

## Background

### 1.1 Resultatives

- Monoclausal causatives in which an agent performs an activity that brings about a change of state in (another) entity; the result is encoded as a secondary predicate:

#### English

Mary hammered the spoon flat.

#### ASL

IX<sub>addr</sub> HAMMER SPOON FLAT IX<sub>addr</sub>  
'Did you hammer the spoon flat?'

### 1.2 Directness of causation



- Mary hammered the spoon flat.
- Mary caused the spoon to become flat.



- #Mary hammered the spoon flat.
- Mary caused the spoon to become flat.



#### Possible factors:

- causee's degree of control [2]
- causer's intentions [5, 17]
- physical contact [14]
- shared spatio-temporal profile [7]
- adjacency in the causal chain [1, 4, 13]

### 1.3 Causative affix vs. operator

- Concealed causatives have no overt morphological exponent of causation
- Where does the causal meaning come from?

#### 1. silent causative verb/affix ([9], [16])

[[cause]] =  $\lambda P_{\langle et \rangle} \lambda e_s \exists s_s [\text{state}(s) \ \& \ \text{event}(e) \ \& \ P(s) \ \& \ \text{CAUSE}(s)(e)]$

#### 2. compositional semantic rule ([6], [10], [1])

Causation as a type-shifting operator that takes a transitive verb ( $\langle e, \langle e, t \rangle \rangle$ ) and an adjective ( $\langle e, t \rangle$ ) and outputs a complex verb ( $\langle e \langle e, t \rangle \rangle$ ).

## Aims

- Establish empirically which factors impact directness of causation in English and ASL resultatives
- Focus on theoretically established factors (a) temporal distance, (b) intervening cause(r), and (c) causer intentionality
- Show that the empirical results support an analysis of concealed causation in English resultatives as a null affix

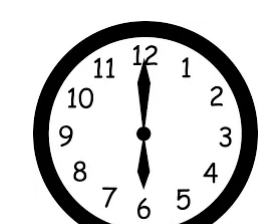
## Felicity judgment task

Causative scenario	Intentional causer	Intervening cause	Temporal delay
1 Direct	+	-	-
2 IntInv	+	+	-
3 Inv	-	+	-
4 Temp	+	-	+

