

# An analysis of secondary predication with LTAG and semantic frames

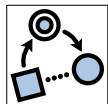
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University of Düsseldorf  
TreeGraSP Meeting #5



**SFB 991**

# Motivation - Secondary Predication in English

- (1) a. Kim<sub>i</sub> painted the barn hungry<sub>i</sub>. (depictive)  
'Kim painted the barn, during which he/she was hungry.'
- b. Kim painted the barn<sub>j</sub> red<sub>j</sub>. (resultative)  
'Kim painted the barn with red color.'

# Intransitive Resultatives

- (2)
- a. Kim ran the shoes threadbare.
  - b. \*Kim ran the shoes.
  - c. \*Kim ran threadbare.

# Transitive Resultatives

- (3) a. Kim painted the barn red. (barn  $\hat{=}$  THEME)  
b. Kim painted the bucket empty. (bucket  $\hat{=}$  CONTAINER)  
c. Kim ate the parents bankrupt.

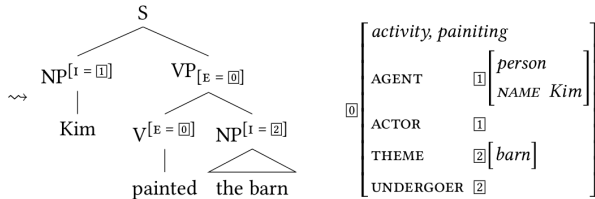
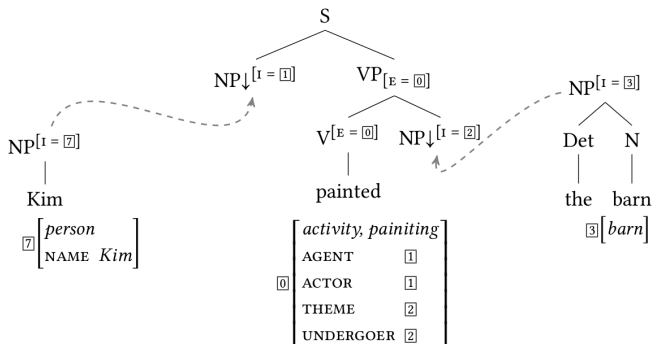
# Unaccusative Resultatives

- (4) a. The pond froze solid.
- b. The pond froze the water plants solid.

# Passivized Resultatives

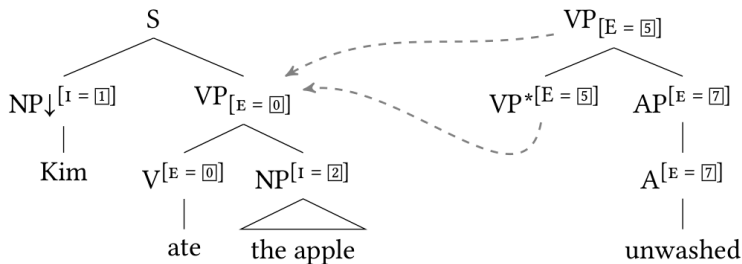
- (5)
- a. The barn was painted red (by Kim).
  - b. The shoes were run threadbare (by Kim).
  - c. The parents were eaten bankrupt (by Kim).

# Framework: LTAG and Frames



# Depictives: Analysis via adjunction at VP

revision of Burkhardt et al., 2017



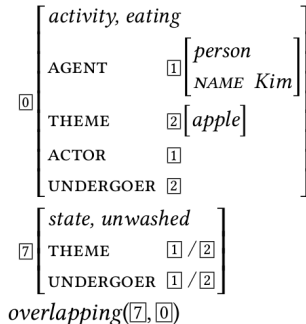
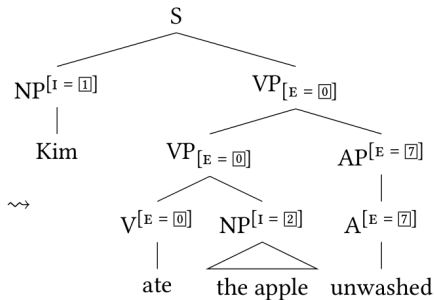
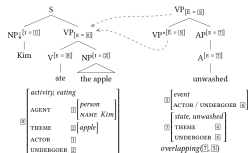
[0]	<i>activity, eating</i>	
	AGENT	[1] <i>person</i>
		NAME Kim
	THEME	[2] <i>apple</i>
	ACTOR	[1]
	UNDERGOER	[2]

[5]	<i>event</i>	
	ACTOR / UNDERGOER	[6]
[7]	<i>state, unwashed</i>	
	THEME	[6]
	UNDERGOER	[6]

*overlapping*([7], [5])



