Appearance and Existence in Mandarin Chinese

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Abstract

In Mandarin Chinese, the string of three overt elements in a row, a locative, a verb, and a nominal, asserts the existence of the entity denoted by the nominal in the location. This paper argues that the verb is contained in an adjunct, whereas the locative in its base position and the nominal establish a matrix predication relation. Thus, instead of the overt verb, the head of the matrix predicate of the construction is null. Moreover, a new analysis is provided to explain the obligatory argument sharing between the verb and the matrix predication of the construction. Furthermore, the paper argues that the agent of a transitive verb in certain types of embedded clauses needs to be Case-licensed by either the v of the selecting verb, as in an ECM construction, or a local c-commanding functional element, such as a complementizer, as in the English infinitive *for* construction. This Case-licensing explains why the transitive verb in the string has no agent. The research shows that the syntactic strategies to license abstract Cases in Chinese are similar to the ones found in other languages. Finally, the paper argues that the post-verbal *-zhe* is an adessive marker when it occurs in a non-progressive context.

Keywords

1 The issue and the essentials of the proposal

So far, it has been taken for granted that if only one overt verb is seen in a sentence, it must be the lexical head of a predicate, and the predicate is not embedded. This paper challenges this belief. What to be shown is that in a certain construction in Mandarin Chinese (Chinese henceforth), the unique overt verb is in fact embedded in a subordinate predicate, and the lexical head of the matrix predicate is null.[1]

This naughty construction is composed of a locative, a verb, and an entity-denoting nominal sequentially, exemplified by (1). In (1), the verb *he* 'drink' follows the locative *wo de duzi-li* 'in my belly' and precedes the nominal *henduo shui* 'much water'. The construction can belong to what traditionally called *cun-xian ju* 'existence-appearance sentence' (Zhu 1982: 184). I call the construction Locative-V-Entity Construction (LVEC).[2]

(1) Wode   duzi-li   he-le   henduo   shui.
    my   belly-in   drink-PRF   much   water
    'My belly has much water because of my drinking.'

The general reading of an LVEC is that the entity denoted by the right-edge nominal exists in the place denoted by the left-edge locative (see Zhu 1982: 115; Huang 1987: 227).[3]

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1 A somehow relevant effort, but in the opposite direction, is made by Thompson (1983). She tries to show that some complement clauses in English are not subordinate. However, her argumentation has been shown to be problematic by Boye and Harder (2007) and Newmeyer (2010). I thank James Myers for the references.

2 Abbreviations: CL: classifier; DE: modification/nominalization marker; EXP: experiential aspect; PASS: passive; PRF: perfective aspect; PRG: progressive aspect; PRT: sentence-final aspect/mood particle; Q: question.

3 The construction represented by (i) means that the entity denoted by the right-edge nominal disappears or is coming out of existence in the place denoted by the left-edge locative. The basic syntactic analysis of this paper applies to this construction, although I do not discuss the construction in this paper.

   (i) Jie-shang   shao-zhe   yi   liang   jipuche.
      street-on   burn-PRG   one   CL   jeep
      'A jeep is being burned on the street.'

LVEC covers Huang's (1987) type II (= Zhu's [1982: 114] Type B) and type III (= Zhu's Type A) existential constructions (Huang's Type I is a simple *you* 'have' existential construction, such as [ii]; and Type IV is a complex existential construction that contains multiple overt verbs; see Zhang 2008 and the references therein). For Huang (1987), the locative is optional in his Type II, but obligatory in his Type III; and the verbs in Type II are all unaccusative, but those of Type III can be any kind of verb. In my opinion, however, the left-edge locative of an LVEC can be a *pro*, licensed by the discourse information (Teng 1978: 199, cited and adopted in Li 1990: 143). Such a null locative occurs typically with a verb that encodes a deictic meaning, such as *lai* 'come', as seen in (iii). In English, the omission of a locative in the so-called existential unaccusatives is also easier for the verb *go*, which has a deictic meaning, than other verbs, as shown in (iv). See Section 3.1 for my discussion of possible verbs in an LVEC.

Various kinds of verbs may occur in an LVEC, for example, transitives, such as *he* 'drink' in (1), coming-on-the-scene unaccusatives, such as *dao* 'arrive' in (2a) and *zhang* 'grow' in (2b), change-of-state unaccusatives, such as *dong* 'freeze' and *liang* 'dry' in (3) (see Kural 2002; Deal 2009; Irwin 2012; Cuervo 2014, among others, for classification of unaccusatives), and unergative verbs, such as *shui* 'sleep' in (4).[4] Accordingly, various event types denoted by the verbs are allowed in an LVEC (see T. Lin 2001: 137–139).

(2) a. Shangdian-li   dao-le   yi   pi   huo.
       shop-in   arrive-PRF one CL   goods
       'Some goods arrived in the store.'
       (Zhu 1982: 114)
    b. Lulu de   bozi-shang   zhang-le   yi   ge   liuzi.
       Lulu DE   neck-on   grow-PRF   one CL   tumor
       'A tumor has grown on Lulu's neck.'

(3) a. Bingxiang-li   dong-le   henduo   jiaozi.
       refrigerator-in   freeze-PRF   many   dumpling
       'Many dumplings were frozen in the refrigerator.'
    b. Yangtai-shang   liang-le   henduo   yifu.
       balcony-on   dry-PRF   much   clothes
       'A lot of clothes are drying on the balcony.'

(4) Chuang-shang   shui-zhe   yi   ge   xiaohai.
    bed-on   sleep-PRG   one   CL   kid
    'There is a kid sleeping on the bed.'

Since an LVEC allows various types of verbs, the construction is different from a locative inversion construction in English, which disallows some types of verbs. For example, a verb of change of state is not allowed, as seen in (5a) and (5b) (Levin and Rappaport Hovav 1995: 223; see Nakajima 2001 for the same constraint in Japanese).

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(ii) Jie-shang   you   bushao   xuesheng.
     street-on   have   many   student
     'There are many students on the street.'
(iii) (Men-wai)   lai-le   yi   ge   ren.
      door-outside come-PRF   one   CL   person
      'Out of the door came a person.'
(iv) Context: Speaker is describing waiting outside a health food store
     a. #All of a sudden, a hippie danced in.
     b. %All of a sudden, a hippie danced into the store.
     c. All of a sudden, a hippie went in (to the store).
     (Irwin 2018: 26)
4 See Nakajima 2001: 50f for a discussion whether unergative verbs are allowed to occur in a locative inversion construction in English and Japanese. Huang (1987: 23) claims that unergative verbs are disallowed in LVECs, but (4) is a counter-example to the claim.

(5)   a. *On the line are drying a lot of clothes.
      b. *On the top floor of the skyscraper broke many windows.

An LVEC is also different from 'presentational-*there*' construction in English (e.g., *There stepped out in front of his care a small child*), which allows a stative verb of location or active directional verb only (Aissen 1975).

In an LVEC, the right-edge nominal has been called *cun-xian binyu* 'existence-appearance object' of the verb (Zhu 1982: 116). As stated by Huang (1987: 238–242), it is indefinite by default, although it can be definite in certain special cases, as seen in (6) (In Section 5, I show that -*zhe* in examples like [6] is not a real progressive marker, although it is glossed as PRG).

(6)   a. Shu-dixia   zuo-zhe   {yi   ge ren   /Zhangsan /nei ge xiaohai}.
         tree-bottom   sit-PRG   one CL man   /Zhangsan /that CL child
         'Under the tree sits a man/Zhangsan/the child.'
         (Huang 1987: 242 [63])
      b. Qiang-shang   xie-zhe   Min-Zhu   liang ge zi.
         wall-on   write-PRG people-preside two   CL character
         'On the wall, the two characters, Min-Zhu (democracy), were written.'

But most LVECs reject a definite nominal at the right edge. The possible occurrence of a definite nominal in (6) can be similar to the one in *There's <u>the duck</u> on my desk*, which is unacceptable in general, but acceptable in some special context, for example, as a response to *I don't see anything weird in your office* (Milsark 1974; Francez 2007; Irwin 2018: 18). Also, it is possible for an existential sentence to serve not only to introduce a novel discourse referent but also to reintroduce or focalize a referent that has been mentioned (Abbott 1993, Abbott 1997; Ward and Birner 1995). Abbott (1993, 1997) and Francez (2007) argue that such a definite use of a nominal has to do with the pragmatic function of the existential sentence rather than the basic rules in its syntax and semantic composition. See McNally 2011: Sec. 3 for more discussion. I thus assume that for the general pattern of LVECs, the right-edge nominal is indefinite.

In an LVEC, the left-edge locative phrase is composed of a noun and a localizer, such as *li* 'inside' in (1), (2a) and *shang* 'surface' in (2b) (see Lü 1965; Chao 1968: 397 for localizers). The whole locative phrase is a nominal (Huang 1987: 251; Zhang 2002, Zhang 2017, and the references therein; Wu 2008: 62; Li 2016). As pointed out by Huang (1987: 229), no preposition precedes the locative nominal in an LVEC. This is shown in (7). Thus, the locative of an LVEC is different from the one in the English locative inversion construction (e.g., *To the shore swarm little boys and girls; Into my office dashed students*).

(7)   a. *Zai   wode   duzi-li   he-le   henduo   shui. (cf. [1])
          at   my   belly-in   drink-PRF   much   water
      b. *Wang   jiaoshi-li   chong-le   henduo   xuesheng.
          to   classroom-in dash-PRF   many   student
          Intended: 'Into the classroom dashed many students.'

Zhu (1982: 115), Huang (1987: 229), T. Lin (2001), and Wu (2008: 65–73) all claim that the left-edge locative phrase in an LVEC is a subject, rather than a modifier. Wu gives a group of syntactic arguments to show that the phrase has moved from its base position to SpecTP (or called SpecIP), like the subjects in other constructions. One of her arguments is that the phrase can precede a raising verb, such as *sihu* 'seem' or *kanqilai* 'seem' (for such raising verbs, see Li 1990: 123; Tsao 1996: 176, 178; Tang 2000: 199). I use (8a) to show the point. (8a) is similar to (1), except that the locative is *nide duzi* 'your belly' and it precedes *kanqilai* 'seem'. (8b) shows that the non-locative nominal *bushao shui* 'much water' in the LVEC cannot precede a raising verb, and thus the nominal does not show subject properties.

(8) a. Nide   duzi-li   kanqilai   he-le   henduo   shui.
        your   belly-in   seem   drink-PRF   much   water
        'Your belly seems to have much water because of your drinking.'
     b. *Henduo   shui   kanqilai   nide   duzi-li   he-le.
         much   water   seem   your   belly-in   drink-PRF

I adopt Wu's analysis that the locative phrase has moved to the surface position of the matrix subject, and thus, it is not a modifier. In Sections 2.2 and 5, I add two more pieces of evidence for this analysis. The main goal of this paper it to give novel analyses to four major issues of LVECs. First, what is the structure of the matrix predication of the construction? I will claim in Section 2 that the matrix predication does not include the verb; instead, it is an existential predication headed by a null head. Second, how is the verb integrated into the construction? I will claim in Section 3 that the verbal phrase that contains the verb (XP in [9]) is an adjunct to the matrix predication (YP in [9]), and the obligatory argument sharing between the adjunct and the matrix predication is achieved by a sideward movement. With Wu's (2008) locative raising to the surface position of the subject, the surface order of an LVEC is derived. Thus, the basic structure of (1) is (9) (following Partee and Borschev [2004] and others, I use DP to cover DP, NP, and QP).

