On the ambiguity of riding tired

Rint Sybesma

1. An interesting ambiguity and two generalizations

Li (1990:177) reports that the sentence in (1) is ambiguous: either the horse or Baoyu ends up tired. Li explains the ambiguity as follows. The first predicative element ('V1'), qi 'ride', is a two-place predicate and the second predicate ('V2'), lei 'tired', is a one-place predicate. The single thematic role of V2 may (under conditions not to be discussed here) identify with either role of V1.

- (1) Baoyu qi-lei-le nei-pi ma.
 B. ride-tired-LE that-M horse
 i. 'Baoyu rode the horse got tired as a result'
 ii. 'Baoyu rode Baoyu got tired as a result'
- However, the ambiguity of (1) is more surprising than Li's explanation suggests. For a start, it is surprising in view of Simpson's Law, which states that 'resultative attributes are predicated of OBJECTS, whether surface OBJECTS or underlying OBJECTS' (Simpson 1983:144); in (1), only *nei-pi ma* 'that horse', it seems, is a likely OBJECT, and as a consequence, in the interpretation of (1ii), the sentence should be out. (We will discuss Simpson's Law in section 2 below.)

At the same time, the ambiguity in (1) is also exceptional as in general Chinese does abide by Simpson's Law and examples like (1) are quite rare. Consider (2).

(2) a Wo qi-que-le nei-pi ma.
 I ride-crippled-LE that-M horse
 'I rode the horse crippled'

 b Zhang San he-mei-le yinshen-moshui.
 Z. drink-gone-LE vanishing mixture
 'Zhang San drank the vanishing mixture'

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Both sentences in (2) allow for one interpretation only, despite the fact that they, like (1), contain a two-place V1 (qi 'ride' and he 'drink' respectively) and a one-place V2 (que 'crippled' and mei 'gone'). The sentence in (2a), then, only means that, as a result of my riding, the horse ends up crippled, although it would be equally conceivable that I hurt my legs. Similarly, (2b) only conveys that Zhang San finished the magic potion; it does not comment on the effectivity of the drink.

In short, the ambiguity of (1) is surprising, first, from a cross-linguistic perspective, because it seems inconsistent with Simpson's Law, and secondly, because even in the narrower context of Chinese it is exceptional in the light of the fact that in general Chinese is consistent with Simpson's Law.

In this paper I argue that (1) abides by Simpson's Law in both readings. The analysis differs from Li's (1990) in many respects, e.g., I claim that *lei* 'tired' is not always a one-place predicate: in some cases it is a two-place predicate.

There is one more aspect to the ambiguity of (1) which we need to discuss, viz., the fact that not all native speakers agree with Li's judgement: significantly, some deny that (1) has the reading in (1ii).

While exploring and trying to explain these aspects of (1) in the sections to follow, I will draw sentences like (3) into the discussion as well.

- (3) a Wo chi-bao-le tudou.

 I eat-full-LE potato

 'I ate myself full of potatoes'
 - b Xizaopen guan-man-le shui. bath.tub pour-full-LE water 'the bath tub has poured full of water'

These sentences side with (1) in the (1ii) reading in that they, too, seem to undermine Simpson's Law: in spite of the presence of what could be an OBJECT (tudou 'potatoes' and shui 'water') the resultative attributes bao 'full' and man 'full' predicate of the subject, as, obviously, it is wo 'I' who ends up satisfied and it is xizaopen 'bath tub' which gets filled to the brim. However, it is important to note that the sentences in (3) do not parallel (1) in all respects: first, they are universally accepted (which (1ii) is not), and secondly, like the sentences in (2), they are not ambiguous.

These issues (especially the sentences in (3)) will be discussed in relation to yet another generalization, which I refer to as Zhan's Generalization (Zhan 1989:109): 'If in resultative sentences with both a subject and an object [V2] is transitive, it predicates of the subject, if [V2] is intransitive it predicates of the object.' Zhan's Generalization (not developed in reference to sentences like (3)) is not incompatible with Simpson's Law but if both are valid, the former must be

² Actually, bao is more aptly translated as 'satisfied': 'full from eating'.

reformulated as: 'If Simpson's Law seems to be violated, the result denoting predicate is transitive.' We turn to this in section 3.

