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When Simpson's Law, Themehood, and Causation Meet: The Case of Mandarin Resultatives

The Problem Mandarin cluster resultative constructions of the type in (1) famously allow for as many as three different interpretations, paraphrased in (1a–c) (see esp. Li 1995); only the logically possible reading in (1d) is not available. The b–reading poses a challenge for the generalization (due to Simpson 1983) that resultatives can only be predicated of deep objects (henceforth 'Simpson's Law'). The use of the 'light verb' *ba* in (2) eliminates the b–reading while preserving the a– and c–readings; conversely, reduplication of the verb, as in (3), narrows the range of interpretations down to just the b–reading. This paper presents a structural explanation for each of the accessible readings for (1)–(3) as well as for the unavailability of the interpretations that cannot be accessed, safeguarding Simpson's Law and providing an enhanced structural perspective on both the 'Theme of' relation and the syntax of agentivity and causation.

(1) Taotao zhui-lei-le Youyou [ordinary cluster resultative]
 Taotao chase-tired-ASP Youyou
 a. 'Taotao chased Youyou and as a result, Youyou got tired'
 b. 'Taotao chased Youyou and as a result, Taotao got tired'
 c. 'Youyou chased Taotao and as a result, Youyou got tired'
 d. *'Youyou chased Taotao and as a result, Taotao got tired'

(2) Taotao ba Youyou zhui-lei-le [cluster resultative with *ba*]
 Taotao BA Youyou chase-tired-ASP
 a. 'Taotao chased Youyou and as a result, Youyou got tired'
 b. *'Taotao chased Youyou and as a result, Taotao got tired'
 c. 'Youyou chased Taotao and as a result, Youyou got tired'
 d. *'Youyou chased Taotao and as a result, Taotao got tired'

(3) Taotao zhui Youyou zhui-lei-le [reduplicative cluster resultative]
 Taotao chase Youyou chase-tired-ASP
 a. *'Taotao chased Youyou and as a result, Youyou got tired'
 b. 'Taotao chased Youyou and as a result, Taotao got tired'
 c. *'Youyou chased Taotao and as a result, Youyou got tired'
 d. *'Youyou chased Taotao and as a result, Taotao got tired'

The Proposal The key ingredients of the proposal advanced in this paper are the following: *(i)* allowing Themes to be projected in two syntactic positions (Spec/VP and Spec/ResP), simultaneously present in a single clause under specific circumstances; *(ii)* allowing a Causer to be syntactically projected above the Agent; *(iii)* allowing serializing languages to represent V twice in the structure of a single clause, both as the main verb of the sentence and as the head of an event modifier, yielding double exponence ('reduplication') whenever the main V does not raise to *v*.

The Analysis The structures proposed for the a-, b- and c-readings are given in (4)–(6), overleaf.
➤ **(a)** In the syntax of the a–reading, given in (4), *Taotao* is projected in Spec/*v*P as the Agent, and *Youyou* is the Theme, occupying the specifier of the VP of *zhui* 'chase', which takes the result phrase (ResP) of *lei* as its complement, in a syntax *à la* Hale & Keyser (1993). This syntax (available in both Mandarin and English) allows *v* to spell out as *ba*, and obeys Simpson's Law.
➤ **(b)** The b–reading is best paraphrased as 'Taotao chased himself tired by chasing Youyou': in (5), the verb *zhui* is represented in the structure twice, both as the main verb and as the head of a modifier of the event ('by chasing Youyou'). Modifier *zhui* takes *Youyou* as its Theme. Main-verb *zhui* takes no Theme of its own but selects a small-clause complement whose predicate is *lei* 'tired', predicated of a silent reflexive (coreferent with the Agent, *Taotao*) that serves as the second Theme of the sentence. Thanks to this silent reflexive in Spec/ResP, (5) conforms to Simpson's Law (like English *Taotao chased himself tired*). When the main verb *zhui*

is raised up to *v*, the token of *zhui* in the event modifier remains silent as it is asymmetrically c-commanded by raised *zhui*. Only when main-verb *zhui* stays *in situ* and neither occurrence of V c-commands the other can *zhui* be pronounced twice, yielding verb reduplication: (3). The syntax in (5) is illicit when *ba* spells out *v*: *ba* is in a binding relation with V; having *ba* bind *both* Vs in (5) results in a violation of the bijection principle (Koopman & Sportiche 1982), ruling out (2b).

