

Activity-derived Verbs Can Denote States: Semantic Analysis of Adhesive Verbs

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ABSTRACT. *Adhesive verbs possess the traits of both activity verbs and the state verbs. Although prior research has explored the topic adhesive verbs, it is not comprehensive or systematic enough. This paper takes 126 adhesive verbs from the Chinese Verb Usage Dictionary, and analyzes them in terms of conceptual structure, event structure, syntactic behavior and coding mode of adhesive verbs. The results reveal that most adhesive verbs have “resultative” meaning encoded within them. This “resultative” meaning is the root of these verbs’ adhesive nature and the reason these verbs are suitable to use in existential sentences. We have also found that the syntactic behavior of adhesive verbs is determined by event structure*

Keywords: Adhesive-verbs, Semantic types, Conceptual structure, Event structure, Coding mode

1. **Introduction.** There is a certain type of verbs in Modern Chinese, when co-occurring with the aspectual marker *zhe*, leads to ambiguity. For example,

(1) Wuli bai *zhe* jiuxi.
 In the house arrange *zhe* banquet.
 ‘A banquet is being arranged inside the house.’
 ‘There is a banquet arranged inside the house.’

(2)a. Qiangshang gua *zhe* yifu hua.
 On the wall put up *zhe* one painting.
 ‘A painting hangs on the wall.’

b. Qiangshang gua *le* yifu hua.[1]
 On the wall put up *le* one painting.
 ‘A painting hangs on the wall.’

(3)a. Taishang zuo *zhe* zhuxituan.
 On the rostrum sit *zhe* presidium.
 ‘There are presidium sitting on the rostrum.’

a’. Zhuxituan zuo zai taishang.
 The presidium sat on the rostrum.
 ‘The presidium are sitting on the rostrum.’

b. Taishang chang *zhe* xi.
 On stage sing *zhe* opera.
 ‘The opera is being sung on stage.’

b’.*Xi chang zai taishang
 *Opera sing on stage.
 *‘Opera sing on stage.’

In (1), the verb *bai* has two different meanings when followed by the aspectual mark *zhe* [2]. The first interpretation is “people are arranging a banquet in the house”, which is expressed from the viewpoint of time. The second interpretation is “there is a banquet arranged in the house”, which is expressed from the viewpoint of space. Sentences in (2) show that the conceptual meanings of the two sentences are almost the same despite *zhe* is replaced by *le*. The transformed structure of sentence (3a) is syntactically correct, but not the case of (3b). A great deal of work has been done on this topic. So far, there are basically three aspects of solutions: aspectual marking, sentence transformation and verbal semantics. The verbs involved in such phenomena have both the phase of state and the phase of action, which was known as adhesive-verbs in literature. This article starts with the perspective of verbal semantics and then proceeds to discuss the causes of adhesive meaning in the

following steps:

- I. To define the adhesive-verbs;
- II. To choose adhesive verbs from *Chinese Verb Usage Dictionary*;
- III. To analyze the deep semantics of the selected verbs and to dig out the causes of the adhesive meaning.

2. What is Adhesive-verb.

2.1. Defining Adhesive-verb. To define adhesive-verbs, the two phases of the situation “action + state” are taken as the baseline. Importantly, it is spotted that the adhesive meaning is generally activated in the existential sentences; therefore, it is not hard to find that the adhesive verbs can fit into existential sentences. Thus, there are three specific criteria to define adhesive verbs, namely

- I. Verbs that have action phase, and are compatible with *zhengzai*, *zhe* and *le*;
- II. Verbs that have state phase, and are compatible with *zhe*;
- III. Verbs that can simultaneously enter such sentence patterns as “L + V+*zhe* + O” and “O + V+*zai*+ L”.

Based on the above criteria, 126 verbs/terms were selected from *Chinese Verb Usage Dictionary*. Homonyms were represented with a number after it, such as *zhuang2* ‘load’, and different terms were labelled with a number in the bracket, *kao(2)* ‘lean’.

