Licensing Existential Polarity Wh-Phrases in Mandarin Chinese

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Abstract

In this paper, I examine two influential treatments of existential polarity wh-phrases (EPWs) in Mandarin Chinese: Li (1992) and Lin (1996, 1998). With some new data, I show that neither of the analyses can account for the distribution of EPWS. I extend Giannakidou's (non)veridicality for temporal/aspectural operators and show that the extended (non)veridicality can capture the distribution of EPWs.

1 Introduction

Wh-words in Mandarin Chinese have multi-fold interpretations: interrogative words (1a) and universal quantifiers (1b). Examples like (1c) represent an additional kind of use. Wh-words like *shei* 'who' and *shenme* 'what' can be interpreted as non-interrogative existential indefinites meaning 'somebody' and 'something' respectively. This use of wh-phrases is frequently referred to as existential polarity wh-phrases (EPWs) (e.g. Lin, 1996 1998).

(1)a. Xiaowang shuai sui   guo shenme.
     Xiaowang fall broken PERF what
     'What has Xiaowang broken?'
   b.Xiaowang shei dou bu xiangxin.
     Xiaowang who all not trust
     Xiaowang does not trust anyone.'
   c.Xiaowang xiang chi yidianr sheme.
     Xiaowang want eat a bit   what
     'Xiaowang wants to eat something.'

1.1 EPWs is existential, not universal

By no means does the EPW use of wh-phrases have universal or free choice interpretations: one of the defining properties of EPWs is its existential quantification. We have three pieces of evidence for the existentiality of EPWs.

Cheng (1994) notes that MC universal quantifiers (compared to existential quantifiers) are allowed to co-occur with *dou* 'all' (2a). *Dou* can also co-occur with free choice items, as suggested by (2b). Being existential in nature, the EPW is not compatible with *dou*, even when the left-adjacency requirement[1] is met, as show in (2c).

(2) a. Xiaowang sheme (dongxi) dou chi
       Xiaowang what   thing   all eat
       $\exists x \forall y$ [xiaowang(x)$\wedge$thing(y)$\wedge$eat(x,y)]
    b. An shenme jian dou keyi
       press what   key all OK
       'Pressing any key will do.'
    c. Xiaowang xiang qu mai dianr sheme
       Xiaowang want go buy a bit what
       cai (*dou) lai zuofan.
       veggie all come cook
       Intended: 'Xiaowang wants to buy some vegetables to cook.'

Universal quantifiers, but not existential quantifiers, allow modifiers like *almost* (Horn, 1972). The examples in (3) show that universal quantifiers *mei* 'every' can be modified by *jihu* 'dou', but the EPW *shei* 'who' cannot.

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[1] *dou* can only quantify an NP to its (immediate) left (Wu, 1999).

(3) a. Jihu   mei   ren   dou xue hanyu
       almost every person all study Chinese.
       'Almost everyone studies Chinese.'
    b. Ruguo *(jihu) shei lai   zhao   wo …
       if   almost who come look for me …

Another piece of evidence that the EPW is existential rather than universal comes from the fact that it is capable of taking an overt existential marker *you* 'have, exist' (4a and 4b), in the same way as a normal existential NP takes an optional *you* (4c). In contrast, a wh-phrase in its universal use cannot take the existential marker *you* (5).

(4)a. ruguo (you) shei lai   zhao   wo, …
      if   have who come look-for me, …
      'If someone comes for me,…'
   b. (?) ta xiangxin (you) shei xihuan mali.
         he believe   have who likes Mary
         'He believes that someone likes Mary.'
   c. (you) yi ge ren zai   shang wang.
      have one CL man PERF   on I net
      'There is someone surfing the Internet.'
(5)a. Shei dou   hui zuo zhe dao timu.
      who all   can do this CL problem
      'Everyone can work out this problem.'
   b. *you shei dou   hui zuo zhe-dao timu
      have who DOU can do this-CL problem

1.2   Distribution of EPWs

The environments in which EPWs can appear include negation (6a), yes/no questions (6b), if-clauses (6c), object of A-not-A questions (6d), epistemic adverb (6e), inference *le* (6f), modal verb (6g), futurity (6h), imperatives (6i), consequent clauses (6j), imperfective (progressive) (*zheng*)*zai* (6k), imperfective (durative) *zhe* (6l), perfective *le* (6m), etc. (6a-j) are adapted from Lin (1996, 1998). Note that an EPW has a considerably flexible scope relation with respect to other scope bearing elements in the same sentence, but it cannot scope over its licensor (cf. Lin, 2004).