Regarding the organization of this paper, section 2 contains a discussion of result structures, in particular, Simpson's Law and how it was explained in Hoekstra (1988). Subsequently, I discuss the structural (section 3) and semantic aspects (section 4) of *lei* 'tired' as a two-place predicate; in section 4 we also turn to the disagreement among native speakers of Chinese as to the ambiguity of (1).

2. Simpson's Law and small clause theory

Simpson (1983:144) generalizes that 'resultative attributes are predicated of OBJECTS, whether surface OBJECTS or underlying OBJECTS' on the basis of sentences of the following type:

- (4) a I beat him to death.
- c The ice melted to liquid.
- b The ice cream was frozen solid.
- d He ran *(himself) tired.

In all these cases the resultative attribute predicates of the OBJECT. In (4b) (passive) and (4c) (ergative) the ice (cream) is the underlying object, and (4d) illustrates the fact that when no underlying object is present, we must add one (in this case in the form of a fake reflexive), so as to save the sentence.

Simpson's Law is a generalization, which is given a theoretical explanation in Hoekstra (1988), where it is argued that what Simpson calls OBJECT is invariably analyzable as the (underlying) subject of an embedded resultative small clause: the OBJECT is really a subject, hence it is predicated of. As we will see, the underlying forms of (4a,b,c) would be I beat [him to death], was frozen [the ice cream solid] and melted [the ice to liquid] respectively.

In this section I sketch a brief overview of the main features of the Hoekstra's (1988) result structure analysis and of Sybesma's (1991a) application of this analysis to Chinese result structures.³

The main idea behind Hoekstra's analysis is that the result denoting part of the sentence is a small clause, which as a whole is the (only) complement of V1:

The proposal in Sybesma (1991a) involves, among other things, the postulation of a projection, referred to as ExtP, which intervenes between the matrix predicate and the result denoting small clause. The latter is the complement of the intervening ExtP, which in turn complements the matrix V. The derivation of a result sentence involves either movement of the embedded small clause head into the head of this ExtP (resulting in inversion structures as in the examples in the text), or insertion of a dummy into the ExtP head position (these matters are also briefly discussed in Sybesma 1991b). For ease of exposition, ExtP will be ignored in this paper. Thus, when it is said that the result denoting small clause is a complement to the matrix verb it must be read as: it is the complement to ExtP, which in turn complements the matrix V. Similary, the particle *le* will not be entered into the analytical parts of this paper (for some discussion, see Sybesma 1992, Ch.3).

- (5) a The joggers ran [the pavement thin].
 - b He washed [the soap out of his eyes].
 - c They painted [the fence blue].
- (6) a Zhang San ku-shi-le shoujuan.

 Z. cry-wet-LE handkerchief
 'Zhang San cried the handkerchief wet'
 - Zhang San ku [shoujuan shi]. Z. cry handkerchief wet
- (7) a Zhang San da-si-le Li Si.
 Z. beat-dead-LE L.
 'Zhang San beat Li Si to death'
 - b Zhang San da [Li Si si]. Z. beat L. dead

As a second feature, the subject of the small clause is not thematically related to the matrix verb, V1. Instead, it is thematically dependent on the small clause predicate, V2. This is obvious for (5a) and (6), which contain an intransitive V1; according to this analysis, (5a) must be paraphrased as something like: the joggers run, with the result that the pavement gets thin. Similarly, (6) is to be paraphrased as: Zhang San cried, with the result that the handkerchief got wet.⁴ As to (5b) it is clear that the soap is not thematically dependent on wash, despite the fact that the latter may be transitive; (5b) is to be paraphrased as: he washes with the result that the soap gets out of his eyes. Finally, (5c) and (7) receive the same analysis. The fence and Li Si are not thematically marked by V1; instead they thematically depend on V2. The paraphrase for (5a) would be: they paint, with the result that the fence ends up blue. As to (7) it is: Zhang San beat, with the result that Li Si died. The fact that the fence and Li Si in these sentences are interpreted as if they were the object (patient) of painted and da 'beat' is a phenomenon which Hoekstra (1988:117) calls 'shadow interpretation', an interpretation forced upon the sentence by our knowledge of the world: if a fence is blue as the result of a painting event, our conception of the world forces us to assume that the paint will have been smeared onto the fence. Syntactically, however, there is no direct relation between the second NP and V1.

