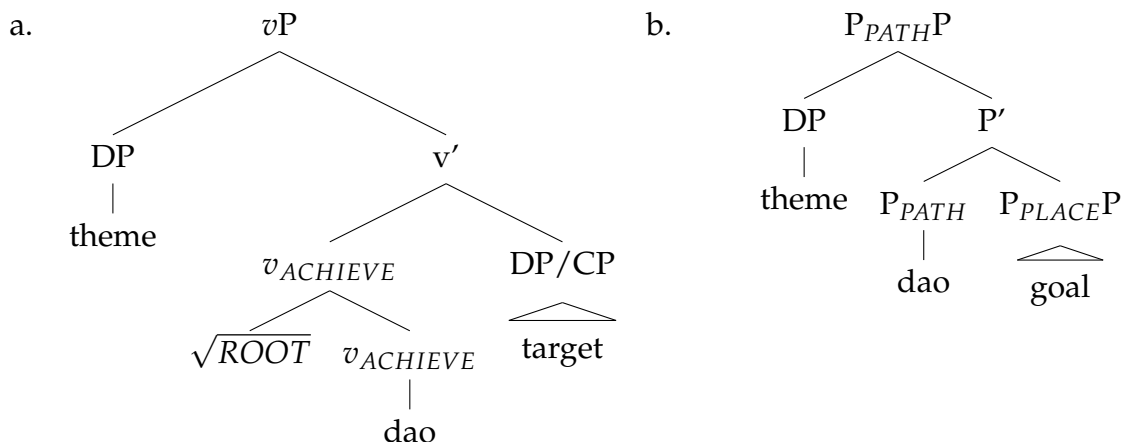
5 *Dao* in achievement events

5.1 Encoding an achievement event in syntax

One of the theoretical aims of the current research is to unify *dao* in motion events and that in an achievement event. In essence, they share the same semantic core encoded by *dao*: the achievement of a goal, be it a location, an entity and a state. The unified account of *dao* is supposed to capture such a shared semantic primitive without losing the fact that *dao* in both event types have different morphosyntactic properties: *Dao* in motion event can be an independent verb/preposition but it never does so in achievement events. In addition, they are different in terms of C selection: the latter can be a DP or a CP.

Based on the above facts, we argue that *dao* in achievement events is a light verb (verbal categorizer) with a semantic flavor ‘achievement’. To make it simple, *dao* is $v_{ACHIEVE}$ which has the following argument structure in (32a). This structure can be seen as a node to node mapping from the $P_{PATH}P$ in the motion event structure, as in shown in (32b), despite their categorial distinction: the former is a vP but the latter, PP , will be selected by a vP .

(32)



Such a structural mapping, we argue, captures the universality as well as the difference of *dao* in motion events and achievement events. Parallel to “arriving at some place”, “achieving some entity or result” also involves a theme undergoing some progress and arrives at its target. Such an event structure encodes a transitive achievement, in which the theme achieves the target. The achievement nature is carried by the semantic flavor of the *v*, the functional core of the structure. This *v* is transitive, as it comes with 2 argument position: an external argument with the thematic role ‘theme’ and an internal argument as ‘target’.

The theme argument is very similar to the undergoer of a motion. Such a thematic role entails that the achievement of the event is never totally under the control of the external argument. They can initiate the action but never determine whether such an initiation will lead to the achievement of the result. Furthermore, the internal argument of *v_ACHIEVE* can be of different categories but they all received the thematic role ‘target’, parallel to the goal argument in motion events. The flexibility in C selection allows that the target to be achieved can be an entity or a state/degree. We will elaborate on that below:

5.2 Achieving an entity

The *v_ACHIEVE* analysis can account for a series of syntactic and semantic properties of *dao* we have listed before.

Firstly, *dao* in an achievement event only has the suffix usage, it never stands alone as a verb or preposition. The morphological boundedness of *dao*, different from the one in motion event, is attributed to its categorizer identity. As *v_ACHIEVE*, *dao* is exponent defective, thus never occurs by itself but requires a lexical base, namely a root, to discharge its categorizing ability. Whereas *dao* in motion event, in its nature, is a P element (as it realize

the P_{PATH}), which naturally can stand along. Take *dao* as a verbalizer also explains its involvement in word formation, especially its combination with a bound root, as in ‘*yu-dao*’ (meet), or a ‘versatile’ root like ‘*meng-dao*’ (dream of) or ‘*mei-dao*’ (make... feel beautiful). Without *dao*, these roots cannot become a verb and enter the syntactic derivation.

