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**Verbal selection:
semantically, syntactically or lexically constrained?**

Theoretical Approaches to Lexical Constraints
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Types of selection



I. Types of selection

Three types of selection (Pesetsky 1982, Newman 2021):

- **Category selection (c-selection):** the syntactic representation of a head has a featural requirement that can only be satisfied by an element of a particular syntactic category.
- **Semantic selection (s-selection):** the meaning associated with some head is such that the composition with the head results in a non-contradictory or pragmatically reasonable meaning.
- **Lexical selection (l-selection):** the morphological exponent of some head is such that it demands a particular vocabulary item as the head of its sister.

I. Types of selection

Three types of selection (Pesetsky 1982, Newman 2021):

- **Category selection (c-selection):** the syntactic representation of a head has a featural requirement that can only be satisfied by an element of a particular syntactic category.

She devoured [_{DP} the cake / a cake / three cakes]

*She devoured [_{CP} that I left]

The [_{NP} chair / democracy / sand]

In [_{DP} the garden / the car / Paris]

I. Types of selection

Three types of selection (Pesetsky 1982, Newman 2021):

- **Semantic selection (s-selection):** the meaning associated with some head is such that the composition with the head results in a non-contradictory or pragmatically reasonable meaning.

She put the cake [_{PP} on the table]

*She put the cake [_{PP} at 3pm]

She drank [_{DP} a cup of tea]

*She drank [_{DP} a car]

I. Types of selection

Three types of selection (Pesetsky 1982, Newman 2021):

- **Lexical selection (I-selection):** the morphological exponent of some head is such that it demands a particular vocabulary item as the head of its sister.

She relies on the bus

*She relies for the bus.

She bristled at Sally's insult.

*She bristled of Sally's insult.

The problem: verbal c-selection and projection



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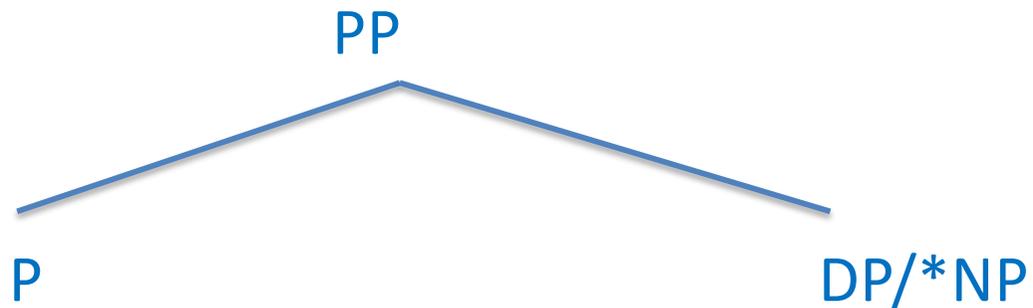
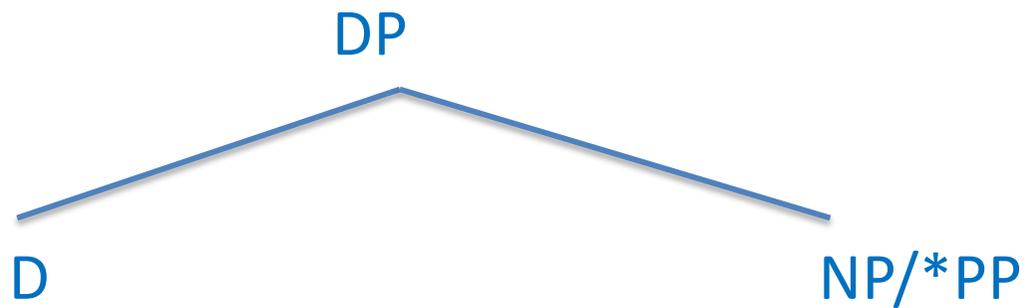
II. The problem

Most approaches to structure building, in one way or another, postulate a link between projection/labeling and syntactic selection (Chomsky 1995 et seq).

- Only a head that c-selects its complement can provide the label.
- A head that does not c-select its complement cannot provide the label.

II. The problem

Examples: D c-selecting NP, P c-selecting DP



II. The problem

Conundrum: verbs are generally taken not to c-select, but rather to s-and/or I-select their complements (Grimshaw 1979).

- The reason is that Vs often select DP, PP and CP arguments; it is the meaning of the complement that determines whether it can act as its complement, not its syntactic categorial status.

Mary knows [_{DP} Bill]

Mary knows [_{PP} about Peter]

Mary knows [_{CP} that Theo is ill]

II. The problem

Conundrum: verbs are generally taken not to c-select, but rather to s-and/or I-select their complements (Grimshaw 1979).

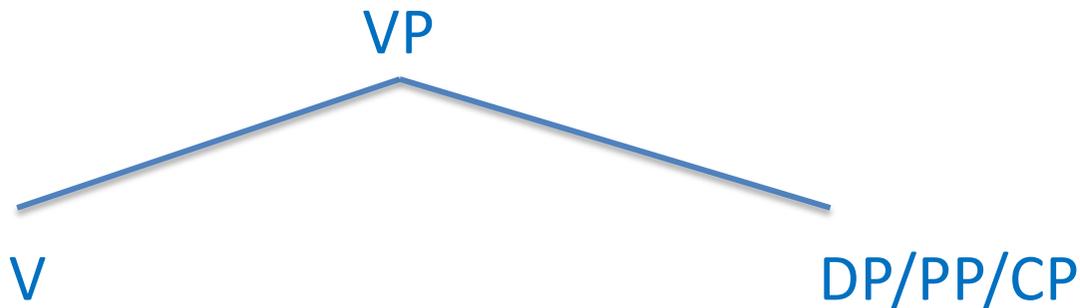
Mary asked {[_{CP} what time it was] / [_{DP} the time] / [_{DP} that]}

Mary wondered {[_{CP} what time it was] / * [_{DP} the time] / [_{DP} that]}

Mary inquired {[_{CP} what time it was] / * [_{DP} the time] / * [_{DP} that]}

II. The problem

But verbs project a VP even if they do not seem to c-select their complements:



- This means that if merger of a V with a complement XP yields a VP, this V should c-select XP.

