

# Result XPs and the argument-adjunct distinction

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# Resultatives

- Result phrases:
  - ▶ *She hammered the metal flat.*
  - ▶ *The river froze solid.*
  - ▶ *The vase broke into pieces.*
- Result phrases are optional; yet they are typically treated as arguments:
  - ▶ Simpson (1983a), Rappaport Hovav and Levin (2001), Carrier and Randall (1992)
- However, it has also been noted that result XPs show adjunct-like characteristics:
  - ▶ Ernst (2002,498), Iwata (2006), Mateu (2011)

# This paper

- Result phrases do indeed display characteristics of both arguments and adjuncts.
- This follows naturally from the traditional treatment of resultatives in LFG (Simpson 1983b)

# Argument vs. adjuncts

“The arguments are the participants minimally involved in the activity or state expressed by the predicate” (Haegeman 1994,44)

“This distinction between arguments and adjuncts is important, but not always easy to make. The basic difference is that arguments are closely associated with the meaning of the predicate itself, while adjuncts are not.” (Kroeger 2004,10)

# Argumenthood diagnostics

- The basic intuition of argumenthood: the meaning of a predicate entails that certain participants are involved (Dowty 1982).
- Participants/phrases that are not entailed by the predicate are *adjuncts*.
- Problem: Intuitions can vary as to which participants are entailed. Moreover, a time and a place are always entailed (Dalrymple 2001 and others).
- Arguments and adjuncts have been noted in the literature to behave differently with respect to a number of syntactic and semantic phenomena; “argumenthood tests”
- The argumenthood tests are very useful, but they are also problematic.

# Classes of resultatives

- Resultatives can be classified along different dimensions (causative, fake reflexive...); see Goldberg and Jackendoff (2004)
- Our division (based on Goldberg and Jackendoff 2004):
  - ▶ causative and non-causative action
  - ▶ property and path result

# Four classes of resultatives

- ① Causative property: *Kelly hammered the metal flat*
- ② Non-causative property: *The river froze solid*
- ③ Causative path: *Kelly rolled the ball down the hill.*
- ④ Non-causative path: *The car rolled down the hill.*

# Testing the result XPs for argumenthood status

Some examples are constructed and some are taken from the WWW and the Corpus of Contemporary American English (COCA). The judgements: previous literature, Liz's and a pilot questionnaire study (seven native speakers).



# Core participants

Arguments are core participants of the verb, adjuncts are not.

Dowty's entailment test: "the second and/or third argument of an inherently two or three-place verb are always implicit in the meaning of the verb, even if they are unmentioned in the sentence" (Dowty 1982,90)

# Core participants

Causative property:

- Kim hammered the metal flat.
- Sam broke the vase into pieces

Non-causative property:

- The river froze solid.

Causative path:

- Bill pushed/rolled the ball down the hill.

Non-causative path:

- The truck rolled/rumbled into the garage.

The verbs *hammer*, *push*, *knead* and *rumble* do not seem to entail a result state/location  $\Rightarrow$  adjunct

The verbs *roll*, *break* and *freeze* do seem to entail an end state/location  $\Rightarrow$  argument

# Core participants

Non-causative property:

- ① The river froze solid.
  - ② The vase broke into pieces.
  - ③ The earth split open.
  - ④ The ice cream melted into a mess.
- Non-causative path resultatives seem to be restricted to change-of-state verbs and thus have an entailed end state: *argument*
  - The verbs in the other classes of resultatives do not necessarily entail an end state/path: *adjunct*

# Syntactic Obligatoriness

Arguments are syntactically obligatory, adjuncts are not.

- Kelly prodded Sam on Tuesday.
- Kelly prodded Sam.
- \*Kelly prodded.

# Syntactic Obligatoriness

Causative property:

- Kim hammered the metal (flat).

Non-causative property:

- The river froze (solid).

Causative path:

- Bill rolled the ball (down the hill).

Non-causative path:

- The truck rolled (out of the garage).

The result XP is optional  $\Rightarrow$  patterns with *adjuncts*.

# Fixed preposition

- If a verb requires its complement to have a fixed preposition, the PP is an argument.

Causative property:

- Kim kneaded the dough into a ball/\*onto a square.