(6) a.Wo mei ma   shenme.
      I not buy what
      'I bought nothing.'
   b. Shei qifu ni   ma?
      who bully you Q
      'Did somebody bully you?'

    c. Yaoshi shei qifu   ni, …
       if   who bully you …
       'If somebody bullies you, …'
    d. Ni ren-bu-renshi   shenme da renwu?
       you know-not-know what big person
       'Do you know any big shot or not?'
    e. Keneng   shei qifu   ta.
       possibly who bully him
       'Possibly somebody bullied him.'
    f.Ta kandao shenme le.
       he see   what LE
       'Apparently he saw something.'
    g. Wo mingtian hui qu mai dianr shenme.
        I tomorrow will go buy a bit what
       'I will go to buy something tomorrow.'
    h. Ta dasuan qu mai ben shenme shu lai   du.
        he plan   go buy CL what   book come read
       'He plans to buy a book to read this afternoon.'
    i. Shei qu bang wo na ge diezi   lai.
       who go help me take Cl plate   come
       'Somebody go and get a plate for me.'
    j. Ni yaoshi bu fangxin, jiu he shei yiqi   qu.
       you if   not relax, then with who together go
       'If you are anxious, go together with
        someone.'
    k. (Wo jinqu shi,) ta zhengzai he sheme.
        I enter time, he PROG   drink what
       'When I entered, he was drinking something.'
    l. Ta shou   li   na zhe   shenme.
       he hand inside hold DUR   what
       'He has something in his hands.'
    m.Zhangsan na zou le   shei de shu.
       Zhangsan take go PERF who DE book
       'Zhangsan took somebody's book.'

  The examples in (7), which are mostly adapted from Lin (1996, 1998) as well, are (some of) the environments where EPWs cannot appear. They include simple affirmatives (7a), subject of negative clauses (7b), subject of A-not-A questions (7c), wh-questions (7d), complement of factive verbs (7e) and perfective *guo* (7f).

(7) a. Xiaowang kan shenme shu.
       Xiaowang read what book
       Intended: *'Xiaowang reads some book.'
       Possible: 'What does Xiaowang read?
    b. Shei mei mai zhe ben shu.
       who not buy this CL book
       Intended: *'Someone didn't buy this book.'
       Possible: 'Who didn't buy this book?"

c. *Shei mai-bu-mai zhe ben shu?
who buy-not-buy this CL book
Intended: *'Does somebody buy this book or not buy this book?'

d. Shei mai le dianr shenme?
who bought PERF a bit what
Intended:*'What did somebody buy?'
Intended: *'Who bought something?'
Intended: *'Somebody likes something.'
Possible: 'Who eats what?'

e. Wo houhui zuo le shenme (shiqing).
I regret do PERF what (thing)
Intended: *'I regret about having done something.'

f. Zhangsan chi guo dian shenme dongxi.
Zhangsan eat PERF a bit what thing
Intended: *'Zhangsan has eaten something.'
Possible: 'What has Zhangsan eaten?'

2 Previous Proposals

2.1 Li 1992

Li (1992) imposes two requirements on the distribution of EPWs. Her semantic indefiniteness requirement suggests that EPWs are licensed only in contexts where the truth value of the proposition is not *positively* fixed in a definite manner. She lists the following contexts as meeting this semantic indefiniteness requirement:

(8) a. contexts where the truth value is negated: negation

b. contexts where the truth value is not fixed: questions, non-factive verb complements, conditionals

c. contexts where the truth value is not asserted directly: seem, circumstantial *le*, probably contexts.

Li's semantic requirement is at best a recapitulation of the indefiniteness characteristic of EPWs. It is more a description than an explanation of the data we have. In addition, it leaves some relevant data unattended to. For example, (9) depicts a situation whose truth value is positively fixed yet it is still grammatical.

(9) Chen shang, zuoguyoupan xunzhao zhe shenme
Chen up, look around look for IMPER what
'Chen appeared on the stage, looking for something.'