(9) $[_{DP}$ my belly-in$]_k$ $[[_{XP}$ drank $t_i]$ $[_{YP}$ t_k $\varnothing_{EXIST}$ $[_{DP}$ much water$]_i]]$

Third, why does a transitive verb in an LVEC reject an agent (Pan 1996; T. Lin 2001; J. Lin 2002), as shown in (10)? I will claim in Section 4 that the rejection is predicted since there is no Case-licensor for the agent in the construction.

(10) Wode   duzi-li   (*wo)   he-le   henduo   shui.
      my   belly-in   I   drink-PRF   much   water
      'My belly has much water because of my drinking.'

Fourth, why does an LVEC allow the non-progressive use of the progressive marker -*zhe* (e.g., Pan 1996; T. Lin 2001; J. Lin 2002)? I will claim in Section 5 that LVECs provide the right structure for licensing the adessive use of -*zhe*. I will address the significance of this research in Section 6, and give a short summary in Section 7.

2 The existential structure of the matrix predication of an LVEC

To show that the matrix predication of an LVEC is an existential predication, I present four arguments: the existence assertion of the construction (Section 2.1), the impossible circumstantial location reading of the left-edge locative (Section 2.2), the unpredicted form of the right-edge DP if the DP were the argument of the verb (Section 2.3), and an unpredicted word order if the verb heads the matrix predicate (Section 2.4). I then give the structure of the matrix predication (Section 2.5).

2.1 Existence assertion

The claim that an LVEC expresses an existential predication is supported by the fact that the construction asserts the existence of an entity in a location, beyond the meaning of the verb. In other words, although the information encoded by the verb can be new, it is not the at-issue meaning of the construction. Instead, it is the existential meaning that is the at-issue content of the construction. For instance, (11a) has the verb *tang* 'lie' while (11b) has the verb *zuo* 'sit', but both LVECs assert that there is a cat on the chair.

(11) a. Yizi-shang   tang-zhe   yi   zhi   mao.
        chair-on   lie-PRG   one   CL   cat
        'There is a cat lying on the chair.'
    b. Yizi-shang   zuo-zhe   yi   zhi   mao.
        chair-on   sit-PRG   one   CL   cat
        'There is a cat sitting on the chair.'

This existence assertion can be attested in the following way. One can add *Dui ma?* 'Is it right?' to an LVEC to form a yes-no question. Then, various *you* 'have' forms can be possible answers. Specifically, the form *Dui, DP1 queshi you DP2* 'Right, DP1 indeed has DP2' is always a possible positive answer, and the form *Bu-dui, DP1 shenme dou meiyou* 'No, DP1 has nothing', or *Bu-dui, DP1 meiyou DP2* 'No, DP1 does not have DP2', is always a possible negative answer. This is shown in (12). In contrast, such *you*-forms cannot be proper answers to other questions in the form [DP1 V DP2. *Dui ma*?]. This is shown in (13).

(12) a. Yizi-shang   tang-le   yi   zhi   mao.   Dui   ma?
        chair-on   lie-PRF   one   CL   cat   right   Q
        'There is a cat lying on the chair. Is it right?'
    b. Dui,   yizi-shang   queshi   you   yi   zhi   mao.
        right   chair-on   indeed   have   one   CL   cat
        'Right, there is indeed a cat lying on the chair.'
    c. Bu-dui,   yizi-shang   shenme   dou   mei-you.
        not-right   chair-on   what   all   not-have
        'No, there is nothing on the chair.'
    d. Bu-dui,   yizi-shang   mei-you   mao.
        not-right   chair-on   not-have   cat
        'No, there is no cat on the chair.'

(13) a. A-hua   kanjian-le   yi   zhi   mao.   Dui   ma?
         A-hua   see-PRF   one   CL   cat   right Q
         'A-hua saw a cat. Is it right?'
     b. #Dui,   A-hua   queshi you   yi   zhi   mao.
         right   A-hua   indeed have one   CL   cat
         'Right, A-hua indeed has a cat.'
     c. #Bu-dui,   A-hua   shenme dou   mei-you.
         not-right A-hua   what   all   not-have
         'No, A-hua has noting.'
     d. #Bu-dui,   A-hua   mei-you mao.
         not-right A-hua   not-have cat
         'No, A-hua does not have a cat.'

The contrast between (12) and (13) shows that for an LVEC, if the hearer gives an answer only to the existence of DP2 with respect to DP1, it counts as an appropriate answer. This confirms that it is the existence of DP2 that is asserted in an LVEC. The semantics of the verb plays no role in this assertion. The unacceptability of (13b), (13c), and (13d) shows that a non-LVEC DP1-V-DP2 construction does not have to assert the existence of DP2.

The existence meaning of an LVEC is also asserted under a modal. The question in (14a) can be answered by (14b), where the verb *zuo* 'sit' in (14a) is changed into *you* 'have'. The meaning of *zuo* is not asserted in (14a), and is thus ignored in the answer in (14b). On the other hand, *you* does not occur in (14a), but the *you*-form in (14b) is not an irrelevant answer at all.[5]

(14) a. Que. Jiangtai-shang   bixu   zuo   ji   wei   laoshi?
              stage-on   must   sit   how.many   CL   teacher
              'How many teachers must sit on the stage?'
     b. Ans. Jiangtai-shang   bixu   you   san   wei   laoshi.
              stage-on   must   have   three CL   teacher
              'There must be three teachers on the stage.'

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5 A reviewer assumes that (i) is an LVEC. But the left-edge nominal in (i) is not a locative. (i) is in fact a capacity/accommodation construction, similar to (ii), instead of an LVEC. In such a capacity/accommodation construction (Lu 2004; Ramchand 2008: 192; Her 2009: 1156; Li 2014: 309), a manner-denoting verb may be adjoined to a null capacity/accommodation verb, and the post-verbal nominal is the theme object of the null verb, rather than an argument of the overt verb (see Zhang 2018: 1402).
   (i) Zhe   zhang chuang neng   shui   san   ge   ren.
       this   CL   bed   can   sleep three CL   person
       'This bed fits 3 persons.'
   (ii) Zhe   ping   shui   he   san   ge   ren.
        this bottle water   drink three CL   person
        'This bottle of water is for 3 persons.'

Also, in (12), *yi zhi mao* 'a cat', like the indefinite DP in an existential sentence, has the narrow scope with respect to the question. The sentence does not ask whether a specific cat is lying on the chair. Thus, from the perspective of the reading of the right-edge DP of an LVEC, the construction is also similar to an existential construction.

These facts show that an LVEC contains an existential predication, encoding that the location denoted by the left-edge locative has the entity denoted by the right-edge DP. Importantly, the semantics of the verb of an LVEC is not part of this existential predication.

2.2 An interpretation restriction on the left-edge locative phrase

The left-edge locative phrase of an LVEC must be interpreted as a new goal position of the entity denoted by the right-edge DP, rather than a circumstantial location of an action. In (1), my belly is where the water exists, rather than where I drank. Consider the LVECs in (15a) and (15b).

(15) a. Jiaoshi-li   song-lai-le   yi   ge   baoguo.
          classroom-in   send-come-PRF   one   CL   package
          'A package has been sent to the classroom.'
      b. Jiaoxue-lou-li   song-lai-le   yi   ge   baoguo.
          teaching-building-in   send-come-PRF   one   CL   package
          'A package has been sent to the teaching building.'
          Not: 'In the teaching building, a package has been sent from one place to another.'

The source of the sending in (15a) must be out of the classroom; and similarly, the source of the sending in (15b) must be out of the teaching building. This rules out the impossible reading of (15b), in which the locative is a circumstantial location of the sending action, rather than the goal of a sending action. Although it is possible to send a package from one room to another room within the same teaching building, this meaning cannot be expressed by the LVEC in (15b). In this radical *pro* language, null arguments can be licensed by the discourse information, as seen in Speaker B's answer to Speaker A's question in (16). However, the second intended reading of (15b) is still cannot be expressed by the LVEC. Specifically, the goal expression is null in (16), but not in the second intended reading of the LVEC in (15b).

(16) Speaker A: Baoguo   song-lai-le   ma?   Speaker B: Song-lai-le.
                  package   send-come-PRF   Q   send-come-PRF
                  'Has the package been sent in?'   'Yes.'

The reading restriction on the left-edge locative phrase of an LVEC supports the semantic function of the phrase, as argued by T. Lin (2001), Wu (2008), among others: it is not a circumstantial modifier of an action denoted by the verb. Instead, it is the locative subject of an existential predication.

Note that this discussion does not exclude the possibility that the locative subject is accidentally overlapped with the circumstantial location pragmatically. In (17a), the campus is both the position of the snake and the position of the finding. This contrasts with (17b), where his belly must be the position of the tumor, rather than that of the finding event.

(17) a. Xiaoyuan-li   faxian-le   du-she.
        campus-in   find-PRF   poisonous-snake
        'There is a poisonous snake found in the campus.'
     b. Tade   duzi-li   faxian-le   zhongliu.
        his   belly-in   find-PRF   tumor
        'A tumor is found in his belly.'

2.3 A form restriction on the right-edge DP

In an LVEC, the DP following the verb cannot be a pronoun, but the constraint does not apply to an argument of a verb in other constructions.[6] The LVEC in (18a) is not acceptable because it ends with the pronoun *tamen* 'they'. In (18b), which is not an LVEC, the same verb *zuo* 'sit' is able to take *tamen* as its argument.

(18) a. *Wuzi-li   (yizhi)   zuo-zhe   tamen.
         room-in   all.the.time   sit-PRG   they
         (also Li 1990: 143 [74b])
     b. Tamen   yizhi   zuo-zhe.
        they   all.the.time   sit-PRG
        'They are sitting there all the time.'

The contrast in (18) is explained, if the matrix predication of an LVEC is existential. Pronouns do not occur in an asserted or foregrounded position (see, e.g., Venhuizen et al. 2018, for references and examples). In Section 2.1, we have shown that what is asserted in an LVEC is that in a certain location, there is an entity, which is denoted by the right-edge DP. An existential sentence introduces or focalizes referents. Thus, the DP is informationally focused. Accordingly, the LVEC in (18a) is not allowed to end with a pronoun. But a subject does not have

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6 LVECs thus differ from existential constructions in Catalan, which allow pronouns (McNally 2011: 1844).
   Also see the text below (6) on the definiteness of the right-edge DP of an LVEC. A reviewer points out that an LVEC like (i) is acceptable, where the right-edge definite DP is a complex complemented pronoun (see Zhang 2016: 278).
   (i) Zicong   suo-li   lai-le   tamen   san   ge   ren   yihou,   mafan   bu   duan.
       since   institute-in   come-PRF   they   three CL   person   after   trouble not   stop
       'Since they three came to the institute, troubles have never stopped.'

to be focused, and thus the subject in the non-LVEC example in (18b) can be a pronoun.