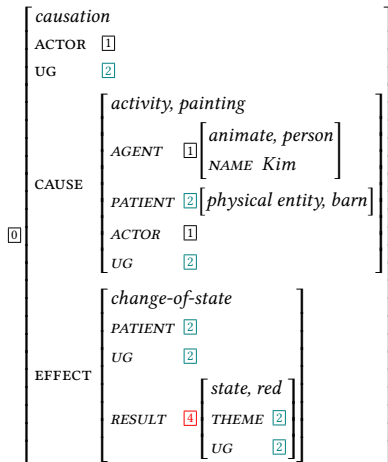
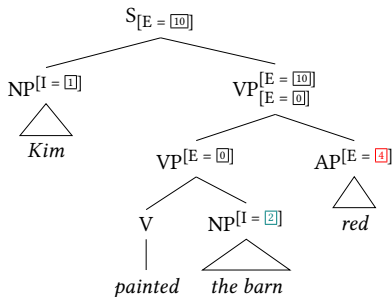
# Depictives: Analysis via adjunction at VP



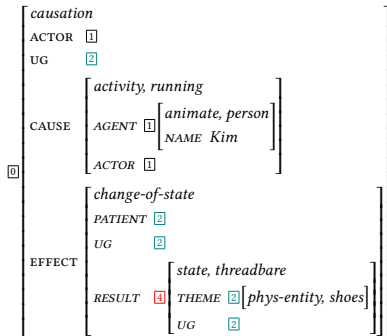
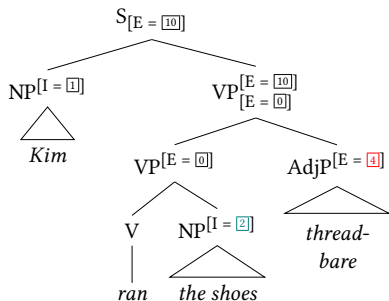
## Resultatives: Four types to cover

- (6) a. Kim painted the barn<sub>j</sub> red<sub>j</sub>
- b. Kim ran the shoes<sub>j</sub> threadbare<sub>j</sub>
- c. The pond<sub>j</sub> froze solid<sub>j</sub>
- d. The kids ate the parents<sub>j</sub> bankrupt<sub>j</sub>

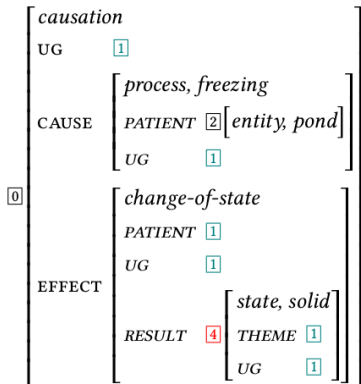
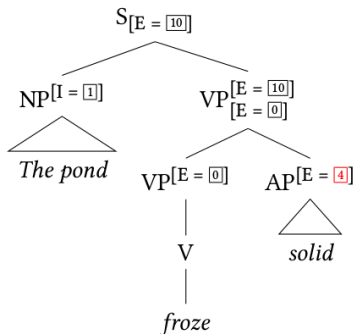
# Derived tree frame pairs: what we want to get (6-a)



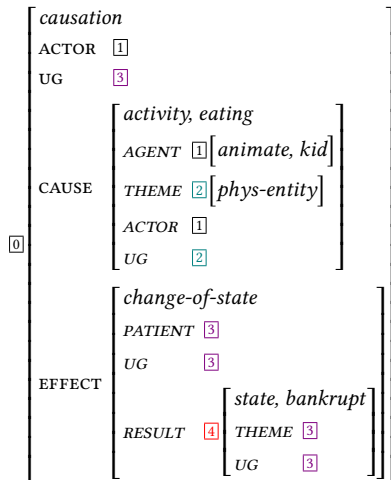
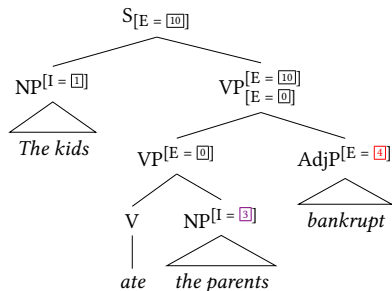
# Derived tree frame pairs: what we want to get (6-b)



# Derived tree frame pairs: what we want to get (6-c)



# Derived tree frame pairs: what we want to get (6-d)



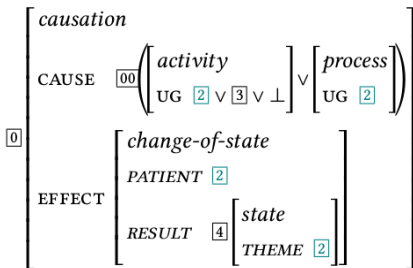
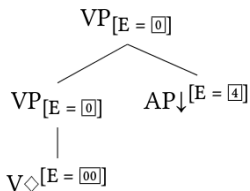
# MG decomposition

Observation: The resultative contributes a causation with a caused change of state. The verbal predicate is the cause. The four cases differ wrt. the type of the cause and the way the patient of the change of state is involved in the cause.

