Possessor raising in Mandarin unaccusatives

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1 Unaccusative verbs with two arguments

The Unaccusative Hypothesis has been widely adopted since its first formulation by Perlmutter (1978) and later development by Burzio (1986). The hypothesis argues for a classification of intransitive verbs into unaccusatives and unergatives, with the former having an internal object, and the latter having an external subject as their arguments. However, Mandarin Chinese has an interesting construction in which unaccusative verbs like *si* 'die' and *xia* 'get blind' seem to take two nominal arguments:

(1) a. Zhangsan si-le   fuqin.
        Zhangsan die-ASP father

        'Zhangsan's father died on him.'

    b. Lisi xia-le   yi zhi yanjing.
        Lisi go.blind-ASP one CL eye

        'Lisi had of his eyes gone blind.'

This construction is, however, not compatible with unergative verbs like *xiao* 'laugh', as in (2).

(2) * Zhangsan xiao-le   fuqin.   (3) ta-de   fuqin si-le.
        Zhangsan laugh-ASP father   he-GEN father die-ASP

      Intended: 'Zhangsan's father laughed on him.'   'His father died.'

  Notably, the internal objects of intransitive verbs in Mandarin normally appear in a preverbal position, same as English. The ordinary unaccusative counterpart of (1a), for instance, is in a form as in (1). Because the internal object of the verb in (1a) remains strangely in a post-verbal position, this construction is sometimes called 'retained object construction' (Xu 1990, Pan and Han 2005, 2008). Another term referring to this construction is 'double unaccusative' (Chappell 1999, Huang 2008). Instead of adopting these terminologies made exclusive for Mandarin data, I will follow the generative literature and refer to the sentences in (1) as 'possessor raising' (Landau 1999, Pylkkänen 2008 a.o.). However, this paper will make it clear that this construction has a special semantics that relates the two arguments. The raising of the possessor, instead, will be argued to be a property not exclusive to this construction.

2 Observation

First, the denotation of preverbal NP must be interpreted as the denotation of the possessor of the postverbal NP. A sentence in which the two NPs are not in a possessor-possessee relation is ungrammatical, such as (4).

(4) * Lisi xia-le   erzi-de yanjing.
        Lisi go.blind-ASP son-GEN eye

      Intended: 'Lisi had his sons' eyes gone blind.'

Another observation frequently raised in the literature is that the construction seems to express an adversity meaning in which the denotation of the preverbal NP is interpreted as negatively affected by the event (Pan 1997). Thus, in (1a) *Zhangsan* must be interpreted as adversely affected by his loss of father. Unfortunately, this claim is too strong and fails further empirical investigation. With proper contexts, the sentences in (1) can be easily followed by clauses like '...but he doesn't give a damn' or even '...and he seems happy'. In the following examples, both interpretations are natural, but my intuition is that a benefactively affected reading (i.e. (a)) is more salient than a adversely affected reading (i.e. (b)) if affectedness is not explicitly stated in the continuation.

(5) Zhangsan zhihao-le tui yihou, {zhongyu keyi zoulu le   / you   yao kaishi mang gongzuo le}.
     Zhangsan heal-ASP leg after finally can walk ASP   again will start busy work   ASP

     'After Zhangsan's legs healed, {he can finally walk again / he will get busy again}.'

Before moving on, I would like to stress one more point about the meaning of 'possession' as well as the meaning of benefit and adversity. As observed in other languages, the losing of one's possession in adversive interpretation does not need to be about physical possession, and the same applies to the gaining of one's possession in benefactive interpretation. Instead, they can be of a more abstract concepts. In the Finnish example below, although the event of seeing does not result in any direct loss of Sanna's possession, the sentence is still interpreted with an adversely affected interpretation. Rather, the sentence implies that Sanna lost her privacy, and thus yields the sense of adversity in its interpretation.

(6) Riikka   näki Sanna-lta   aluspaida-n.
     Riikka.NOM saw Sanna-ABL undershirt-ACC

     'Rikka saw Sanna's undershirt.'   (Pylkkänen 2008 (92), p. 51)

The same applies to the Mandarin examples presented above. For instance, in (5), 'legs' are part of 'Zhangsan's possession' both before and after the event of healing, so the sense of benefactivity does not come from Zhangsan's gain of physical possession, but comes from Zhangsan's healthiness contributed by the healing event.