Roadmap



III. Roadmap

Two logical possibilities to circumvent this conundrum:

- C-selection and labeling should be fully disentangled: this calls for a fully different view on labeling.
- Verbal c-selection should be reinstalled.

III. Roadmap

This talk:

- Provide a formal version of a Labeling Algorithm that is based on c-selection.
- Show that this Labeling Algorithm naturally reinstalls c-selection: every verb selects a DP-argument:
 - Semantic PP Arguments are actually syntactic adjuncts;
 - CP arguments are DP arguments.

Proposal



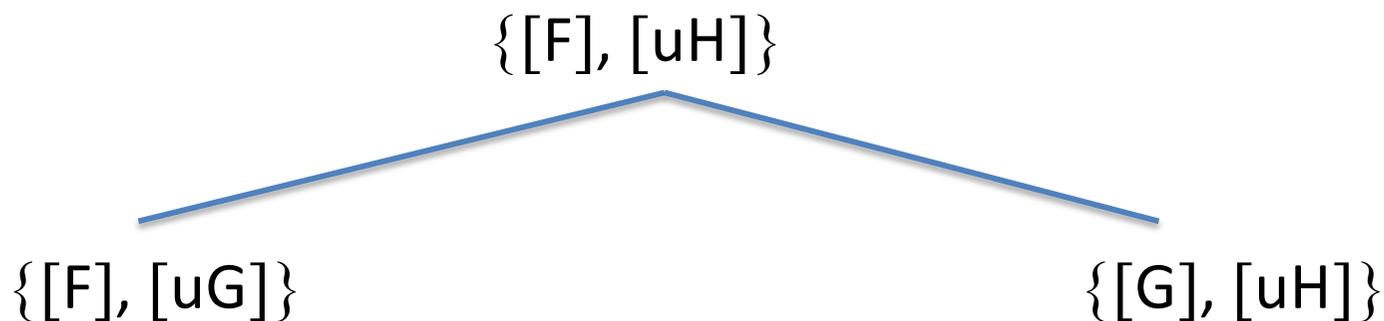
IV. Proposal

Starting point:

- Categorical behaviour is determined in terms of dependent and independent features: $[F]$ and $[uF]$.
- This brings minimalism and categorial grammar closer to each other.

IV. Proposal

Since both dependent and independent formal features are categorial features, merger of an element with a dependent and an element with a matching independent formal feature, should result in absence of both on the top node, following standard rules in categorial grammar:



IV. Proposal

- **Let A and B be two sets of formal features. For every and at least one pair $[F]$ - $[uF]$, such that $[F] \in A$ and $[uF] \in B$, or $[F] \in B$ and $[uF] \in A$, neither $[uF]$ nor $[F]$ percolate; all other features percolate.**
- Every node needs to contain exactly 1 independent feature (as this determines its category); it may carry multiple dependent features.
- Every instance of Merge must be triggered by satisfying some featural requirement.
- A structure is grammatical iff the top node carries no dependent feature.

Labeling and Selection



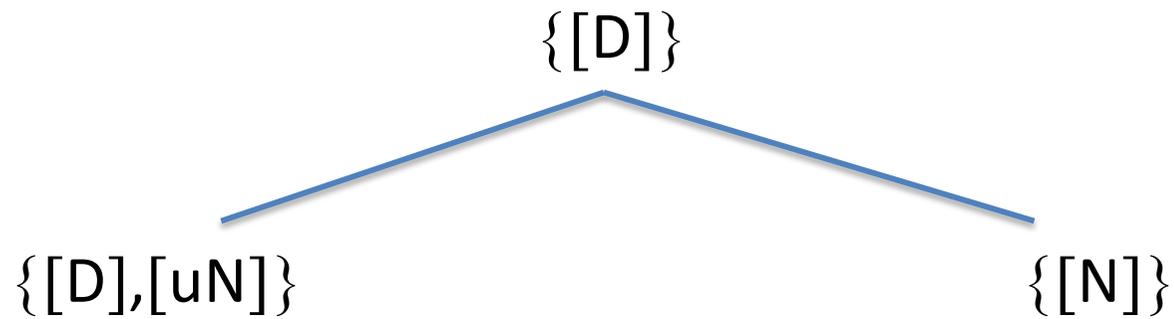
V. Labeling and Selection

For head-complement and specifier-head configurations, the proposal re-establishes the original connection between labelling and selection.

- The selected feature does not project;
- The selecting feature does not project;
- That all other features still project.