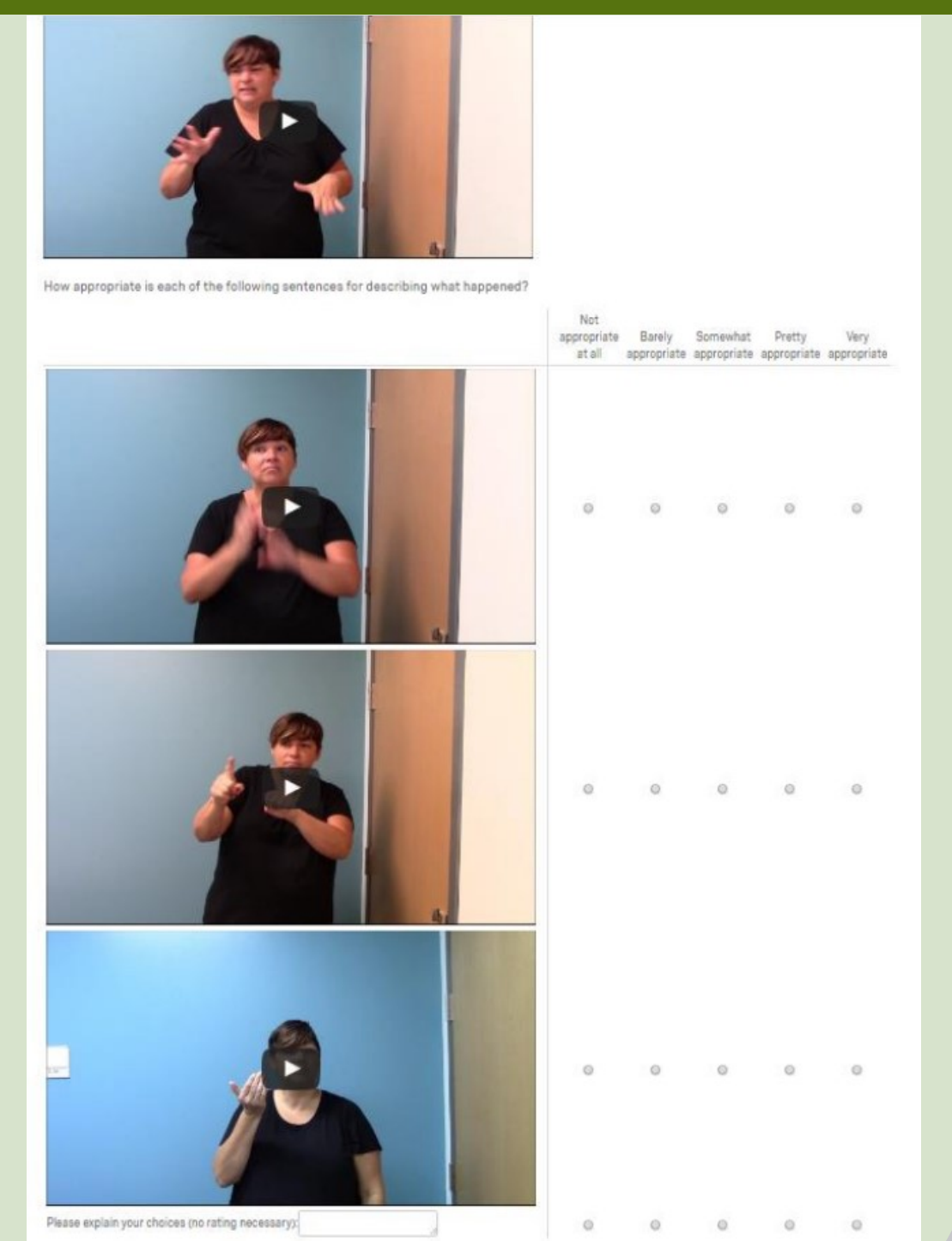
- 12 resultatives in 4 scenarios (= 48 items) distributed over 2 online surveys
- 25 ASL signers + 28 English speakers judged appropriateness of resultatives in each scenario on 5-Likert scale

#### Example:

ASL: #JOHN CL:kick OPEN-door  
English: John kicked the door open.