Non-causative property:

- The vase broke into pieces/to bits/\*across pieces.

Causative path:

- Bill rolled the ball down the hill/across the road.

Non-causative path:

- The truck rolled out of the garage/into the garden.

- Properties: *arguments*; paths: *adjuncts*

# Prepositional content

- The more semantic content a preposition contributes to a phrase, the more likely it is that it heads an adjunct.

Causative property:

- Kim kneaded the dough into a ball/\*onto a square.

Non-causative property:

- The vase broke into pieces/to bits/\*across pieces.

Causative path:

- Bill rolled the ball down the hill/across the road.

Non-causative path:

- The truck rolled out of the garage/into the garden.

- Properties: *arguments*; paths: *adjuncts*

# Pseudocleft

Adjuncts can appear after do in a VP-focused pseudocleft; arguments cannot.

- \*What Kelly did on Rory was rely. (Argument)
- What Kelly did on Tuesday was swim. (Adjunct)



# Pseudocleft

Causative property:

- \*What Kim did flat was hammer the metal.
- \*What Kim did into pieces was break the vase.

Non-causative property:

- \*What the river did solid was freeze.
- \*What the vase did into pieces was shatter.

Causative path:

- \*What Bill did into the goal was kick the ball.

Non-causative path:

- \*What the truck did into the garage was roll.

The result XP cannot appear after a VP-focused pseudocleft  $\Rightarrow$  patterns with arguments.

# VP Preposing

Arguments must move with a preposed verb; adjuncts can be left behind.

- Kylie wanted to draw a picture, and draw a picture she did.
- \*Kylie wanted to draw a picture, and draw she did a picture.
- Kelly wanted to run on Tuesday, and run she did on Tuesday.

# VP Preposing

Causative property:

- \*Kim wanted to hammer the metal flat, and hammer the metal she did flat.
- \*Kim wanted to break a pot into pieces, & break a pot she did into pieces.

Non-causative property:

- \*The river needed to freeze solid, and freeze it did solid.
- \*The vase needed to break into pieces and break it did into pieces.

Causative path:

- \*Bill wanted to kick the ball into the net, & kick the ball he did into the net.

Non-causative path:

- \*The truck needed to roll into the garage, and roll it did into the garage.

The result XP cannot be left behind by a preposed verb  $\Rightarrow$  patterns with arguments.

## VP Anaphora (Do So)

Arguments cannot be added to a 'do so' clause, adjuncts can.

- \*Kate ate the cake and Bill did so the frosting. (Argument)
- Kelly swam on Tuesday and Rory did so on Wednesday. (Adjunct)

# VP Anaphora (Do So)

Causative property:

- \*Kim wiped the counter clean and Sam did so dry.
- \*Kim broke his cup into shards and Sam did so in half.

Non-causative property:

- \*The vase broke into 6 pieces and the pot did so in half.

Causative path:

- \*Bill pushed a friend into the house and Sammy did so into the garage.

Non-causative path:

- \*The truck rolled into the garage and the bus did so down the street.

The result XP cannot be added to a “do so” clause  $\Rightarrow$  patterns with arguments.

# Uniqueness / Iterativity

Each argument position (subject, object, etc.) can only be filled one time; adjuncts can be iterated multiple times.

- Kelly kissed Rory.
- \*Kelly kissed Kevin Rory. (Argument)
- Kelly kissed Rory in the park in the Big Apple on the bench next to the hot dog stand. (Adjuncts)

# Uniqueness / Iterativity

Causative property:

- Sally hammered the metal flat.
- Sally hammered the metal into a disc.
- \*Sally hammered the metal flat into a disc.

Non-causative property:

- The jar burst open.
- The jar burst into flames.
- \*The jar burst open into flames.

The property result XP cannot be iterated  $\Rightarrow$  patterns with arguments.

# Uniqueness / Iterativity

Causative path:

- Sally pushed the cup off the table.
- Sally pushed the cup onto the floor.
- Sally pushed the cup off the table onto the floor.

Non-causative path:

- The ball bounced down the hill.
- The ball bounced along the path.
- The ball bounced down the hill along the path.

The path result XP can be iterated  $\Rightarrow$  patterns with adjuncts.