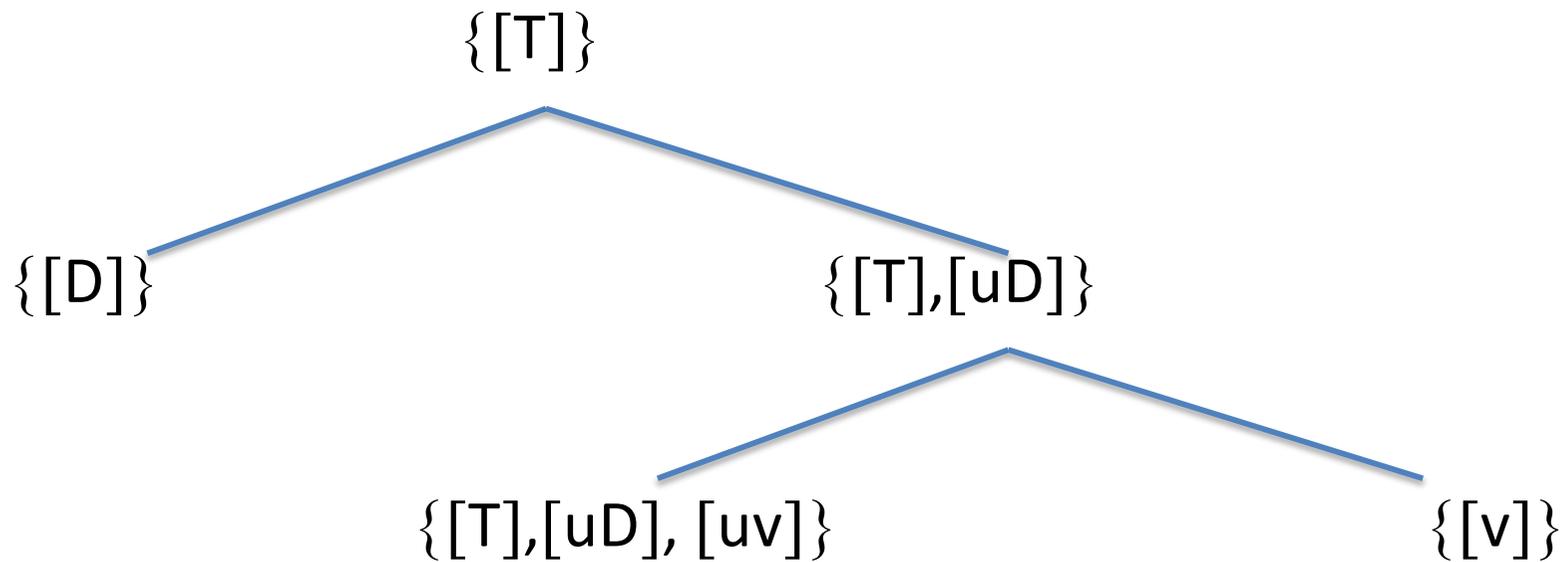
V. Labeling and Selection

Example: D selecting NP



V. Labeling and Selection

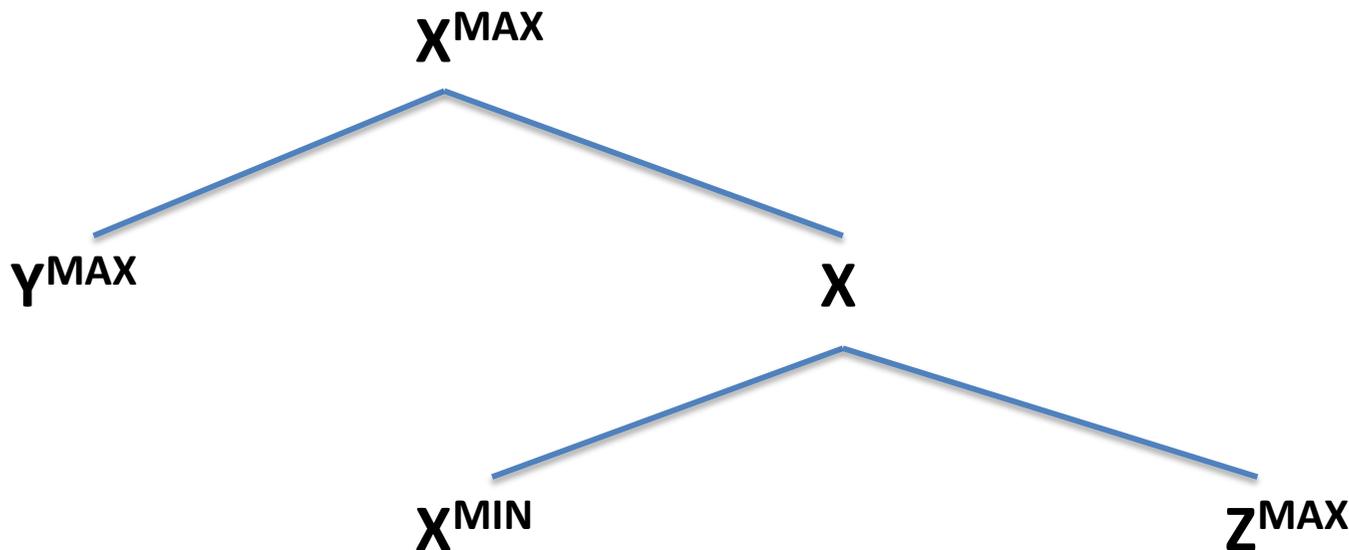
T' selecting DP:



V. Labeling and Selection

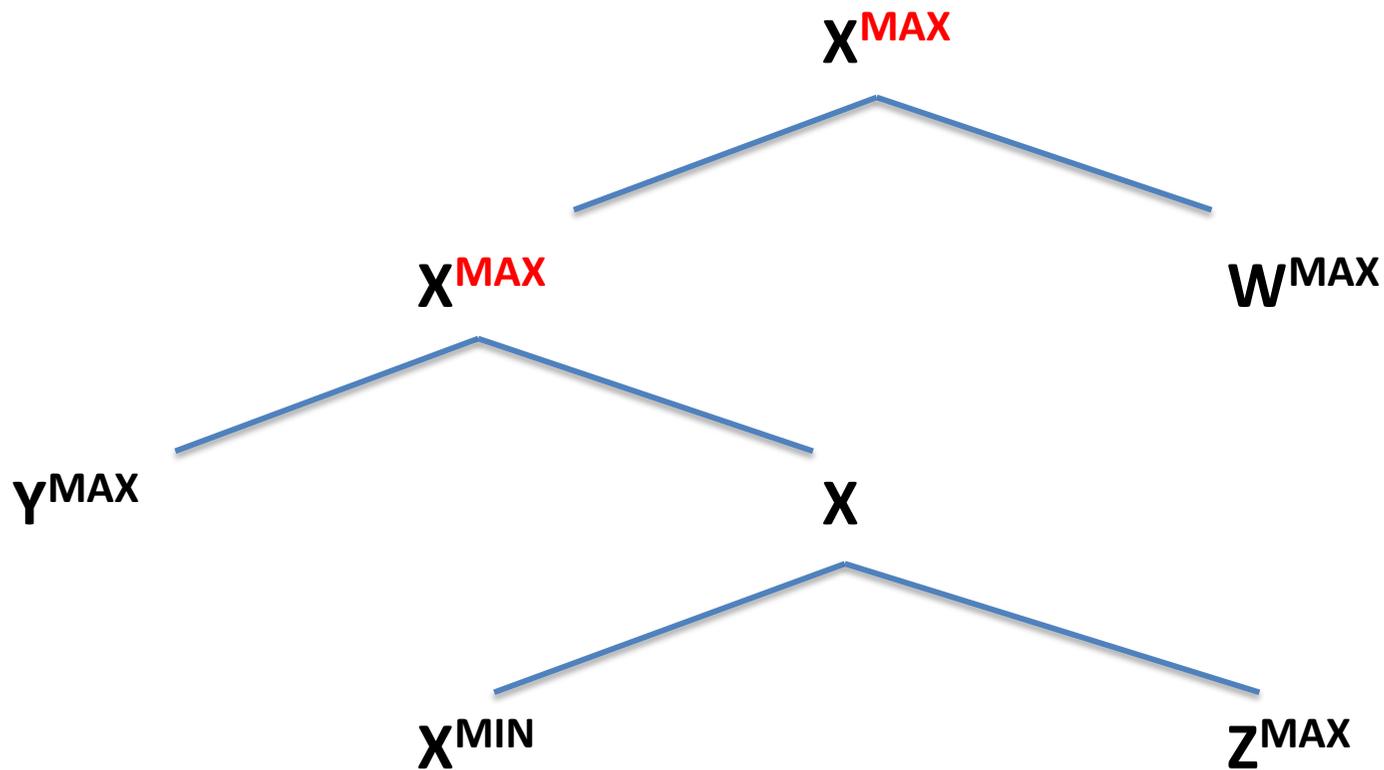
Adjuncts form a notorious problem for labeling under Bare Phrase Structure (cf. Hornstein & Nunes 2009 and references therein).