The sentences in (5)-(7) exemplify what I will refer to as transitive result sentences, as they involve two argument NPs, NP1 (the first) and NP2 (the second).

As a third feature, the analysis is extrapolated to what I call intransitive result structures (structures involving a single argument NP; see (4c)). In sentences like

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In the analysis developed in Sybesma (1992), these sentences involve an abstract CAUS projection and the paraphrase of this sentence would be: Zhang San causes the handkerchief to be wet as the result of a crying event. Since in this paper, we are mainly interested in the structure of the embedded clause, the simpler paraphrase given in the text will suffice.

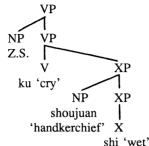
(8) and (10), the surface matrix subject is the underlying small clause subject, the matrix verb being ergative, as indicated in (9) and (11) (cf. also Sybesma 1991a, 1992). No thematic relation exists between the matrix verb and the matrix subject. (The embedded subject raises to matrix subject position for reasons of Case.) In the case of (8a) and (10a), it is clear that they did not fall and that shoujuan 'handkerchief' did not ku 'cry'. A sentence like (10a) may be paraphrased as: there was an event of crying with the result that the handkerchief ended up wet. The examples in (8b) and (10b) receive the same analysis, despite the fact that here, the matrix subjects do seem to be thematically dependent on V1. A paraphrase for (8b) would be: there is a jumping event with the result that Jan ends up in the ditch. The fact that Jan in (8d) and (9b) is understood as the 'jumper' is a 'shadow interpretation': if someone ends up in the ditch as the result of a jumping event, he will have jumped himself. Likewise, (10b) is to be paraphrased as: there was a crying event, with the result that Zhang San ended up tired. If someone ends up tired as the result of a crying event, he will most probably have been the 'crier' himself.

- (8) a They fell in love.
 - b Jan sprong in de sloot. J. jumped in the ditch
- (9) a fell [they in love]
 - b sprong [Jan in de sloot] jumped J. in the ditch
- (10) a Shoujuan ku-shi-le.
 handkerchief cry-wet-LE
 'the handkerchief got wet from crying'
 - b Zhang San ku-lei-le.
 Z. cry-tired-LE
 'Zhang San cried himself tired'
- (11) a ku [shoujuan shi] cry [handkerchief wet]
 - b ku [Zhang San lei] cry Z. tired

Viewed this way, as was the case in (5)-(7), the resultative attributes in (8)-(11) predicate of Simpson's OBJECT: the subject of the resultative predicate. In this sense, then, Simpson's Law is explained in Hoekstra's (1988) system: the resultative attribute always takes the form of a small clause and Simpson's OBJECT is its subject. That is why resultative attributes invariably predicate of the OBJECT.

Structurally, this section is summarized in (12) (but see footnotes 3 and 4) and with these structures in mind, we return to the horses.

(12) a 'Transitive' result structures



b 'Intransitive' result structures



3. Lei as a two-place predicate

Returning to the horses, let us first attend to the crippled one in (2a). In view of the discussion in the preceding section, the sentence in (2a) is analyzed as a transitive result structure:

The result denoting part of the sentence is the small clause *nei-pi ma que* 'that horse crippled', which is a complement to the matrix verb *qi* 'ride'. According to the analysis in (13), the NP *nei-pi ma* 'that horse' receives its thematic role from *que* 'crippled'; it is not thematically related to the matrix *qi* 'ride' in any way. As a whole the sentence could be paraphrased as something like: I rode with the result that thorse is crippled (but see footnote 4).

As to the tired horse, the same transitive analysis applies to the (1i) reading of (1). Baoyu rides, with the result that the horse gets tired. In terms of thematic marking, *nei-pi ma* 'that horse' is solely related to the embedded predicate.