Secondly, the flavor of *v* explains the argument configuration and the lexical aspect property of the predicate. Previously, it is detected that *V-dao* is a transitive achievement verb, agentiveless, telic and punctual. This is naturally achieved with $v_{ACHIEVE}$. It brings two thematic roles, theme and target, thus the transitivity. Agentivelessness is account for through the thematic role of the external argument, a theme, or undergoer, rather than an agent. The punctuality is also attributed to the ‘achievement’ *v*, which denotes an instantaneous, achievement event, or the time point in which the theme is possessing its target (physically or abstractly). The abstract possession serves as the resultative state, thus telicity is also entailed in the achievement flavor of *v*.

Previously, we mentioned this *dao* typically co-occurs with 3 sorts of verbs: transitive activity verbs, sensory/cognitive verbs and psych verbs. Under the above hypothesis, these verbs are basically roots conflated with $v_{ACHIEVE}$ as event modifiers to enrich the eventive meaning by specifying the manner of achievement: we can achieve an entity by buying it (*mai-dao*), looking for it (*zhao-dao*), catching it (*zhua-dao*) and so on. We can also sense the target by looking at it (*kan-dao*), listening to it (*ting-dao*), smelling it (*wen-dao*), perceiving it (*yisi-dao*). We can even achieve the target by means of some emotional effect, for instance, through frightening, ‘*xia*’ (frighten), or ‘*mei*’ (make... feel beautiful). In all of these cases, the theme achieves its target, physically, mentally or emotionally through different manner/methods.

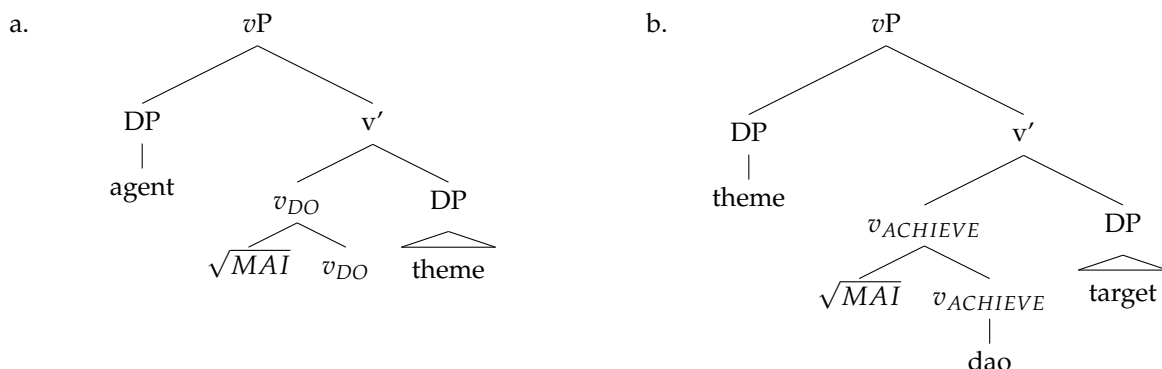
The last issue concerns the optionality of *dao* in expressing the achievement of the result. This is related to the lexical semantic interaction of *dao* and the other verb. To recap, *dao* is obligatory to combine with ‘*zhao*’ (find) to express the achievement of the result but ‘*mai*’ (buy) does not necessarily do so. The two verbs belong to different situation types. According to the classification based on Vendler (1957) and the manner-result verb class distinction (Rappaport Hovav & Levin, 1998). The lexical template of accomplishment verbs like *buy* have already included a natural result which is uncancellable. Take ‘*mai*’ (buy) as an example, the process of buying something will naturally lead to the possession of it. Only after we pay for something and possessed it can we say you buy it. Hence, the result of the action is entailed by the lexical meaning of the verb. Pure activity verbs, represented by ‘*zhao*’ (look for), do not entail any result information but merely signifying the manner. For ‘*zhao*’ (look for), the process of looking for something does not necessarily lead to the finding of it. As long as we make such an action, it is an ‘looking for’ event, without result. Such manner-result distinction is claimed to figure the

aspectual property of the verb, determining the situation type of the predicate (Beavers & Koontz-Garboden, 2012) and makes them behave differently with respect to the combination with *dao*.