- Under Bare Phrase Structure Bar levels and Maximal projections are structurally defined:



V. Labeling and Selection

But adjunctions consists of two layers of the same feature that should both count as maximal:



V. Labeling and Selection

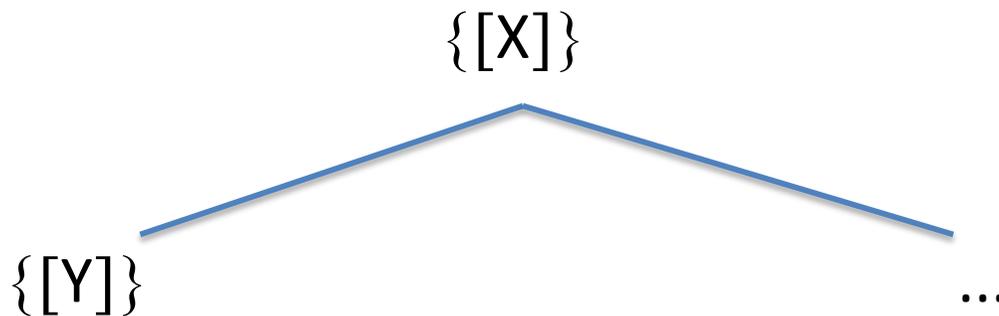
For this reasons, adjuncts have been taken outside the system that derives structures by means of set-merge and labelling:

- Chomsky (2001): Set-Merge vs Pair-Merge
- Lebaux (1989): Late insertion of adjuncts into already labelled structures
- Hornstein & Nunes (2009): Unlabelled adjuncts

All these approaches have been primarily introduced to account for the special status of adjuncts under Bare Phrase Structure.

V. Labeling and Selection

However, under the proposal proposed here, adjunction can be derived under Bare Phrase Structure. Take the following structure:

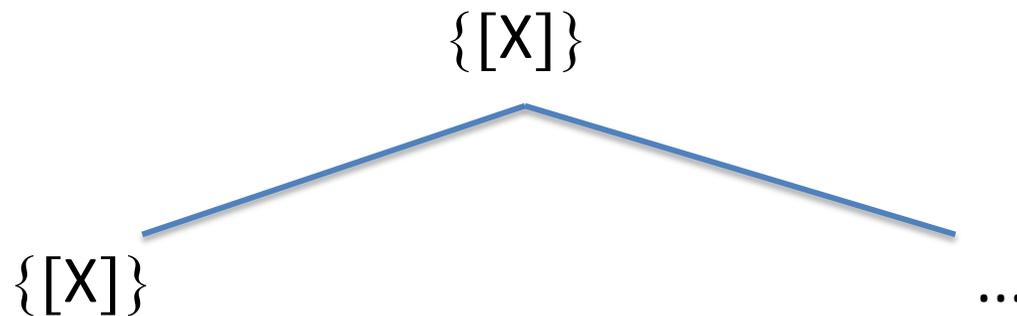


Irrespective of the phrasal status of the elements represented by $\{[X]\}$ and $\{[Y]\}$, we can compute the feature representation of the unknown sister/daughter \dots , which must be:

$\{[X], [uY]\}$

V. Labeling and Selection

Adjuncts are cases where the top node must be featurally identical to one its sisters, otherwise its distribution would not be identical.



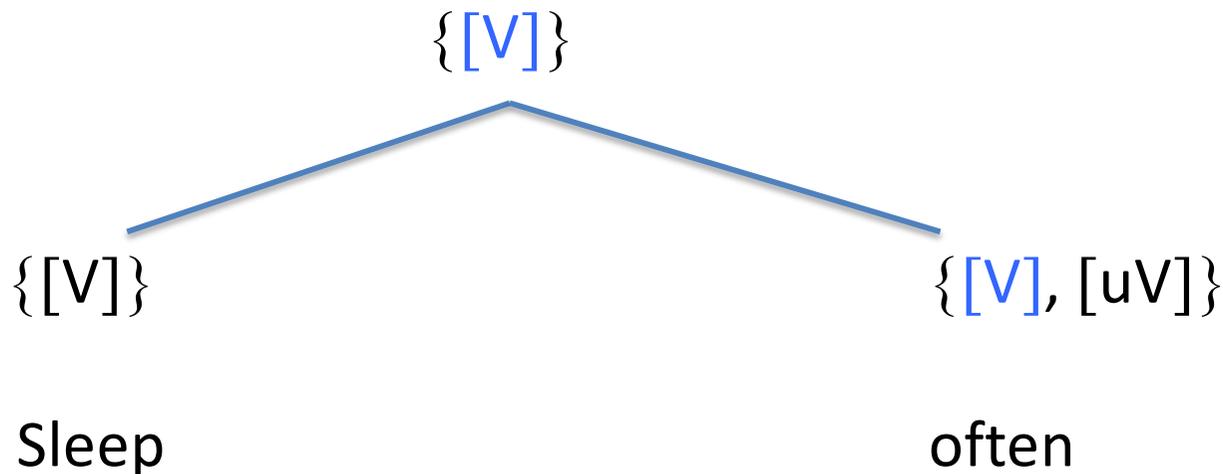
But that means that every X-adjunct, should have a representation:

$\{[X], [uX]\}$.

V. Labeling and Selection

VP adjuncts, e.g. adverbs, should then be taken to be elements with a featural representation $\{[V], [uV]\}$.