2.2. The Semantic Types of Adhesive-verb. A great deal of research has been done on two types of this kind: *gua* ‘hang’ and *chuan* ‘wear’, however the 126 adhesive verbs that we have collected cannot fall neatly into these two types. In fact, seven semantic types are identified as follows:

- (1)*gua* type: *gua* ‘hang’, *bai* ‘lay’, *cha* ‘inset’, *dui* ‘heap’, *fang* ‘place’, *ge* ‘place’, *li(2)* ‘erect’, *ting* ‘stop’, *tu* ‘smear’, *mo* ‘smear’, *ca* ‘smear’, *da(10)* ‘smear’, *zhan* ‘adhere’, *ran* ‘dye’, *kao(2)* ‘lean’, *la* ‘pull’, *che* ‘pull’, *zhuai* ‘drag’, *pu* ‘spread’, *dian* ‘cushion’, *ya* ‘press’, *xiang* ‘inlay’, *qian* ‘inlay’, *zai* ‘plant’, *zhong* ‘plant’, *yang* ‘bring up’, *an* ‘install’, *zhuang2(2)* ‘install’, *cang* ‘enshrine’ ‘hide’, *cun* ‘store’ ‘deposit’, *shou* ‘collect’, *liu* ‘reserve’, *kou* ‘withhold’, *guan(3)* ‘barrier’, *suo* ‘lock’, *chan* ‘twine’, *rao* ‘twine’, *shuan* ‘tie’, *kun* ‘fasten’, *bang* ‘fasten’, *liang* ‘air’, *shai* ‘air’, *diao* ‘hang’, *jia(1)* ‘clip’, *anpai* ‘arrange’, *zhuangshi* ‘decorate’, *buzhi* ‘arrange’, *shuli* ‘erect’, *baoliu* ‘reserve’, *zhangwo* ‘hold’;
- (2)*xie* type: *xie* ‘write’, *hua* ‘paint’, *miao* ‘depict’, *ke* ‘carve’, *qi* ‘acquer’, *shua* ‘brush’, *pu* ‘pave’, *da* ‘set up’, *jia* ‘set up’, *jie* ‘freeze’, *jie* ‘knit’, *zhi* ‘knit’, *ci* ‘stitch’, *xiu* ‘stitch’, *feng* ‘stitch’, *chao* ‘transcribe’, *ji* ‘record’, *qi* ‘infuse’, *zhu* ‘boil’, *ao* ‘decoct’, *dun* ‘stew’, *pao* ‘infuse’, *miman* ‘pervade’, *chongying* ‘brim’, *jiju* ‘accumulate’, *chengxian* ‘present’, *xianxian* ‘show’;
- (3)*zuo* type: *zuo* ‘sit’, *pa* ‘grovel’, *tang* ‘lie’, *zhan* ‘stand’, *li(1)* ‘stand’, *dao* ‘lie’, *gui* ‘kneel’, *kao(1)* ‘lean’, *quansuo* ‘curl up’, *chuli* ‘stand erect’, *songli* ‘stand erect’;
- (4)*na* type: *na* ‘take’, *nie* ‘pinch’, *ti* ‘carry’, *duan* ‘hold’, *zhua* ‘catch’, *lin* ‘carry’, *ju* ‘lift’, *bei* ‘carry on back’, *kang* ‘shoulder’, *tai* ‘lift up’, *yao* ‘bite’, *jia(2)* ‘hold under arm’;

- (5) *bao* type: *bao* ‘pack’, *cheng* ‘hold’, *zhuang*2(1) ‘hold’, *juan* ‘curl’, *guo* ‘parcel’, *mai* ‘bury’, *gai* ‘cover’, *fugai* ‘cover’, *maizang* ‘bury’, *longzhao* ‘envelop’;
 (6) *chuan* type: *chuan* ‘wear’, *dai* ‘wear’, *xi* ‘tie’, *wei* ‘wear’, *zha* ‘bind’, *pi* ‘cover’, *gua* ‘hang’, *da*(8) ‘tie’;
 (7) *lou* type: *lou* ‘leak’, *luo* ‘fall’, *reng* ‘throw’, *sa* ‘sprinkle’, *sa*1 ‘sprinkle’, *sa*2 ‘sprinkle’, *tuo* ‘take off’, *sanbu* ‘spread’.

The first six types are related to the adhesive meaning, except for the seventh one, the verbal meaning of which is “to wipe off”, but the result of the action still has an adhesive meaning. See below:

- (4)a. Qiangjiao reng *zhe* yishuang xie.
 Corner of wall throw *zhe* a pair of shoes.
 ‘There is a pair of shoes thrown in the corner of wall.’

- b. Dishang lou *zhe* yitan you.
 On the floor leak *zhe* some oil.
 ‘There is some oil leaked on the floor.’

