

A label theoretic explanation of the resultative parameter

Dan Milway
University of Toronto
dan.milway@mail.utoronto.ca

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Introduction

- Resultative interpretation of secondary predicates is parameterized
 - (1) She hammered the metal flat
 - (2) *Il a marché les jambes raides.
He has walked the legs stiff
“He walked his legs off.” (**French**. Washio 1997)
 - Compare with depictives:
 - (3) She ate the meat raw.
 - (4) Il a mangé la viande crue.
He has ate the meat raw
“He ate the meat raw.” (**French**)
 - The parameterized expressions (resultatives) are surface-indistinguishable from the non-parameterized expressions (depictives).
 - This presents an acquisition puzzle.
 - The puzzle can be solved if the resultative parameter can be shown to follow from a surface parameter.
 - Snyder (2016) argues that resultatives are strongly correlated with productive Bare Stem Compounding (BSC)
 - In his dissertation it was restricted to N-N Compounding (Snyder 1995)
 - (5) pocket watch chain
 - (6) *poche montre chaîne (**French**)
- Such a strong correlation suggests a possible causal link.
 - BSC is a surface pattern, therefore directly learnable.
 - Showing how BSC and resultatives are linked would solve the acquisition puzzle.

Goal of the talk: To present a plausible link between BSC and resultatives

Language	Resultatives	N-N Compounding
English	Yes	Yes
Dutch	Yes	Yes
German	Yes	Yes
Khmer	Yes	Yes
Hungarian	Yes	Yes
French	No	No
Spanish	No	No
Russian	No	No
Serbo-Croatian	No	No
Japanese	No	No
ASL	No	No
Mandarin	No	No
Modern Hebrew	No	No
Palestinian Arabic	No	No

Figure 1: Resultatives are correlated with N-N compounding (Snyder 1995)

Plan

1. Background assumptions
 - Theory
 - Structure of resultatives
 - Lexical basis of BSC
2. Label Theory
 - Chomsky (2013, 2015)
 - My extensions
3. Deriving (*)resultatives
 - Deriving resultatives in English-type languages
 - Blocking resultatives in French-type languages

1 Background assumptions

1.1 Theory

- Working within the minimalist program
- Four components of the language faculty:
 - Two interfaces:
 - Conceptual-Intentional (CI)
 - Sensory-Motor (SM)
 - A structure building operation (Merge)
 - A lexicon

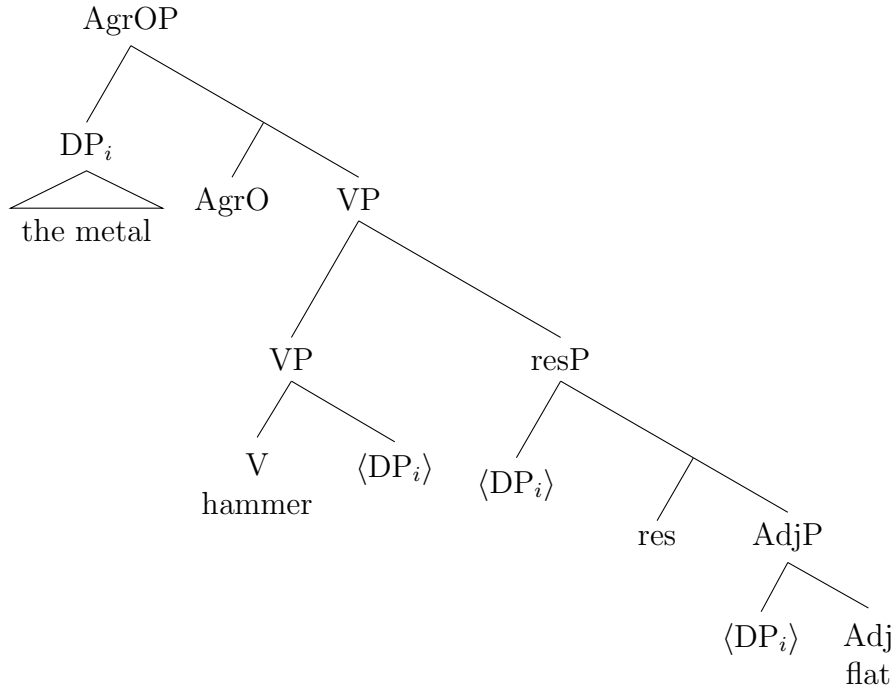
- The interfaces and Merge are invariant, the lexicon varies between individuals.

(7) **The Borer-Chomsky Conjecture** (Baker 2008)

All parameters of variation are attributable to differences in the features of particular items (e.g., the functional heads) in the lexicon.