2.4 The unexpected word order for unergative verbs

The surface order of the three overt elements of an LVEC is fixed: the verb must follow the locative and precede the non-locative DP. If one assumes that the right-edge DP is an argument of the verb exclusively, one needs to explain why the relative order of the two elements can be different from the one if they occur in other constructions. For example, the unique argument of an unergative must precede the verb in Chinese (Li 1990: 136). In the non-LVEC in (19a), *yu* 'fish' precedes the verb *you* 'swim'. (19b) shows that the reversed order is impossible. (19c) shows that exactly this impossible order is seen in the LVEC.

(19) a. Yu   zai   shui-li   you-zhe.
       fish   at   water-in   swim-PRG
       'Fish are swimming in the water.'
    b. *Zai   shui-li   you-zhe   yu.
        at   water-in   swim-PRG   fish
    c. Shui-li   you-zhe   yu.
       water-in   swim-PRG   fish
       'Fish are swimming in the water.'

Can the surface order of the LVEC in (19c) be derived from (19a) by movement? The leftward movement of the verb to the left of its argument is ruled out, for the following reason. In the language, if an adverb occurs with a verb, it precedes the verb, as seen in (20a). In the correlated LVEC, the adverb also precedes the verb, as seen in (20b). This parallelism indicates that the verb in an LVEC does not move to any position higher than its default position.

(20) a. Yu   (yizhi)   zai   shui-li   you-zhe   (*yizhi).
       fish   all.the.time   at   water-in   swim-PRG   all.the.time
       'Fish are swimming in the water all the time.'
    b. Shui-li   (yizhi)   you-zhe   (*yizhi)   ji   tiao
       water-in   all.the.time   swim-PRG   all.the.time   a.few   CL
       yu   (*yizhi).
       fish   all.the.time
       'A few fish are swimming in the water all the time.'

The rightward movement of the DP from (19a) to form (19c) does not work, either. Such a movement would derive the PP-initial string *zai shui-li you-zhe yu*, which is ungrammatical, similar to those in (7). Thus, the LVEC in (19c) is not derived from (19a).

      In the above discussion, I have argued that the verb of an LVEC is out of the matrix predication of the construction, not only the meaning of the verb is not asserted but also its position is not expected if it heads the matrix predication. My

conclusion is different from the classic analysis, which treats the verb as the lexical head of the matrix predicate (Zhu 1982: 114, 116). A modern version of the classic analysis is seen in T. Lin 2001, 2008. In T. Lin's (2001: 150f) analysis, a null light verb EXIST takes the VP headed by the overt verb as its complement (i.e., VP1 in [21]), and the right-edge DP is the internal argument of the overt verb. I use (21) to illustrate a possible derivation of (1) in his analysis.

(21) $[_{VP2} [_{LOC}$ my belly-in] $[_{V2'}$ drank$_i$-EXIST] $[_{VP1}$ t$_i$ $[_{DP}$ much water]]]

One main problem of (21) is that the complement of the null light verb EXIST is a VP, which denotes an eventuality, rather than an individual. But an LVEC asserts the existence of an individual, rather than an eventuality. For (1), it is the water, rather than the action of drinking, that exists in my belly. A structure like (21) might be a possible structure for a construction where the locative is a circumstantial location (see the impossible reading of [15b]).
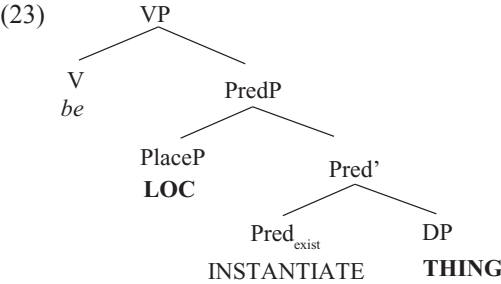
Moreover, if it were an event asserted in an LVEC, the internal argument of the VP should allow a pronoun (cf. Section 2.3). In (22), *you* 'have' may take a clausal argument, and what is asserted is the existence of an eventuality, rather than the existence of an individual (Li 1996). In this case, the internal arguments of the verb can be a pronoun.

(22) Ruguo   you   [Lao   Li   zhaogu   wo],   wo   hui   hen   xingfu.
     if   have   Lao   Li   care   I   I   will   very   happy
     'If there is such a situation that Lao Li takes care of me, I will be very happy.'

So far, I have shown that semantically and syntactically, the verb is out of the matrix predication of an LVEC, which is an existential predication. In the next subsection, I present the structure of the matrix predication of the construction.

2.5 The internal structure of the existential predication

I use Irwin's (2018) theory of existential predication to analyze the structure of the existential predication of LVEC. According to McNally (2011: 1831), "in all existential sentences there is a 'pivot' nominal which describes the individual whose existence is under discussion." In our LVEC, the right-edge DP is such a pivot. According to McNally (1992, 1997), the meaning of existential sentences involves a special predicate, INSTANTIATE, which asserts the existence of an entity that is described by the property denoted by the pivot (see McNally 2011 for the advantages of this instantiate analysis over some other analyses). As stated by Partee and Borschev (2004: 214), "existence is always relative to a 'LOCation', which may be implicit." Irwin (2018: 15) states that "an existential proposition says that an instance of some set or property (THING) exists at a given spatio-temporal 'location' (LOC). The existential predication's statement of existence is executed by the function instantiate (McNally 1992; 1997)" (the terms LOC and THING are from Partee and Borschev 2004). According to Irwin (2018: 10), such a state in English has the structure in (23).

(23)

```
              VP
            /    \
          V       PredP
          be     /     \
            PlaceP      Pred'
            LOC        /     \
                  Pred_exist   DP
                 INSTANTIATE  THING
```

In (23), the head $Pred_{exist}$ has two arguments: LOC (PlaceP) and THING (DP), which is the pivot. This head is not realized by any overt verb. For an English sentence such as *There is a lady at the door*, the copular *is* is external to the PredP and takes the PredP as its complement. The separation of the syntax of an existential predication from that of the copula is important here. In Chinese, no copula occurs in an LVEC. So for the matrix predication of the construction, like the PredP in (23), the head is not realized by any overt verb. Whether the head $Pred_{exist}$ has to be null cross-linguistically and in other constructions in the same language is a different issue. McNally (2011: 1831) summarizes that though existential sentences do not always contain a verb, if there is one it is often homophonous with a verb meaning "to be" or "to have", or with some other verb related to possession (such as *geben* 'give' in German) which is "bleached" of its content; it may also be a special lexical item such as Hebrew *yeS*. It is possible that the verb *you* 'have' in a simple existential construction, exemplified by (ii) in Footnote 3, is a realization of this head. Here the point is that the silence of the matrix predication in an LVEC is not ad hoc. The semantics of the head $Pred_{exist}$ is the following (Irwin 2018: 16, 21):

(24) $[[Pred_{exist}]] = \lambda P_{<e,t>} \; \lambda LOC_{<e,<s,t>>} \; \lambda e_s \; [INST(^{\cap}\lambda x \; [P(x)\&LOC(x,e)])]$

In (24), P is a variable to be saturated by the THING in (23), which is of property type (or a higher type, cf. Francez 2007). LOC is a variable name for the type *e* locational argument (LOC) in (23). The variable *e* is for an eventuality, and the subscript *s* means that the semantic type of the eventuality is of state. Finally, "the operator $^{\cap}$ has the effect of requiring that INSTANTIATE take an argument that is of property type, which is then type-shifted down to entity type. This is how the function yields an individual instance from the set (or set of sets) denoted by the pivot (Chierchia 1984; Partee 1987; McNally 1992)" (Irwin 2018: 16).

In the PredP in (23), PlaceP is the subject. Developing McNally 1992, 1997: 7 and McCloskey 2014, Irwin (2018: 8, 15) argues that for an English sentence such as *There is a lady at the door*, the locative PP *at the door* is syntactically an adjunct and semantically a modifier of the existential proposition, and thus it is not a realization of PlaceP directly. The PP just specifies the content of PlaceP. In the spirit of Williams (1994, 2006), PlaceP can be realized by the expletive *there*.

Thus, (25) is one possible analysis of *There is a lady at the door*. In this structure, PredP is headed by a null Pred, ∅; the final PP is an adjunct to the PredP; and *there* is raised to SpecTP.

(25) [TP *there... is* [[PredP <*there*> [Pred' ∅ [DP *a lady*]]] [PP *at the door*]]]

In Chinese, there is no expletive, and the locative in an LVEC may not be a PP (see [7]). As I reported in Section 1, many studies have shown that the locative nominal in an LVEC show properties of a subject. In contrast, a PP, such as *zai wode duzi-li* 'in my belly', is not able to play the role of a subject. I thus claim that the locative nominal is the PlaceP in (23).
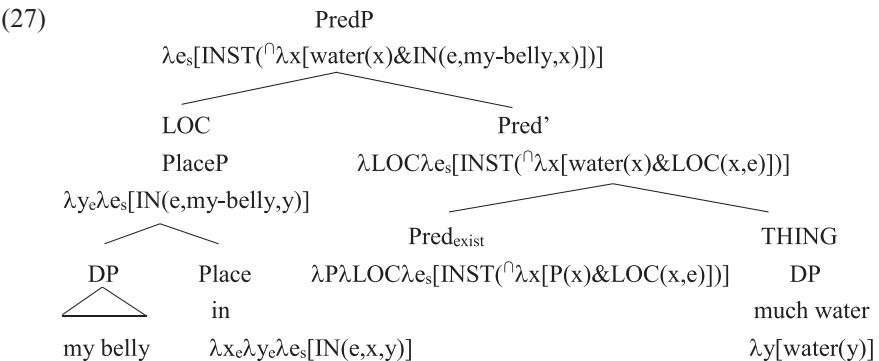
This PlaceP is headed by Place, which takes a type *e* nominal as its complement. The head Place is realized by a non-path localizer (Svenonius 2010 and the references there), which is a place-value-denoting element (Zhang 2002). In the nominal *wode duzi-li* 'in my belly', the localizer *li* 'in' realizes Place, taking *wode duzi* 'my belly' as its complement (cf. Zhang 2002). The PlaceP is a nominal, which is the subject of PredP, and also the matrix subject of an LVEC.

(26)

PlaceP
DP   Place
      li
wode duzi   in
my   belly
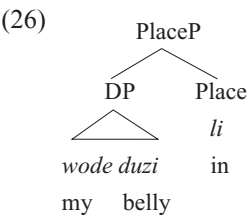
Adapting Irwin's (2018: 17) semantic structure of the PredP for an existential proposition, I propose the PredP structure in (27) for the matrix predication in (1) (called YP in [9]).

