The unaccusative-unergative distinction in Mandarin resultative constructions

Synopsis. The *Unaccusativity Hypothesis* (*UH*), which posits that the sole argument of an unaccusative verb is a theme/underlying obj., while the sole argument of an unergative verb is an agent/underlying subj., is supported by unaccus.-unerg. distinctions in English resultatives, but is challenged by the apparent lack of such distinctions in Mandarin resultatives. This paper presents novel evidence for the existence of unaccus.-unerg. distinctions in Mandarin resultatives and proposes a *non-uniform* analysis of Mandarin resultatives with unaccus. and unerg. matrix verbs, in accordance with *UH*. The proposal also sheds new light on the *Uniformity of Theta-Assignment Hypothesis* (*UTAH*) and a general theory of resultative argument structure.

1. Introduction. A resultative involves a matrix verb which specifies a causing event and an embedded result which must predicate over an (underlying) obj. via the *Direct Object Restriction* (*DOR*). In English, ❶ an intransitive resultative, where the embedded result predicates over the surface subj., is compatible with an unaccus. but not unerg. matrix verb (1a vs. 1b); ❷ a resultative with an unaccus. matrix verb transitivizes with an additional subj. but not obj. (5a vs. 3a), ❸ while a resultative with an unerg. matrix verb transitivizes with an additional obj. but not subj. (3b vs. 5b). These distinctions follow from the structural difference between resultatives with unaccus. and unerg. matrix verbs (Levin & Rappaport Hovav 1995; a.o.).

Puzzle: Unlike English, Mandarin resultatives lack apparent unaccus.-unerg. distinctions (Huang 2006; a.o.): ❶ an intrans. resultative is compatible with an unaccus. or unerg. matrix verb (2ab); ❷ a resultative with an unaccus. matrix verb may transitivize with an additional subj. or obj. (6a, 4a); ❸ similarly, a resultative with an unerg. matrix verb may transitivize with an additional obj. or subj. (4b, 6b).

Intrans. resultative

(1) a. The river froze solid. [unaccus.]
b. *Dora shouted hoarse. [unerg.]

(2ab) Lisi ji/ku-de bing-le. [unaccus./unerg.]
Lisi be.worried/cry-DE be.sick-PRF
'Lisi was worried/cried, as a result (he) was sick.'

Trans. resultative w/ addt'l post-verbal obj.

(3) a. *The snow melted the road slushy.
b. She cried me awake.

Trans. resultative w/ addt'l subj.

(5) a. The cold weather froze the river solid.
b. *The bad news cried me awake.

(4ab) Wo jidong/ku-de lian hong-le.
1SG be.excited/cry-DE face be.red-PRF
'I was excited/cried, as a result face was red.'

(6ab) Zhe-shi ji/ku-de Lisi bing-le.
this-matter be.worried/cry-DE Lisi be.sick-PRF
'This made Lisi worry/cry, as a result (he) was sick.'

Based on (2, 4, 6), existing studies assume no unaccus.-unerg. distinctions in Mandarin resultatives and, as a result, abandon *UH* in favor of a *uniform* analysis of Mandarin resultatives with unaccus. and unerg. matrix verbs (e.g., Huang 2006). In contrast, I argue for the existence of unaccus.-unerg. distinctions in Mandarin resultatives and a *non-uniform* analysis of Mandarin resultatives with unaccus. and unerg. matrix verbs.

2. New observation. Mandarin transitive resultatives differ in the possibility of having a *corresponding* BA-*construction*, which is semantically equivalent to the resultative, and the possibility of *passivization with* BEI. Despite the lack of unaccus.-unerg. distinctions in (4, 6), there is a contrast ❶ in (7ab), the BA-counterparts of (4ab), ❷ in (8ab), the BEI-counterparts of (4ab), and ❸ in (10ab), the BEI-counterparts of (6ab). These contrasts call for a *non-uniform* analysis of Mandarin resultatives with unaccus. and unerg. matrix verbs.

Trans. resultative w/ addt'l post-verbal obj.

(7ab) Wo ba lian *jidong/ku-de hong-le.
1SG BA face be.excited/cry-DE be.red-PRF

(8ab) Lian bei wo *jidong/ku-de hong-le.
face BEI 1SG be.excited/cry-DE be.red-PRF
Lit. '(My) face was caused to be red by me, as a result of me being excited/crying.'