In our story, *dao*, as $v_{ACHIEVE}$ signifies a syntactic manner to encode telicity, specifically, the achievement of the result after some action. However, if such a result is entailed in the lexical semantics of a verb, combining with $v_{ACHIEVE}$ makes no difference in terms of telicity. This is the case with ‘*mai*’ (buy). If the lexical semantics makes no such entailment, combining with *dao* is the only option to syntactically encode the endpoint, as with ‘*zhao*’ (look for). Such an optionality of *dao*, in effect, reflects the division of labor between syntax and (lexical) semantics with regard to telicity encoding.

Nevertheless, combining *dao* with an accomplishment verb makes a difference for the argument structure as well as the lexical aspect of the predicate. To illustrate, *mai* and *mai-dao* indicates the alternation of different semantic flavor of the v : v_{DO} or $v_{ACHIEVE}$, as is seen below:

(33)



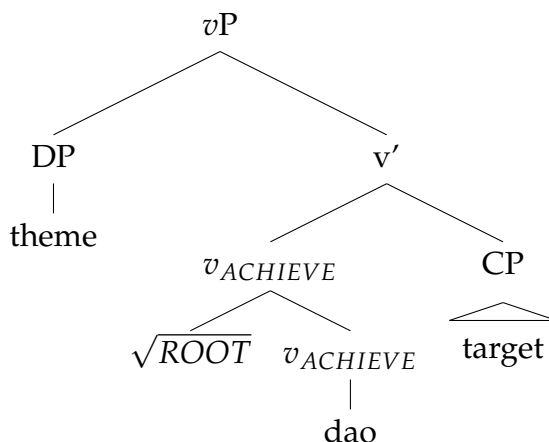
The superficial addition of *dao* to an accomplishment verb is in its nature the alternation of *v* flavor, which completely alters the underlying event structure, giving rise to a series of syntax-semantics consequences. The event changes from an agentive durative to an agentiveless punctual one. Namely, the agentivity of the subject is erased as the thematic role of the subject is changed to theme from an agent, unable to bear the agentive modifiers. The achievement meaning strips off the process of the event, transferring it from durative to punctual. This accounts for *V-dao*'s incompatibility with progressive aspect as well as the non-ambiguity with '*cha-yi-dianer*'(almost). The punctuality and non-agentivity is the semantic effect of *dao*, albeit its effectiveness in telicity. This also indicates that *dao* is the functional core of the *V-dao* compound, determining the argument configuration, thematic entailment, lexical aspect information and so on.

To summarize, *dao*, or the *v*_{ACHIEVE}, on the one hand, can categorize a root and form a verb. Thus, it is very natural to see *dao* engaged in word formation, or the so-called derivational morphology. On the other hand, this *v*_{ACHIEVE} determines the argument structure in which *V-dao* occurs: it brings two thematic roles, theme and target, thus always form a transitive verb. The achievement flavor of this *v* also accounts for its involvement in lexical aspect encoding: it zooms into the time point of achieving the target, the commencement of a new state, thus it is both telic and punctual.

5.3 Achieving a state

Based on the above arguments, *dao*, when introducing a resultative/degree is also the PF exponent of *v*_{ACHIEVE}. The only difference is that the internal argument is realized as clausal/predicative element, basically a CP. This shows the C selection property of *v*_{ACHIEVE}. Semantically, what has been achieved is not an entity but a new state/event.

(34)



The root being adjuncted to *dao*, specifies in what manner or on what scale is such a state or event achieved. For example, in (35), Nana achieved “everyone is heartbroken” by means of crying. In (36), Dahua achieves ‘he looks like a bamboo’ on the scale of weight.