(27)

PredP
$\lambda e_s[INST(\cap\lambda x[water(x)\&IN(e,my\text{-}belly,x)])]$

LOC
PlaceP   Pred'
$\lambda y_e\lambda e_s[IN(e,my\text{-}belly,y)]$ $\lambda LOC\lambda e_s[INST(\cap\lambda x[water(x)\&LOC(x,e)])]$

DP   Place   Pred$_{exist}$ THING
      in $\lambda P\lambda LOC\lambda e_s[INST(\cap\lambda x[P(x)\&LOC(x,e)])]$ DP
my belly $\lambda x_e\lambda y_e\lambda e_s[IN(e,x,y)]$ much water
                                                                                      $\lambda y[water(y)]$

In (27), the pivot is the right-edge *much water,* which is for the DP *henduo shui* in (1). It is a weak indefinite, having only the narrowest scope with respect to other operators, if any, in the existential sentence. According to Milsark (1974, 1977), weak indefinites are systematically licensed as pivots because indefinite

determiners can be analyzed as cardinality predicates, making the nominal amenable to a property-type analysis.

Summarizing, in this section, I have presented semantic and syntactic arguments for a new analysis of the matrix predication of LVEC, claiming that it is an existential structure: the existence assertion, the impossible circumstantial location reading of the left-edge locative, the unpredicted form of the right-edge DP if the DP were the argument of verb, an unpredicted word order if the verb headed the matrix predicate. I have also given the semantic structure of the proposed matrix existential predication. The structure of the verbless existential state is similar to that of the existential state in languages such as English, in which the existential PredP is headed by the null INSTANTIATE (McNally 1992, McNally, 1997; Irwin 2018). Regardless of the overtness of any element of the construction, the syntax and the semantics of the construction are both compositional.

3 The integration of the verbal expression

3.1 The semantic restriction on the verb of an LVEC

In an LVEC, if the matrix predication is a PredP, as in (27), how is the verb integrated into the construction? Li and Thompson (1981: 512) call the verbs in LVECs positional verbs. Huang (1987: 228) states that such verbs are "locative verbs – transitive or intransitive verbs that subcategorize for a locative phrase. These include intransitives like *zhu* 'live', *zuo* 'sit', *tang* 'lie', *piao* 'float' and transitives like *fang* 'put', *gua* 'hang', and *xie* 'write'." However, Huang's locative-subcategorizing theory can be challenged. In Chinese, if a transitive verb subcategorizes for a phrase, the former precedes the latter; but why must the subcategorized locative precede the verb in an LVEC consistently? Moreover, why is this assumed locative-subcategorization not seen in other contexts? For example, if *xie* 'write' subcategorizes for a locative in the LVEC in (6b), why does it not do so in (28)? As pointed out by T. Lin (2008: 73), "it is conceptually difficult to accept that such verbs as *xie* 'write' (and many others) have an internal locative argument. Why does writing have anything to do with a location, other than it must happen somewhere?" T. Lin's comment applies to other verbs, such as *he* 'drink' in (1).

(28) Lulu   xie-le   liang   ge   zi.
     Lulu   write-PRF   two   CL   character
     'Lulu wrote two characters.'

Instead of the problematic locative-subcategorizing theory, a better analysis is called for. I have observed that only three types of verbs are allowed in an LVEC: verbs that encode an eventuality that leads to the existence of an individual in a certain location, verbs of finding, and verbs of spatial configuration (see Levin 1993: 255 for verbs of spatial configuration) (as I stated in Footnote 3, I do not discuss the disappearing version of LVEC in this paper).

Verbs that encode an eventuality that leads to the existence of an individual in a certain location include verbs of appearance such as *chuxian* 'appear', *lai* 'come',

dao 'arrive', as in (2a), and verbs such as *he* 'drink' in (1). For example, *he* in (1) tells us that my drinking leads to the existence of the water in my belly.

Verbs of finding such as *zhaodao* 'find' and *faxian* 'discover' in LVECs, as in (17), encode an eventuality, and the occurrence of the eventuality depends on the existence of the entity denoted by the internal argument in a certain place.

Different from the above two types of verbs, in LVECs, verbs of spatial configuration, such as *tang* 'lie' in (11a) and *zuo* 'sit' in (11b), encode the mode of the individual whose existence can be asserted (cf. Levin's [1993: 250] concept "entity-specific mode of existence" for locative inversion in English). The verbal phrase headed by such a verb functions as a secondary predicate, depicting the individual, in an LVEC.

No other types of verb (e.g., verbs of desire, such as *zhuiqiu* 'seek') may occur in an LVEC. Thus, the verb of an LVEC is not free. Also, the same verb may or may not occur in an LVEC, depending on the choice of the locative. Consider the verb *he* 'drink', which does not belong to the types of verb of finding and verb of spatial configuration. Thus, only when a verb is able to encode a cause for an entity to exist in a certain place, may it occur in an LVEC. In (29a), drinking can cause the water to be in my body, but in (29b), drinking cannot cause water to be in the office (see Pan 1996: 425 for more unacceptable examples like [29b]).

(29) a. Wode duzi-li he-le henduo shui.
   my belly-in drink-PRF much water
   'My belly has much water because of my drinking.'
  b. *Bangongshi-li he-le henduo shui.[7]
   office-in   drink-PRF much water

Reversely, the same locative may or may not occur in an LVEC, depending on the choice of the verb. In (30a), *you* 'swim' is a verb of spatial configuration, and its occurrence in the LVEC is legal. However, the verb *diao* 'fish' in (30b) is not a verb of finding or verb of spatial configuration, and fishing is not able to cause fish to appear in a river. Although fishing needs a water place, (30b) is still not acceptable.

(30) a. He-li you-zhe ji tiao yu.
   river-in swim-PRG several CL fish
   'In the river, several fish are swimming.'
  b. *He-li diao-zhe ji tiao yu.
   river-in fish-PRG several CL fish

---

7 In examples like (i), an agent, or its *pro* form, may occur. But in an LVEC, no agent is allowed (see Section 4).
 (i) Keting-li (renmen) zheng he-zhe jiu ne!
   living.room-in people right.now drink-PRG wine PRT
   'In the living room, people are drinking wine!'
   (adapted from T. Lin 2008: 80 [64])

In (31a), showing a movie on a screen causes the movie to appear on the screen, and thus the LVEC is acceptable. In contrast, in (31b), seeing a movie does not cause a movie to appear on a screen. Although watching a movie needs a screen, the LVEC in (31b) is still unacceptable.

(31) a. Pingmu-shang   bofang-zhe   dianying.
       screen-on   show-PRG   movie
       'A movie is playing on the screen.'
     b. *Pingmu-shang   kan-zhe   dianying.
        screen-on   watch-PRG   movie

T. Lin (2001: 141, 163) notes that verbs of state are rejected in an LVEC, as seen in (32a). Verbs like *lei* 'tired' and *shangxin* 'sad' are also banned. We observe that LVECs also reject "verbs of nonverbal expression" (a term in Levin 1993: 95), for example, *xiao* 'smile, laugh', and psych-verbs, as seen in (32b) and (32c), respectively. None of the verbs in (32) belongs to any of the three types of verbs mentioned above. Thus, the unacceptability of these examples is predicted.

(32) a. *Jia-li   e-zhe   xiaohai.
        home-in   hungry-PRG   kid
     b. *Men-wai   xiao-zhe   yi   ge   nühai.
        door-outside   smile-PRG   one   CL   girl
     c. *Malu-shang   danxin-zhe   xiaohai.
        street-on   worry-PRG   kid

The examples in (32) also show that not all verbs are able to denote the mode of the existence of an entity in LVECs (cf. T. Lin 2008: 74). In (32a), for example, it is possible for a kid to exist at home in the mode of a hungry state, but the sentence is still unacceptable. Only a verb of spatial configuration can denote the mode of the existence of an entity in an LVEC, as discussed above.

For all three types of verbs that may occur in an LVEC, first, one argument of the verb is shared with the non-locative DP of the matrix predication (see Section 3.2), and the existence of the individual denoted by this argument is asserted in an LVEC; second, the verb provides certain information associated with the existential state expressed by the matrix predication. However, the three types of verbs in LVECs are not semantically unified, although I claim that syntactically, the verbal phrase is an adjunct to the matrix PredP consistently (see Section 3.2). The eventualities expressed by them have different temporal relations with the existential state denoted by the matrix predication. For verbs of spatial configuration, their denoted eventuality is temporally overlapped with the existential state. For verbs of finding, their denoted eventuality is temporally contained in the existential state. Finally, for verbs that encode an eventuality that leads to the existence of an individual in a location, there are two cases. If the verb is not durative, such as *dao* 'arrive', the denoted eventuality is temporally overlapped with the initial point of the existential state expressed by the matrix predication of an LVEC. If the verb is durative, the

ending or stopping time of the denoted eventuality is temporally overlapped with the initial point of the existential state expressed by the matrix predication of an LVEC. For the LVEC in (33), a dumpling exists in his hands as soon as he finishes the wrapping. Similarly, for the LVEC in (1), much water exists in my belly as soon as I have drunk much water.

(33) Ta-shou-li   bao-zhe   yi   ge   jiaozi.
  he-hand-in   wrap-PRG   one   CL   dumpling
  'In his hands, a dumping is being wrapped.'

3.2 The syntax of the obligatory argument sharing

The verb in an LVEC not only must be semantically related to the existence state denoted by the matrix predicate, as shown in Section 3.1, but also must be structurally interacted with the structure of the matrix predicate. It must share a canonical argument with the right-edge DP, which is the THING argument of the matrix existential predication. Consider (34a) and (34b).

(34) a. *Lese-tong-li   chi-le   bushao   chuyu.
   trash-bin-in   eat-PRF   many   left.overs
  b. *Shuzhuo-shang   xie-le   bushao   mao-bi.
   desk-on   write-PRF   many   brush-pen

In (34a), one might think that the existence of leftovers in the trash bin is caused by eating. However, *bushao chuyu* 'many leftovers' is not an argument of *chi* 'eat'. In (34b), one might think that the existence of brush-pens on the desk is caused by writing with them. However, the instrument *bushao maobi* 'many brush-pens' is not a canonical argument of *xie* 'write', although Chinese allows the string *xie maobi* 'write brush-pen' as a non-canonical object construction (e.g., T. Lin 2001; Zhang 2018). The unacceptability of both (34a) and (34b) indicates that the verb must share a canonical argument with the right-edge DP in an LVEC. Specifically, if the verb is intransitive, its unique argument is shared; and if the verb is transitive, its internal argument is shared, with the THING argument of the matrix existential predication.

  Since argument sharing is required between the verb and the THING argument of the existential predication in an LVEC, and since the latter argument is a weak indefinite normally, only a weak indefinite argument of the verb can be shared. If the unique argument of an intransitive verb is a pronoun, the verb does not occur in an LVEC (see Section 2.3). Also, since mental attitude verbs (e.g., *taoyan* 'dislike' and *xihuan* 'like') do not take weak indefinite as their internal argument (Diesing 1992), such verbs are rejected in LVECs.

(35) *Jiaoshi-li   taoyan-zhe   yi   ge   xuesheng.
  classroom-in   dislike-PRG   one   CL   student

How does syntax represent this argument sharing? First, the argument of the verb that is shared with the matrix predication cannot be a *pro* because a *pro* allows an

overt alternate, but no overt pronoun may occur with the verb of an LVEC. Also, it is not easy for a *pro* to take a weak indefinite as its antecedent.