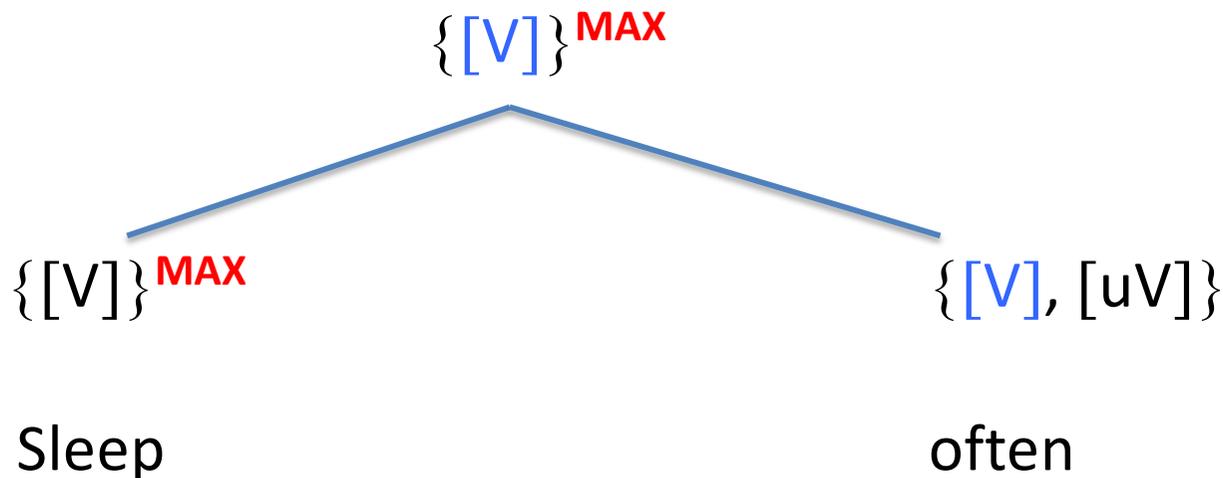
But, as the picture shows, this solves the adjunct problem. In the configuration below, both V-layers are maximal projections (where colours reflect projection lines):



V. Labeling and Selection

VP adjuncts, e.g. adverbs, should then be taken to be elements with a featural representation $\{[V], [uV]\}$.

But, as the picture shows, this solves the adjunct problem. In the configuration below, both V-layers are maximal projections (where colours reflect projection lines;



PP adjuncts and arguments



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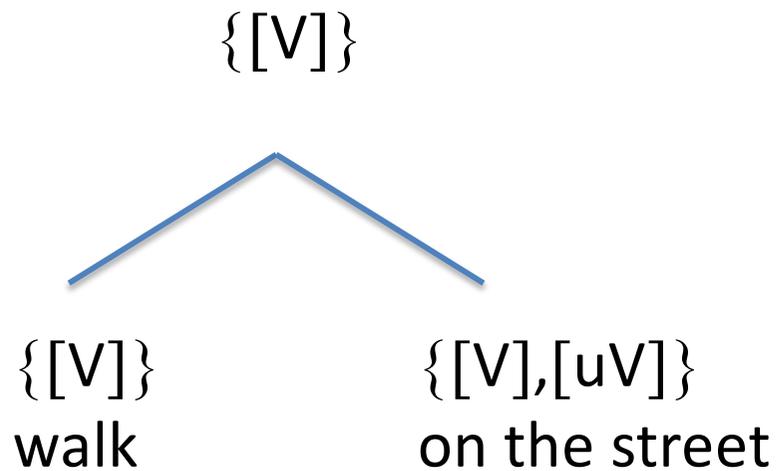
VI. PP Arguments and Adjuncts

If PPs behave as VP adjuncts, they should be analysed as $\{[V], [uV]\}$. But such an analysis gives rise to the following two issues:

- If PPs are $\{[V], [uV]\}$, how are PP arguments and adjuncts different?
- PPs may adjoin to (at least) NPs, APs and VPs.

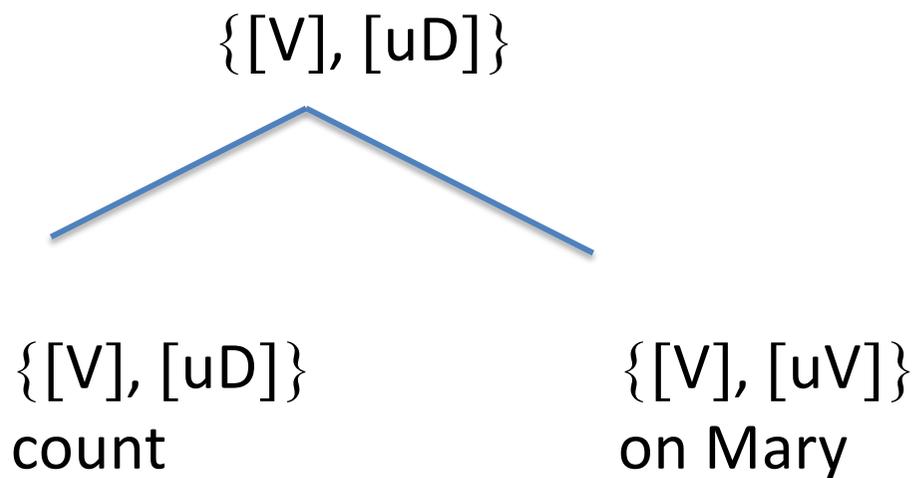
VI. PP Arguments and Adjuncts

PPs do not require any V to select them; PPs select VPs.