- (35) Nana ku-dao dajia dou hen shangxin.
 Nana cry-dao everyone all very heartbroken
 ‘Nana cried every one heartbroken.’

- (36) Dahua shou-dao xiang yi gen zhugan.
 Dahua slim-dao like one-Cl bamboo
 ‘Dahua is so slim that he looks like a bamboo.’

The clausal element introduced by *dao* can denote both a descriptive result or a degree. In the event structure of (34), it seems that the distinction of degree or result is not signifies in syntax. We argue that degree or result can be viewed as two sides of the same coin. The structure in (34) involves an action, denoted by the verb(root) and a descriptive content, denoted by the clause introduced by *dao*. If the action is viewed as the cause of the descriptive content which has been achieved, the resultative reading is prominent. However, if the description content is to measure the extent to which the action has been conducted. The degree reading is more significant (Huang, C.T. J, p.c.). For instance, in (35). That ‘everyone is heartbroken’ can be seen as a result caused by Nana’s crying, i.e., ‘Nana cried everyone heartbroken’. In this sense, the resultative meaning can be captured. However, the sentence can also mean that ‘Nana cried until everyone is heartbroken’. That ‘everyone is heartbroken’ is to describe the hardness of Nana’s crying, or the degree to which Nana’s crying has achieved. For a situation in which a cause-effect relation is hard to restore, the resultative reading is unlikely to be perceived. This is the case in (36), ‘he looks like a bamboo’ is a reflection of Dahua’s slimness, not the result. Therefore, there is a strong sense of degree reading. This also account for the reason

why *dao* and the complement clause it introduces play the role of degree adverbs in their combination with gradable adjectives.

6 Theoretical implications

6.1 $v_{ACHIEVE}$ and the analyticity of Chinese

In the study of eventualities, it is a consensus that different event types can be pinned down to a small set of universal event denoting primitives hierarchically organized on the event template, namely CAUSE, BECOME, DO, ect. These eventive primitives can be realized syntactically as the different flavors of v , as in Folli and Harley (2005, 2006, 2007) and Harley (2010, 2013). An activity event is denoted by v_{DO} . A change of state is boiled down to the v_{BECOME} . An accomplishment is usually decomposed to v_{CAUSE} and v_{BECOME} . The identification of $v_{ACHIEVE}$ adds one more flavor to the v family, thus brings a new event template which can encode a transitive change of state event without causativity involved: the change of state which ending up with a theme achieving some entity, which entails possession, or achieving some state, which entails degree or result. This semantic flavor difference is also reflected in syntax. Different from v_{BECOME} which is to form an unaccusative verb and only bring one thematic role, theme. $v_{ACHIEVE}$ is the ingredient of a transitive verb, linking a theme and a target. To put it in a different way, $v_{ACHIEVE}$ can be viewed as the transitive version of v_{BECOME} ².

The addition of $v_{ACHIEVE}$ offers another dimension to account for the analyticity parameter initiated in C.-T. J. Huang (2014) and J. Huang (2006). Our analysis shows that Chinese expresses the result meaning in an analytical way in syntax by using an independent item *dao* merged with a manner morpheme to encode the achievement of result. While in languages like English, the achievement flavor is fused into a single word with manner, forming an achievement verb with no morphological hint, such as ‘see’, ‘catch’ or ‘find’. As we can see, English resorts to lexical semantics to entail such achievement information. Whereas Chinese can resort to syntax to encode this piece of information. This is largely in line with the gist of the Lexicalization Parameter hypothesis initiated in T.-H. Lin (2001), again the analyticity feature of Chinese. A prominent feature of analyticity is ‘the extensive use of light verbs to express accomplishment and other the complex predicates meaning’(J. Huang, 2006). Taking *dao* as an overt light verb, namely the PF exponent of $v_{ACHIEVE}$ is in accordance with the robust analyticity of Chinese. It also suggests that accomplishment and achievement share the same underlying syntactic mechanism, with

²It can also be viewed as a v_{BECOME} a POSS head (or P_{HAVE}) incorporated into it, which is in line with Harley (2013)’s analysis of an achievement verb.

different semantic features to be specified on the light verb.

