

phrase in (5). Since (5) does not have a weak NP, it remains a puzzle why a resumptive pronoun is licensed under Lin's proposal.

- (4) ?Zhangsan bei Lisi da le **ta** zhengzheng san ge xiaoshi.
 Zhangsan BEI Lisi hit PERF him whole three-CL hour
 'Zhangsan was hit by Lisi for three hours.'
- (5) Zhangsan bei Lisi da de **ta** toupoxueliu.
 Zhangsan BEI Lisi hit DE he head-broken-blood-bleed
 'Zhangsan was beaten up by Lisi.'

Another problem for Lin's analysis is that long passives involving weak NPs (6), which are predicted by Lin (2006, 2009) as grammatical, are judged as ungrammatical by native speakers even though they accept examples like (1a).

- (6) *Zhangsan bei Lisi da-shang le liang-ge ren.
 Zhangsan BEI Lisi hit-wound PERF two-CL person
 'Zhangsan is affected by Lisi's hitting and wounding of two persons.'

Lin's analysis also fails to explain the coreference between the resumptive pronoun and the subject in a long passive. In (1a) the subject *Zhangsan* and the resumptive pronoun *ta* 'him' have to be co-indexed. But under Lin's analysis, it is hard to see how *ta* 'him' is co-indexed with *Zhangsan*, because Op binds the variable introduced by 'once', not 'him'.

3. The proposal

I propose that the contrast between (2) vs. (1a), (4) and (5) follows from a PF constraint: resumptive pronouns cannot be stressed. Cinque (1993) proposes that the main stress assigned by the nuclear stress rule falls on the most deeply embedded constituent. For two sisters, the most deeply embedded constituent is the one selected by the other. Following these assumptions, in an SVO language like Chinese, the object is more deeply embedded than the verb and thus receives the main stress.

3.1. Gapless passives

Let us look at the gapless passive in (2). In a normal context when the verb or the subject is not stressed, the most deeply embedded constituent in a gapless long passive like (2) is the resumptive pronoun, which receives the main stress. Thus the ungrammaticality of (2) follows directly from the PF constraint that a resumptive pronoun must not be stressed.

3.2. Passives with postverbal modifiers

Why are resumptive pronouns allowed when the gapless long passive contains a postverbal modifier as in (1a), (4), and (5)? Generally speaking, it is because in these examples the nuclear stress falls on the postverbal element instead of the resumptive pronoun. There exists different analyses of *de*-resultative constructions. For instance, Li (1997) and Zhang (2001) analyze *de*-resultative constructions as object control (7a), while Sybesma (1999) analyze *de*-resultative as small clause (7b). No matter what analysis we assume, in a

long passive with a resultative-*de* phrase, the most deeply embedded constituent is the intransitive predicate *toupoxueliu* ‘head-broken-blood-bleed’, which receives the main stress. Therefore, a resumptive pronoun is allowed.

- (7) a. Zhangsan da-de Lisi_i [pro_i toupoxueliu].
 Zhangsan hit-DE Lisi head-broken-blood-bleed
 b. Zhangsan da [DeP de [XP Lisi toupoxueliu]].
 Zhangsan hit DE Lisi head-broken-blood-bleed
 ‘Zhangsan beat Lisi up.’

Let us move on to constructions with durational/frequency phrases. In Chinese certain noun phrases can appear either before or after a durational/frequency phrase (8).

- (8) a. Wo qu guo Beijing san-ci. [V object DFP]
 I go PERF Beijing three-time
 b. Wo qu guo san-ci Beijing. [V DFP object]
 I go PERF three-time Beijing
 ‘I’ve been to Beijing for three times.’

For a long passive with a durational/frequency phrase (1a) and (4), I follow Soh (1998) in the assumption that constructions with a durational/frequency phrase involve object scrambling. As illustrated in (9), the durational/frequency phrase adjoins to VP, and the object moves to the Spec of FP, a functional projection above VP (Soh, 1998). In (9) the most embedded element is hence the VP. Since phonologically null elements do not receive stress, the main stress falls on the durational/frequency phrase ‘once/for three hours’. Thus the resumptive pronoun is allowed.

- (9) [_{VP} Lisi da_j le [_{FP} ta_i F [_{VP} yixia/zhengzheng sange xiaoshi [_{VP} t_j t_i]].
 Lisi hit PERF him once/whole three hours

4. Further arguments and consequences

Under the PF analysis, two additional patterns follow directly. First of all, when the discourse context requires stress on the verb, which avoids main stress on the object, resumptive pronouns are possible, even if there is no postverbal element (10).

- (10)?Zhangsan zhibuguo shi bei Lisi peng-le ta, you bushi da-le ta,
 Zhangsan only be BEI Lisi touch-PERF him, while not hit-PERF him,
 (hebi zheme dajingxiaoguai?)
 (why so make a fuss)
 Zhangsan was simply touched by Lisi, not hit by him. (Why does Zhangsan make such a fuss about it?)

Second, all the examples which allow resumptive pronouns in an unmarked context ((1a), (4), (5)) become degraded when the resumptive pronoun is stressed. These contrasts are

unexpected under any of the previous syntactic analyses of resumptive pronouns, but follow directly from a PF-analysis.

The analysis can be extended to resumptive pronouns in relative clauses in Chinese, which display the same contrast as long passives (Huang, 1999). As illustrated in (13), a resumptive pronoun can replace the trace only if there is a post-verbal modifier in a relative clause.

- (13) a. [Zhangsan da t_i] de nage ren_i
 Zhangsan hit MOD that person
 ‘The person that Zhangsan hit’
 b.*[Zhangsan da ta_i] de nage ren_i
 Zhangsan hit him MOD that person
 ‘The person that Zhangsan hit him’
 c. ?[Zhangsan da ta_i yi-xia] de nage ren_i
 Zhangsan hit him one-time MOD that person
 ‘The person such that Zhangsan hit him once’

5. Conclusion

Resumptive pronouns in Chinese long passives have a restricted distribution: It only seems to occur before a post-verbal modifier, such as a frequency/durational phrase or a resultative-*de* phrase. I argue that the occurrence of resumptive pronouns is subject to a PF constraint: It cannot occur in a position which receives stress.

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