(36) Chuang-shang　　(*ta)　　shui-zhe　yi　ge　xiaohai.
　　　 bed-on　　　　　　 he　　　 sleep-PRG　one　CL　kid
　　　 Intended: 'There is a kid on the bed, who is sleeping.'

Second, the argument of the verb that is shared with the matrix predication cannot be a deleted nominal, taking the right-edge nominal of the matrix predication as its antecedent. If the argument were deleted in this way, the deletion should satisfy the right-edge condition for backward ellipsis (Wilder 1997). In (37a), both the deleted part and its antecedent (the underlined part) are at the right edge of the hosting clause. In (37b), however, the deleted part is at the left edge of the first clause and its antecedent is also at the left edge of the second clause (see Wilder 1997: 59). In (37c), the deleted part is at the left edge of the first clause, although its antecedent is at the right edge of the second clause. The backward ellipsis in neither example is possible. (37d) (Wilder 1997: 87) shows that backward ellipsis is not restricted to coordinate constructions.

(37)　a. John bought _ and Sue read the day's newspaper.
　　　 b. *_ sat down and Mary laughed.
　　　 c. *_ hugged Mary and she kissed John.
　　　 d. I talked to _, without actually meeting everyone on the committee.

However, for an unergative verb, its unique argument is not at the right edge of the clause in Chinese (see Section 2.4). We thus see that the backward deletion of the argument of the verb of an LVEC is not possible.

　　　 Third, similarly, the argument sharing cannot be achieved by Right-Node-Raising (RNR), since for an unergative verb, its unique argument is not at the right edge of the verbal phrase in Chinese, whereas RNR must be achieved by the sharing of the right-edge elements.

　　　 Fourth, the argument of the verb that is shared with the matrix predication cannot be a PRO because it is not the subject of the verb if the verb is transitive, whereas a PRO must be a subject.

　　　 Fifth, the argument sharing cannot be achieved by a parasitic gap strategy because the right-edge DP in an LVEC is not a gap. Thus, it is not the case that the argument gap of the verb is parasitic on another gap.

　　　 Therefore, none of the five strategies, *pro*, deletion, RNR, PRO, and parasitic gap, is able to represent the argument sharing between the verb and the matrix predication of an LVEC.

　　　 I propose that the obligatory argument sharing between the verbal phrase and matrix predication of an LVEC is achieved by a sideward movement of an argument from the former to the latter. The following is a brief introduction to sideward movement.

Generally speaking, the movement of α lands at a position that c-commands the launching site, in the same "tree". The movement from one tree into another tree is sideward movement. The mode of sideward movement is illustrated as follows.

(38) Step 1: α moves from Tree 1 to Tree 2

Tree 1   Tree 2
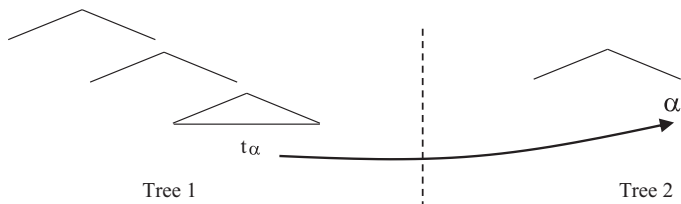
Step 2: Tree 2 grows.
Step 3: Tree 1 is merged with the developed Tree 2.

The theory of sideward movement is proposed by Bobaljik and Brown (1997), Nunes (2001, 2004), Hornstein (2001), Nunes and Uriagereka (2000), and Bošković (2018). It has been used to account for a number of unrelated phenomena, such as adjunct control, tough-movement and other null-operator constructions (Hornstein 2001), issues pertaining to extraction domains (Nunes and Uriagereka 2000), PRO-gate effects (Hornstein and Kiguchi 2003), donkey anaphora (Boeckx 2003), antecedent-resumptive relations (Kayne 2002), and others. The existence of sideward movement seems to be expected, if Remerge (i.e., Move), like Merge, just sets up new syntactic relations. As pointed out by Hornstein and Nunes (2002: 27), sideward movement does not add any new constraint to our current computational system. In contrast, it removes a stipulation from the system that movement must target the syntactic object that contains the trace. Hornstein and Nunes (2002) claim that such a stipulation is actually a residue of D-structure, which is not compatible with the Minimalist Program. If no D-structure is assumed and the computational system resorts to generalized transformations to build phrasal objects, the landing site of a movement may be beyond the domain that contains the trace. "In other words, in a system that may operate with more than one single-rooted syntactic object at once, as in Chomsky 1995, only brute force would force movement to always target the same tree" (Hornstein and Nunes 2002: 28).

The integration of the verbal phrase into the matrix predication in (39) is illustrated in (40).

(39) Wode   duzi-li   he-le   henduo   shui.
     my   belly-in   drink-PRF   much   water
     'My belly has much water because of my drinking.'

(40) Step 1: build the XP that contains *he-le henduo shui* 'drank much water'

     a. [$_{XP}$ ... he-le [$_{DP}$ henduo shui]] (Tree 1)

     Step 2: The DP *henduo shui* 'much water' undergoes a sideward movement from Tree 1, to merge with a null Pred$_{exist}$, building another tree.

b. $[_{XP} \dots \text{he-le } t_i]$ $[_{Pred'} \text{Pred}_{exist} [_{DP} \text{henduo shui}]_i]$

       Tree1   Tree 2
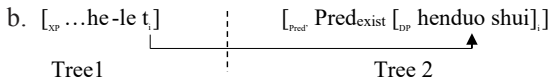
Step 3: Tree 2 "grows", as in (27):

c. $[_{PredP} \text{wode duzi-li } [_{Pred'} \text{Pred}_{exist} [_{DP} \text{henduo shui}]_i]]$

Step 4: Tree 1 in the output of Step 2 left adjoins to Tree 2. This is just a merger of two trees. In Chinese, an adverbial precedes the modified expression consistently (see [20]).

d. $[_{PredP} [_{XP} \dots \text{he-le } t_i] [_{PredP} \text{wode duzi-li } [_{Pred'} \text{Pred}_{exist} [_{DP} \text{henduo shui}]_i]]]$

Step 5: The locative DP *wode duzi-li* 'in my belly' moves to the surface position of a subject, higher than PredP, deriving the surface order in (39).

e. $[_{IP} [_{DP} \text{wode duzi-li}]_k [_{I'} [_{PredP} [_{XP} \dots \text{he-le } t_i]] [_{PredP} t_k [_{Pred'} \text{Pred}_{exist} [_{DP} \text{henduo shui}]_i]]]]$

This derivation of an LVEC represents the syntactic and semantic relations between the verb containing XP and the PredP identified in the previous (sub)sections.

It needs to be clarified that in an LVEC, the verbal XP specifies some further information of the existential PredP semantically. An existential PredP does not need the verbal XP. If Pred_{exist} is realized by *you* 'have', no verbal XP occurs.

3.3 The aspect marker and the A-not-A form of the verb of an LVEC

Two remaining issues on the verb of an LVEC are clarified in this subsection, to show that they do not affect my claim that the overt verb does not head the matrix predication of an LVEC. One is about the aspect suffix on the verb. The verb may have an aspect suffix, for example, the progressive *-zhe*, as in (41a), the perfective *-le*, as in (41b), and the experiential *-guo*, as in (41c). Such a suffix is licensed locally in the verbal phrase, which should be an AspP. Thus, precisely, the XP in all the structures in (40) (also in [9]) should be AspP.

(41) a. Qiang-shang   pa-zhe   yi   zhi   mayi.
        wall-on   crawl-PRG   one   CL   ant
        'There is an ant crawling on the wall.'
     b. Qiang-shang   pa-le   yi   zhi   mayi.
        wall-on   crawl-PRF   one   CL   ant
        'There was an ant crawling on the wall.'
     c. Qiang-shang   pa-guo   yi   zhi   mayi.
        wall-on   crawl-EXP   one   CL   ant
        'There was an ant crawling on the wall.'

The choice of an aspect marker is decided by the temporal relation between the event denoted by the verbal expression and a certain reference time, as in other

constructions in the language. Specifically, if there is no overt reference-time expression, the default reference time is the utterance time. This is the case in (41) above. If there is an overt reference-time expression, such as *nashi* 'at that time' in (42), a *-zhe* verb denotes that the event is simultaneous with the reference time (see Section 5 for more discussion of *-zhe*).

(42) Na-shi,   qiang-shang   pa-zhe   yi   zhi   mayi.
     that-time   wall-on   crawl-PRG   one   CL   ant
     'There was an ant crawling on the wall at that time.'

I have discussed three temporal relations between the eventuality denoted by the verb and the existential state denoted by the matrix predication of an LVEC in Section 3.1. The choice of an aspect marker does not affect the relations. For example, in all the examples in (41) and (42), the crawling eventuality is temporally overlapped with the existential state of the ant on the wall.

     The other issue is about the A-not-A form of the verb in an LVEC. The possibility for the verb to have an A-not-A form does not affect the embedded status of the verbal phrase in the construction. Since the verb in an LVEC occurs at the left edge of the whole matrix predicate, it may have an A-not-A question form, as in (43a), although it does not head the matrix predicate. (43b) shows that the preposition *gen* 'from,' which is at the left edge of the whole predicate and does not head the predicate, may also have an A-not-A form.

(43) a. Qiang-shang   gua-mei-gua-zhe   yi   fu   hua?
        wall-on   hang-not-hang-PRG   one   CL   picture
        'Is there a picture on the wall?'
    b. Ni   gen-mei-gen   ta   jie-guo   qian?
        you   from-not-from   he   borrow-EXP   money
        'Did you borrow money from him?'
        (also see Huang et al. 2009: 249 [61])

In this section, I have argued that the verbal phrase headed by the verb in an LVEC is an AspP, adjoined to the structure of the matrix predication, that one argument of the verb must be shared with the internal argument of the matrix predication, and that the sharing is syntactically implemented by sideward movement.

4 The one-argument constraint on the verb of an LVEC

Having discussed the matrix predication of an LVEC, and the integration of the verbal phrase into the construction, in this section, we discuss a structural restriction on the verbal phrase itself in an LVEC: it has one argument only.

4.1 The one-argument constraint on several constructions

In an LVEC, if the verb is transitive, no agent is allowed, as shown in (44a). As expected, no agent-oriented adverb is allowed, either, since such an adverb needs an

agent licensor. In (44b), *guyi* 'deliberately' is banned, and in (44c), the instrument adverbial *yong jiu-bei* 'with a wine-cup' is banned. The restrictions consistently indicate that there is no *pro* or PRO agent for the transitive verb in an LVEC.

(44) a. Wode   duzi-li   (*wo)   he-le   henduo   shui. (=[10])
        my   belly-in   I   drink-PRF much   water
        'My belly has much water because of my drinking.'

    b. Wode   duzi-li   (*guyi)   he-le   henduo   shui.
        my   belly-in   deliberately   drink-PRF much   water
        Intended: 'My belly has much water because of my deliberate drinking.'

    c. Wode   duzi-li   (*yong   jiu-bei)   he-le   henduo   shui.
        my   belly-in   with   wine-cup   drink-PRF much   water
        Intended: 'My belly has much water because of my drinking with a wine-cup.'