The above analysis adopts the lexicalist approach, through which the analyticity difference in terms of achievement verb formation in Chinese and English is attributed to whether such lexical process (the combination with the event primitive ACHIEVE) happens in the lexicon or in syntax. Namely, what is done in English lexicon (the S syntax) is delayed to syntax (L syntax) in Chinese. Under the neo-constructivist approach, when such S/L syntax distinction is cancelled and syntax becomes the only engine for the derivation of all constituents, including word. The analyticity parameter can be boiled down to a more micro parametric difference in the functional lexicon of these two languages: the phonological property of $v_{ACHIEVE}$. Apparently, $v_{ACHIEVE}$ has an independent exponent in Chinese, *dao* but it is exponent defective in English. Therefore, in Chinese, manner information and achievement (of the result) information are separated on two different morphemes, constituting the analyticity pattern of word formation. In English, as $v_{ACHIEVE}$ is exponent defective, the achievement flavor is fused into the conceptual meaning of the root and being spelt out in the form of a single morpheme (the form of the root). That is why a single achievement verb like ‘see’ or ‘find’ can be a combination of manner and result meaning.

Ascribing the analyticity parameter to a phonological feature of a functional head is in line with the Borer Chomsky Conjecture (BCC, Baker, 2008), or the micro parametric variation approach: the morphological property of a functional item in the lexicon determines linguistic variations. It also shows that a tiny variable in the lexicon can potentially bring about extensive cross linguistic differences. The existence of such phonological independent light verbs (categorizers) figures the analyticity feature of Chinese. The analyticity feature of Chinese, in turn, provide us with a microscope to look into the lexical decomposition of predicates and help us identify some functional apparatus universally in languages, here $v_{ACHIEVE}$.

6.2 Violating the manner result complementarity?

Chinese expresses the result meaning in a more analytical way as manner and result are separately encoded by different morphemes. No matter it is ‘arrive’ or ‘achieve’, the suffix usage of *dao* fall in the same “manner-result” word formation pattern. This, apparently, constitutes a violation the well-known manner-result complementarity constraint (Hovav & Levin, 2010; Levin & Hovav, 2008):

Manner/result complementarity: Manner and result meaning components are in complementary distribution: a verb may lexicalize only ONE.

(Levin Rappaport Hovav, 2008, p. 1, ex. (6))

The authors attribute this complementarity to the lexicalization constraint of a root, which can only be associated with one predicate, such as CAUSE or BECOME in an event schema. Manner verbs serve as modifiers of such predicates while result verbs are arguments. Although taking the manner/result complementarity as a pure semantic or truth condition restriction on the root is untenable, as has been detailed manifested in Beavers (2012), it is still a reasonable constraint on the underlying event structures of verbs are built. In Acedo-Matellán (2012), Folli and Harley (2020), and Haugen (2009), the complementarity is a natural result of the syntactic computation and properties of the syntax-morphophonology interface, since a single root cannot simultaneously undergo conflation and incorporation in the lexicalization of a verb. Therefore, monomorphic manner-verb complementarity is impossible. For morphological complex items which involves more than one root, manner-result complementarity is also problematic since it tacitly permits two roots to share the same categorizer, which finally will be ruled out by morphology, since it violates the well formedness constraint (Embick, 2010).

Coming back to the analyticity feature of Chinese, *V-dao* although packaging manner and result in the same verb, survives from the violation of the above constraint. Notice that syntax allows manner and result to occur in the same structure, since they are based generated in different syntactic positions. As is mentioned in Folli and Harley (2020), the exoskeletal verbal structure would predict the existence of such dual specification derivation and ‘produce a kind of V-V or P-V compound, with one element encoded manner and the other result’. The only potential issue here is that manner and result root may share the same categorizer and get evicted by morphology. If such categorizer sharing can be avoided, the manner result complementarity violation can be safely avoided.