VI. PP Arguments and Adjuncts

In fact, even if V selects for a DP argument, it can be modified by a PP argument as well:



VI. PP Arguments and Adjuncts

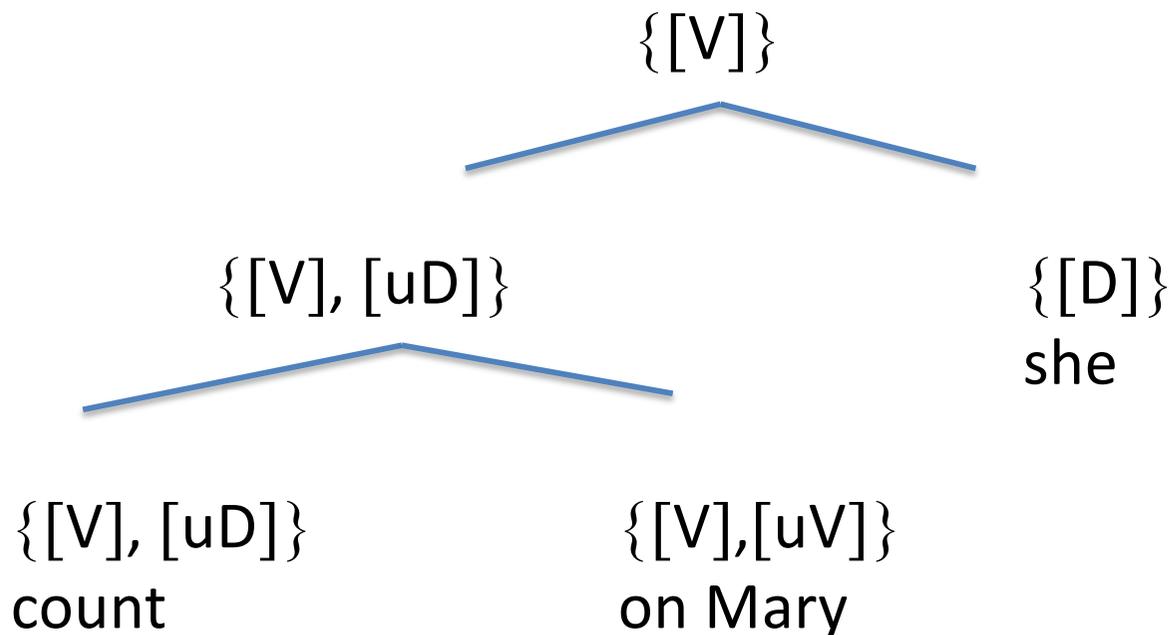
Under this proposal, Vs do not syntactically select for PPs, but they can be modified by PPs.

- PP arguments and PP adjuncts are syntactically identical; their differences follow from the (different) semantic properties of argument and adjunct PPs and the the verb.
- At the same time the question it is a well known fact that the PP adjunct/argument distinction has syntactic reflexes.

VI. PP Arguments and Adjuncts

PP adjuncts and PP arguments of a verb can be syntactically distinguished, as long as this verb also selects for another (DP) argument.

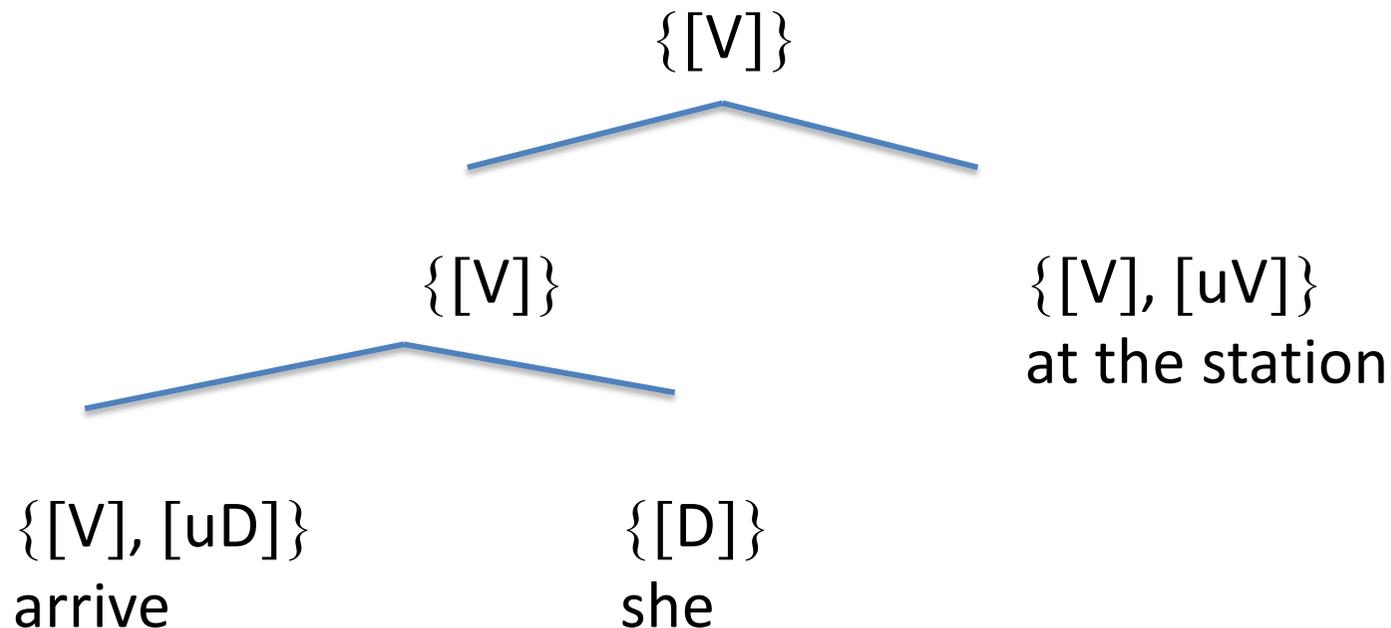
- A PP sister of a verb behaves argumental if it is merged before the verb selects other (DP-)arguments:



VI. PP Arguments and Adjuncts

PP adjuncts and PP arguments of a verb can be syntactically distinguished, as long as this verb also selects for another (DP) argument.

- A PP sister of a verb behaves adjunct-like if it is merged after the verb selects other (DP-)arguments:



VI. PP Arguments and Adjuncts

So, PPs can be said to uniformly select verbal complements, while maintaining the PP argument-adjunct distinction.

- Both adjunct and argument PPs are feature sets $\{[V], [uV]\}$.
- PP arguments have a feature $[uD]$ present on their mother node; PP adjuncts lack that.
- But how to deal with PP-modification of non-verbals?