3   A semantic analysis

3.1   Applicatives

This section offers an analysis of Mandarin possessor raising building on Pylkkänen's (2008) analysis of applicatives, a construction in which a noncore argument can be added to the argument structure of a verb, such as *him* in (7a). Although applicatives are extensively attested and express very similar meanings in many languages, their syntactic behaviors are not always the same. For example, English allows applied benefactive arguments added to transitive verbs but not unergative verbs, as in (7a–b), but languages like Chaga allow applied arguments added to both types of verbs, as in (8a–b).

(7) a. I baked **him** a cake.   (Pylkkänen 2008 ex. (1b))
     b. *I ran **him**. (Intended meaning: I ran for him.)   (Pylkkänen 2008 ex. (1d))

(8) a. N-ǎ-í-lyì-í-à   **m-kà** k-élyá
        FOC-1SG-PRES-eat-APPL-FV 1-wife 7-food

        'He is eating food for his wife.'

     b. N-ǎ-i-zrìc-í-à   **mbùyà**
        FOC-1SG-PRES-run-APPL-FV 9-friend

        'He is running for a friend.'   (Bresnan and Moshi 1990, cited in Pylkkänen ex. (2))

Overall, Pylkkänen adopts an approach that captures the crosslinguistic semantic similarity of applicatives by introducing an applicative projection, where the semantics of its functional head, Appl, plays an role in adding an applied argument. On the other hand, the syntactically different properties of applicatives such as the contrast shown by English and Chaga are the results of attaching Appl to different syntactic positions relative to VP. If it combines with VP, thus high applicative, Appl introduces a new thematic role to the event described by the verb as a participant. If it appears within VP, thus low applicative, Appl introduces a new individual that bears a transfer-of-possession relation with the internal argument, and ApplP as a whole takes the verb as its argument. The semantics of each type of Applicative heads is in (9). Note that the notion of 'transfer-to-possession' can take place in both directions, i.e. with the applied argument as a source (i.e. Low-Appl$_{From}$) or a recipient (i.e. Low-Appl$_{To}$) of possession. Low-Appl in English only introduces recipients as applied arguments (e.g. 7a), i.e. Low-Appl$_{To}$, but the presence of Low-Appl$_{From}$ is attested in languages like Hebrew and Japanese.

(9)   a. $[\![\text{High-Appl}]\!] = \lambda x.\lambda e.\text{Appl}(e, x)$ (Appl = Benefactive, Instrumental etc.)

       b. $[\![\text{Low-Appl}_{From}]\!] = \lambda x.\lambda y.\lambda f_{\langle e,st\rangle}.\lambda e.f(e, x) \ \& \ \text{theme}(e, x) \ \& \ \text{from-the-possession}(x, y)$

          $[\![\text{Low-Appl}_{To}]\!] = \lambda x.\lambda y.\lambda f_{\langle e,st\rangle}.\lambda e.f(e, x) \ \& \ \text{theme}(e, x) \ \& \ \text{to-the-possession}(x, y)$

          (Pylkkänen 2008, pp. 16–17)

Back to Mandarin unaccusatives, I propose that possessor raising in Mandarin unaccusatives is introduced by a low applicative head that relates the internal argument to its source. (10a) shows the basic structure of (1a), and (10b) shows the details of important steps of its semantic derivation via Functional Application (cf. Heim and Kratzer 1998).

(10)   a.
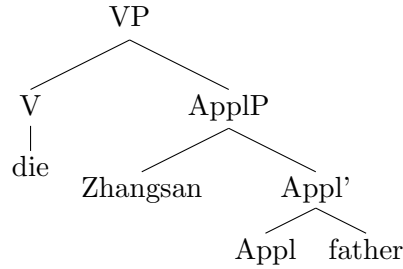
       b. $[\![\text{Appl'}]\!] = \lambda y.\lambda f_{\langle e,st\rangle}.\lambda e.f(e, \text{father}) \ \& \ \text{theme}(e, \text{father}) \ \& \ \text{from-the-possession}(\text{father}, y)$

          $[\![\text{Appl}]\!] = \lambda f_{\langle e,st\rangle}.\lambda e.f(e, \text{father}) \ \& \ \text{theme}(e, \text{father}) \ \& \ \text{from-the-possession}(\text{father}, \text{Zhangsan})$

          $[\![\text{V}]\!] = \lambda x.\lambda e.\text{dying}(e) \ \& \ \text{theme}(e, x)$

          $[\![\text{VP}]\!] = \lambda e.\text{dying}(e) \ \& \ \text{theme}(e, \text{father}) \ \& \ \text{from-the-possession}(\text{father}, \text{Zhangsan})$

          (Lit.: The event such that a father dies, and the father is possessd by Zhangsan.)

