Adjunction in minimalism: Ideas and ideals

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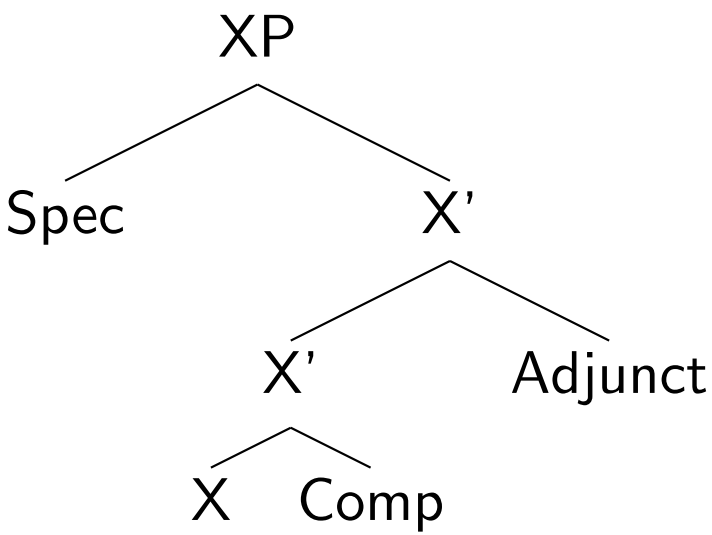
Overview

Progress

Recall: adjuncts in GB

In X-bar theory:

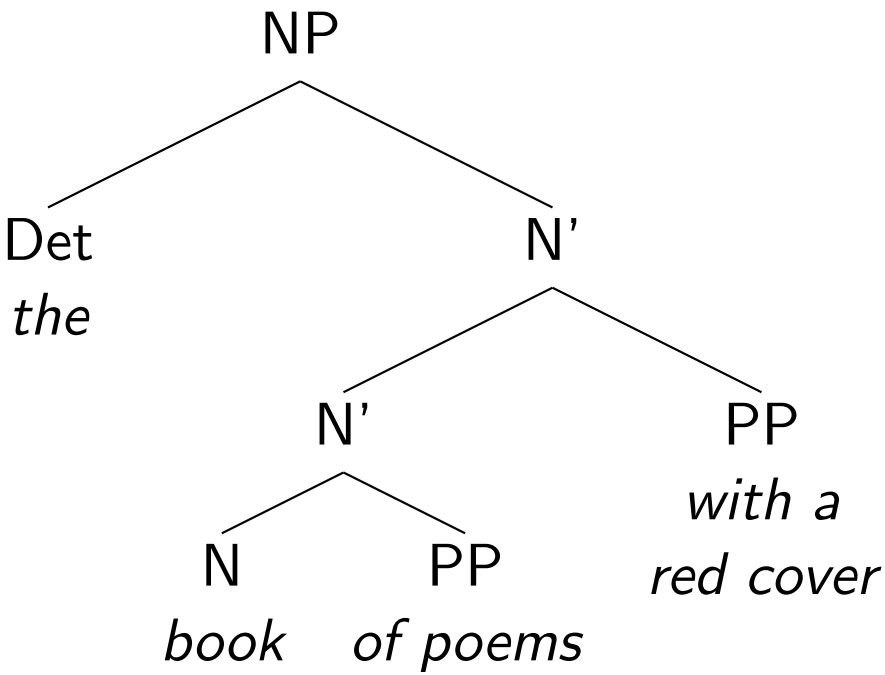


Adjunct rule: X' $\rightarrow$ (ZP) X' (ZP)

- sister to and daughter of X'
- recursive

Examples (Carnie 2013)

