

## Directness of causation in English and ASL resultative constructions: Evidence for a null causative affix

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**Background.** Concealed causatives [1] such as resultatives (1a) and lexical causatives (1b) exhibit a form-meaning mismatch: They describe situations in which an agent intentionally brings about an immediate change of state in an(other) entity, yet the causative meaning component is not encoded in an overt morpheme. Typically, covert causatives cannot felicitously describe indirect causation scenarios such as (1), where a periphrastic causative (1c) is acceptable.

- (1) Causative situation: Mary hammers on a roof tile. The tile comes loose and falls to the ground, directly onto a piece of metal. The metal becomes flat.
- #Mary hammered the metal flat.
  - ?#Mary flattened the metal.
  - Mary caused the metal to become flat.

**Claim.** The observed restriction to direct causation has been attributed to the non-overt nature of the causative meaning element. Causation is said to be introduced either via a type-lifting operator [1] or a null affix on the result adjective [7], and the relation between causing and change-of-state event has to be ‘direct’ [1,7,10]. In light of a lack of empirical studies investigating the notion of directness, I show that intervening causers, temporal distance, and the causer’s intentions influence directness. Assuming directness to be a truth-conditional component of resultatives (see [9] for counter-arguments), these findings lead me to argue that, at least in English, causation is introduced via a null affix.

Which components of a direct causation scenario are necessary for a resultative to be felicitous? Potential candidates include (a) the causee’s degree of control [2]; (b) the causer’s intentionality [4, 12]; (c) physical contact between causer and causee [11]; (d) a shared spatio-temporal profile [5]; and (f) adjacency of causing and change-of-state events in the causal chain [1, 3, 10]. For resultatives in particular, [5] argues that directness is characterized by temporal overlap between causing event and change of state, while [10, 1, 7] claim the decisive factor to be the absence of intervening events in the causal chain. Lastly, work on lexical causatives predicts that the causer’s intention to bring about a particular change of state attenuates the effect of an intervening cause(r) [12].

**Proposal.** This study presents the first empirical analysis of directness constraints on resultatives in American Sign Language and English.<sup>1</sup> Given that languages differ in the degree of directness required by a causative construction [11], comparing ASL and English allows investigating universal trends and unique properties of their resultative constructions. Based on felicity judgment data, I propose a revised construct of directness that distinguishes at least two levels of indirectness: (1) temporal distance and (2) an intervening cause(r) between cause and change-of-state subevents. In addition to this universal trend, I show cross-linguistic differences in the attenuating effect of causer intentionality.

**Experiments.** I tested the felicity of 12 resultative constructions per language in 4 causative scenarios that varied by degree of directness (see Table 1). The 4 scenarios allowed testing

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<sup>1</sup> ASL has a productive resultative construction, shown in (i) [6, 8]. The construction is monoclausal, as evidenced by the availability of subject pronoun copies (IX-addr in (i)) and rightward *wh*-movement.

(i) polar q  
IX-addr HAMMER SPOON FLAT IX-addr  
‘Did you hammer the spoon flat?’

the effect of temporal distance (a:d), intervening cause(r)s (a:b), and intentional vs. unintentional intervening cause(r)s (b:c) on the degree of directness of a causative situation.

Causative scenario	Intentional causer	Intervening cause(r)	Temporal delay
a) Direct	+	-	-
b) Intentional intervener	+	+	-
c) Intervener	-	+	-
d) Temporal distance	+	-	+

Table 1 Causative situations by intentionality, intervening cause(r)s, and temporal distance

Two online surveys with 48 items (12 resultatives x 4 conditions) were created; 28 English speakers and 25 native signers of ASL were each assigned randomly to one of two sub-surveys to judge 24 items in randomized order on a 5-point Likert scale from “Very appropriate” to “Not appropriate at all”. A sample resultative for ASL and English is provided in (2); stimuli, scenarios and instructions for the ASL survey were presented in the target language.

(2) How appropriate is the following sentence for describing what happened in (a)-(d)?

ASL: #JOHN CL:kick OPEN-door

English: John kicked the door open.

- a. John wants to get into his home, but the door is stuck, so he kicks at it once and it opens.
- b. John wants Mary to water his flowers while he is gone, so he programs his door to open automatically at 6pm, when Mary is supposed to stop by. John likes technological gimmicks, so he bought a door that you can only program to open at a particular time if you kick it. John kicks it to set the opening mechanism for 6pm, and when Mary gets to John’s place a little after 6pm, the door is open.
- c. John wants to open his front door for his wife but he has his hands full and his foot cannot reach the door. There’s a ball lying nearby, so John kicks the ball at the door and it opens.
- d. John is mad about something and needs to vent his anger. He kicks against a ball lying near him, and the ball accidentally hits a nearby door. The door opens.

**Results & Discussion.** A linear mixed model (fixed effect: causative scenario) revealed that English and ASL resultatives were significantly more felicitous in the Direct scenario than in any other ( $p < 0.0001$ ). Resultatives were further significantly more felicitous in scenarios with a temporal delay than in those with an intervening cause(r) ( $p < 0.0001$ ). English and ASL differed in the effect of intentionality: A causer who intends to bring about a particular result significantly increases the felicity of a resultative with an intervening entity in English ( $p = 0.008$ ), but not in ASL. The empirical contribution of these findings consists in a) showing that resultatives are sensitive to the level of directness of a causative situation; b) contra [10] and pro [5], temporal distance and intervening cause(r)s impact directness independently; and c) two distinct levels of directness can be distinguished since temporal distance degrades the felicity of a resultative less than an intervening cause(r). Regarding theory, the English results suggest that causation is introduced by an affix rather than a type-shifting operation. The type of causal meaning found in English resultatives cannot be subsumed under the logical meaning typically contributed by composition principles. Rather than describe a pure ordering relation of immediate precedence in the causal or temporal chain (see [1]), the causer’s intentionality can influence what counts as ‘immediate’ in English resultatives. In ASL, which allows no intervening causers regardless of causer intentionality, either an affixal or a type-shifting analysis are possible, suggesting that the encoding of causation in resultatives is language-specific.

#### References

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