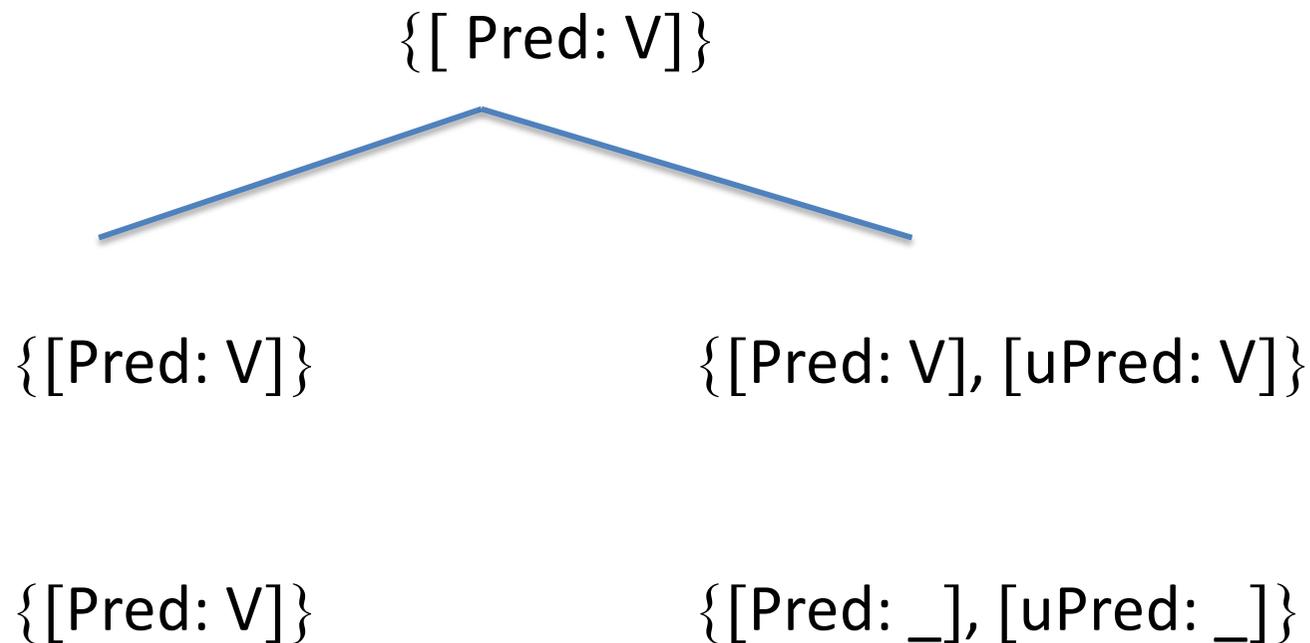
VI. PP Arguments and Adjuncts

Implementation:

- There is a superfeature [Pred(icate)], very similar to a root feature.
- This feature can receive a feature value V or N.
- The PP still receives its verbal or nominal feature from the phrase it modifies.

VI. PP Arguments and Adjuncts

V PP merger:



CP vs. DP Arguments



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VII. CP vs. DP Arguments

So, PPs do not form an argument against c-selection of Vs, even though the PP-adjunct/argument distinction is still available.

- Hence, the only argument against c-selection is the difference between DP arguments and CP arguments.
- In order to assess these differences, first it must be established what the syntactic features of CP arguments are.
- Most crucially, it should be determined what the differences and correspondences between (argument) CPs and (argument) DPs are.

VII. CP vs. DP Arguments

Closer scrutiny shows that (argument) CPs share a number of prototypical properties of (argument) DPs. For instance:

- They can be referred to by pronouns: *That (John is ill) I know.*
- They have case (in a clause with a CP subject, the DP receives dependent case): *That Bill left Susanne shocked her.*

Note that this not necessarily apply to every CP. It only holds for those CPs that can be used as (verbal) arguments.

VII. CP vs. DP Arguments

This calls for a unified analysis of CPs and DPs.

- Such proposals are not novel; (particular) CPs arguments indeed have nominal properties (cf. Ross 1967 and Rosenbaum 1967).
- Claim: Current analyses (most notably, Kastner 2015) that take some CP arguments to be DPs can be generalized to taking all CP arguments to be DPs.

VII. CP vs. DP Arguments

Kastner (2015): factive verbs, such as *remember* and *forget* take clausal complements which are presupposed to be true. By contrast, predicates like *say* and *think* do not presuppose the truth of their complements:

*Mary remembered/forgot that the building collapsed, but it didn't

Mary said/thought that the building collapsed, but it didn't

VII. CP vs. DP Arguments

Kastner takes these facts to reflect a connection between the different semantic status of these clausal arguments and their different syntactic status in terms of being a DP or a CP.

- Semantically, Kastner argues that entire propositions function as discourse referents.
- A non-presuppositional verb like *think* introduces a new filecard (in the sense of Heim 1982) and adds a new discourse referent to the Common Ground.
- By contrast, the verb *remember* takes as its complement a proposition that is already part of the Common Ground.

VII. CP vs. DP Arguments

Kastner takes these facts to reflect a connection between the different semantic status of these clausal arguments and their different syntactic status in terms of being a DP or a CP.

- The clausal arguments of factive presuppositions, for him, must count as definite expressions and therefore as DPs (for Kastner headed by a covert determiner).
- Since non-factives do not refer to existing discourse referents but rather introduce those, Kastner takes those clausal arguments to be CPs.

VII. CP vs. DP Arguments

Following the work by Honcoop (2000), he takes those definite DPs to introduce syntactic island effects, which in turn accounts for the following extraction facts:

Who do you think stole the cookies?

Why do you think John stole the cookies?

*Who do you remember/deny stole the cookies?

*/?Why do you remember/deny that John stole the cookies?

VII. CP vs. DP Arguments

It is a small step from arguing that the difference between the arguments introduced by factives and non-factives is not the difference between DPs vs. CPs, but rather the difference between definite DPs vs. indefinite DPs.

- It is a property of indefinite DPs to introduce new referents to the Common Ground.
- If these properties extend to propositional referents (introduced or referred to by clausal arguments), one would expect these properties to be aligned in the same way: If argument clauses of factives are definite DPs, argument clauses of non-factives should be indefinite DPs.

VII. CP vs. DP Arguments

It is a small step from arguing that the difference between the arguments introduced by factives and non-factives is not the difference between DPs vs. CPs, but rather the difference between definite DPs vs. indefinite DPs.

- The locality effects would then still work in the same manner, as Honcoop's account alludes these island effects to definiteness (in a dynamic semantic version) and not to DP-hood in general.