(1) the book of poems with a red cover



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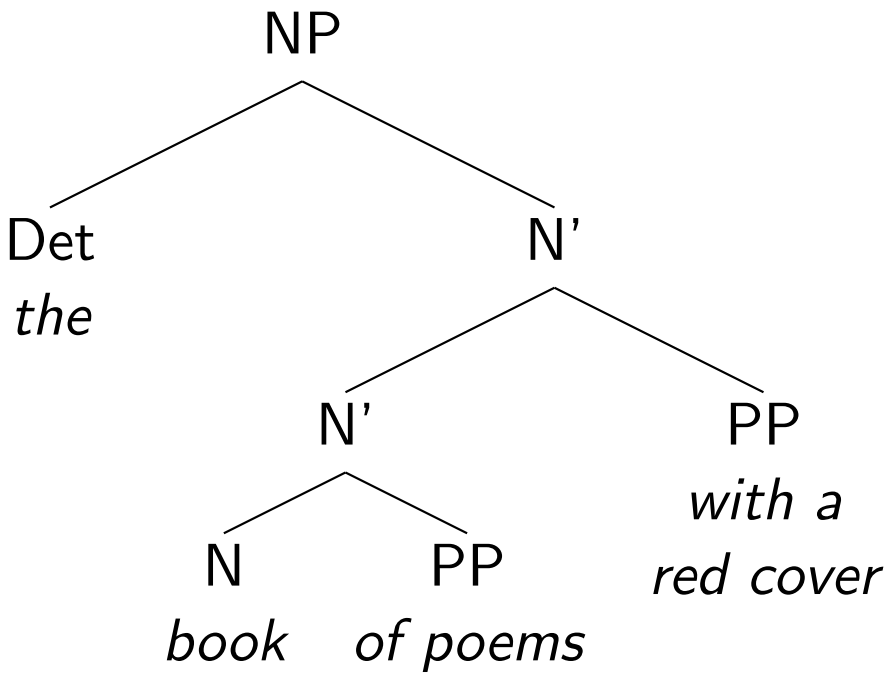
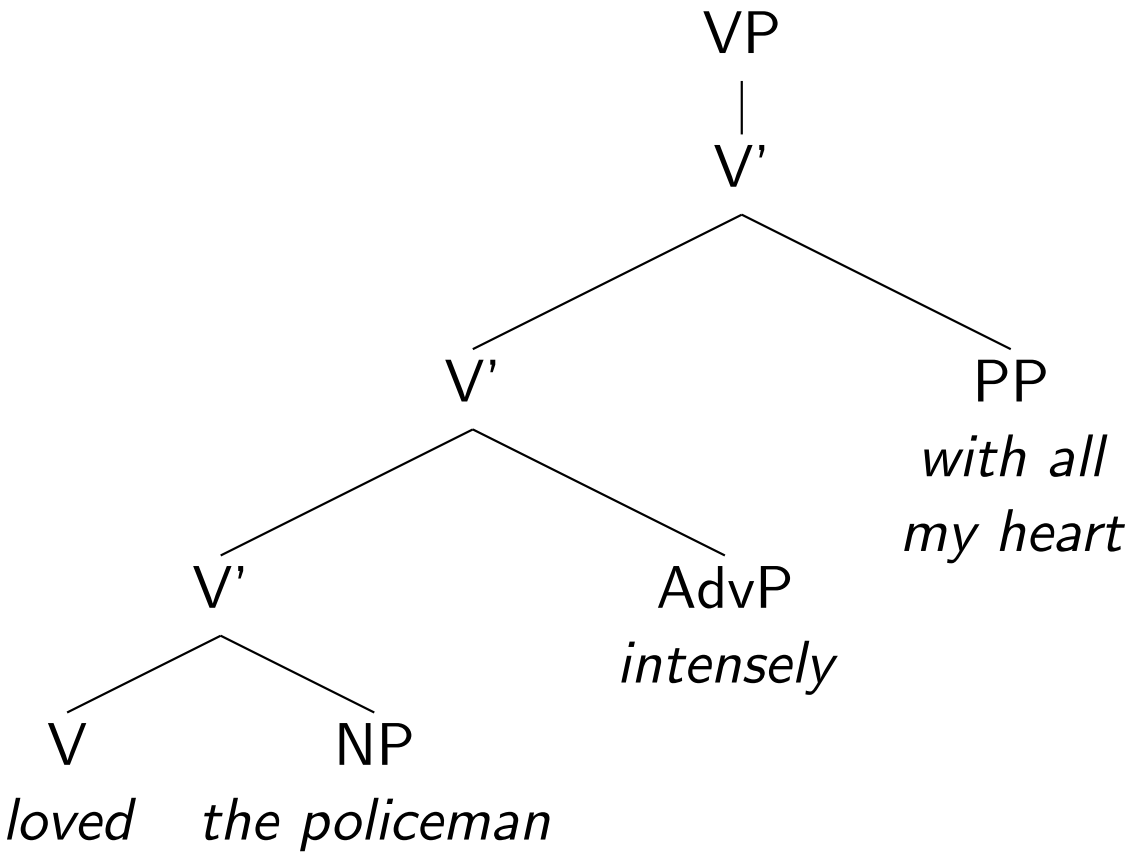