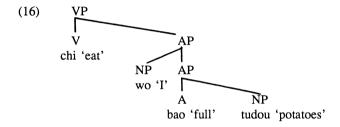
The structure tree corresponding to (13) and (14) is the one in (12a).

Before looking at the (1ii) interpretation of (1), we turn to the sentences in (3). Recall that sentences like (3) are interesting to us for two reasons: first, in an apparent violation of Simpson's Law the resultative attribute in these sentences predicates of NP1 (wo 'I' and xizaopen 'bath tub'), not of NP2 (tudou 'potatoes' and shui 'water'); secondly, unlike (1), the sentences in (3) are not ambiguous.

Let us consider the semantics of these sentences more closely, concentrating particularly on the relation between the head of the resultative attribute and NP2.

It seems reasonable to assume that for instance in (3a) the resultative head bao 'full' is a two-place predicate. With wo 'I' as the external argument and tudou 'potatoes' as the internal argument, the idea conveyed is that I am full of potatoes. The positive side-effect of this assumption is that if wo 'I' is the embedded small clause subject, (3a) turns out to be no exception to Simpson's Law. Similarly, shui 'water' in (3b) would be the internal argument of man 'full'; xizaopen 'bath tub' is the underlying external argument. Once again, Simpson's Law is not violated. The accompanying underlying structures would be the following; for the sake clarity, a tree is provided in (16).

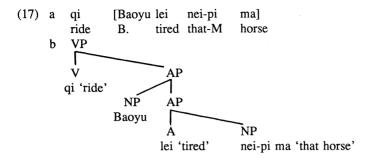
(15) a chi [wo bao tudou]
eat I full potatoes
b guan [xizaopen man shui]
pour bath.tub full water



The structure in (15)-(16) corresponds to the structure of the 'intransitive' sentences in (8) and (10), and the tree in (12b). The matrix verb *chi* 'eat' in (15a) and (16) is an ergative verb, complemented by the resultative small clause *wo bao tudou* 'I full [of] potatoes'. The difference is that here, the head of the result denoting small clause (*bao* 'full') is a two-place predicate, whereas in (10)-(11), the embedded result small clause head was a one-place predicate. These cases, then, exemplify Zhan's Generalization, which I quoted above: 'If in resultative sentences with both a subject and an object [V2] is transitive, it predicates of the subject, if [V2] is intransitive it predicates of the object' (Zhan 1989:109).

If this is the right analysis for these sentences it follows that *tudou* 'potatoes' and *shui* 'water' cannot be predicated of by the resultative attribute in their respective sentences: they are internal arguments, not external arguments.

Partly inspired by these results, partly by our earlier reformulation of Zhan's Generalization ('if a sentence seems to violate Simpson's Law, the resultative predicate is transitive'), I propose to adopt a similar analysis for (1) in the (1ii) reading. In this reading, *lei* 'tired' is a two-place predicate (like *bao* 'full'), with *Baoyu* as the external and *nei-pi ma* 'that horse' as the internal argument, as indicated in (17). We turn to the semantics of the sentence shortly.



In sum, as to the ambiguity of (1), the following two structures are involved (cf. (18)): in the (1i) reading, in which the horse ends up tired, Baoyu is the subject of the matrix verb (but see fn. 4), the matrix verb is (indirectly through ExtP; see fn.2) complemented by a result denoting small clause headed by lei 'tired', with nei-pi ma 'that horse' as its external argument (nei-pi ma lei 'that horse tired'); in this structure, lei 'tired' is a one-place predicate, cf. (18a); in the (1ii) interpretation (Baoyu ends up tired), the matrix verb is ergative, and it is complemented by a result denoting small clause (but see fn. 2), the head of which, lei 'tired', is a two-place predicate: it has an external argument (Baoyu) and an internal argument (nei-pi ma 'that horse'), cf. (18b) and the tree structure in (17b).

This analysis raises a number of questions; for space reasons we will not discuss them all here. The question we will discuss is an obvious one: What does it mean to say that *nei-pi ma* 'that horse' is the internal argument of *lei* 'tired'? Does it correspond to the semantics of (1ii)? Section 4 provides an answer.