3. The Conceptual Structures of Adhesive-verbs. In this section, we will explore the reason why activity verbs of different semantic types are able to produce adhesive meaning from the perspective of conceptual structure. In the conceptual structure of adhesive meaning, three core elements are involved, including object(O), motion(M), location(L), as well as some optional elements such as agent(A), instrument(I), manner(M’), feature(F), purpose(P) and cause(C). There are different conceptual structures in different semantic types, and different elements in different conceptual structures.

3.1. $L=A$ or $L \leq A$. Location(L) is the agent(A), or is the part of the agent(A). The motion always approaches to the agent(A) rather than departing from it. The following verbs fall into this category: (i) *na*-type: *na* ‘take’, *nie* ‘pinch’, *ti* ‘carry’, *duan* ‘hold’, *zhua* ‘catch’, *jia*(2) ‘hold under arm’; (ii) *chuan*-type: *chuan* ‘wear’, *dai* ‘wear’, *xi* ‘tie’, *wei* ‘wear’, *zha* ‘bind’, *pi* ‘cover’, *gua* ‘hang’, *da*(8) ‘tie’; (iii) *gua*-type: *cun*1 ‘store’, *cun*2 ‘deposit’, *shou* ‘collect’, *liu* ‘reserve’, as shown in Figure 1:

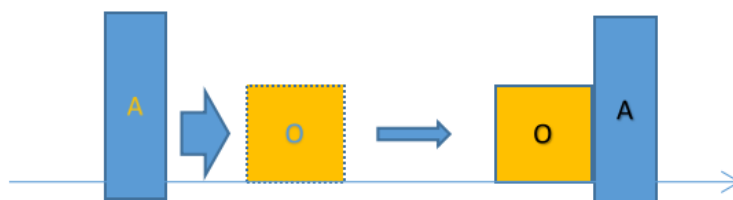


FIGURE1. ADHESIVE MEANING CONCEPTUAL SCHEMA 1.

3.2. $O=A$. Agent(A) is the object(O). Agent(A) moves towards and is attached to the location(L) autonomously and remains in this state. Verbs of this type are *zuo* ‘sit’, *pa*

‘grovel’, *tang* ‘lie’, *zhan* ‘stand’, *li*(1) ‘stand’, *dao* ‘lie’, *gui* ‘kneel’ in *zuo* type, as shown in Figure 2:

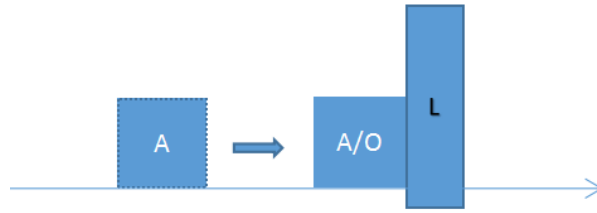


FIGURE 2. ADHESIVE MEANING CONCEPTUAL SCHEMA 2.

3.3. **L is The Container.** The object(O) is placed in a container L under the effect of agent(A), and remains in this state, such as *bao* ‘pack’, *cheng* ‘hold’, *zhuang2*(1) ‘hold’, *juan* ‘curl’, *guo* ‘parcel’, *mai* ‘bury’, *gai* ‘cover’, *fugai* ‘cover’, *maizang* ‘bury’, *longzhao* ‘envelop’ in *bao* type, as Figure 3 shows:

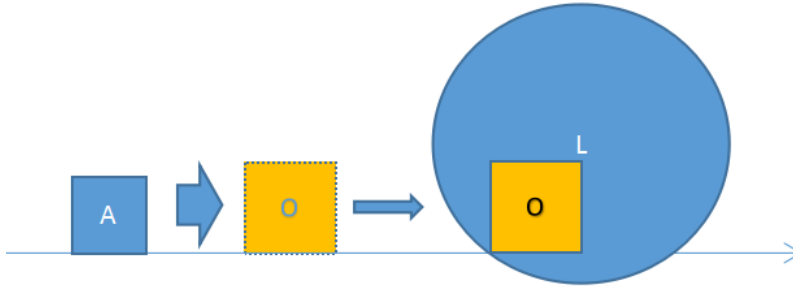


FIGURE 3. ADHESIVE MEANING CONCEPTUAL SCHEMA 3.