Complement: [PP of poems]

Adjunct: [PP with a red cover]

Examples (Carnie 2013)

(2) I loved the policeman intensely with all my heart.



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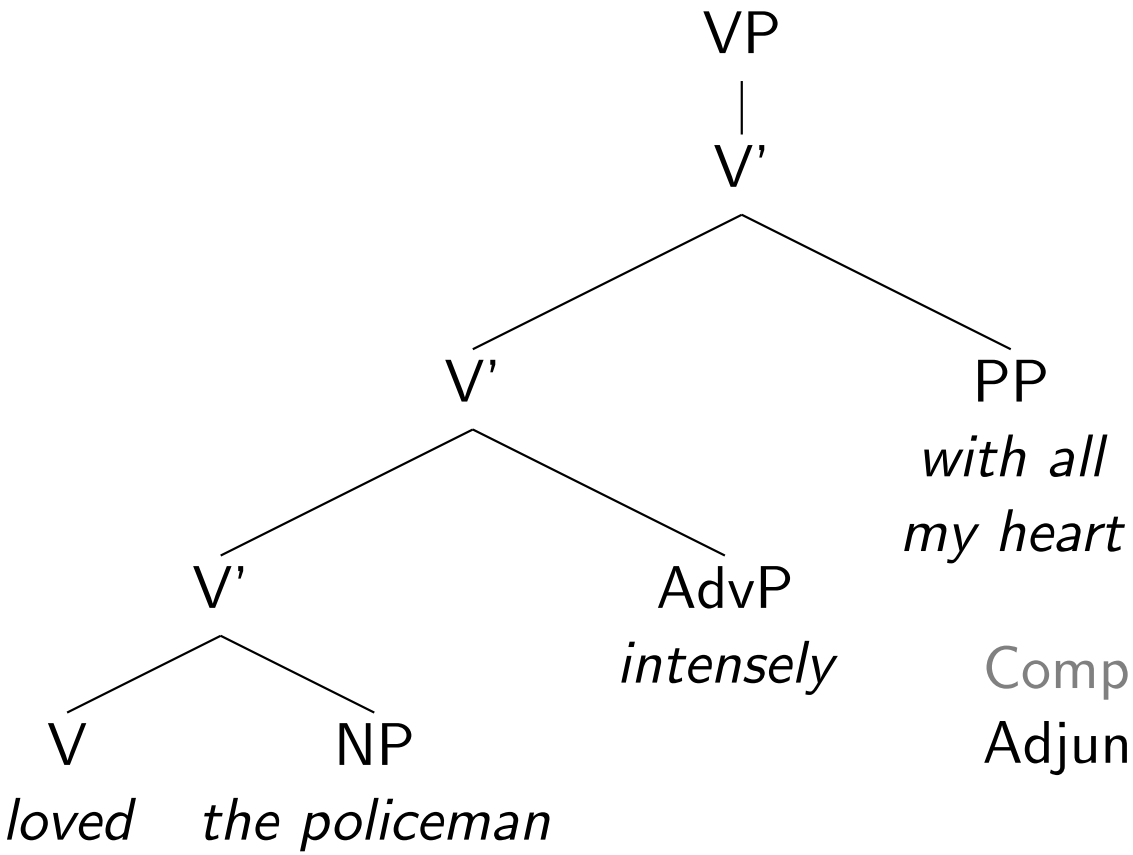

Complement: [$_{NP}$ the policeman][1]

Adjuncts: [$_{AdvP}$ intensely]
[$_{PP}$ with all my heart]

[1] NB: in current parlance this is a DP.