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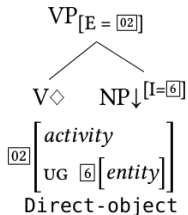
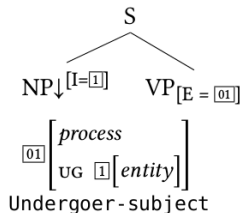
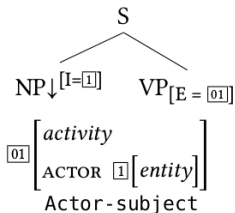
Resultative class in the MG:





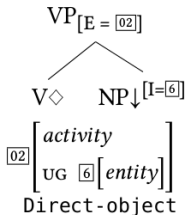
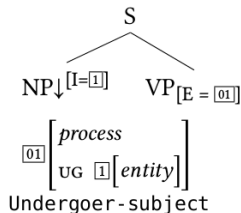
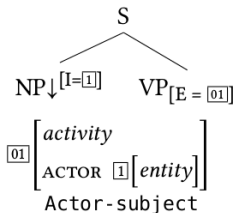
# MG decomposition ctd.

MG classes for subject and object:



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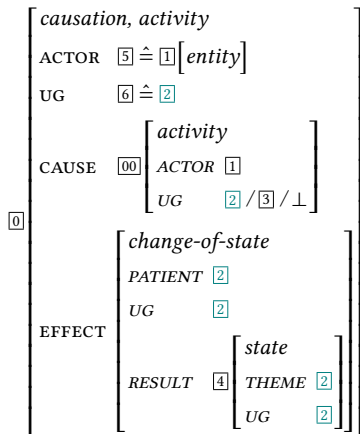
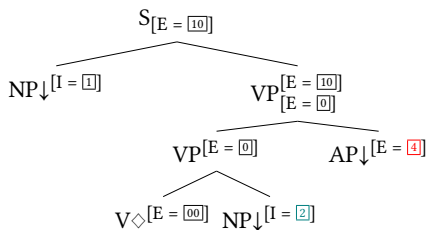
MG classes for subject and object:



- (7) a. Resultative-with-object-undergoer:  
**Actor-subject**  $\wedge$  **Direct-object**  $\wedge$  **Resultative**
- b. Resultative-with-subject-undergoer:  
**Undergoer-subject**  $\wedge$  **Resultative**

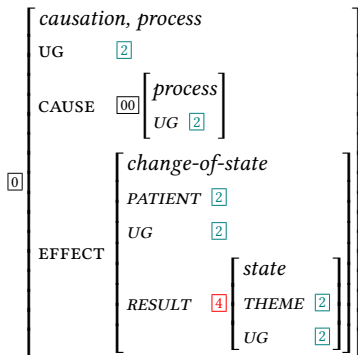
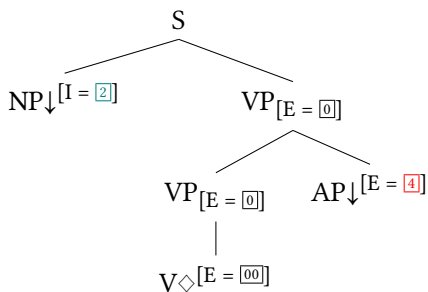
# MG decomposition ctd.

Result of compiling Resultative-with-object-undergoer:



# MG decomposition ctd.

Result of compiling Resultative-with-subject-undergoer:



## MG decomposition ctd.

What about passive?

- (8) a. The barn was painted red (by Kim).
- b. The shoes were run threadbare (by Kim).
- c. The parents were eaten bankrupt (by Kim).

## MG decomposition ctd.

What about passive?