3.4. **The Object(O) in xie Type.** The object(O) is produced by the effect of the agent(A) and remains this state, such as *xie* ‘write’, *hua* ‘paint’, *miao* ‘depict’, *ke* ‘carve’, *qi* ‘acquer’, *shua* ‘brush’, *da* ‘set up’, *jia* ‘set up’, *jie* ‘knit’, *zhi* ‘knit’, *xiu* ‘stitch’, *feng* ‘stitch’, *miman* ‘pervade’, *chongying* ‘brim’, *jiju* ‘accumulate’ in *xie* type. The difference between this type and the last three types is that the object is produced from nothing, as the Figure 4 shows:

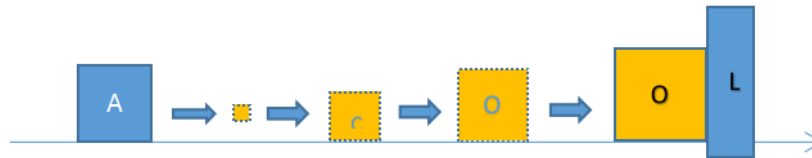


FIGURE 4. ADHESIVE MEANING CONCEPTUAL SCHEMA 4.

Regardless of the differences among the four types, they have one feature in common, that is, they all contain within themselves the action of motion and the state of existence. Action is presented in space while state of existence is presented in time. The whole event is constituted by three core elements, i.e. object(O), motion(M) and location(L), as presented below:

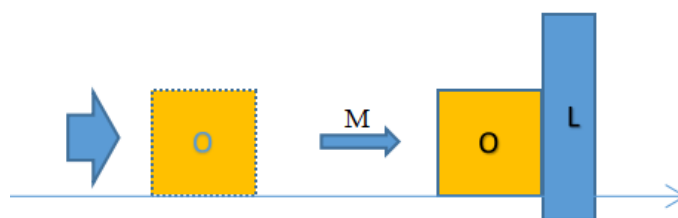


FIGURE5. ADHESIVE MEANING CONCEPTUAL SCHEMA 5.

What Figure 5 shows is a highly abstract conceptual structure: object(O) moves to location(L) under some kind of effect and keeps the adhesive state to location(L). The action of motion leads to the state of existence. There is a causal relationship between the two phases. The action of motion is usually assumed by agent(A), and object(O) maintains in the adhesive state. It can explain why adhesive verbs always express action when the agent(A) is the subject of the sentence and express state when the object(O) or location(L) is the subject.

Different elements in conceptual structure are presented in different surface forms. Object(O), motion(M), location(L), agent(A) and instrument(I) can be presented as syntactic components; manner(M), feature(F), purpose(P) and cause(C) are directly encoded into verbs. For example, verb *gua* ‘hang’ highlights the manner(M) of an action, verbs like *liang* ‘air’, *shai* ‘air’ highlight the purpose(P), verb *lou* ‘leak’ highlights the cause(C), and verbs as *zhan* ‘stand’, *li*(1) ‘stand’, *gui* ‘kneel’, *pa* ‘grovel’ highlight the feature(F). As shown in sentence (5-7), the verbs that express action originally are turned into the expression of state, and specify non-path information such as cause(C) or manner(M) of existence.

- (5) Qiangshang shi/ you yifu hua. —Qiangshang gua zhe yifu hua.
On the wall is /have a painting. —On the wall put up zhe a painting.
‘A painting is on the wall.’—‘A painting hangs on the wall.’
- (6) Yuanzili shi/ you liangke shu. —Yuanzili zhong zhe liangke shu.
In the yard is /have two trees. —In the yard plant zhe two trees.
‘Two trees are in the yard.’—‘There are two trees planted in the yard.’
- (7) Dishang shi/ you yige shangyuan. —Dishang tang zhe yige shangyuan.
On the floor is/ have a wounded. —On the floor lie zhe a wounded.
‘A wounded is on the floor.’—‘There is a wounded lying on the floor.’

According to the description on the motion event in reference 3, the result of the motion is encoded into path verbs, and the information of manner in motion event is encoded into manner verbs. From (5) to (7), *you* ‘have’ and *shi* ‘is’ are similar to path verbs which indicate the existence and do not specify the other non-path information. Reference 4 takes them as “light verbs”. Nevertheless, adhesive verbs are similar to manner verbs which can encode the abundant non-path information into the lexical semantics, including the manner,

feature, purpose, and cause, etc.

Adhesive verbs indicate the information related to existence. Different choices and combinations of elements in conceptual structure make different codings of adhesive verbs, and also cause different syntactic behaviors of disparate adhesive verbs. According to the theory of reference 5-6, the event structure is regarded as the interface of the mapping from conceptual structure to syntactic surface in this paper.