Complements vs. adjuncts

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- Complements complete the meanings of heads while adjuncts add optional information.
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  - Especially true for verbs; e.g., *I loved ?(the policeman) (intensely).*
- Complements are structurally closer to heads than adjuncts.
  - So adjuncts but not complements may be reordered; compare:

    the book [of poems] [with a red cover] [by Robert Burns]

    the book [of poems] [by Robert Burns] [with a red cover]

    **the book [by Robert Burns] [of poems] [with a red cover]*

Complements vs. adjuncts

- Adjuncts but not complements can iterate.

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    the book of poems [with a red cover] and [with a blue spine]

    **the book [of poems] and [by Robert Burns]*

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    the book of poems [with a red cover] and [with a blue spine]

    **the book [of poems] and [by Robert Burns]*
- Some constituency tests (e.g., *one*, *do so*) must include complements but may exclude adjuncts.

  e.g., *the book of poems with a red cover* ↛

  the one, the one with a red cover

  **the one of poems with a red cover*

Interim summary

- Adjuncts are a **very common** type of constituent in human language. They are everywhere.
- In GB adjunction was treated as a special PS rule (schematized into X-bar theory).

. . . and the existence of such a rule was taken for granted.

Progress

The minimalist turn (Chomsky 1995)

As X-bar theory got superseded by **bare phrase structure** (BPS), many aspects of adjunction had to be rethought. In particular,

- How to recover its structural/relational definition without X-bar?
  - sister to and daughter of X' ➛ ?
- How to maintain the complement vs. adjunct distinction?
  - distance from head, iterability, etc.

All such "basic facts" became new explicanda.

Bare phrase structure

In earlier papers . . . X-bar theory is presupposed, with specific stipulated properties. Let's now subject these assumptions to critical analysis, asking what the theory of phrase structure should look like on minimalist assumptions . . . .

this will come up again

—Chomsky (1995:242)

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—Chomsky (1995:242)

- Output conditions make only minimal/maximal projections available.
- X' is invisible at the interface and for computation.
- There is only one structure-building operation: Merge.
- Merge is simply (labeled) set formation.

Bare phrase structure

> *[P]hrase structure theory is essentially "given" on grounds of virtual conceptual necessity . . . . The structures stipulated in earlier versions are either missing or reformulated in elementary terms satisfying minimalist conditions, with no objects beyond lexical features. Stipulated conventions are derived . . . phrase structure theory can be eliminated entirely, it seems, on the basis of the most elementary assumptions.*
>
> —Chomsky (1995:249)

So BPS is a minimalist move par excellence. It provides a good model for other minimalist (re)theorizations to follow.

Progress

Adjunction in minimalism

Three major approaches:

1. **Axiomatic:** defined as a special rule (as in GB)
2. **Derivational:** reduced to a side effect of procedural computation (typical in transformational grammar)
3. **Lexicalist:** reduced to the property of a functional category (an appealing trend)

In the remainder of this minilecture I briefly introduce and evaluate the three approaches.

Axiomatic approach to adjunction I

Chomsky (1995): adjunction is distinguished from complementation by the shape of its label

- Complementation: Merge(α, K) = {H(K), {α, H(K)}}
- Adjunction: Merge(α, K) = {$\langle$H(K), H(K)$\rangle$, {α, H(K)}}[2]

an ordered pair

NB: complementation and adjunction are created by the same operation Merge and only differ in labeling.

[2] This is a "two-segment category" in Chomsky's (1986) terms.