The other syntactic, binding requirement states that the non-interrogative wh-licensor must c-command the EPW at S-structure. As pointed out by Lin (1996, 1998), this structural requirement actually makes a wrong prediction. Compare (10) and (6c): the surface order does not play a significant role in deciding the binding relation between the EPW and its licensor. So, if the c-commanding requirement is necessary at all, it should apply to the LF rather than S-structure. Therefore Li's proposal is not adequate.

(10) Shei yaoshi qifu ni, ...
who if bully you ...
'If somebody bullies you,....'

2.2 Lin 1996, 1998

Lin (1996, 1998) proposes an account called Non-Entailment-of-Existence Condition on EPWs (NEEC) as a solution to the question of what licenses the EPW:

(11) NEEC: The use of an EPW is felicitous if and only if the local proposition in which the EPW appears does not entail existence of a referent satisfying the description of the EPW.

The notion 'local proposition' of an EPW is the proposition whose widest scope operator is the narrowest operator that the EPW is in the scope of. The notion 'entail' is used in a loose sense here, including logical entailment and presupposition. The NEEC constraint roughly amounts to saying that a felicitous use of EPW cannot take a wide scope, or have existential import, in the local proposition in which it appears, or, EPWs 'cannot be referential or presuppositional' (Lin 1998: 249).

By way of illustrating what he means by existence entailment, Lin compares (12a) with (12b) (Lin, 1996's 47 and 48 respectively). (12a) entails the existence of at least one entity that satisfies the description of a car (that I bought), while (12b) does not entail that there is such a car.

(12) a. I bought a car.
b. I didn't buy a car.

Turning to Chinese EPWs, Lin argues that (13) (Lin, 1998's 38a) is excluded because indefinites in simple affirmative sentences entail the existence

of at least one referent satisfying their description and hence violate the NEEC.

(13) * Shei xihuan Mali
     who   like   Mary
     'Somebody likes Mary.'

Lin's NEEC predicts (14a) to be unacceptable with EPW interpretation because from this sentence there must be something that Lisi took away and hence violates the NEEC. This prediction, however, is not borne out: an EPW is generally acceptable in a cleft sentence (14a) and other focus sentences (e.g. 14b and 14c) when the right licensing condition is met. All of the three sentences in (14) entail the existence of something that was taken by Lisi.

(14) a. Shi   Lisi na   zou   le   shenme,
       be   Lisi take go PERF what,
       Zhangsan mei na.
       Zhangsan not take.
       'It was L. that took something, Z. didn't.'
    b. (?) LISI nazou le shenme, Zhangsan mei na.
       Same as (a)
    c. Zhiyou Lisi na zou le   shenme.
       only Lisi take go PERF what,
       'Only Lisi took something.

Another piece of evidence against the NEEC is the co-occurrence of an EPW and the imperfective markers *zai* (6k), *zhe* (6l) and the perfective marker *le* (6m). For instance, with (6m), the book-taking event has already happened and hence factual. This entails that there must be a person whose book was taken -- satisfying the description of the EPW.

(15) are some more examples of EPWs in the environment of the durative marker *zhe*. The EPW *shenme* 'what' in (15a) entails a referent satisfying the description given in the proposition. The second clause in (15b), where the EPW *shenme* 'what' appears in a similar position as the referent-entailing *gouzi* 'hook' in the first clause, has the interpretation that there was something (though not as specified as a hook) that the old man was pulling towards the outside. In (15c) *jliguala* 'in a noisy manner', unspecified as it is, denotes the content/manner of *shuo* 'talk', hence the existence of the referent of the EPW.

(15) a. Ta huaili chuai zhe   shenme, yi ju
       she chest hold IMPERF what, one CL
       hua   ye bu shuo.
       sentence even not say
       'She had something in her chest and did not even say a word.'
    b. Laoren ju   zhe   yizhi gouzi,
       old man hold IMPERF one CL   hook,
       wang   wai   bala zhe   shenme
       towards outside pull IMPERF what
       'The old man was holding a hook and pulling something towards the outside.'
    c. Ta jiliguala   di   xiang riben junguan
       he blabblah ADV to   Japanese officer
       shuozhe   shenme
       say-IMPERF   what
       'He was saying something to the Japanese officer.'

To sum up, neither Li's semantic/syntactic requirements nor Lin's NEEC can account for the whole picture of EPWs. For the NEEC, the main challenge comes from the existence of EPWs in imperfective (*zhe*, *zai*, and (*zheng*)*zai*) and perfective *le* sentences. Lin (1996, 1998) barely discusses the distribution of EPWs in these contexts.