4. Event Structures and Syntactic Behaviors of Adhesive-verbs. In addition to connecting with the conceptual of structure in analysis of event structure, it is also necessary to explain the syntactic behaviors of adhesive verbs. The event of adhesive verb is composed of two sub-events: one is action event (motion) and the other is the existent state (adhesion). These two sub-events are integrated into the semantics of the adhesive verb. Any difference in one part would cause the semantic difference in the whole verb, which further results in a difference in syntactic behavior. The event structure of the adhesive verbs could be classified into the following situations.

4.1. Autonomous “Motion+Adhesion” Event (Dualistic Adhesion). Autonomous “motion+adhesion” event means that the object(O) is self-displaced and attached to the location (L), in which the object(O) is the agent(A) of the action (as shown in Figure 3). The typical *zuo* ‘sit’-type verbs are *zuo* ‘sit’, *pa* ‘grovel’, *tang* ‘lie’, *zhan* ‘stand’, *li*(1) ‘stand’, *dao* ‘lie’, *gui* ‘kneel’, *kao*(1) ‘lean’, *quansuo* ‘curl up’, *chuli* ‘stand erect’, and *songli* ‘stand erect’, etc. The object (O) in event of this kind of verbs are mainly animated nouns, especially person nouns. The action of displacement is done by the object(O) itself, and the adhesive state is also maintained by the object (O).

There are three indispensable elements, namely motion (M), object (O) and location(L). The sub-event 1 is a motion event that takes the action as the core, and the sub-event 2 is a state event that takes the adhesive state as the core, which can be described as below:

$\exists e[e1(a,l) \rightarrow s1(o,l) \wedge a=o]$ (Note : “ \rightarrow ” indicates the chronological order.)

Since there are only two event elements, object (O) and location (L), in this type of adhesive verbs, this type of event can be called “dualistic adhesion”, which is the simplest type.

The most common sentence patterns are “O\A+V+*zai*+L” and “L+V+*zhe*+O\A”, as demonstrated in (8). But because there is no action agent (A) or instrument (I) in this event structure, this type of verbs can’t be used in *ba*-sentence or *bei*-sentence, as shown in sentence (9).

(8)a. Nazhi xiaomao pa zai shafashang.
The little cat groveled on the sofa.
‘The little cat groveled on the sofa.’

b. Shafashang pa *zhe* yizhi xiaomao.
On the sofa grovel *zhe* a little cat.
‘There is a little cat groveled on the sofa.’

- (9)a. Nazhi xiaomao pa zai shafashang.
 The little cat groveled on the sofa.
 ‘The little cat groveled on the sofa.’
- b. *Nazhi xiaomao beita pa zai shafashang.
 *The little cat by him groveled on the sofa.
 *‘The little cat is groveled by him on the sofa.’
- c. *Ta ba nazhi xiaomao pa zai shafashang.
 *He maked the little cat grovel on the sofa.
 ?‘He maked the little cat grovel on the sofa.’

4.2. **Nonautomatic “Motion+Adhesion” Event.** Nonautonomous “motion+adhesion” event means that the object (O) is driven to move and attached to the location(L) under the effect of agent(A) or some external force. Except for the *zuo* ‘sit’ type, the remaining adhesive verbs belong to nonautomatic event. There is an external force for this type event structure², and the object(O) is attached to the location(L) under the effect of the force. When the force is agent(A), there are at least three elements of the event: agent(A), object (O) and location(L). The action of verb is done by agent(A), and object (O) maintains the adhesive state. When the external force is unknown, agent(A) can’t be supplemented into the sentence, therefore, there are object(O) and location(L) only. It is a type of “dualistic adhesion”, as shown below.

- (10) Yueliang gua zai tianshang genggao de difang.
 The moon hang-zai the sky higher place.
 ‘The moon hangs in the higher sky.’

In the sentence above, we can not squeeze the agent(A) into the sentence because there is no force of verb *gua* ‘hang’.

4.2.1. **Ternary Adhesion.** This kind of event structure consists of four basic elements, namely agent(A), motion(M), object(O) and location(L). Because there are three event elements in addition to the motion(M), this type of the event can be called “ternary adhesion”. As shown above, it is composed of two sub-events: motion and state, in which the agent(A) is not the object(O). The majority of the adhesive verbs out of the six semantic types above (except for *zuo* ‘sit’ type) belong to this type of event structure. We can even say that this is the basic event structure of adhesive verbs. This type of event can be described as below:

$$\exists e[e1(a,l) \neg s1(o,l) \wedge a \neq o]$$

Verbs with this event structure is compatible with the “O+V+*zai*+L” sentences and “L+V+*zhe*+O” sentences, and it allows the agent(A) to get into the *ba*-sentence and

² In most cases, the power source is agent(A), and in a few cases it is unknown.

bei-sentence through the preposition as shown below.