VII. CP vs. DP Arguments

Kastner presents some empirical arguments that call for a different categorial treatment of the two types of clausal arguments. Only factive verbs can form relative clauses that modify their arguments:

[Americans should get cheap oil], as the whole world knows

[Americans should get cheap oil], which the whole world knows

[Americans should get cheap oil], as the whole world says/claims

*[Americans should get cheap oil], which the whole world says/claims

VII. CP vs. DP Arguments

Note that these raised clauses are actually topics.

- Topics by definition refer to old information in the Common Ground.
- If the clausal arguments of non-factives are indefinites, it follows already that these cannot be topical and therefore cannot head a relative clause in the examples above.
- Empirically, there is no reason to assume that the (raised) clausal arguments of non-factives cannot be DPs.

VII. CP vs. DP Arguments

Even though more needs to be said, Kastner's original proposal in terms of CP and DP clausal complements can be recast in terms of indefinite vs. definite DP clausal complements.

- Under that reformulation, every CP argument clause can be taken to be a DP argument clause.
- Consequently, verbs that (may) select CP arguments, actually select DP arguments.

VII. CP vs. DP Arguments

CPs differ from DPs in the sense that complementizers select clauses (TP, vP, VP). Focusing on (argumental) *that*-CPs:

- *That* selects a TP
- The merger of *that* and a TP behaves like a DP
- On these grounds, it makes sense to think of complementizers like *that* as elements that change TPs into DPs.

VII. CP vs. DP Arguments

But this means that every verb that selects a DP or CP argument must carry [uD] (cf. Wurmbrand 2014).

- The lexical semantics of these verbs determines whether the argument is an individual or a proposition.
- This reinstalls c-selection.

Conclusions



VIII. Conclusions

This talk:

- I have provided a formal version of a Labeling Algorithm.
- I have shown that this Labeling Algorithm naturally reinstalls verbal c-selection: every verb selects a DP-argument:
 - Semantic PP Arguments are actually syntactic adjuncts;
 - CP arguments are DP arguments.

Thank you!

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Appendix

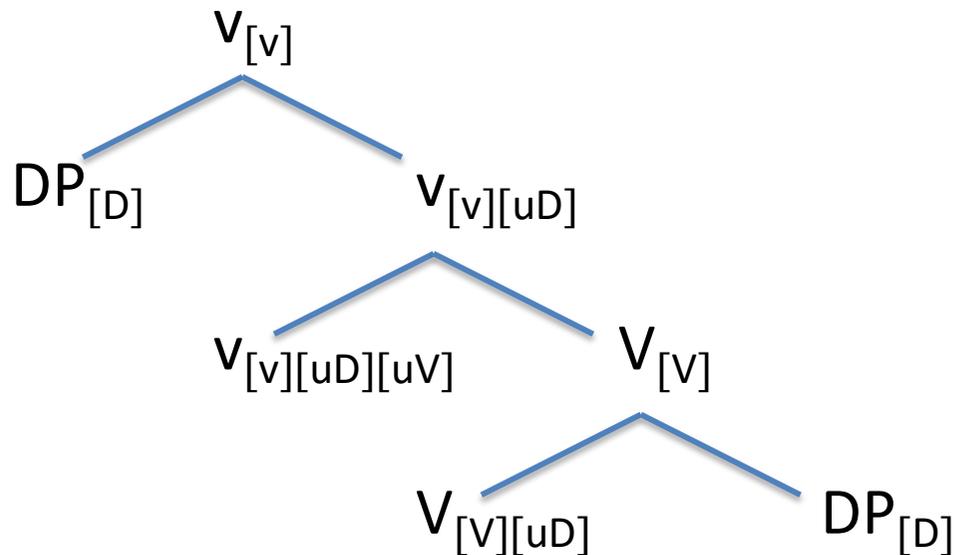
But now the question arises as to how verbs that select for multiple (DP) arguments encode these selectional properties.

- Suppose that a verb selects two DP arguments:
- Such a verb cannot carry two [uD]-features:

$$\{[V], [uD], [uD]\} = \{[V], [uD]\}$$

Appendix

In order to be able to select for more than one DP argument, a verb needs to merge with another DP-selecting element (P or v):



Appendix

Now we can also address the previous question: which verbs select for DPs (i.e., carry a [uD] feature)?

- All arguments need to be base-generated inside the vP/VP (VISH)
 - Every DP needs to be selected
 - Every verb requires one DP subject
 - A verb cannot select for more than one DP
-
- Each verb must carry exactly one feature [uD].
 - One could even go further and hypothesize that what distinguishes verbal from nominal predicates is the presence of [uD].

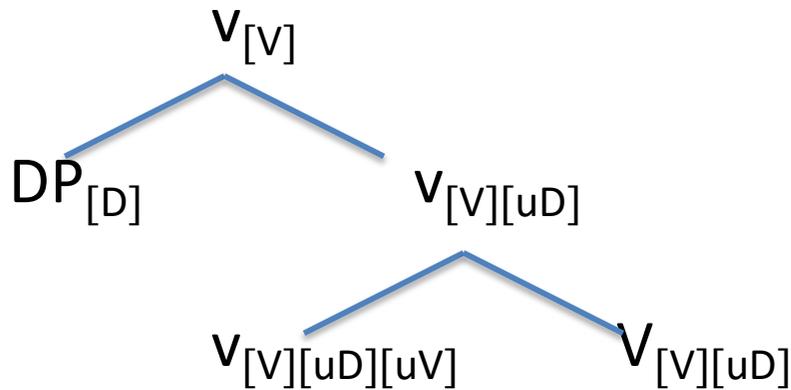
Appendix

How to distinguish verb types:

- Every transitive verb carries [uD] (which selects the object DP); a second verbal head ('v') selects the subject.
- Transitive verbs 'selecting' PP arguments, are actually intransitive verbs (carrying [uD]) being selected by a PP-argument.
- Unaccusative intransitive verbs carry a feature [uD] (which selects the object DP, which is to be promoted as subject).
- Unergative intransitive verbs carry a feature [uD], but merge first with v:

Appendix

Unergatives are intransitive verbs that select a DP but merge with *v* first:



- Note that this entails that the fact that unergatives lack objects is purely semantic; syntactically they could select an object (cf. cognate objects):

I walked a walk

I dreamed a dream