4. What does it mean?

The investigation of the semantics of two-place *lei* 'tired' will be considered in the context of a number of observations. First, as we observed (cf. (3); two more examples are given in (19)), two-place adjectives exist in Chinese. Secondly, we observe that the Chinese two-place predicates we have seen so far and will see in (19) have cognates in English and other languages which may also be regarded as two-place predicates: *full of, enough of, fed up with, tired of* and others.

(19) a Wo ting-gou-le nei-shou ge.

I listen-enough-LE that-M song
'I have enough of that song as a result my listening [too much] to it'
b Wo kan-fan-le nei-ben shu.
I read-fed.up-LE that-M book
'I am fed up with that book as a result of my reading it [too often]'

Let us investigate a third observation: some two-place adjectives may occur in contexts which lead to ungrammaticality with others. One such context is this:

(20) a *Wo dui (nei-xie) tudou bao-le. I that-MPL full-LE towards potatoes Wo dui nei-pi gou-le. ma towards that-M horse enough-LE 'I have enough of that horse'

The preposition *dui* 'towards' is used to express 'concrete direction' or 'abstract mental attitude' (in the terms of Henne, Rongen & Hansen 1977:153). Generally, *dui* either means 'in the direction of; to' (in which meaning it occurs with verbs like *shuo* 'say') or it means 'regarding', in which case it occurs with psychological predicates. Provided that these are the two options for *dui*, the ungrammaticality of (20a) falls out: while *dui* is used in the 'regarding' reading, *bao* 'full' is not a psychological predicate—it refers to physical fullness. It seems, then, that there are two classes of two-place adjectives, physical and psychological ones. Consider, once again, (3a) (repeated as (21a)) and compare it to (21b) (cf. (19a)).

(21) a Wo chi-bao-le tudou.

I eat-full-LE potatoes

'I ate myself full of potatoes'

b Wo chi-gou-le tudou.

I eat-enough-LE potatoes

'I have enough of potatoes'

Although I would assume that in both (21a) and (21b) tudou 'potatoes' is the internal argument of the embedded predicate (bao 'full' and gou 'enough' respectively), the relation between bao 'full' and tudou 'potatoes' seems different from that between gou 'enough' and tudou 'potatoes' in several respects. In the case of bao 'full' in (21a) we are dealing with physical fullness and the potatoes seem to merely specify what we are full of. In (21b) on the other hand, with gou 'enough' referring to something more psychological, the potatoes seem to limit the 'enoughness': I only have enough (I am only fed up) in as far as potatoes are

concerned—it is not implied that I'm not hungry, or that I have just consumed a huge plate of potatoes.

That there is a difference between bao 'full' and gou 'enough' is furthermore corroborated by the following sets of sentences:

- (22) a *Wo chi-bao-le (nei) liang-dun fan.

 I eat-full-LE that two-M^{meal} food
 'I am full of (those) two meals'
 - b *Wo dui (nei-xie) tudou bao-le. I towards that-MPL potato full-le 'I am full with regard to those potatoes'
 - c *Wo chi-bao-le tudou, xianzai yao chi chaofan.

 I eat-ful-LE potatoes now want eat fried.rice
 'I have eaten myself full of potatoes, now I want to eat some fried rice'
- (23) a Wo ting-gou-le (nei) liang-shou ge.

 I listen-enough-LE that two-M song
 'I have anough of (those) two songs'
 b Wo dui zhei-shou ge gou-le.
 - I towards this-M song enough-LE 'with regard to that song, I have enough (I am fed up)'
 - c Wo ting-gou-le nei-shou ge, xianzai ting zhei-shou. I listen-enough-LE that-M song now listen this-one 'I have enough of that song, let's now listen to this one'

These sentences seem to confirm the difference between bao 'full' and gou 'enough' we just noted. The sentence in (22a) makes clear that fullness is specified by some mass; the unacceptability of the sentence must be seen in the light of English sentences like '*the wardrobe is full of two jackets'—it must not be interpreted as 'with these two jackets the wardrobe will be full'. As the enoughness in (23a) is no absolute enoughness and the internal argument limits rather than specifies, this mass-issue does not occur. The absoluteness of 'full' versus the non-absoluteness of psychological 'enough' is also illustrated in (22c) and (23c). As we have seen above, unlike physical adjectives, psychological adjectives may express their thematic object in the form of a PP with dui 'towards'. This is illustrated again in (23b) and (22b).