- (11) Chabei ge zai zhuoshang. —Zhuoshang ge *zhe* chabei.
 The cup put on the table. —On the table put *zhe* a cup.
 ‘The cup is put on the table.’—‘There is a cup put on the table.’

- (12)a. Chabei bei baba ge zai zhuoshang.
 The cup by Dad put on the table.
 ‘The cup is put on the table by Dad.’

- b. Baba ba chabei ge zai zhuoshang.
 Dad make the cup put on the table.
 ‘Dad put the cup on the table.’

4.2.2. **Quaternary Adhesion.** In addition to the motion(M), agent(A), object(O) and location(L), there is another element instrument(I), therefore, this type of the event can be called “quaternary adhesion”. Verbs fall into this type include *bao* ‘pack’, *cheng* ‘hold’, *zhuang*2(1) ‘hold’, *ya* ‘press’, *suo* ‘lock’, *zhan*(2) ‘adhere’, *shuan* ‘tie’, *jia*(2) ‘clip’, *chan* ‘twine’, *rao* ‘twine’, *kun* ‘fasten’, *bang* ‘fasten’, *liang* ‘air’, *shai* ‘air’, *gua* ‘hang’, *diao* ‘hang’, ect. What distinguish this type of event structure is that there is an element instrument(I), which can be described below.

$$\exists e[e1(a,l,i) \neg s1(o,l,i) \wedge a \neq o]$$

These verbs with this event structure can enter the “O+V+*zai*+L” sentence, “L+V+*zhe*+O” sentence, *ba*-sentence, *bei*-sentence and *yong*-sentence, as shown below:

- (13)a. Beibao shangmian kun *zhe* shuidai.
 On the package fasten *zhe* a sleeping bag.
 ‘There is a sleeping bag fastened on the package.’

- b. Shuidai kun zai beibao shangmian.
 Sleeping bag fasten on the package.
 ‘A sleeping bag was fastened on the package.’

- (14)a. Beibao shangmian bei tongxue kun *le* yige shuidai.
 On the package by classmate fasten *le* a sleeping bag.
 ‘The package was fastened with a sleeping bag by classmate.’

- b. Shuidai bei tongxue kun zai beibao shangmian.
 Sleeping bag by classmate fasten on the package.
 ‘A sleeping bag was fastened on the package by classmate.’

- (15)a. Beibao shang bei tongxue yong shengzi kun *le* yige shuidai.
 On the package by classmate with string fasten *le* a sleeping bag.
 ‘The package was fastened with a sleeping bag with string by classmate.’

b. Shuidai bei tongxue yong shengzi kun zai beibao shangmian.
 Sleeping bag by classmate with string fasten on the package.
 ‘A sleeping bag was fastened on the package with string by classmate.’

(16)a. Tongxue ba shuidai kun zai beibao shangmian.
 The classmate make sleeping bag fasten on the package.
 ‘The classmate fastened a sleeping bag on the package.’

b. Tongxue yong shengzi ba shuidai kun zai beibao shangmian.
 The classmate with string make sleeping bag fasten on the package.
 ‘The classmate fastened a sleeping bag on the package with string.’

The major difference is that there is a preposition *yong* introducing the instrument (I) in the sentence in this kind of event structure as (15b) and (16b), while this situation is impossible in the previous event structures.

According to the numbers of verbal arguments, the three types of event structures are listed as follows:

1. Dualistic adhesion event structure: $\exists e[e1(a,l) \neg s1(o,l) \wedge a=o]$, such as *zuo* ‘sit’, *pa* ‘grovel’, *tang* ‘lie’, *zhan* ‘stand’, *li*(1) ‘stand’, *dao* ‘lie’, *gui* ‘kneel’, *kao*(1) ‘lean’, *quansuo* ‘curl up’, *chuli* ‘stand erect’, and *songli* ‘stand erect’, etc.

2. Ternary adhesion event structure: $\exists e[e1(a,l) \neg s1(o,l) \wedge a \neq o]$, most of the adhesive verbs belong to this event structure except *zuo*(sit) type.