In particular, the EPW *shenme* 'what' in the sentences in (14) are not licensed by focus per se. Compare (14a) with (16). Without the perfective marker *le*, the sentence is ungrammatical. Therefore focus is not relevant for our discussion.

(16) Shi Lisi xihuan tou shenme.
     be   Lisi like steal what
     Intended: *It is Lisi that likes to steal something.

3   (Non)veridicality

Giannakidou (1998, 2002) proposes a theory that the distribution of affective polarity items (API) is sensitive to the (non)veridicality of the context of appearance.

(17) Licensing condition for APIs
An affective polarity items α is licensed in a sentence S iff S provides some expression γ which is nonveridical, and α is in the scope of γ.

Giannakidou defines (non)veridicality for propositional operators, temporal/aspectual operators as well as quantifiers and determiners. This paper leaves aside the issue of EPWs in relative clauses, of which grammaticality judgment is rather tricky, so we do not discuss the (non)veridicality for quantifiers and determiners.

Giannakidou's (non)veridicality for propositional operators (as in (18)) is very similar to Lin's NEEC. When the local proposition in which the EPW appears does not entail existence of a referent satisfying the description of the EPW, a natural conclusion is that Fp does not entail p and we have non-veridicality. On the other hand, when Fp does not entail p, the reason is most probably that there is no referent that satisfies the description of the EPW. Therefore, in the case of propositional operator, it appears nonveridicality and the NEEC makes very similar prediction.

(18) (Non)veridicality for propositional operators
   i. A propositional operator F is veridical iff Fp entails p: Fp $\rightarrow$ p; otherwise F is nonveridical;
   ii. A nonveridical operator F is antiveridical iff Fp entails not p: Fp $\rightarrow$ ¬p.

According to Giannakidou (2002), a propositional operator refers to 'a proposition embedding function, which includes a sentence modifier (type <t,t>; a sentence-level adverb, modal operators, tense, temporal/aspectual adverbs, connectives), and an expression taking a proposition as its first argument, e. g. a propositional attitude verb (type <t, <e,t>>), and the question operator (type <t, <s,t>>)'. Modal verbs, intensional operators, and questions are nonveridical and license NPIs. Antiveridical operators, e.g. negation and *without*, are the prototypical licensers of NPIs.

In addition to (non)veridicality for propositional operators, Giannakidou (2002) relativizes truth with respect to temporality in her definition of (non)veridicality for temporal/aspectual operators.

(19) (Non)veridicality for temporal/aspectual operators
Let F be a temporal/aspectual operator; t an instant or an interval.
i. F is veridical if and only if for Fp to be true at a time t, p must be true at a (contextually relevant) time t'≤ t. Otherwise F is nonveridical.

ii. A nonveridical operator F is antiveridical if and only if for Fp to be true at a time t, ¬p must be true at a (contextually relevant) time t' ≤ t.
iii. If F is true of an interval t, then F is veridical if and only if for all (contextually relevant) t'⊆ t, p is true at t'. Otherwise, F is nonveridical. If for all (contextually relevant) t'⊆ t, ¬p is true at t', then F is antiveridical.

Drawing on data from Greek and Dutch, Giannakidou (2002) and Giannakidou & Zwarts (to appear) analyzes the future and the habitual operators as nonveridical, and PIs are licensed in these contexts (20a-b, Giannakidou 2002's (22a) and Giannakidou & Zwarts (to appear)'s (8) respectively), and the perfective past and progressive as veridical, and hence PIs are not allowed in these contexts (21a-b, Giannakidou & Zwarts (to appear)'s (32) and (38) respectively.).

(20) a. O   Janis tha agorasi kanena bukali krasi.
        the John will buy   a/any bottle of wine.
     b. Otan   pijene   o Pavlos ja   ipno,
        when went.imp.3sg   the P.   for sleep,
        ksefilize   sinithos kanena periodhiko.
        browsed.imp.3sg usually any   magazine
        'When Paul went to bed, he usually browsed through a magazine.'
(21) a. *O Pavlos ksefilise   kanena periodhiko.
        the P. browsed.perf.3sg any   magazine
        'Paul browsed through a magazine.'
     b. *O Pavlos ksefilizi   kanena periodhiko
        the Paul browse.imp.3sg any   magazine
        olo to proi.
        all the morning
        'Paul is browsing through a magazine all morning.'