1.2 Structure of Resultatives

(8) hammer the metal flat



- I adopt a modified version of Kratzer’s (2004) structure
- Several properties of (8) that bear noting:
 - resP is adjoined to VP.
 - res is a phase head, therefore *the metal* raises from the SC to [Spec res].
 - The move from [Spec res] to [Comp V] is sideward (see Nunes 2001).
- **Preview:** Blocking the DP movement will be key to blocking resultatives in French-type languages.

1.3 Lexical basis of BSC

- Bare stems are needed for BSC.
- Snyder (2016) defines Bare stems as any form that:
 - “could be used as an independent word”
 - “is the form that inflectional morphology would combine with”

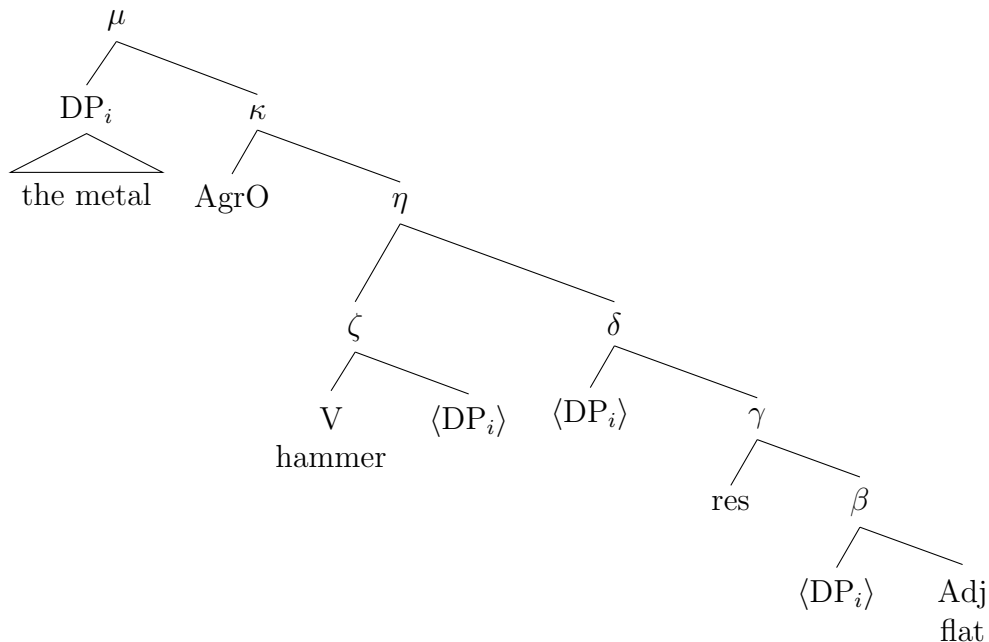
- “does not yet bear any inflection”
- In current generative syntactic theory, a stem is a root merged with a category-determining head.
 - *e.g.*, $dog \leftrightarrow \{n, \sqrt{DOG}\}$
- **Proposal:** A language generates bare stems iff its lexicon contains category-determining heads without φ -features.
 - English-type lexicons have n_\emptyset , adj_\emptyset , v_\emptyset *etc.*
 - as well as n_φ , adj_φ , v_φ , *etc.*
 - French-type lexicons have only n_φ , adj_φ , v_φ , *etc.*

2 Label Theory

2.1 Chomsky (2013, 2015)

- Syntax is reducible to simplest Merge
 - $\text{Merge}(X, Y) = \{X, Y\}$
- Accounts for the fundamental properties of language (*e.g.*, structure-dependence of rules, displacement)
 - Except for Projection/Labelling
 - Why is $\{\text{see}, \text{the girl}\}$ a VP, not a DP?
- Chomsky’s proposal: Labels are assigned at the CI interface by a Labelling Algorithm (LA)

(9) hammer the metal flat (**unlabeled**)