We argue this is exactly what we see in Chinese *V-dao* compound. For *V-dao* in motion events, the manner root and the result root are categorized independently. The manner root is adjuncted to *v* in the form of conflation and *dao* is realized as P_{PATH} . They only form a compound post syntactically, as a result of morphological merger. By this means, manner-result co-occurrence is possible. For the achievement *V-dao*, it is not two roots sharing the same categorizer, but *dao* itself is the categorizer, verbalizing the manner root which precedes it. By this means, manner information is stored in the verb and the result meaning is entailed by ‘achievement’, rather than explicitly signified in syntax. Therefore, be it P_{PATH} or $v_{ACHIEVE}$, the combination of a manner root and *dao* never violates the manner result complementarity.

7 Conclusion

The paper analyzes the multifunctional item *dao* in Mandarin Chinese. Superficially, *dao* resembles ‘arrive’, ‘to’ and ‘achieve’ and shows up in a motion event, an achievement event and a descriptive state/degree event. After a closer examination of *dao*’s syntactic properties, we argue that *dao* in different event types shares the same semantic core: it indicates the theme undergoes some process and achieves its goal, which can be a location, a concrete/abstract entity or a state. The nature of *dao* determines its various syntactic behaviors can be covered by the same event primitives, aka, $v_{ACHIEVE}$.

Although the research initially aims to propose a unified account of *dao* in different syntactic contexts. We end up with a “quasi-unified account” by arguing that *dao*, on the one hand, is P_{PATH} , to be specific, the realization of the feature bundle [(v), PATH, PLACE], on the other hand it is the PF spell-out of a functional head, $v_{ACHIEVE}$. Although P_{PATH} and $v_{ACHIEVE}$ are two different syntactic items, they share some underlying semantic core which can be realized in different categorial domains. Arguing that *dao* can signify both of them, on the one hand, can capture the distinct morphosyntactic behaviors of *dao* in different event types: most significantly, *dao* in achievement events is always a verbal suffix whereas in a motion event it can serve as a verb or preposition independently. Empirical facts lead us to the conclusion that *dao* has differentiated into two syntactic entities. On the other hand, it still makes sense to bring the two *daos* into the same picture and reveals the underlying essence behind such syntactic differences, i.e., the encoding of concrete and abstract achievement in the event structure. Theoretically, this ‘arrive’ ‘to’ $v_{ACHIEVE}$ analysis combines the syntactic structure of a directed motion event and an achievement event by means of a cross categorial mapping of a single event template. It also sheds some light on the structural correlation of a motion and an achievement event. As dative alternation is a classic case to demonstrate the structural parallelism of caused-motion and caused possession (Harley, 2002, 2007; Levin & Hovav, 2008), *dao* provides another evidence to show how such parallelism is realized in Mandarin. As both ‘arrive’ and ‘achieve’, *dao* signifies the transitional point in both change of location and change of possession. In a broader sense, this supports the universal underlying semantics among different sorts of transitional event and their structure encoding, as has been argued in previous frameworks of event structure (Acedo-Matellán, 2016; Beavers, 2012, 2013; Folli & Harley, 2005, 2006, 2020; Hu, 2018, 2020; Ramchand, 2008; Talmy, 1991, 2000).

Diachronically, the analysis depicts the grammaticalization path of *dao* and add one more grammatical path of a functional item, which does not only involve an upward climbing from lexical domain to functional domain (Hopper & Traugott, 2003) but also a

cross categorial mapping of a single semantic primitive. In this respect, grammaticalization can happen both vertically and horizontally. Meanwhile, the ‘arrive’ to ‘achieve’ grammaticalization path does not abandon *dao*’s initial lexical verb usage but retains it. Therefore, we can see *dao*’s diachronic change synchronically exists in Chinese, the so called ‘cross-sectional data’ in language. A similar phenomenon is also discovered and discussed in Tsai (2010)’s study of Chinese modal verbs and he attributes such phenomenon to the analyticity of Chinese. In our view, such analyticity can be traced back to the stability of root in Chinese, as is argued in Hu (2020). As the grammaticalization process is not accompanied by the phonological change of *dao*, giving rise to the fact that a single root has multiple categorial identities, even for a lexical item and a functional head to share the same form. The ‘root inertia’ property helps to unfold the inner structure of a compositional predicate, thus the analyticity feature of Chinese. In return, such analyticity can help us illuminate some universal functional apparatus exist in languages, such as $v_{ACHIEVE}$.

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