Axiomatic approach to adjunction II

Chomsky (2000, 2004): adjunction is created by a different type of Merge, called "pair Merge"

- Complementation: Merge(α, β) = $\{\gamma, \{\alpha, \beta\}\}$ ($\gamma = H(\beta)$)
- Adjunction: Merge(α, β) = $\{\gamma, \langle\alpha, \beta\rangle\}$

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The ordered pair brings out the "inherent asymmetry" in adjunction.

– Chomsky (2004): the adjunct is merged "on a separate plane"

Axiomatic approach to adjunction

The pair-Merge-based approach to adjunction is the current standard in the minimalist program. It is axiomatic in that pair Merge cannot be reduced to anything else in the theory.

- An axiom is a statement that is taken to be true, to serve as a premise or starting point for further reasoning and arguments. (Wikipedia)
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There is nothing wrong with the axiomatic approach—other than that it is axiomatic. . .

- part of the minimalist spirit is to reduce the number of stipulated premises
- e.g., X-bar ➙ BPS

Derivational approach to adjunction I

Hornstein & Nunes (2008): adjunction is unlabeled merger[3]

- $[_X\ X\hat{}Y]\hat{}Z$ ☜ adjunction

[3] Hornstein & Nunes use the term "concatenation," which is basically Merge.

Derivational approach to adjunction I

Hornstein & Nunes (2008): adjunction is unlabeled merger[3]

- $[_X\ X\hat{}Y]\hat{}Z$ ☜ adjunction

H&N allow elements in an unlabeled merger to participate in further Merge (called "reconcatenation"); e.g.,

- $[_W\ W\hat{}[_X\ X\hat{}Y]]\hat{}Z$ ☜ Z is a "dangling off" adjunct

(see also Hornstein 2009)

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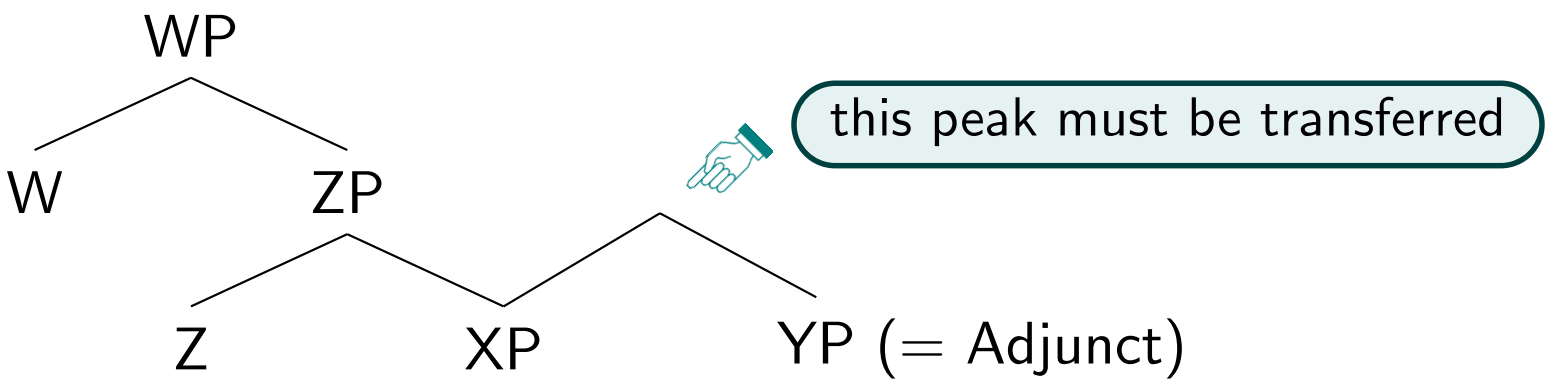
Derivational approach to adjunction II

Oseki (2015): adjunction is unlabeled merger plus compulsory Transfer (i.e., spell-out) "two-peaked" structure



Derivational approach to adjunction

The basic idea in H&N (2008) and that in Oseki (2015) are the same:

1. Some merger μ is not labeled
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This approach is derivational in that it relies on the procedural implementation of syntactic operations (e.g., Merge, Label, Transfer).

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Multidominance

A single node is simultaneously dominated by two or more nodes.