The PIs under discussion, Chinese EPWs, show cross-linguistic variation from Greek and Dutch. Besides habitual and future, EPWs are as well licensed by progressive *zai*, progressive (durative) *zhe* and perfective *le*. Therefore, as it stands, Giannakidou's definition of nonveridicality for temporal/aspectual operators is too restrictive and calls for revision in order to account for the distribution of EPWs in Mandarin Chinese. Moreover, as shown in 7(f), the perfective (experiential) marker *guo*, whose semantics is very similar to the perfective marker *le*, cannot license the EPW. This con-

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trast adds to the complexity of the problem.

In what respect(s), if any, *guo* differ from *zai*, *zhe* and *le*? The key difference between *guo* and *le* lies in what is called 'discontinuity effect' in the literature (Smith, 1991; Klein et al, 2000). Basically this effect of *guo* requires that the resultant state of an eventuality no longer obtains at the reference time of resultant state, while *le* does not have such a requirement. For example, while (22a) implies that the book is still with Zhangsan, (22b) implies that the resultant state of the book's being with Zhangsasn no longer obtains.

(22)a. Zhangsan na   zou le   wo de   shu
     Zhangsan take go PERF me POSS book
     'Zhangsan took away my book.'
  b. Zhangsan na   zou guo wo de   shu
     Zhangsan take go Perf. 1sg POSS book
     'Zhangsan once took away my book.'

(22a-b) does not have an overt adverbial phrase. In cases like this, a simplistic way to capture the 'discontinuity effect' of *guo* is to say that the whole eventuality, including the resultant state in particular, must precede the reference time of the resultant state (i.e. speech time). On the other hand, the resultant state of *le* sentences can overlap with the speech time.

When there is an overt adverbial phrase as topic time, the reference time for the resultant state is an anaphor-like time variable and get bound by the overt topic time. Let us call this reference time of the resultant state t_{rts}. The speech time discussed above is just a special case of t_{rts}.

For the perfective marker *le*, the time of the resultant state t_r must include, or overlaps with, t_{rts}. Therefore, the semantics of *le* has two components: the perfective component says the event time precedes the reference time, and the imperfective component deals with the relationship between the time of resultant state and the reference time of the resultant state. By contrast, the perfective marker *guo* always has t_r precedes t_{rts}.

Regarding the progressive marker *zai*, the intuition behind progressive is that an event is ongoing relative to a reference time (usually equivalent to the speech time), and in all w' in the continuation branch of e in w a resultant state (not necessarily the intended result) follows. Therefore, the progressive *zai* patterns with the perfective/imperfective *le* in that the resultant state

is not (totally) to the past of the reference time of the resultant state t_{rts}.

The Chinese imperfective marker *zhe* occurs only with atelic eventualities (Lin, to appear), which generally do not have a resultant state. I would like to make a novel assumption here that atelic eventualities themselves are a resultant state. In this way, *zhe* patterns with *le* and *zai* with respect to the time of resultant state and the reference time of resultant state: the former either either overlaps with, or to the future of, the latter. What is crucial here is that the resultant state does not fall totally to the past of its reference time.

Given all the above discussion, we may redefine the non-veridicality for temporal aspectual operators as in (23). This definition guarantees the perfective marker *guo* is veridical and hence cannot license EPWs.

(23)   (Non)veridicality for temporal/aspectual operators (Mandarin Chinese)
Let F be a temporal/aspectual operator.
F is veridical if and only if the time of resultant state (t_r) of the eventuality of p must precede the reference time of resultant state time t_{rst}: $t_r \leq t_{rst}$. Otherwise F is nonveridical.

4 Conclusions

In this paper, I examined the two influential treatments of EPWs in Mandarin Chinese: Li (1992) and Li (1996, 1998). I showed that neither of the analyses can capture all the relevant data. Then I extended Giannakidou's (non)veridicality for aspectual/temporal operators and proposed that the distribution of EPWs in Mandarin Chinese is sensitive to the extended non-veridicality.

A couple issues calls for further consideration: i. whether and to what extent the semantic verb types affect the distribution of EPWs in particular and PIs in general? ii. whether there is cross-linguistic evidence for the novel (non)veridicality for temporal/aspectual operators as proposed above.

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