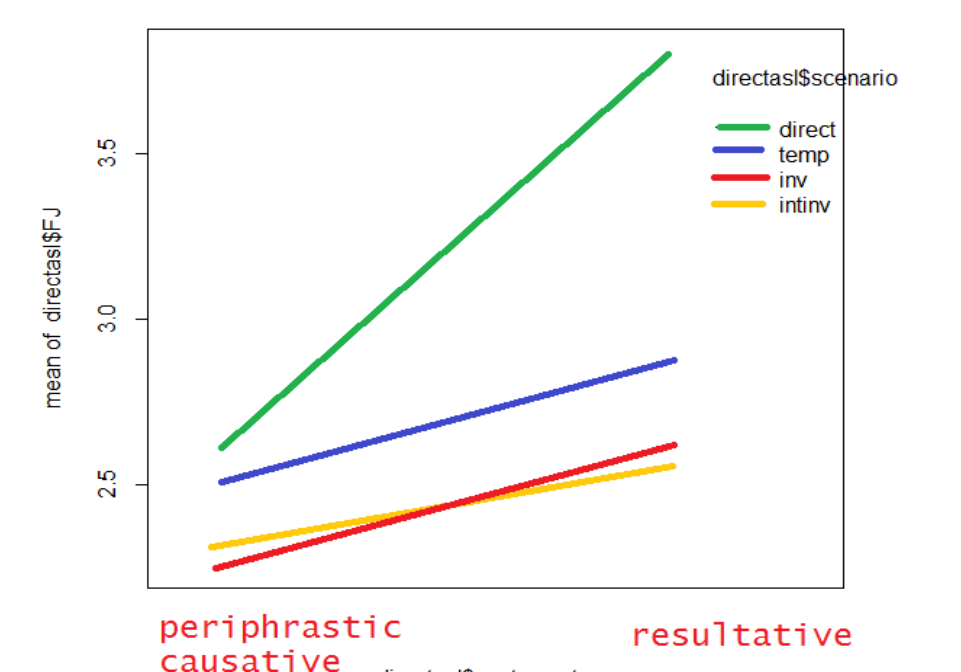
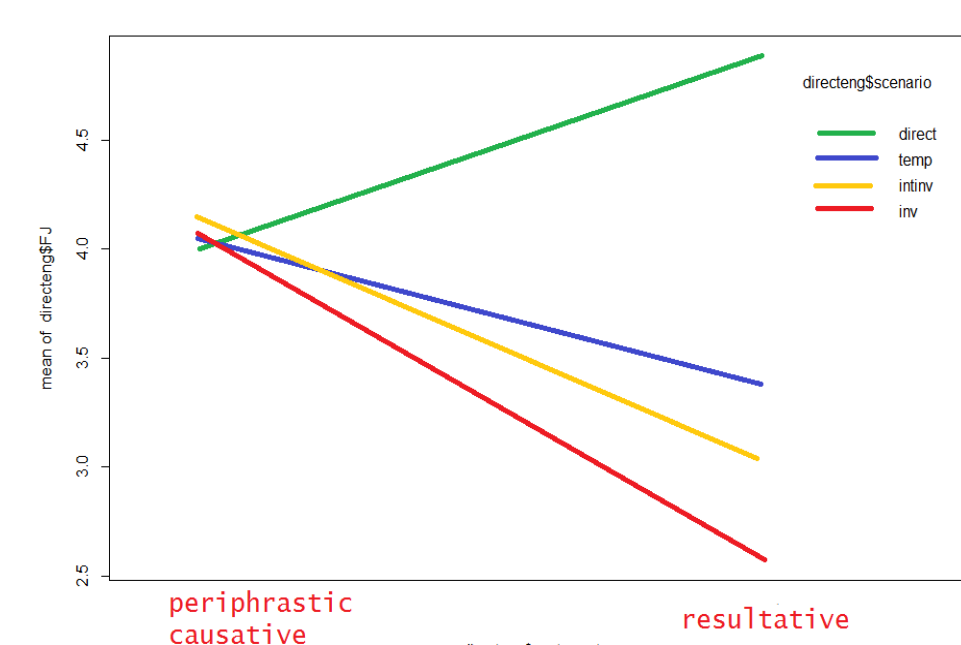
- John wants to get into his home but the door is stuck, so he kicks at it once and it opens.
- John has Mary water his flowers while he is on vacation and programs his front door to open for her at 6pm. His door can be programed by kicking. John kicks the door to set the opening mechanism and when Mary gets to John's place at 6pm, the door opens.
- John wants to open the door for his wife but has his hands full. There's a ball lying nearby so John kicks the ball at the door and it opens.
- John is mad about something and needs to vent his anger. He kicks at a ball lying near him, and the ball accidentally hits a nearby door. The door opens.



## Results

English	Acceptability ratings	
Causative scenario	M	SD
(1) Direct	4.88	0.39
(2) IntInv	3.02	1.46
(3) Inv	2.57	1.39
(4) Temp	3.39	1.32

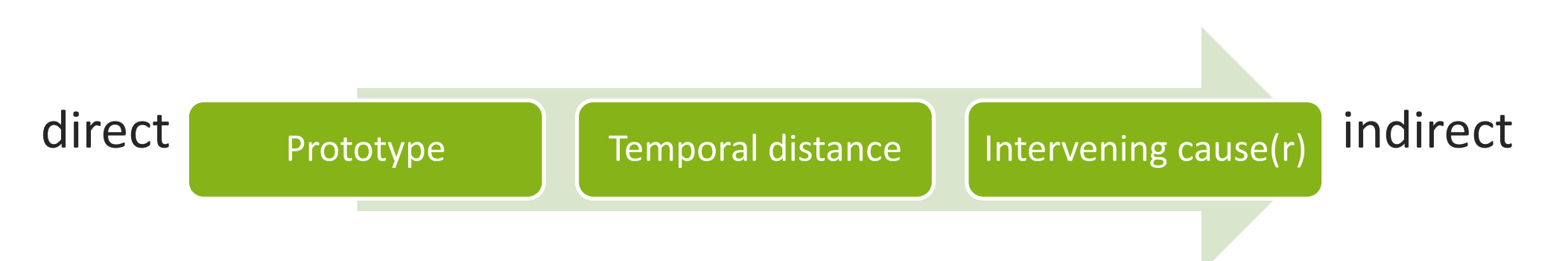
ASL	Acceptability ratings	
Causative scenario	M	SD
(1) Direct	3.81	1.19
(2) IntInv	2.56	1.37
(3) Inv	2.61	1.44
(4) Temp	2.88	1.26