- LA is an instance of Minimal search.
 - Picks out the most prominent item as a syntactic object's (SO) label
 - Failure of the LA results in a crash.
- There are three relevant classes of SOs for LA:
 1. Head-Phrase structures: $\{X, YP\}$
 - The head, X, is the most prominent and therefore is the label.
 2. Head-Head structures: $\{X, Y\}$
 - Only converges in stems ($\{\text{cat}, \text{ROOT}\}$)
 - Since Roots are featureless, they are too weak to label.
 - $\text{Label}(\{n, \text{ROOT}\}) = n$
 3. Phrase-Phrase structures: $\{XP, YP\}$
 - Only converges in two cases:
 - One phrase is a lower copy:
 - $\text{Label}(\{\langle XP \rangle, YP\}) = \text{Label}(YP)$
 - XP and YP agree for some feature F:
 - $\text{Label}(\{XP_F, YP_F\}) = \langle F, F \rangle$
 - F is *e.g.*, φ for $\{\text{DP}, \text{TP}\}$, Q for $\{\text{WhP}, \text{CP}\}$.
 - Crashes otherwise.
 - Not everything can label
 - Roots cannot
 - Heads with only one φ -set cannot
 - English finite T_φ needs an overt subject for labelling.
 - Compare: Italian finite $T_{\langle \varphi, \varphi \rangle}$, English non-finite T_\emptyset

2.2 Extensions to Label Theory

2.2.1 Labels determine composition

- Chomsky argues that labels are needed for interpretation at the CI interface.
- **Proposal:** The label of a syntactic object determines how the objects members are composed.
 - The CI interface interprets pairs of syntactic objects (SO) and their labels (L): $\langle \text{SO}, L \rangle$
 - If L is a head, The SO composes by Function Application.
 - $\llbracket \langle \{D, NP\}, D \rangle \rrbracket = \llbracket D \rrbracket(\llbracket NP \rrbracket)$
 - If L is a pair of features, the SO is interpreted as an Operator-Variable structure.
 - $\llbracket \langle \{\text{WhP}, \text{CP}\}, \langle Q, Q \rangle \rangle \rrbracket = (\text{Wh}x)(\dots x \dots)$

2.2.2 Adjunction Structures are unlabelled

- Host-Adjunct structures (*e.g.*, VP+resP) receive a null label (\emptyset)
 - Adjuncts are ignored by LA
 - *cf* Chametzky (1996), Hornstein (2009)
- Syntactic Objects with null labels are composed by predicate modification
 - $\llbracket \langle \{VP, \text{resP}\}, \emptyset \rangle \rrbracket = \llbracket VP \rrbracket(e) \ \& \ \llbracket \text{resP} \rrbracket(e)$
- **Note:** A null-labelled object can converge. A failure of LA causes a crash.

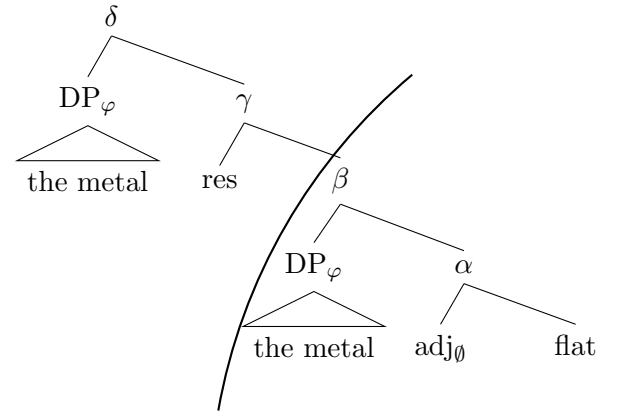
3 Deriving (*)resultatives

3.1 Deriving resultatives in English-type languages

- In a language like English (with adj_{\emptyset} heads) resultatives converge.
- *e.g.*, *Natalie hammered the metal flat*

Step 1: Derive the resP adjunct

- Build the Small Clause.
- Merge(res, β)
- Copy(DP) + Merge(DP, γ) (10)
- Transfer(β)
 - res is a phase head.
 - $\text{Label}(\alpha) = \text{adj}$
 - $\text{Label}(\beta) = \text{Label}(\alpha)$
 - β converges.
- Copy(DP)
 - Generally, it seems that *overt* specifiers of adjuncts are barred. (See appendix for explanation).

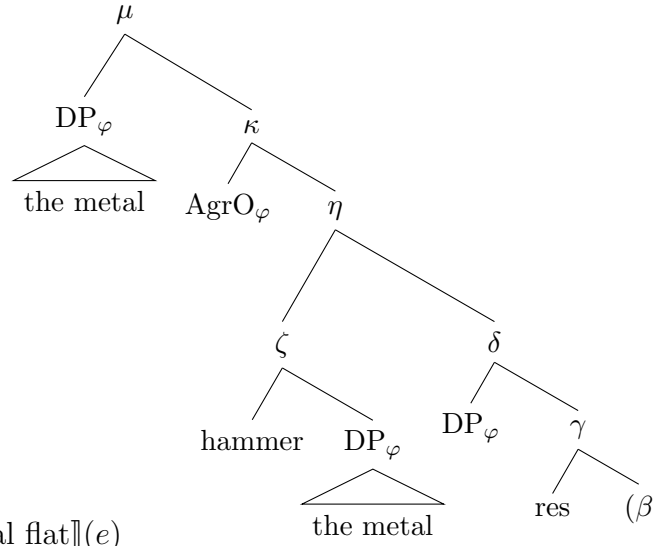


Step 2: Derive the VP

- Merge(DP, hammer) (11)