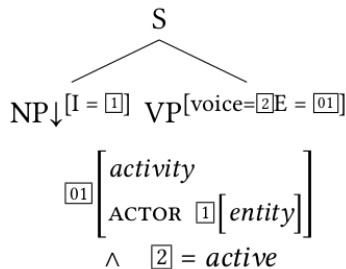
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Standard way of treating passive in the MG (Crabbé et al., 2013):

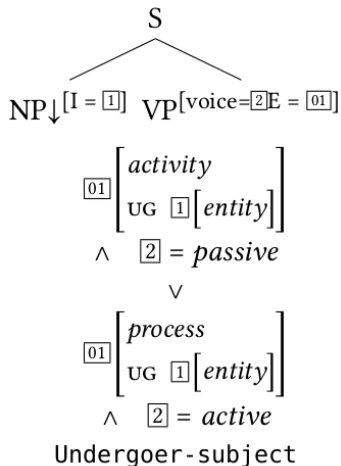
- (9) **Subject**  $\wedge$   
 (**ActiveVerb**  $\wedge$  **CanonicalObject**)  $\vee$  (active)  
 (**PassiveVerb**  $\wedge$  **CanonicalByObject**) (passive)

# MG decomposition ctd.

Extension:



Actor-subject



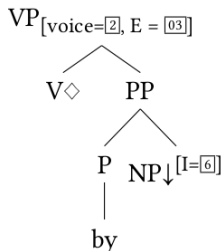
(10) Class Subject: Actor-subject  $\vee$  Undergoer-subject

# MG decomposition ctd.

Extension:

$$\begin{array}{c} \boxed{03} \left[ \begin{array}{l} \textit{activity} \\ \text{ACTOR } \boxed{3} \left[ \textit{entity} \right] \end{array} \right] \\ \wedge \quad \boxed{2} = \textit{passive} \end{array}$$

By-object:



- (11) a. Resultative-with-object-undergoer:  
 Subject  $\wedge$  Resultative  $\wedge$   
 ((ActiveVerb  $\wedge$  Direct-object)  $\vee$  (active)  
 (PassiveVerb  $\wedge$  By-object)  $\vee$  (passive, *by*-PP)  
 PassiveVerb) (passive, no *by*-PP)
- b. Resultative-with-subject-undergoer:  
 Undergoer-Subject  $\wedge$  Resultative  $\wedge$  ActiveVerb



# Combining depictives and resultatives

Predictions of our analyses:

- 1 If the event denoted by the verbal predicate has an ACTOR, then the depictive should be able to target this ACTOR (provided semantic types are compatible) because it is the ACTOR of the entire *causation*.

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Predictions of our analyses:

- 1 If the event denoted by the verbal predicate has an ACTOR, then the depictive should be able to target this ACTOR (provided semantic types are compatible) because it is the ACTOR of the entire *causation*.
- 2 Provided types are compatible, the depictive should be able to target the argument of the result state (its UNDERGOER, which is also the UNDERGOER of the *causation*).
- 3 If the event denoted by the verbal predicate has an UNDERGOER that is not the UNDERGOER of the *change-of-state*, this UNDERGOER should be excluded as a target for the depictive (since it is not the UNDERGOER of the entire *causation*).

## Combining depictives and resultatives

At least 1 and 2 seem to be the case:

- (12)
- a. Nackt<sub>i/j</sub> tanzten sie<sub>i</sub> die Füße<sub>j</sub> blutig.  
Naked danced they the feet bloody.  
'Naked they danced the feet bloody.'
  - b. Kim ran the shoes<sub>i</sub> unlaced<sub>i</sub> threadbare.
  - c. Sie haben das Zimmer<sub>i</sub> unausgeräumt<sub>i</sub> gelb  
They have the room uncleaned yellow  
gestrichen.  
painted.  
'They painted the room, which was not cleared,  
yellow.'
  - d. They<sub>i</sub> ate the parents<sub>j</sub> hospitalized<sub>i/j</sub> bankrupt.
  - e. Ungepflegt/ungestrichen<sub>i</sub> rostete das Tor<sub>i</sub> kaputt.  
Unkempt/unpainted rusted the gate broken.  
'Unkempt/unpainted, the gate rusted broken.'

## Combining depictives and resultatives ctd.

3 is harder to test, here is a try:

- (13) a. ?Roh/?kalt/?unaufgewärmt haben sie den  
 Raw/cold/unheated have they the  
 Kühlschrank leer gegessen.  
 fridge empty eaten.  
 'Raw/?cold/?unheated, they ate the fridge empty.'
- b. Sie haben ?unverdünnt den Keller leer  
 They have undiluted the cellar empty  
 getrunken.  
 drunken.  
 '?Undiluted, they drank the cellar empty.'

# Conclusion

- We proposed an adjunction-based analysis for depictives, and a construction-based analysis for resultatives within the MG.
- Key features of the latter:
  - 1 Due to general frame constraints for causative events, the undergoer necessarily is the undergoer of the change of state that is embedded as an effect in the causation.
  - 2 Consequently, the direct object slot (resp. the subject slot in the unaccusative case) need not be a semantic participant of the verbal predication but must be a participant of the result state.
  - 3 Conversely, the undergoer of the verbal predicate (if it has one) need not be realized.