- Resultatives are more appropriate in Direct causation scenarios than 2, 3, or 4 ( $p < 0.0001$ )
- Temporal distance is more acceptable than intervening cause(r) (Temp > IntInv/Inv  $p > 0.05$  English,  $p = 0.08$  ASL)
- In English, causer intentionality raises appropriateness of an intermediate cause(r) (IntInv > Inv  $p < 0.01$ )

## Discussion & Conclusion

- At least 3 levels of directness need to be distinguished



- Causation in English resultatives is likely encoded by a causative affix:
  - type-shifting operators contribute only logical meaning
  - causer intentionality affects immediate precedence in the causal chain (making 'tools' invisible in the chain)
  - intentionality is more likely encoded by a null lexical element

#### References

[1] Bittner, M. 1999. Concealed causatives. *Natural Language Semantics* 7.1-78; [2] Brennenstuhl, W. & K. Wachowicz. 1976. On the pragmatics of control. Proceedings of the 2nd annual BLS Meeting, Berkeley, CA. [3] Carrier, J. & Randall J. 1992. The argument structure and syntactic structure of resultatives. *Linguistic Inquiry* 23(2). 173-234. [4] Cruse, D.A. 1972. A note on English causatives. *Linguistic Inquiry* 3.522-28. [5] DeLancey, S. 1983. Agentivity and causation: Data from Newari. Proceedings of the 9th annual BLS Meeting, Berkeley, CA. [6] Dowty, D. 1979. *Word meaning and Montague grammar: The semantics of verbs and times in Generative Semantics and in Montague's PTQ*. Dordrecht, Boston, London: D. Reidel Publishing Company. [7] Goldberg, A. 1995. *Constructions: A Construction Grammar Approach to Argument Structure*. Chicago: University of Chicago Press. [8] Kentner, A. 2014. Event structure of resultatives in ASL. Purdue MA thesis. [9] Kratzer, A. 2005. Building resultatives. *Event Arguments*, ed. by C. Maienborn & Wöllstein, 177-212. Tübingen: Max Niemeyer Verlag. [10] Levin, B. & Rappaport Hovav, M. 1995. *Unaccusativity: At the syntax-lexical semantics interface*. Cambridge, MA: MIT Press. [11] Loos, C. The syntax and semantics of resultative constructions in DGS and ASL. UT Austin Dissertation. [12] Neeleman, A. & Van de Koot, H. 2012. The linguistic expression of causation. UCLPWL2010. [13] Rappaport Hovav, M. & B. Levin. 1999. Two types of compositionally derived events. *SALT* 9. 199-223. [14] Shibatani, M. 1976. The grammar of causative constructions: A conspectus. *The Grammar of Causative Constructions: Syntax and Semantics* 6, ed. by M. Shibatani, 1-42. New York: Academic Press. [15] Simpson, J. 1983. Resultatives. *Papers in Lexical-Functional Grammar*, ed. by B. Levin, M. Rappaport & A. Zaenen, 143-57. Bloomington, Indiana: Indiana University Linguistics Club. [16] Sybesma, R. 1992. Causatives and accomplishments: The case of Chinese BA. Doctoral Dissertation, Leiden University. [17] Wolff, P. 2003. Direct causation in the linguistic coding and individuation of causal events. *Cognition* 88.1-48.