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Multidominance is set-theoretic intersection:

- $\{W, \{X, Y\}\} \cap \{\{X, Y\}, Z\} = \{X, Y\}$
- $\{W, \{Z, XP\}\} \cap \{\{Z, XP\}, YP\} = \{Z, XP\}$

Derivational approach to adjunction

> *[T]here are no operations "form copy" or "remerge," just simple Merge. . . . The concepts of multidominance, "late Merge," and some others postulate an extension of Merge.*
>
> —Chomsky (2013:40)

Recall: part of the minimalist spirit is to reduce the number of stipulated premises (i.e., axioms) in syntactic theorization

- favor simple Merge over a menagerie of Merge-y operations
- (a glaring outlier: pair Merge)

Lexicalist approach to adjunction

Rubin (2003): all adjuncts are introduced via a dedicated functional category Mod, which triggers pair Merge

- similar to functional shells for clauses (C) and nominal phrases (D)
- $[_{\text{ModP}}$ Mod $[_{\text{YP}}$ "Adjunct"]]

Rubin's proposal is motivated by his dissatisfaction with the axiomatic approach.

Lexicalist approach to adjunction

For Chomsky (2001), adjunction necessarily involves pair-Merge. . . . [I]t is crucial to ask how . . . NS determines that pair-Merge is appropriate for adjuncts. We need to avoid circularity here, so we cannot simply say that we want adjuncts to be adjuncts [and therefore] invoke pair-Merge, which creates adjuncts. Before any two expressions are merged, relational terms such as adjunct, complement, and specifier are premature. Another way to understand the same question is to ask why set-Merge couldn't create adjuncts.

—Rubin (2003:663)

Lexicalist approach to adjunction

Rubin's evidence: dedicated modifier markers

(3) *nà* *yì-běn* [ModP [*zài* *zhuōzi* *shàng*] [Mod *(*de*)]] *shū* [Mandarin]
that one-CL be at table top MOD book
'that book on the table'

(4) *bahay* [ModP [Mod *(*na*)] [*maganda*]] [Tagalog]
house MOD beautiful
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- NB: the word order variation (Adjunct$\prec$Mod vs. Mod$\prec$Adjunct)
- reminiscent of head-complement linearization parameterization
- e.g., ENG *watch TV* vs. JAP *terebi-o miru* 'TV-ACC watch'

Lexicalist approach to adjunction

Rubin's proposal is in line with a recent trend in minimalism:

Borer-Chomsky conjecture (Baker 2008)

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In fact not only parameters but also core syntactic mechanisms have been gradually "lexicalized"; e.g.,

- Merge ➙ edge feature
- Agree ➙ unvalued features
- Move ➙ EPP feature

Mod may be another member in this trend.

- Adjoin ➙ MOD feature?

Glitches in Rubin's proposal

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2. Mod merges twice but only triggers pair Merge in the second step (Arsenijevic & Sio 2009)
   - So Rubin's proposal crucially relies on bar-level information (antiminimalist!)

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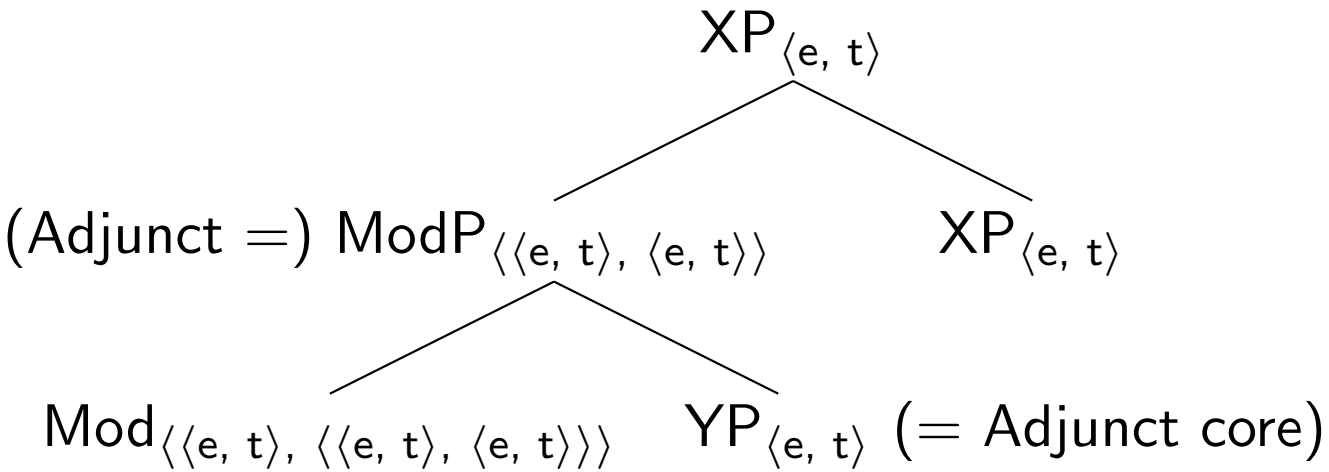