There are three reasons why I chose a low applicative instead of a high applicative head. First and most straightforwardly, a high applicative head would not predict the possessor-possessee relation between the two NPs. In addition, in languages that position the applicative projection truly high, the thematic relation between the applied arguments and the events is always consistent (e.g. always benefactive or instrumental etc.). However, we have seen that the applied argument in Mandarin alternates between benefative and malefactive, which makes high applicative an inappropriate option. Finally, and most importantly, low applicative heads capture the fact that unergatives are incompatible with possessor raising, as in (2). The reason should be obvious. Low applicatives are defined as associating an individual with the verb's internal argument. Following the Unaccusative Hypothesis, unergative verbs only have external arguments, and thus would provide no argument for an applicative head in its semantic computation if it is to be attached within VP.

3.2   Predicting affectedness

It is natural to ask, now, whether it is Low-Appl$_{From}$ or Low-Appl$_{To}$ that is applied to Mandarin possessor raising. I argue that the lexical semantic representation of the predicate is responsible to

make the choice. Following Levin and Rappaport Hovav (1995), I assume the Existence Linking Rule, as in (11), which applies to the theme argument of verbs of appearance (e.g. *emerge, arise*), existence (e.g. *flourish, thrive*) and disappearance (e.g. *die, vanish*).

(11) **Existence Linking Rule**   (Levin and Rappaport Hovav 1995 p. 153)
   The argument whose existence is asserted or denied is its direct internal argument.

I argue that in Mandarin possessor raising, Low-Appl$_{To}$ applies to predicates that assert the existence of its internal argument, whereas Low-Appl$_{From}$ applies to predicates that deny the existence of its internal argument. Informally speaking, this is because the lexical semantic definition of a verb of appearance implies that the possession of the applied argument denoted by the internal object 'comes into existence', and the definition of a verb of appearance implies the opposite, i.e. that the possession 'coming not to exist' (Levin and Rappaport Hovav 1995 pp. 120–121).[1] The task of formalizing the definition of 'existence' is extremely difficult, and I do not have a concrete solution at the current stage. A semi-formalization is sketched in (12). Following Levin and Rappaport Hovav's lexical semantic representation of verbs of change of state, it shows how unaccusative verbs involved in possessor raising entail the existence or nonexistence of the denotation of its internal argument. While I leave formal details to be worked out in future research, the intuition of the 'existence-linking' property of verb semantics strikes me as valid and useful, especially for our current purpose.[2]

(12)   a. Verbs of disappearance (Low-Appl$_{From}$ inserted):
         die: [y BECOME $DEAD$] $\rightarrow$ [y BECOME $\neg EXIST$]
      b. Verbs of appearance (Low-Appl$_{To}$ inserted):
         come: [y BECOME $COME$] $\rightarrow$ [y BECOME $EXIST$]

Typical examples of unaccusative verbs constantly used to illustrate the case of possessor raising in the literature include *si* 'die', *xia* 'go.blind', *chen* 'sink', *duan* 'break (of a bone/leg)' etc. Curiously enough, these verbs all happen to fall into the category of verbs of disappearance, entailing the internal argument's state of becoming nonexistent, and thus select Low-Appl$_{From}$ as the appropriate functional head. And because the denotation of the applied argument to these verbs would experience 'loss of possession', speakers' intuition about the possessor being adversely affected can also be explained.

In addition, the proposal here also predicts the contrast between (1b) and (13) below. Although the two arguments are in possessor-possessee relation in both cases, the predicate *xia* 'blind' only entails the change of state of existence of one's eyes (or more accurately, one's eyesight), not one's son, resulting in the ungrammaticality of (13).

(13)   * Lisi xia-le   erzi.
        Lisi go.blind-ASP son
      Intended: 'Lisi's son went blind on him.'