3. Quaternary adhesion event structure: $\exists e[e1(a,l,i) \neg s1(o,l,i) \wedge a \neq o]$, such as *bao* ‘pack’, *cheng* ‘hold’, *zhuang*2(1) ‘hold’, *ya* ‘press’, *suo* ‘lock’, *zhan*(2) ‘adhere’, *shuan* ‘tie’, *jia*(2) ‘clip’, *chan* ‘twine’, *rao* ‘twine’, *kun* ‘fasten’, *bang* ‘fasten’, *liang* ‘air’, *shai* ‘air’, *gua* ‘hang’, *diao* ‘hang’, etc.

It is observed that the more complex the event structure is, the more event elements are involved; the more event elements are allowed to enter the syntactic structure, and the more complex the sentence patterns will be. The dualistic adhesive verbs can’t enter into the *ba*-sentence and *bei*-sentence but can enter the two structures of “O\A+V+zai+L” and “L+V+zhe+O\A”, because there is no agent(A) and other elements, but only object(O) and location(L). However, the ternary adhesive verbs can enter into *ba*-sentence and *bei*-sentence, because there is agent(A) in event structure. As for the quaternary adhesive verbs, the situation is more complicated. Due to the number of the event elements involved here, the quaternary adhesive verbs can enter into more sentence patterns, such as “O\A+V+zai+L”, “L+V+zhe+O\A”, *ba*-sentence, *bei*-sentence, *yong*-sentence. The number of sentence patterns that the quaternary adhesive verbs can enter is more than other three types. Reference 7 proposed that the locative sentence, *ba*-sentence, *bei*-sentence and preposition sentence are prominent among the eight kinds of sentence patterns of the verb *fang* ‘put’. This paper proves this view theoretically, and also shows that the order of sentence matching is determined by the event structure of verbal semantics.

5. Coding Modes of Adhesive Verbs. The substantial elements in event structures can enter into syntactic surface directly or through preposition, such as agent(A), object(O), location(L), and instrument(I). However, other predicative or adverbial elements are encoded in the lexical meaning of verb, such as manner(M'), purpose(P) and feature(F). We collected and analyzed the interpretations of the adhesive verbs in *Modern Chinese Dictionary* according to reference 8, and here are the situations we have identified.

5.1. Action+Result. In the first situation, the core content in the semantics of verb is action+result. There are usually words marking the result of such actions as *shi* 'make', *rang* 'let' in their interpretations. The examples are *ting* 'stop', *fang* 'put', *liu* 'reserve', *anfang* 'place', *anzhi* 'place', *sanbu* 'spread' and so on.

Ting: to stop, to park or place.

Liu: to stop in a place or position does not move.

Anfang: to make something be in a certain position.

Anzhi: to place or make a person or thing in place.

Sanbu: to make something widely spread.

5.2. Action+Instrument+Result. In this situation, instrument(I) can be introduced into the syntactic layer through a preposition. In the lexical level, there are also some adhesive verbs in which the instrumental information is encoded in. Some adhesive verbs express the meaning of result as *shu* 'brush', *ding* 'nail', *qi* 'lacquer', *suo* 'lock', which highlight the instrument(I) in the lexical form.

Shua: to remove or apply with a brush.

Qi: to lacquer the paint to the artifacts.

Suo: to make doors, windows or artifacts tied with lock.

5.3. Action+Feature+Result. Verbs in this situation precisely describe a feature of action in the interpretation, which have typical examples like *zuo* 'sit', *pa* 'grovel', *tang* 'lie', *li*(1) 'stand', *dao* 'lie', *gui* 'kneel', *quansuo* 'curl up', *chuli* 'stand erect', *juan* 'curl', *guo* 'wrap', *dui* 'heap', *jia* 'set up', etc. In a broad sense, the feature is also a result.

Pa: to lie down with chest and abdomen down.

Gui: to bent knees, one or two knees to the ground.

Juan: to make things into a cylindrical shape.

Guo: to wrap things into a pack..

Dui: to heap up things.

Jia: to support and make thing stand up.

5.4. Action+Manner+Result. In this case, information about action, manner and result is encoded into the lexical meaning of verb, such as *sa* 'sprinkle', *bai* 'lay', *liang* 'air', *shai* 'air', *bing* 'ice', *reng* 'throw', *tu* 'smear', *mo* 'smear', *ca* 'smear', *xiang* 'inlay', *qian* 'inlay', *zai* 'plant', *zhong* 'plant', *yang* 'bring up', *zhuang*2(2) 'install', *cang* 'hide', *cun* 'store', *kun* 'fasten' and *bang* 'fasten', etc.

Sa I: to throw out the granular objects dispersedly.