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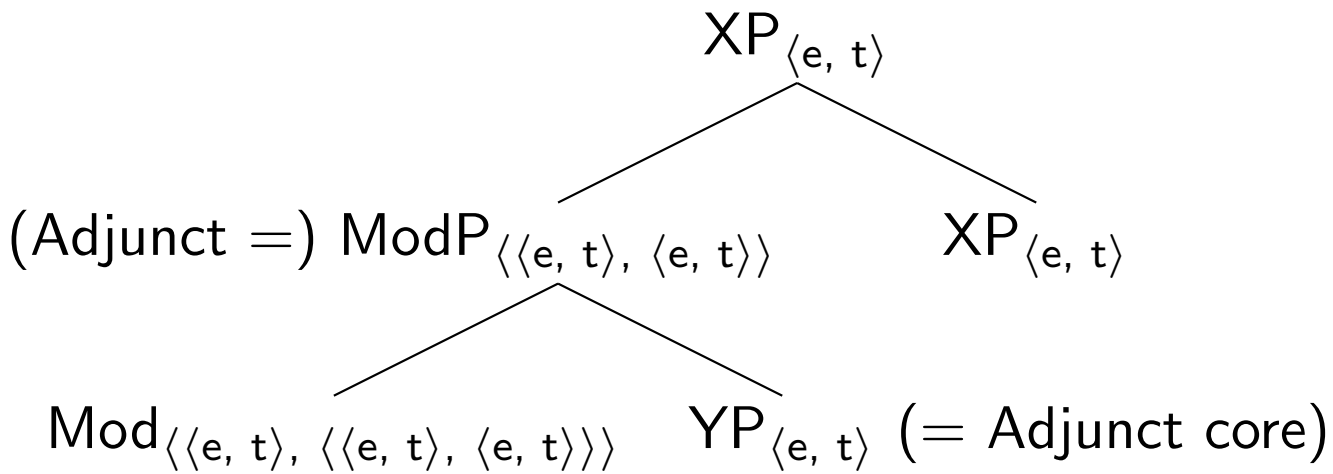

This makes Mod fundamentally different from other functional categories (e.g., C, D, T), which all have conceptual basis.

- C: discourse, D: referentiality, T: anchoring
- (see Wiltschko 2014 for a full proposal)