– A copy of the DP was in
“working memory”

- Merge(ζ , δ)
- Merge(AgrO, η)
- Copy(DP) + Merge(DP, κ)
- ...
- Label(η) = \emptyset
- $\llbracket \langle \eta, \emptyset \rangle \rrbracket =$
 $\llbracket \text{hammer the metal} \rrbracket(e) \& \llbracket \text{res the metal flat} \rrbracket(e)$



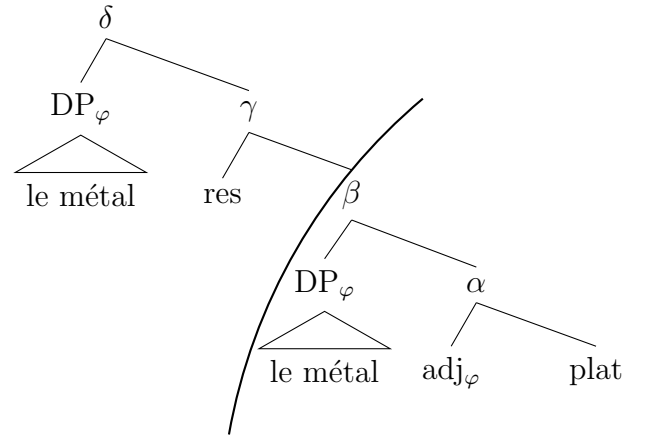
3.2 Blocking resultatives in French-type languages

- In languages like French (without adj_\emptyset heads) resultatives crash.
- e.g., **Jean a martelé le métal plat*.

3.2.1 Attempt 1

Step 1: Derive the resP adjunct

- Build the Small Clause. (12)
- Merge(res, β)
- Copy(DP) + Merge(DP, γ)
- Transfer(β)
 - res is a phase head.
 - Lower DP copy is invisible
 - adj_φ is too weak to label without agreement
 - Label(β) is undefined
 - *CRASH*



3.2.2 Attempt 2

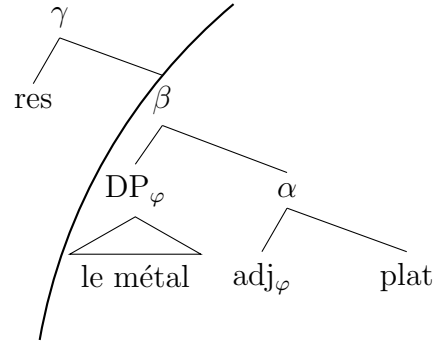
Step 1: Deriving the resP adjunct

- Build the Small Clause.
- Merge(res, β)
- Transfer(β)
 - res is a phase head.
 - DP and α agree for φ
 - Label(β) = $\langle \varphi, \varphi \rangle$
 - β converges.

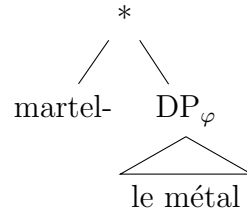
Step 2: Deriving the VP

- Cannot Merge(DP, martel-)
- No copy of the DP in “working memory”
- *CRASH*

(13)



(14)



Summary: Adjectival resultatives can only be derived if the adjective is categorized by an adj_\emptyset head.

4 Conclusion

- The resultative parameter seems not to be directly learnable.
- I’ve presented a plausible way it can be indirectly learnable.
- Starting with Snyder’s (2016) correlation between resultatives and bare stem compounding ...
- Adopting a small clause analysis for resultatives based on Kratzer’s (2004) structure ...
- Assuming an extended version of Chomsky’s (2013, 2015) label theory ...
- Resultatives were shown to be derivable in English-type languages ...
- And blocked in French-type languages

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A A note on specifiers of adjuncts

- Consider the VP+resP structure with an unmoved DP in [Spec res] (15)
- $\text{Label}(\delta) = \emptyset$
- $\llbracket \langle \delta, \emptyset \rangle \rrbracket = \llbracket \text{the metal} \rrbracket(x) \ \& \ \llbracket \text{res the metal flat} \rrbracket(x)$
- This is an ill-formed interpretation
- Requires that *the metal* be identical to an event of which it is a participant.
 - Looks like an i-within-i violation
- Therefore, The DP must move.
- cf. Cinque (1996)