The ban of an agent in LVECs has been noted by Huang (1987: 231: "they do not have a D-Structure subject"), and discussed by Pan (1996), T. Lin (2001), and J. Lin (2002). Pan and J. Lin both propose their own versions of agent-deletion rule, to explain the restriction. Pan (1996: 428) claims that the deletion correlates with the progressive aspect marker -*zhe*. However, as pointed out by T. Lin (2001: 134) and J. Lin (2002), the construction also allows the perfective aspect marker -*le*. In fact, the experiential aspect marker -*guo* is also allowed, as seen in the complement clause in (45a) (also see T. Lin 2001: 135); and no aspect marker occurs under a modal, as seen in (45b); but the agentless restriction is seen in all LVECs. Thus, the constraint has nothing to do with the choice of or even the occurrence of an aspect marker.

(45) a. Zhentan   duanding   [zhuozi-shang   (*na   ge   ren)   fang-guo
        detective sure   table-on   that   CL   person put-EXP
        yi   ba   dao].
        one   CL   knife
        'The detective is sure that there was a knife on the table (put by that person).'

    b. Zai   jiancha-zhiqian,   nide   duzi-li   (*ni)   bixu   he
        at   check-before   your   belly-in   you   must   drink
        henduo   shui.
        much   water
        'Before the checking, there must be much water in your body.'

In T. Lin's (2001: 149) analysis, an agent is licensed by the light verb DO, but an LVEC is headed by the light verb EXIST, as seen in (21). That is why an agent is not allowed to co-occur with the locative subject. In (21), the light verb heads an extended projection above the VP that is headed by the overt verb, in the same predication. One predication naturally disallows two external arguments. However, since we have recognized that the overt verb heads a different predication from the matrix one in an LVEC, we need to explain the missing of the agent for a transitive verb in the construction.

Semantically, following J. Lin (2002: 279), I assume that in an agentless LVEC, the agent of the verb is saturated through existential closure. For example, *he* 'drink' in (44a) has the semantics in (46), where the agent variable *y* is bound by the operator ∃*y*.

(46) $[[he]] = \lambda x \, \exists e \, \exists y [\text{Theme}(x,e) \, \& \, \text{Agent}(y,e) \, \& \, \text{drink}' \, (e)]$

Syntactically, I claim that the absence of an agent in an LVEC follows a general constraint on some types of embedded clauses in Chinese. In addition to LVECs, the agentless constraint is also seen in at least two more constructions.

The first construction is the impersonal V-*qilai* construction, such as (47a) (Wang and Wu 2018). In (47a), the V-*qilai* cluster (i.e., the underlined part) is hosted in a frame-setting modifier. Wang and Wu (2018: 13) argue that in (47a), the left-edge DP *zhe ben shu* 'this book' is the subject of the right-edge expression *hen youshendu* 'very deep', and *du-qilai* 'read-qilai' has a function similar to that of the clause-initial adjunct in <u>Standing on the chair, John can reach the ceiling</u>. Wang and Wu also notice that in this V-*qilai* construction, a transitive verb also has no agent, and disallows any agent-oriented adverb, as seen in (47b).

(47) a. Zhe   ben   shu   <u>du-qilai</u>   hen   youshendu.
        this   CL   book   read-QILAI   very   deep
        'This book is deep for reading.'
     b. Zhe   ben   shu   <u>(*Lulu/*renmen) (*keyi)   du-qilai</u>
        this   CL   book   Lulu/people   deliberately   read-QILAI
        hen   youshendu.
        very   deep
        'This book is deep for reading.'

It is obvious that no deletion rule applies to any possible agent here, since there is simply no form in the whole construction that can function as an antecedent for the deletion (cf. Wang and Wu 2018: 16). This is also true of LVECs.

The second construction is the subordinate clause (but not coordinate clause) in a serial verb construction (SVC) (Huang et al. 2009: 163). This type of subordinate clause follows the matrix clause directly, as seen in the underlined part of (48a) and (49a). The embedded clause also rejects an agent and agent-oriented adverb, as seen in (48b) and (49b).

(48) a. Lulu   mai   piao   <u>kan   dianying</u>.
        Lulu   buy   ticket see   movie
        'Lulu bought a ticket to see a movie.'
     b. Lulu   mai   piao   <u>(*ta)   (*guyi)   kan   dianying</u>.
        Lulu   buy   ticket he   deliberately   see   movie
        'Lulu bought a ticket to see a movie.'

(49) a. Zhangsan tui-zhe   yi   liang   jiaotache <u>dao   xiao   menkou</u>.
      Zhangsan push-PRG   one   CL   bike   reach school entrance
      'Zhangsan pushed a bike going to the entrance of the school.'
      (J. Lin 2002: 273)
   b. Zhangsan tui-zhe   yi   liang   jiaotache <u>(*ta)</u> <u>(*guyi)</u>
      Zhangsan push-PRG   one   CL   bike   he   deliberately
      <u>dao   xiao   menkou</u>.
      reach   school   entrance
      'Zhangsan pushed a bike going to the entrance of the school.'

Thus, the agentless restriction is observed not only in LVECs but also in some other constructions. In the next subsection, I propose a unified account for the restriction.

4.2 Licensing the Case of the agent of a transitive in an embedded clause

Syntactically, one way to license a DP is to license its abstract Case (e.g., Legate 2008; Li 1990, Li 2013 for Chinese). If the verb of an LVEC is intransitive, and the unique argument moves to the internal argument position of the matrix predication (Section 3.2), it is Case-licensed in the matrix predication structure in the same way as an argument that is base-generated there. However, if the verb of an LVEC is transitive, its external argument needs its Case to be licensed.

It is generally assumed that the internal argument of a transitive verb is Case-licensed by v, but the external argument has to be Case-licensed by a functional head external to vP. For a finite clause, its external argument is licensed by the local Infl, but for a nonfinite clause, its external argument has to be licensed in some special way. It is possible that the three types of agentless embedded clauses introduced in Section 4.1 (i.e., LVECs, impersonal V-*qilai* constructions, and the subordinate clauses in SVCs) are not finite clauses and they also do not have a Case-licensor for an agent. Zhang (2019) argues that a nonfinite clause in Chinese disallows any of the three sentence-final particles of the lowest C-level: *le*, *ne*, and *laizhe*, although finite embedded clauses do allow them. For example, in (50a), the conditional clause allows *ne*, but in (50b), the complement clause under the control verb *dasuan* 'plan' rejects *ne*. She claims that the embedded clause in (50a) is finite, whereas the one in (50b) is nonfinite.

(50) a. [Ruguo ni   zai kaiche ne], jiu   bu   yao   hua   shouji.
      if   you PRG drive   SFP then   not should swipe cellphone
      'If you are driving, you should not swipe a cellphone.'
   b. Ajie dasuan [mingtian-zhongwu zai jia   deng   ni   (*ne)].
      Ajie plan   tomorrow-noon   be   home   wait   you   SFP
      'Ajie plans to be at home waiting for you at tomorrow noon.'

Indeed, none of the three types of agentless embedded clauses allows such a particle. For example, the verb *zuo-zhe* in the LVEC in (51) is followed by the sentence-final particle *ne*, and the example is not acceptable. Possibly, such an agentless embedded clause is nonfinite.

(51) *Yizi-shang   [zuo-zhe   ne]   yi   zhi   mao.
       chair-on   sit-PRG   SFP   one   CL   cat

But how do we know that they do not have a Case-licensor for an agent? One clue is that in certain special contexts, the occurrence of the passive marker *bei* 'by' licenses an agent in an LVEC, as seen in (52a) and (52b) (also [68c]). *Bei* is local to *John* in (52a) and *yisheng* 'doctor' in (52b). Plausibly, it is this functional element *bei* that Case-licenses the agent in these examples.

(52) a. Qiang-shang   bei   John   ke-le   henduo   zi.
        wall-on   PASS   John   carve-PRF many   words
        Lit. 'On the wall was carved many words by John.'
        (Pan 1996: 412 [5b])
     b. Wode   duzi-li   bei   yisheng   guan-le   henduo   shui.
        my   belly-in   PASS   doctor   fill.in-PRF much   water
        'My belly has much water because the doctor filled it in.'
     c. Wode   duzi-li   (*bei   wo)   he-le   henduo   shui.
        my   belly-in   PASS   I   drink-PRF   much   water
        'My belly has much water because of my drinking.'

But in general, *bei* may not occur in LVECs, as seen in (52c), and in the other two constructions discussed in Section 4.1. Plausibly, the absence of a Case-licensor for an agent correlates with the absence of an agent in these constructions.

My new observation is that an agent of an embedded clause is not licensed if the clause does not satisfy either of the following two conditions:

(53) a. The embedded clause is selected by the matrix verb.
     b. The embedded clause is introduced by a functional element, for example, a complementizer, or the clause-linking *de*, which can be understood as a complementizer.

None of the three types of embedded clauses discussed in Section 4.1 satisfies the two conditions in (53). They are not selected by the matrix verb, and not introduced by any functional element. Now let us see how the two conditions license an agent of an embedded clause.

First, (53a) states that the agent of a complement clause of the matrix verb can be licensed. In (54), the embedded clause *Lulu dou ta* 'Lulu teases him' is the complement of *zhiwang* 'expect'. In this example, it is the v of the selecting verb *zhiwang* that Case-licenses *Lulu*, which is the external argument of an embedded clause, similar to the Case-licensing in an ECM construction in English. For example, in *Sue expects him to clean the room*, it is the v of *expects* that licenses the Case of *him*, which is the agent of the embedded nonfinite clause.

(54) Wo   zhiwang   [Lulu   dou   ta].
     I   expect   Lulu   tease he
     'I expected Lulu to tease him.'

If the matrix verb has its own nominal object, its v licenses the Case of the object, and thus is not able to license the Case of another element. Thus, even if one analyzes the purposive *kan*-phrase in (55) (=[48b]) as the complement of the matrix verb *mai* 'buy', assuming *piao* 'ticket' is SpecVP, the v of *mai* is still unable to license the Case of *ta* 'he'.

(55) Lulu   mai   piao   (*ta)   (*guyi)   kan   dianying.
      Lulu   buy   ticket   he   deliberately   see   movie
      'Lulu bought a ticket to see a movie.'

Second, (53b) states that if a complementizer or the clause-linking *de* is available, the agent of the relevant embedded clause can also be licensed. Consider (56). In this example, the purposive complementizer *lai* 'in order to' (Liao and Lin 2019) is able to license the Case of the null external argument of the verb *qi* 'anger' and thus *guyi* 'deliberately' is allowed (although the agent is null). *Lai* is thus similar to the infinitival complementizer *for* in English, which can license the Case of the external argument of the relevant nonfinite clause. For example, in *For him to cook a meal is difficult*, the word *for* licenses the Case of *him*, which is the agent of the embedded nonfinite clause.[8]

(56) A-Mao   mai   ta   qian-qi   de   shu |lai| guyi   qi   laopo.
      A-Mao   buy   his   ex-wife   DE   book   to   deliberately   anger   wife
      'A-Mao bought his ex-wife's book in order to anger his wife.'