# Uniqueness / Iterativity: Note

Non-causative property:

- \*beat someone bloody dead
- roll the dough flat into a circle
- \*roll the dough into a circle flat
- The bird's feathers froze solid.
- The bird's feathers froze into hard, smooth scales.
- The bird's feathers froze solid into hard, smooth scales.
- \*The bird's feathers froze into hard scales solid.

# Summary of the tests

Test	Agentive Property	Non-agentive Property	Agentive Path	Non-agentive Path
Syntactic Obligatoriness	<b>AJ</b>	<b>AJ</b>	<b>AJ</b>	<b>AJ</b>
Core Participants	<b>AJ</b>	AR	<b>AJ</b>	<b>AJ</b>
VP preposing	AR	AR	AR	AR
Fixed Preposition	AR	AR	<b>AJ</b>	<b>AJ</b>
Prepositional Content	AR	AR	<b>AJ</b>	<b>AJ</b>
Pseudocleft	AR	AR	AR	AR
Uniqueness/Iterativity	AR	AR	<b>AJ</b>	<b>AJ</b>
VP anaphora (do so)	AR	AR	AR	AR

**Legend** *AR* more argument-like; *AJ* more adjunct-like

# Paths and properties

Prepositional content and fixed preposition tests:

- There are a number of different types of paths and those paths are expressed using prepositions with different meanings: into, onto, over, across....
- However, even though one can imagine different result states, these differences are not reflected in the choice of preposition in English

s

Iterativity test:

- Predicative properties cannot in general be stacked; paths can:
- \*They were tired exhausted.
- He ran out of the house across the garden onto the street.

# Paths and properties

- The differences between the properties and paths that we find are not specific to results; they are general differences between properties and paths.

# Summary of the tests

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Core Participants	<b>AJ</b>	AR	<b>AJ</b>	<b>AJ</b>
VP preposing	AR	AR	AR	AR
Fixed Preposition	AR	AR	<b>AJ</b>	<b>AJ</b>
Prepositional Content	AR	AR	<b>AJ</b>	<b>AJ</b>
Pseudocleft	AR	AR	AR	AR
Uniqueness/Iterativity	AR	AR	<b>AJ</b>	<b>AJ</b>
VP anaphora (do so)	AR	AR	AR	AR

**Legend** *AR* more argument-like; *AJ* more adjunct-like

# Simpson's resultative rule (1983)

## XCOMP Addition Rule

Add a resultative attribute XCOMP.

Add the control equation: XCOMP SUBJECT = Verb's OBJECT

- The resultative phrases are added by a rule; they are *derived arguments* (Needham and Toivonen 2011)

## Concluding remarks

- Result XPs are optional, and they are typically not semantically selected. They pattern with adjuncts, according to the two most commonly used diagnostics for argumenthood.
- Puzzle: Result XPs pattern overwhelmingly with arguments according to other commonly used argumenthood tests.
- This mixed argument/adjunct status follows if we assume that result XPs are not 'basic' arguments, but instead added to the argument structure by some mechanism. Result XPs are *derived arguments*. (Simpson's traditional LFG analysis)
- The difference between property and path results reflect more general differences between predicative properties and paths.

# Thank you for your time!

Any questions?



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# Test-specific references

**Preposition Stranding:** Chomsky 1977, Hedberg and DeArmond 2009

**Fixed Preposition:** Pollard and Sag 1987, Wechsler 1991, Carnie 2002, Tutunjian and Boland 2008

**Order dependence:** Pollard and Sag 1987, Dalrymple 2001

**Prepositional Content:** Pollard and Sag 1987, Wechsler 1991

**Pseudocleft:** Hedberg and DeArmond 2009

**Core Participants:** Dowty 1982, Levin and Rappaport Hovav 1995, Dalrymple 2001, Koenig et al. 2003, Boland and Blodgett 2008

**Syntactic Obligatoriness:** Jackendoff 1990, Carnie 2002, Kroeger 2004

**Uniqueness/Iterativity:** Fillmore 2968, Pollard and Sag 1987, Bresnan 1982, Zaenen and Crouch 2009

**VP anaphora (do so):** Lakoff and Ross 1966, Baker 1978, Radford 1988, Hedberg and DeArmond 2009