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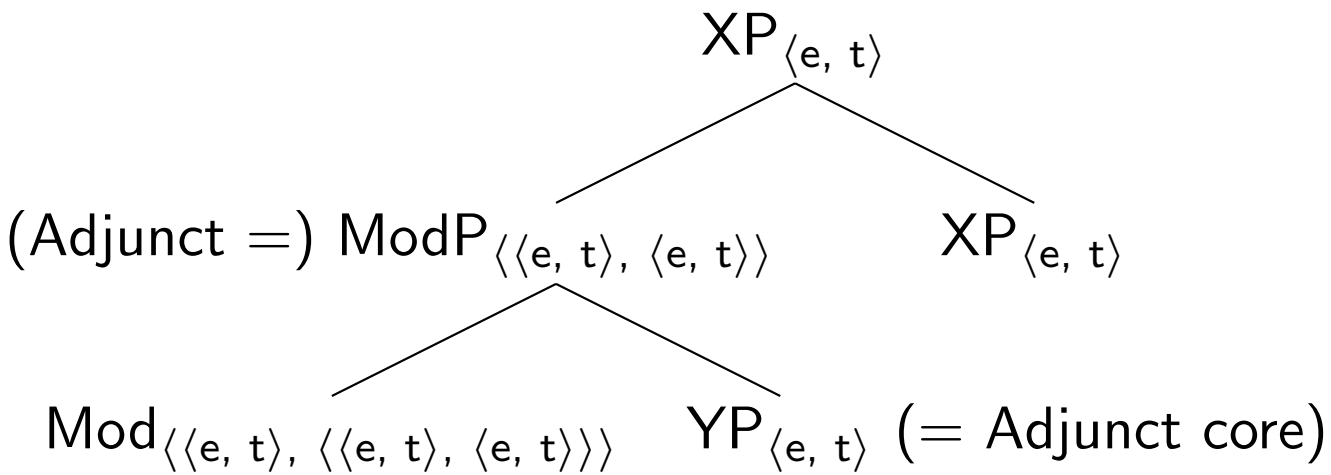

Rubin lets Mod denote $\langle\langle e, t\rangle, \langle\langle e, t\rangle, \langle e, t\rangle\rangle\rangle$ because the structure needs that.

This brings us back to the same kind of circularity that Rubin started criticizing. . .

> *We need to avoid circularity here, so we cannot simply say that we want adjuncts to be adjuncts [and therefore] invoke pair-Merge, which creates adjuncts.*

Progress

Approaches to adjunction

GB: a special rule of the "base"

- X' → (ZP) X' (ZP)

Minimalism: various new ideas upon the elimination of X-bar

1. Axiomatic (standard): pair Merge
2. Derivational: unlabeled merger + remerge
3. Lexicalist: dedicated functional category ("adjunct shell")

However, none of these ideas is perfectly minimalist in spirit.

Approaches to adjunction

GB: a special rule of the "base"

- X' → (ZP) X' (ZP)

Minimalism: various new ideas upon the elimination of X-bar

1. Axiomatic (standard): pair Merge
   - stipulated premise, taken for granted
2. Derivational: unlabeled merger + remerge
   - multidominance (and numerous technical problems, see Song 2019)
3. Lexicalist: dedicated functional category ("adjunct shell")
   - Mod is not an efficient solution

Recall: Chomsky's question

What should the theory of phrase structure look like on minimalist assumptions? (Answer: BPS)

We can ask the same question for adjunction...

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   - Do not stipulate! Derive instead.
2. It should control the overall complexity of the theory.
   - e.g., How many modules of the language faculty are involved (narrow syntax only or also the interfaces)?
   - A mechanism as fundamental as adjunction (like Merge) is unlikely to be an interface (e.g., spell-out) effect. It is indeed in the base (as in GB).

What should a minimalist theory of adjunction look like?

3. It should avoid deviation from existing minimalist tenets (inasmuch as those are justified).
   - e.g., simple Merge, binary branching, interface condition
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4. If it additionally converges with results from other domains of minimalist theorization, that is even better!
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5. And of course it should explain all empirical facts about adjuncts.
   - e.g., asymmetry, islandhood, optionality, iterability

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Ideals	**Ideas**		
	Axiomatic (Chomsky)	Derivational (H&N/Oseki)	Lexicalist (Rubin)
reduce axioms	✗	✓	✗
reduce complexity	✓	✗	✓
obey minimalist tenets	✓	✗	✗
intra-MP convergence	✗	✗	✗
empirical adequacy	✓	✓	✓

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empirical adequacy	✓	✓	✓

The standard minimalist approach (pair Merge) still wins out. But the lexicalist approach has more potential beyond Rubin's proposal!

(See Song 2019 for an alternative lexicalist proposal.)

Thank you!

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