Trans. resultative w/ addt'l subj.

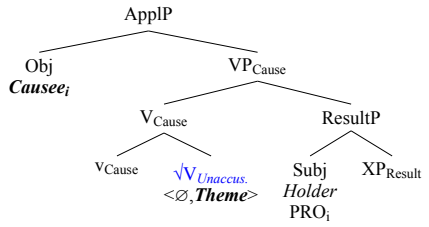
(9ab) Zhe-shi ba Lisi ji/ku-de bing-le.
this-matter BA Lisi be.worried/cry-DE be.sick-PRF

(10ab) Lisi bei zhe-shi ji/*ku-de bing-le.
Lisi BEI this-matter be.worried/cry-DE be.sick-PRF
Lit. 'Lisi was caused to be worried/cry by this matter, as a result (he) was sick.'

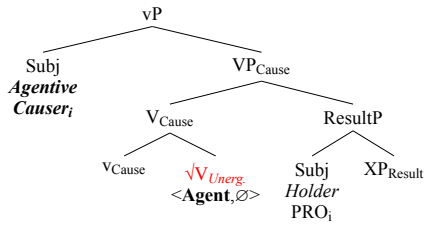
3. Proposal. I pursue a proposal where *UH* is upheld in resultatives, which consist of a matrix V_{Cause} and an embedded ResultP. In intrans. resultatives, the unaccus.-unerg. distinction lies in how the sole argument of the unaccus. or unerg. verbal root aligns with different arguments of V_{Cause}: for $\sqrt{V}_{Unaccus.}$, its theme aligns with a *causee* obj. of V_{Cause} introduced by an Appl(icative) head (11a), while for $\sqrt{V}_{unerg.}$, its agent aligns with an *agentive causer* subj. of V_{Cause} introduced by v (11b). In both structures, the subj. of the embedded ResultP is a PRO controlled by the sole argument of V_{Cause}. In Mandarin, both structures are attested (e.g., 2ab), while in English, (11b), which involves control by an underlying subj., is ruled out by *DOR* (e.g., 1b).

(11) Unaccus.-Unerg. distinction in intrans. resultatives

a.

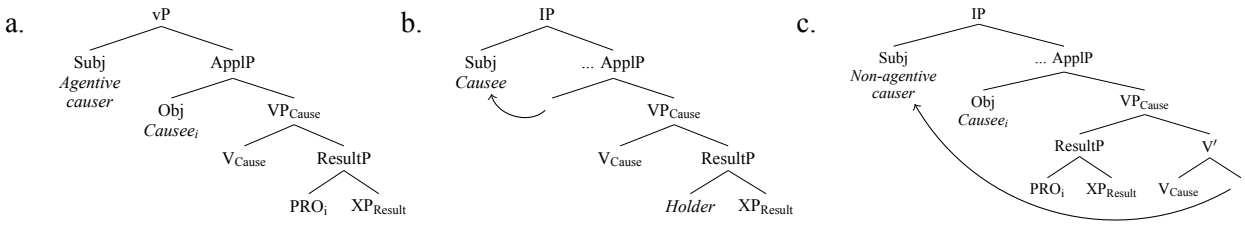


b.



For trans. resultatives, I propose that three distinct argument structures are attested in Mandarin: ❶ V_{Cause} has both an agentive causer subj. and a causee obj. which controls the subj. PRO of the embedded ResultP (12a); ❷ V_{Cause} has just a causee obj. which becomes the surface subj., while the post-verbal obj. is a *holder*, the underlying subj. of the embedded ResultP (12b); ❸ V_{Cause} has both a causee obj. which controls the subj. PRO of the embedded ResultP and a *non-agentive causer* obj., which is introduced by V_{Cause} and becomes the surface subj (12c). Across the board, the obj. becomes post-verbal after V_{Cause} moves to v. English contrasts with Mandarin in that only the structure in (12a) is attested, while the other structures are ruled out: (12b) is ruled out because the Appl head does not assign case to the post-verbal obj.; (12c) is ruled out because V_{Cause} does not introduce a non-agentive causer obj. (cf. Levin & Rappaport Hovav 1995).