It needs to be clarified that Case-licensing is local. Therefore, in (57a), the intended agent *ta* 'he' cannot be Case-licensed by the complementizer *suiran* 'although', since the latter introduces the whole LVEC, rather than the adjunct clause in which *ta* occurs. In this example, as shown in (57b), I Case-licenses the locative subject. Since *ta* is in an adverbial island, it fails to establish a Case relation with either I or C.

(57) a. Suiran   tade   duzi-li   (*ta)   he-le   henduo   shui
          although   his   belly-in   he   drink-PRF   much   water
          'Although his belly has much water because of his drinking'
      b. *[CP suiran [IP [DPtade duzi-li] [I' I [PredP [AspP ta he-le t] [PredP …
              X   Case   No Case-relation

Now let us see how the clause-linking *de* licenses Case. The underlined part in each example in (58) is an embedded clause, and it is introduced by *de*.

(58) a. Wo   zhengzai   du   <u>Lulu   mai $\boxed{de}$</u>   shu.
      I   PRG   read   Lulu   buy   DE   book
      'I am reading a book that Lulu bought.'

    b. Wo   zhengzai   du   <u>Lulu   bangzhu   lao-ren $\boxed{de}$</u>   xiaoxi.
      I   PRG   read   Lulu   help   old-person   DE   news
      'I am reading the news that Lulu helped old people.'

    c. <u>Da-guo   dui   xiao-guo $\boxed{de}$ qinlüe</u>   ling   shi-ren   danyou.
      big-state   to   small-state   DE   invade   make   world-people   worry
      'Big states' invasion of small states make people in the world worried.'

Both the relative clause in (58a) and the complement clause of *xiaoxi* 'news' in (58b) are introduced by *de*. One can assume that *de* is a complementizer and it c-commands the embedded clause in its base position. Accordingly, *de* licenses the Case of *Lulu* in the two examples. Cinque (To appear: Sec. 3.6) shows that Chinese relatives share properties with nonfinite relatives in other languages. If such clauses are nonfinite, the external argument in the clauses cannot be licensed by the local Infl. Our claim that it is *de* that licenses the Case of the external argument in such clauses is compatible with his findings.

In (58c), the nominalizer *de* introduces a nominalized clause. According to Wang (2018), which is a development of Fu 1994: 133, after the verb of a vP moves to a nominal head, the remnant vP moves to the left edge of the complex nominal. This derives the surface order of a nominalized clause in Chinese, as shown in (59). The clause is the subject of *ling* 'make' in (58c).

(59) da-guo   dui   xiao-guo   de   qinlüe
      big-state   to   small-state   DE   invade
      'big states' invasion of small states'
      $[_{FP} [_{vP}$ <u>big states</u> to small states $t_i]_k [_F$ de $[_{NP} [_N [invade]_i] t_k]$

The verbal phrase that undergoes nominalization can be treated as a nonfinite clause, which has its own internal and external arguments, as extensively discussed by Fu (1994). If so, the *de* here is similar to a complementizer that selects a nonfinite clause (e.g., *for* in English). It differs from other complementizers in the property that it projects a nominal feature, and it does not surface at a clause-edge position because of the remnant movement of the vP.[9] In this perspective, this use of *de* is able to license Case, similar to *lai* in (56), and *de* in (58a) and (58b). In (59), in their base positions, *de* is the closest c-commanding functional head element to

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9 In some languages, a nominalizer and a complementizer share the same form, for example, *si* in Modern Okinawan (Shinzato 2011: 454) and *no* and *koto* in Japanese (Comrie and Horie 1995: 70). Karakoç and Herkenrath (2016: 626) discuss the close relation between complementizers and nominalizers in Turkish.

the verbal phrase *da-guo dui xiao-guo qinlüe* 'big states invade small states', and thus it can license the Case of the agent *da-guo* 'big states'. In English, an agent in a nominalized clause is morphologically licensed by its genitive case marker, which is not available in Chinese.

Not every functional element is able to license Case. As we pointed out in Section 4.1, for the verb in an LVEC, its local Asp does not license an agent. The Asp of a nonfinite clause is not able to license an abstract Case. For example, in *Mary believes {him/*he} to have robbed a bank*, if the embedded Asp *have* were able to license a Case, the agent in the embedded clause would be the nominative *he*, instead of the accusative *him*.

As expected, in the absence of a possible Case-licenser, an agent of an embedded clause is disallowed. This explains the agentless constraint on LVECs, the impersonal V-*qilai* construction, and the embedded clauses in the SVCs reported in Section 4.1. As stated above, the embedded clauses in these constructions are not selected by the matrix verb, and they disallow any complementizer. Neither (53a) nor (53b) is satisfied. If an agent argument is not licensed in a construction, its null form (*pro* or PRO) is not licensed, either. Accordingly, an agent-oriented adverbial is also rejected.

In Section 3.3, I have claimed that the verbal phrase in an LVEC is an AspP, and this AspP is an adjunct of the matrix PredP. In the absence of an agent for a transitive verb in the construction, there is no vP or SpecvP projected in the AspP. Therefore, it is a truncated AspP. This section has explained why the truncation is necessary: there is no licensor for the external argument.

In this section, I have shown that the agentless constraint on certain embedded clauses in Chinese, including the embedded clause headed by the verb in an LVEC, is explained by the absence of a Case-licensor for an agent. This account does not need an ad hoc agent-deletion rule that is tied with any aspect marker, such as -*zhe* (Pan 1996) or -*qilai* (cf. Wang and Wu 2018: 22). Also, my account does not need to stipulate that every transitive verb has two versions: one has an agent and the other does not (cf. J. Lin 2002: 279). It is the syntactic context that decides whether an argument is licensed. I have shown that if a nonfinite clause is selected by the matrix verb, its external argument is Case-licensed by the matrix v, as in an ECM construction; also, if a nonfinite clause is introduced by a complementizer, or the clause-linking *de*, which can be understood as a complementizer, the Case of the external argument of the clause is also licensed. The licensing is similar to the one achieved by the complementizer *for* in English.

5 Licensing the non-progressive -*zhe* in an LVEC

LVECs have a special property not seen in other constructions: in some LVECs, the perfective aspect marker -*le* can be replaced by -*zhe*, as seen in (60a). Such a replacement, however, is impossible for some other LVECs, as seen in (60b)

(also see the examples in Pan 1996: 412, and J. Lin 2002: 272). I now explain this replacement possibility and its occurrence condition.

(60) a. Louding-shang   ting-{le/zhe}   yi   jia   zhishengji.
      roof-on   stop-{PRF/PRG}   one   CL   helicopter
      'On the roof, there is a helicopter.'
    b. Jie-shang   lai-{le/*zhe}   bushao   jingcha.
      street-on   come-{PRF/PRG}   many   policeman
      'There are many policemen coming to the street.'

Both *ting* 'stop' and *lai* 'come' are non-durative, and thus the expected aspect marker for such verbs is -*le*, instead of the progressive aspect marker -*zhe*.[10] In the absence of a locative, an aspect mismatch is not allowed, as seen in (61).

(61) a. Na   jia   feiji   ting-{le/*zhe}. (cf. [60a])
      that   CL   plane   stop-{PRF/PRG}
      'That plane has stopped.'
    b. Na   jia   feiji   zheng   jiangluo-{*le/zhe}.
      that   CL   plane   PRG   descend-{PRF/PRG}
      'That plane is descending.'

The special use of -*zhe* in some LVECs is discussed by Pan (1996) and J. Lin (2002), but no one has explained the contrast between examples like (60a) and examples like (60b).

My account for the contrast is the following. The formative -*zhe* (著) has been developed from the verb *zhuo* (著) 'touch' (note the written form identity). In one use of the verb, it takes a location-denoting DP as its internal argument. This use is still available now, as seen in (62).

(62) Na   jia   feiji   zhuo   lu   le.
     that   CL   plane   touch   ground   PRT
     'That plane has landed.'

There are two major grammaticalized and thus nonverbal uses of *zhe*: as a progressive marker and as an adessive marker.[11] In the progressive marker use,

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10 The verb *ting* 'stop' in (61a) is non-durative, since if a temporal expression such as *wu fenzhong* 'five minutes' occurs, it means only the length of the result time, rather than the process time:
   (i) Na   jia   feiji   ting-le   wu   fenzhong.
        that   CL   plane   stop-PRF   five   minute
        'That plane stayed for five minutes after it stopped.'
11 The formative -*zhe* can be further grammaticalized into an empty morph, following a preposition, for example, *dui-zhe* 'toward', *xiang-zhe* 'toward', *chao-zhe* 'toward', *shun-zhe* 'along'. The same is true of the perfective aspect marker -*le*, as seen in *wei-le* 'for', and *chu-le* 'except'. A similar grammaticalization is seen in -*ing* in the English prepositions *regarding* and *concerning* (McCawley 1992: 224).

it selects a durative eventuality, but does not require the occurrence of a locative. This is seen in (61b).

Adessive means a spatial relation of an entity on the surface of another entity. The latter becomes a supporting entity of the former. The adessive notion is grammaticalized as a morphological case in Uralic languages (Finnish, Estonian, and Hungarian). In Finnish, for example, the adessive case marker *-llä* contrasts with the inessive case marker *-ssa* 'in'.

(63) a. Kirja   on   pöydä-llä.
      book.NOM   be.3SG   table-ADESSIVE
      'The book is on the table.'
      (Finnish; Zhang 2002: 62)
    b. Sofia   on   talo-ssa.
      S.nom   be.3sg   house-inessive
      'Sophia is in the house.'
      (Finnish; Zhang 2002: 62)

The adessive notion can also be seen in another fact. In German, there is a semantic type of verbs called "stative localizing verbs relating to a (solid) supporting object", such as *sitzen* 'sit', *stehen* 'stand', and *liegen* 'lie' (Kaufmann 1995). They are able to undergo stative locative alternation, exhibiting special syntactic properties (I thank Daniel Hole for the German fact).

The adessive *-zhe* in Chinese does not require a durative eventuality, but it needs to satisfy two conditions. First, the action denoted by the verb leads to one entity contacting (or "landing on") the surface of another entity; and second, the latter entity must be expressed by a local c-commanding locative nominal, and this c-commanding relation may not be intervened by any other nominal. This is seen in (60a), in which the helicopter touches the surface of the roof, and the locative nominal *louding-shang* 'on the roof' locally c-commands *-zhe*. Like the verbal *zhe* in (62), the adessive *-zhe* also has a local syntactic dependency on a locative nominal: the former selects a locative nominal, whereas the latter keeps the selection in a different structural relation: it needs to be locally c-commanded by a locative nominal.