➤ **(c)** In the c–reading, Taotao is both the undergoer of a chasing event perpetrated by Youyou and the one who caused it (Li 1995). In (6), *Youyou* is projected into Spec/*v*P, serving as the Agent, and *Taotao* is projected even higher, in the specifier of a CausP erected outside *v*P. Both *Taotao* and *Youyou* bind a silent pronoun (*pro*) — the *pro* bound by *Taotao* is in the Spec/VP of *zhui*, serving as the Theme of the chasing event; the *pro* bound by *Youyou* occupies the subject position of the resultative secondary predicate, serving as the Theme of *lei* 'tired'. The interpretation of (6) is that Taotao caused Youyou to chase Taotao, resulting in Youyou being tired. The two structural Cases provided in a single clause, nominative and dependent accusative (cf. Marantz 1991/2000), are assigned to the Causer (*Taotao*) and the Agent (*Youyou*), resp.; the pronouns in the Theme positions in (6) must remain silent because no Case is available for them.

➤ ***(d)** The reading in (1d) cannot be obtained from any of the structures in (4)–(6). Only in (6) can *Youyou* be interpreted as the Agent of *zhui* 'chase'; but in the syntax in (7), coindexing the *pro* in the subject position of *lei* 'tired' with *Taotao* would cause a violation of Condition B. It is impossible for *Taotao* to simultaneously be the Causer, the Theme of *zhui* and the Theme of *lei*.

(4) $[_{vP}$ *Taotao*$_k$ $[_{v'}$ *v* $[_{VP}$ *Youyou*$_i$ $[_{V'}$ V=*zhui* $[_{ResP}$ *lei*$]]]]$
        Agent$_k$ Theme$_i$

(5) $[_{vP}$ *Taotao*$_k$ $[_{v'}$ *v* $[_{VP}$ $[_{ModP}$ V=*zhui Youyou*$_i$] $[_{VP}$ V=*zhui* $[_{ResP}$ REFL$_k$ $[_{Res'}$ *lei*$]]]]]]$
        Agent$_k$ Theme$_i$ Theme$_k$

(6) $[_{CausP}$ *Taotao*$_k$ $[_{Caus'}$ CAUS $[_{vP}$ *Youyou*$_i$ $[_{v'}$ *v* $[_{VP}$ *pro*$_k$ $[_{V'}$ V=*zhui* $[_{ResP}$ *pro*$_i$ $[_{Res'}$ *lei*$]]]]]]]]$
          Causer$_k$ Agent$_i$ Theme$_k$ Theme$_i$

(7)   *$[_{CausP}$ *Taotao*$_k$ $[_{Caus'}$ CAUS $[_{vP}$ *Youyou*$_i$ $[_{v'}$ *v* $[_{VP}$ *pro*$_k$ $[_{V'}$ V=*zhui* $[_{ResP}$ *pro*$_k$ $[_{Res'}$ *lei*$]]]]]]]]$
          Causer$_k$ Agent$_i$ Theme$_k$ Theme$_k$

Cluster resultatives vs *de*-resultatives   'ResP' in the structures in (4)–(6) minimally involves an AspP built on top of the projection of the root (*lei*). In the absence of functional structure between Asp and √P, the root moves to Asp. When there is functional material (Deg=*hen* 'very') between Asp and the root, √-to-Asp movement is blocked and Asp is realized through '*de*-support' (a direct analogue to English '*do*-support'), as in the *de*-resultative in (8) (which supports the same three readings as does (1)). Asp systematically incorporates into V, delivering the output *zhui+lei-le Youyou* in the case of (9a) and *zhui+de Youyou hen lei-le* in the case of (9b).

(8)   Taotao   zhui   *de*   Youyou hen   lei-le   [*de*-resultative]
        Taotao   chase   DE   Youyou very tired-ASP

(9)   a. $[_{VP}$ V=*zhui* $[_{AspP}$ (Theme) $[_{Asp'}$ Asp $[_{√P}$ √=*lei-le* 'tired'$]]]]$
        b. $[_{VP}$ V=*zhui* $[_{AspP}$ (Theme) $[_{Asp'}$ Asp=*de* $[_{DegP}$ Deg=*hen* 'very' $[_{√P}$ √=*lei-le* 'tired'$]]]]]$

Conclusion   Mandarin resultatives reveal all the legal ways in which syntax can combine an activity verb and a resultative secondary predicate. (5) is impossible in non-serializing languages: their T can license just one V. (6) is unavailable in languages such as English since the *pro*'s in the Theme positions cannot be licensed. Syntax provides two positions for Themes in a single clause (with surface realization reined in by Case) plus separate spots for an Agent and a Causer.

References   Hale, Ken & S. Jay Keyser 1993. On argument structure and the lexical expression of syntactic relations. • Koopman, Hilda & Dominique Sportiche 1982. Variables and the bijection principle. • Li, Yafei 1995. The thematic hierarchy and causativity. • Marantz, Alec 1991/2000. Case and licensing. • Simpson, Jane 1983. Resultatives.