Moreover, existence-linking entailment also correctly rules out possessor raising with unaccusative verbs that do not have (non)existence entailment, such as *bing* 'get sick':

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[1]The class of verbs of existence is not related to our current discussion of exploring possessor raising construction, because it is observed that cross-linguistically, applicatives are constantly incompatible with stative predicates. See a Mandarin example using the verb *cunzai* 'exist' below, and see §2.1.2 of Pylkkänen (2008) for how the current syntax-semantic approach captures this empirical generalization.

(1)   * Zhangsan cunzai-le erzi.
        Zhangsan exist-ASP son
      Intended: 'Zhangsan's son exists on him.'

[2]Once the formalization is worked out, it also has the potential of explaining why applied arguments in low applicatives in languages like Hebrew and Finnish come with certain types of morphological marking (e.g. adessive, ablative and allative) for directions of transfer of possession.

(14) ??? Zhansan bing-le   fuqin.
         Zhangsan get.sick-ASP father

      Intended: 'Zhangsan's father got sick on him.'

The reason that the judgment here is not completely unacceptable (not an asterisk) is that the sentence can be 'rescued' to some degree by the abstract sense of adversity implied by the verb, e.g. one's loss of his/her father with a healthy condition (see the Finnish example in (6)). But even with this implication, the sentence is still much less acceptable than the other uncontroversially good examples.

4   A note on syntax

The remaining story of possessor raising in Mandarin unaccusatives is simply how the possessor raises to a preverbal position, and this is an issue that I do not attempt to finalize in this paper. After all, except for indefinites, unaccusative subjects must be preverbal, as in (15), and this requirement also applies to possessor raising, as in (16).

(15) a. Zhangsan si-le
         Zhangsan die-ASP

      b. * si-le   Zhangsan
           die-ASP Zhangsan

(16) a. Zhangsan si-le   fuqin
         Zhangsan die-ASP father

      b. * si-le   Zhangsan-de fuqin
           die-ASP Zhangsan-GEN father

In addition, the acceptability of indefinite subjects in postverbal position holds for possessor raising as well.

(17) si-le   san-ge   ren
      die-ASP three-CL person

      lit. 'There died three people.'

(18) si-le   san-ge   xuesheng-de fuqin
      die-ASP three-CL student-GEN father

      lit. 'There died three students' fathers.'

Therefore, the syntactic motivation for the possessor to raise seems only relevant to the property of unaccusatives, and is independent of possessor raising. The current semantic analysis should thus be sufficient for the purpose of accounting for the exclusive behavior of possessor raising in unaccusatives.

Finally, the current proposal strikes me as more favorable than the previous ones, most of which sought for a syntactic account for this particular construction (e.g. Pan and Han 2005, Pan and Han 2008, Xu 1990). For example, Pan and Han (2008) argues that in a sentence like (1a), the internal argument 'father' is base-generated within VP and raises to Spec,TP in order to get nominative case. The internal argument then moves rightward to a sentence-final position through extraposition, and becomes an 'end focus' for pragmatic purposes. For them, our applied argument *Zhangsan* is a 'dangling topic' base-generated at Spec,CP. See the following derivation:

(19) [CP [DP Zhangsan] [TP [TP [DP t] [T' T [VP [DP t] [[V died] [DP t]]]]] [DP father]]]

Despite the lack of evidence for rightward movement and why the two arguments have to be topic/end focus, there are two major weaknesses of their analysis. First, their account does not capture the obligatory possessor-possessee relation between the two arguments. Second, this account does not recognize the important distinction between unaccusatives and unergatives in their (in)tolerance of possessor raisin, and would predict the external argument of an unergative verb to be able to get nominative case at Spec,TP and then become an end focus. This contradicts our observation in (2).

5   Conclusion

In the above, I hope to have shown a semantic analysis that is strong enough to account for the observed facts about possessor raising in Mandarin unaccusatives. In the future, I hope to explore

why a sentence like *John died father* is unavailable in many languages (e.g. Enlgish), and why the possessor has to be case-marked in certain ways in some languages where possessor raising in unaccusatives are attested (e.g. dative in German and Hebrew). Equally interesting will be to extend the current analysis to transitive constructions that have unaccusative-like properties, such as the contrast between *Alice broke her leg* and **Alice stole her purse* in English under the interpretation that the subject is not an agent but an affectee.

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