The progressive marker *-zhe* is a suffix of a verb, whereas the adessive marker *-zhe* can be a bound relational root, following a verb. The progressive *-zhe* denotes a temporal relation, whereas the adessive *-zhe* denotes a spatial relation. The contrast between the two uses of *-zhe* explains the acceptability contrasts in (60) and (61). Let us look at (60) first. As stated above, (60a) satisfies both conditions of the adessive *-zhe*. The licensing of this *-zhe* occurs after the locative phrase has moved to a position higher than the verbal phrase that contains the adessive *-zhe*. In addition to (60a), the adessive *-zhe* is also seen in other LVECs in which the verb is not in a progressive aspect. Such verbs include *zuo* 'sit', as in (6a), *xie* 'write', as in (6b), *dai* 'put on (a hat)' or *chuan* 'put on (clothes)', *dui* 'pile', and so on.

Moreover, the adessive -*zhe* occurs with various localizers. In addition to *shang* 'on', as in (60a), other forms such as *li* 'in' and *wai* 'outside' are also possible, as seen in (64). After the PlaceP (DP) moves to SpecIP, it c-commands the verb, and licenses the adessive -*zhe*.

(64) a. Pingzi-li   zhuang-zhe   {yangqi/jiu/shazi}.
      bottle-in   put-PRG   {oxygen/wine/sand}.
      'There is {oxygen/wine/sand} in the bottle.'
   b. Tade   zui-li   xiang-zhe   yi   ke   jin-ya.
      his   mouth-in   insert-PRG   one   CL   gold-tooth
      'There is a gold tooth in his mouth.'
   c. Men-wai   zhan-zhe   yi   ge   jingcha.
      door-outside   stand-PRG   one   CL   policeman
      'There is a policeman standing outside the door.'

In (60b), the durative -*zhe* may not occur, since *lai* 'come' is not durative; the adessive -*zhe* may not occur, either, since *lai* does not necessarily lead to one thing touching on the surface of another thing. The same is true of verbs like *chuxian* 'appear', *fasheng* 'happen', and *dao* 'arrive', and thus they are incompatible with the adessive -*zhe*, as seen in (65).[12]

(65) a. Shangdian-li   dao-{le/*zhe}   yi   pi   huo.
      shop-in   arrive-PRF/PRG   one   set   goods
      'Some goods have been shipped to the shop.'
      (Zhu 1982: 114)
   b. Diannao-li   chuxian-{le/*zhe}   bingdu.
      computer-in   appear-PRF/PRG   virus
      'Virus appears in the computer.'

In (61a), although *ting* may have a physical contact meaning, in the absence of a locative, the adessive use of -*zhe* is not licensed. In this example, since the verb meaning is not durative, the progressive marker -*zhe* is also rejected. Thus, -*zhe* may not occur.

     On the other hand, in some cases, the post-verbal -*zhe* can be understood as either a progressive or adessive marker. This is seen in (66) (also [4]). In (66), the durative event denoted by the verb *pa* 'crawl' is still going on, and thus the progressive -*zhe* is allowed; and meanwhile, the verb *pa* here does mean that the

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12 It is not clear to me why verbs of ingesting (such as eat and drink) reject -*zhe*, in either a progressive or adessive use, in LVECs, as shown in (i). One reviewer raised the hypothesis that -*zhe* might never be a progressive marker in LVECs. But the contrast between (69a) and (69b) challenges this hypothesis.
(i) Wode   duzi-li   he-{le/*zhe}   henduo   shui.
    my   belly-in   drink-PRF/PRG   much   water
    'My belly has much water because of my drinking.'

ant touches the surface of the wall, and the locative *qiang-shang* 'on the wall' also locally c-commands *-zhe*. The two conditions for the adessive *-zhe* are both satisfied.

(66) Qiang-shang   pa-zhe   yi   zhi   mayi.
     wall-on   crawl-PRG   one   CL   ant
     'There is an ant crawling on the wall.'

The two uses of *-zhe* explain the ambiguity of examples such as (67). In Reading A of (67), *-zhe* is an adessive marker, and no progressive aspect is expressed in this LVEC. In Reading B of (67), however, *-zhe* is a progressive marker. Only in the latter reading, can an overt agent of the verb, such as *shibingmen* 'solders', occur before the verb. Since a null subject in Chinese may alternate with an overt form, we assume that in this reading of (67), there is a *pro* subject, and the initial locative is a topic.

(67) Shan-shang   jia-zhe   pao.
     mountain-on   put-PRG   cannon
     A: 'There are cannons on the mountains.'
     B: 'People are putting cannons on the mountains.'
     (Lu 2019: Sec. 2.2.1)

The proposal can also explain the contrasts in (68), reported by Pan (1996). In all the examples in (68), the non-durative verb *fang* 'put' occurs, which does not license the progressive *-zhe*. In (68a), the locative does not c-command *-zhe*, and thus the adessive *-zhe* is not allowed. In (68b), which is an LVEC, the locative does c-command *-zhe*, and thus the adessive *-zhe* is allowed. In (68c), the dependency of the adessive *-zhe* on the locative is intervened by *Lulu*. Following Huang (1999), we assume that the passive *bei* is a head element in the clausal spine (not a preposition), and *Lulu* here is the external argument of the verb, c-commanding the verb (recall that *bei* licenses the Case of *Lulu*; see [52a,b]). Thus, *Lulu* is able to block the dependency of *-zhe* on the locative. Before the locative moves to the surface position (SpecIP), it is inside PredP, and the verb is inside an adjunct of PredP. The locative in its base position does not c-command the verb. As a consequence, the adessive *-zhe* is not licensed either before or after the raising of the locative. In (68d) and (68e), the locative nominal is contained in the PP headed by *zai* 'at', and thus it does not c-command *-zhe*. Therefore, an adessive use of *-zhe* is also blocked.

(68) a. Lulu   fang-{le/*zhe}   yi   ben   shu   zai   zhuozi-shang.
        Lulu   put-PRF/PRG   one   CL   book   at   table-on
        'Lulu put a book on the table.'
     b. Zhuozi-shang   fang-{le/zhe}   yi   ben   shu.
        table-on   put-PRF/PRG   one   CL   book
        'There is a book on the table.'

    c. Zhuozi-shang bei Lulu fang-{le/*zhe} yi   ben shu.
       table-on   PASS Lulu put-PRF/PRG   one CL   book
       'There is a book put on the table by Lulu.'

    d. Lulu   [zai zhuozi-shang] fang-{le/*zhe} yi   ben shu.
       Lulu   at   table-on   put-PRF/PRG   one CL book
       'Lulu put a book on the table.'

    e. [Zai zhuozi-shang] Lulu   fang-{le/*zhe} yi   ben shu.
        at   table-on   Lulu put-PRF/PRG   one CL book
       'Lulu put a book on the table.'

An LVEC does not need the adessive *-zhe*, but its structure licenses the latter. The adessive *-zhe* occurs in the same position of an aspect suffix. It is underspecified with an aspect feature, and it can be replaced with a real aspect suffix, such as the perfective *-le* or the progressive *-zhe*, depending on the aspect content of the construction, as seen in (68b). But the progressive *-zhe* cannot be replaced with a different aspect suffix such as *-le*. (69a) and (69b) do not mean the same (In [69], the DP complement of Place [see (27)] is a *pro*; cf. Zhang 2002: 52).

(69) a. Waimian   xia-le   yu.
         outside   fall-PRF   rain
         'It rained outside.'

      b. Waimian   xia-zhe   yu.
         outside   fall-PRG   rain
         'It is raining outside.'

I have assumed that the adessive *-zhe* is a bound root. However, at PF, this bound root competes with the aspect suffix of a verb for the same position in a verb. Thus, the replacement of the bound root by an aspect suffix is possible, and they never co-occur. For example, *fang-zhe* in (68b) may not be replaced with **fang-zhe-le* (I thank a reviewer for helping me to see this).

     The local c-commanding relation between the locative and the adessive *-zhe* in an LVEC shows that the former is not in any PP. This supports the claim made in the literature: the locative phrase in an LVEC is a nominal subject directly (see Section 1). Specifically, the structure of (68b) is different from those of (68d) and (68e). In the LVEC in (68b), the left-edge locative is the subject of an existential predication. In contrast, in (68d) and (68e), *Lulu* is the subject.

     In this section, I have given the structural conditions for the adessive marker use of *-zhe*, and explained why this use is possible in LVECs, but not in other constructions.

6 Significance

Descriptively, this paper has covered several issues of LVEC. I now highlight two major theoretical contributions. This research may be, as far as I know, the first one to explore the possibility that the unique overt verb in a construction is embedded

in a subordinate predicate. It has long been realized that not every type of sentences has a verb; for example, in the so-called nonverbal predication sentences, such as (70), there is no verb (Zhu 1982: 103). Our linguistic theories thus predict that if the matrix predicate is not headed by an overt verb, it is still possible for an embedded predicate to have an overt verbal head. Thus, the result of this research has simply proved a prediction made by our theories. I have identified the null head of the matrix predication of an LVEC to be McNally's (1992, 1997) INSTANTIATE, and the overt verb in the construction is embedded in an adjunct.

(70) Ta   ershi   sui.
     he   twenty   year
     'He is twenty years old.'

This research has also explored the possible licensors of abstract Case in Chinese, a language that shows no Case contrast in the forms of any elements. First, what we have found is that if an argument is not Case-licensed, it is not allowed to occur. This shows that abstract Case is attested in the language. Second, the possible licensors of an abstract Case are also similar to those in other languages such as English. Specifically, the licensors of the external argument of a nonfinite clause in Chinese are also either the v of the selecting matrix verb (as in an ECM construction) or a C-element (similar to the infinitive *for*). Thus, the syntactic strategies to license abstract Cases in Chinese are similar to the ones found in other languages.

7 Summary

I have analyzed four special properties of LVEC. First, the unique overt verb does not behave like the verb of a matrix predicate. Instead, an LVEC expresses an existential state in which the place denoted by the left-edge locative has the entity denoted by the right-edge DP. Second, the integration of the verbal phrase as an adjunct requires argument sharing with the matrix predication. Sideward movement can derive the sharing syntactically. Third, I have argued that a transitive verb in an LVEC, in an impersonal V-*qilai* construction, and in a subordinate clause of a SVC all rejects an agent because there is no abstract Case-licensor for an agent. I have claimed that a Case-licensor for the agent of a nonfinite clause has to be a local c-commanding functional element that is either the matrix v (as in an ECM construction) or a complementizer. Fourth, the non-progressive marker use of -*zhe* in LVECs has been identified in this paper as an adessive bound root, licensed by a local c-commanding locative nominal.

Acknowledgments

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存現於漢語

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提要

漢語的存現句以方位短語開頭，然後是動詞，並以名詞短語結尾。整個句式的意思著眼於名詞短語的所指存在於方位短語所表示的位置。本文支持存現句的主語是方位短語的論點，提出謂語的中心是零形式，結尾的名詞短語是這個零形式的補語。而動詞則處於這個主謂關係之外的修飾語中。本文還分析了存現句中的動詞如何與這個主謂關係共享論元。本文還從抽象格方面解釋了存現句中的動詞為甚麼沒有施事論元。指出在抽象格方面，漢語與英語等其他語言有共性。本文還論證了存現句中動詞後的"著"可以是一個著面成分，不一定是時體標記。

關鍵詞

存現句，方位短語，論元共享，施事論元，抽象格，著面成分