The question to be answered is whether *lei* 'tired' patterns with *bao* 'full' or with *gou* 'enough'. Consider (24); '%' expresses variability in acceptance.

(24) a %Wo qi-lei-le liang-pi ma. ride-tired-LE I two-M horse %Wo dui lei-le. h nei-pi ma towards that-M horse tired-LE c %Wo qi-lei-le zhei-pi ma, xianzai yao qi nei-pi.
I ride-tired-LE this-M horse now want ride that-M

The pattern which emerges is that those native speakers who may interpret lei 'tired' in a psychological way accept the sentences in (24), while those who do not accept the idea that lei 'tired' may refer to psychological tiredness reject the sentences in (24). For the psychological lei speakers, lei 'tired' patterns with gou 'enough' (delete % in (24)), for the others it patterns with bao 'full' (% = *).

As far as the psychological *lei* speakers are concerned, the question 'What does (1ii) mean?' now seems to receive a straightforward answer: Baoyu is tired of that horse and it is true for those speakers that it is not implied that Baoyu would not want to try another one (cf. (23c)). For these speakers, *lei* 'tired of' may be more or less equivalent to *fan* 'fed up with'. If we take (1) and replace *lei* 'tired' with *fan* 'fed up', the sentence is grammatical and ambiguous:

- (25) Baoyu qi-fan-le nei-pi ma.
 - B. ride-fed.up-LE that-M horse
 - i. 'Baoyu rode the horse got fed up as a result'
 - ii. 'Baoyu rode Baoyu got fed up as a result'

Interestingly, in the (25ii) reading, native speakers agree that Baoyu gets fed up with the horse.

In short: all problems connected to the ambiguity of (1) disappear once it is accepted that, to some speakers, *lei* 'tired' may have a psychological interpretation, similar to *fan* 'fed up with', in which capacity it is a two-place predicate.

5. Concluding remarks

One problem remains. As I noted above, not all speakers accept (1) in the (1ii) reading. As we might expect on the basis of the patterns we saw emerge in (22) through (24), this is exclusively the case for the group of non-psychological *lei* speakers. The non-psychological *lei* speakers have no two-place *lei* 'tired'.

However, to complicate things, some (though not all) non-psychological *lei* speakers do accept resultative sentences (even with *lei* 'tired') in a reading in which the resultative attribute predicates of NP1 despite the presence of an NP2, but only when the NP2 is a bare NP. In other words, some speakers who reject (1ii), do accept (26). In addition, some (again, not all) psychological *lei* speakers also accept (26) in a non-psychological interpretation.

(26) Baoyu qi-lei-le ma.

B. ride-tired-LE horse
'Baoyu is tired from horse-riding'

The fact in (26) is interesting for it reinforces the 'physical' parallel with bao 'full', as (27) is not grammatical, while (3a) (like (21a)) is, cf. (22a).

(27) *Wo chi-bao-le nei-pan tudou.

I eat-full-LE that-M^{plate} potato

'I have eaten myself full of that plate of potatoes'

The only thing I can say is that in view of the discussion in section 2, ma 'horse' in (26) can only be structurally related to lei 'tired'. In section 4, we observed that one of the ways in which psychological and physical adjectives were different was the way their internal argument was interpreted: in the case of physical predicates the internal argument seemed to specify while in the psychological case, it seemed to delimit the predicate. If lei 'tired' in (26) is not a psychological predicate, it must be the case that the mass ma 'horse' has a specifying function here.

In conclusion, although I have not been able to solve all the problems that came up, I think we may nonetheless draw two important conclusions. First, Chinese abides by Simpson's Law. Secondly, in some cases, *lei* 'tired' must be viewed as a two-place predicate. As a two-place predicate, it refers to psychological tiredness rather than physical tiredness.

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