Sa 2: to make water or other things scattered to fall.

Hua: to draw a picture.

Xie: to write characters on paper or other things.

Ke: to carve figure or character.

5.5. Action+Manner. In this case, main information encoded in lexical meaning is about action and manner, but no result information is highlighted. The typical representatives are *nie* ‘pinch’, *ti* ‘carry’, *duan* ‘hold’, *zhua* ‘catch’, *lin* ‘carry’, *ju* ‘lift’, *bei* ‘carry on back’, *kang* ‘shoulder’, *tai* ‘lift up’ and *yao* ‘bite’, etc.

Nie: to pinch, with the thumb and other fingers.

Duan: to take it flat.

Lin: to lift with hand.

Ju: to hold things upwards.

Thus, the vast majority of adhesive verbs in lexical meaning are always inseparable from the *result* meaning. This explains why these verbs could produce adhesion from the viewpoint of semantics. The result is the premise of adhesion. The action has nothing to do with the result, thus unable to attach to anything, but the result it brings can be sustained in terms of time.

Only the case of “5.5 action+manner” is slightly different. The meaning of these verbs does not explicitly contain the result, but is derived from the term of “V+*zhe*” through metaphor. It is also due to this difference, the meaning of this type of “V+*zhe*” is different from the meaning of the others. The actions of verbs like *na* ‘hold’-*zhe*, *ti* ‘lift’-*zhe*, *kang* ‘carry on shoulder’-*zhe*, *bei* ‘carry on back’-*zhe* are obviously stronger than the actions of *gua* ‘hang’-*zhe*, *ke* ‘carve’-*zhe*, *anzhi* ‘arrange’-*zhe*. The actions of the latter have ended, while the actions of the former still continue. It can be seen that the degree of grammaticalization and the degree of dynamicity are different in different verbs.

6. Conclusion. Adhesive verbs are widely used in Chinese, the scope of which is far more than the two categories of *gua* ‘hang’ and *chuan* ‘wear’ as discussed in literature. The semantic types of adhesive verbs are not bound to the kind of *displacement*. The category of adhesive verbs is not only a special category, but also is a valuable pragmatic phenomenon. In this paper, we argue that these verbs can be unified to a conceptual structure with *adhesion*, which clarifies its borders and contents, and we suggest to examine it intensively as a separate research project.

The adhesive verbs themselves express action, and the state is the result of the displacement action, indicating the existence of the object. Different semantic types of adhesive verbs have different conceptual structures and event structures, therefore have different syntactic expressions. The process of coding adhesive verbs is a metonymy out of an adjacency relation, that is, the action of verb is transferred refers to the result of the action. In fact, richer information is encoded in the verb, for instance, manner and feature into the meaning of the word, so that the information content of each verb is greatly increased, and the verbs that indicate existence become exceedingly rich. This expands the expressive power of the existential verb. The resultant meaning is the source of the

adhesive meaning of the verb.

Two aspects of significance were proposed for the study of semantics (including conceptual structure, event structure and the coding of the verb) and the syntactic behavior of the adhesive verbs. First, it contributes to the study of the situations of verbs. The adhesive verbs occupy an important position in the whole verb situation system, which is the intermediate part of the continuum connecting the action verbs and the state verbs. It clearly shows the unique nature of both these two characters and the gradual changing of its meaning. The study on adhesive verbs is indispensable for the establishment of a continuum of verb situation types.

Second, it deepens our understanding of the grammatical meaning of aspectual mark *zhe*. The characters of “V-*zhe*” has long been controversial, and it is necessary to study the deep semantics of the verb. The term “V-*zhe*” could mean the progress of action or persistence of state, since adhesive verb has two phases, which is closely related to many controversial phenomena. The three questions mentioned at the beginning of the paper are essentially related to the adhesive verbs.

Through the study of the semantics of adhesive verbs, this paper clearly shows that the result is the root of the adhesion that determines the syntactic behavior of adhesive verbs. It is also the essential reason why the “V-*zhe*” can be compatible with the existential sentence. Most of “V-*zhe*” that contain result meaning are inclined to the state such as *gua* ‘hang’, *chuan* ‘wear’, *xie* ‘write’ and *sa* ‘spread’; while others behave more like the activity, such as *nie* ‘pinch’, *duan* ‘hold’, *lin* ‘lift’ and *ju* ‘hold high’, and don’t contain the meaning of result. The internal imbalance of the adhesive verbs is the embodiment of the transition from action verbs to state verbs.

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