(12) Three argument structures of trans. resultatives



I propose that the three distinct argument structures of trans. resultatives derive the three unique patterns in their possibility of having a corresponding BA-construction and passivization with BEI in Mandarin (sect. 2). Diagnostics: ❶ The possibility of having a corresponding BA-construction diagnoses *affectedness*: BA spells out the Appl head that introduces the post-BA obj. (which corresponds to the post-verbal obj. in a resultative) as the causee of the matrix V_{Cause}, which is interpreted as being affected in the causing event (Huang 1992; Chen 2023; a.o.). Hence, a resultative lacking a well-formed BA-counterpart indicates that the post-verbal obj. is the underlying subj. of the embedded ResultP. ❷ The possibility of passivization with BEI diagnoses *agentivity*: BEI spells out the Pass(ive) head, which requires the matrix V_{Cause} to have an underlying (agentive causer) subj., either assigning case to it (if overt) or existentially closing it (if non-overt) (Chen 2022, 2023).

Trans. resultative has a BA*-counterpart?*	*... has a passive/*BEI*-counterpart?*
✔: post-verbal obj. as causee of matrix cause	✔: matrix cause has an underlying subj.
✘: post-verbal obj. as underlying subj. of embedded result	✘: matrix cause has no underlying subj.

Evidence ❶: Trans. resultatives with the structure in (12a) may be derived either from (11a) with an additional agentive causer subj. or from (11b) with an additional causee obj., and should have well-formed BA- and BEI-counterparts. As expected, trans. resultatives with an unaccus. matrix verb and an additional subj. (e.g., 6a) have well-formed BA- and BEI-counterparts (9a, 10a); similarly, those with an unerg. matrix verb and an additional obj. (e.g., 4b) also have well-formed BA- and BEI-counterparts (7b, 8b). Note that in these cases, the sole argument of $\sqrt{V}_{Unaccus.}$ aligns with the structurally *lower* causee obj. of V_{Cause}, while the sole argument of $\sqrt{V}_{Unerg.}$ aligns with the structurally *higher* agentive causer subj. of V_{Cause}.

Evidence ❷: The structure in (12b) is supported by trans. resultatives with an unaccus. matrix verb and an additional obj. (e.g., 4a), which lack well-formed BA- and BEI-counterparts (7a, 8a). Note that in this case, the sole argument of $\sqrt{V}_{Unaccus.}$ still aligns with the causee obj., which is also the sole argument of V_{Cause}.

Evidence ❸: The structure in (12c) is supported by trans. resultatives with an unerg. matrix verb and an additional subj. (e.g., 6b), which have well-formed BA-counterparts but lack well-formed BEI-counterparts (9b, 10b). Note that in this case, the sole argument of $\sqrt{V}_{Unerg.}$, which aligns with the causee obj. of V_{Cause}, is structurally *higher* than the additional non-agentive causer obj. of V_{Cause} which becomes the surface subj.

4. Implications. Under the proposed analysis, English resultatives exhibit transparent unaccus.-unerg. distinctions, because the mapping between the (causer, causee) arguments of V_{Cause} and the (agent, theme) arguments of the unaccus. or unerg. verbal root is one-to-one. By contrast, in Mandarin, the three distinct argument structures of V_{Cause} obscure the argument structure of the unaccus. or unerg. verbal root, such that the mapping between the (agentive causer, causee, non-agentive causer) arguments of V_{Cause} and the (agent, theme) arguments of the verbal root is not one-to-one. Despite this, an unaccus.-unerg. distinction is still upheld, which is also an expected consequence of *UTAH*: the sole argument of $\sqrt{V}_{Unaccus.}$ is an underlying obj. in intrans. resultatives and always aligns with the structurally *lower* argument of V_{Cause} in trans. resultatives; by contrast, the sole argument of $\sqrt{V}_{Unerg.}$ is an underlying subj. in intrans. resultatives and always aligns with the structurally *higher* argument of V_{Cause} in trans. resultatives. Furthermore, the proposed analysis is a general theory of resultative argument structure, under which cross-linguistic variations between English and Mandarin resultatives are derived from independent and general principles of control (that underlie *DOR*), the case assignment ability of the Appl head, and the argument structure of V_{Cause}.

5. Further support. ❶ The structure in (12c) will be further supported by trans. resultatives in Mandarin where the matrix verb is transitive yet its theme aligns with a non-agentive causer and its agent aligns with a causee (cf. Li 1995). ❷ Further evidence will be presented against Huang's (2006) uniform analysis.

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