

Und es gibt sie doch!  
Zur Notwendigkeit von Konstruktionen

They exist after all!  
Why constructions are necessary

Gert Webelhuth

University of Göttingen

June 24, 2009

# The Goal of this Talk

To argue that the **lexical-constructional** tools that account for canonical “movement” phenomena are sufficient to **capture** “movement mismatches.”

## Filler and gaps: one-to-one relationship

- (1) a. Sue has arrived.  
b. \* Sue has arrived Jill.  
c. \* Who<sub>i</sub> has Sue arrived t<sub>i</sub>?
- (2) a. Sue has always liked Jill.  
b. Who<sub>i</sub> has Sue always liked t<sub>i</sub>?  
c. \* Sue always liked t?

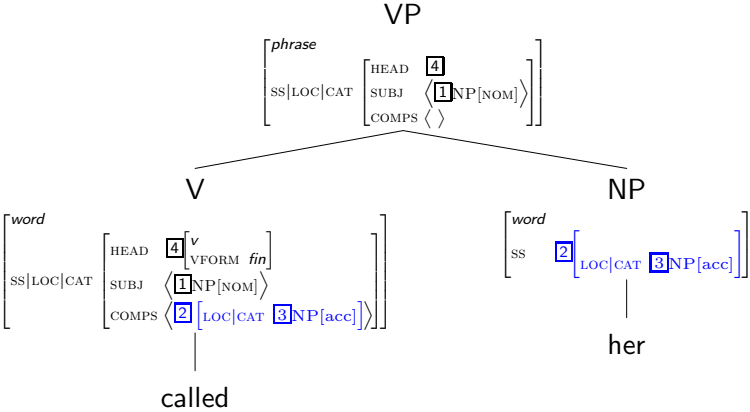
## Filler and gaps: category matching

- (3) a. Sue prefers [NP coffee]  
b. [NP What]<sub>i</sub> does Sue prefer [NP t ]<sub>i</sub>?  
c. \* [PP To what]<sub>i</sub> does Sue prefer [NP t ]<sub>i</sub>?
- (4) a. Sue depends [PP on Jill]  
b. [PP On whom]<sub>i</sub> does Sue depend [PP t ]<sub>i</sub>?  
c. \* [NP Who(m)]<sub>i</sub> does Sue depend [PP t ]<sub>i</sub>?

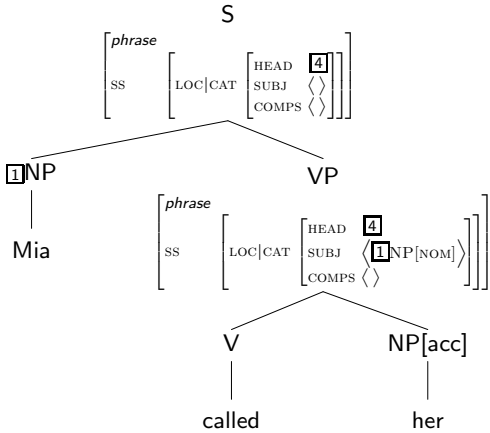
## Filler and gaps: subcategory matching

- (5) a. [NP She] called.  
b. \* [NP Her] called.  
c. [NP Who]<sub>i</sub> [NP t ]<sub>i</sub> called?  
d. \* [NP Whom]<sub>i</sub> [NP t ]<sub>i</sub> called?
- (6) a. [PP On whom]<sub>i</sub> does Sue depend [PP t ]<sub>i</sub>?  
b. \* [PP To whom]<sub>i</sub> does Sue depend [PP t ]<sub>i</sub>?

# Mia called her vs. Her Mia called t



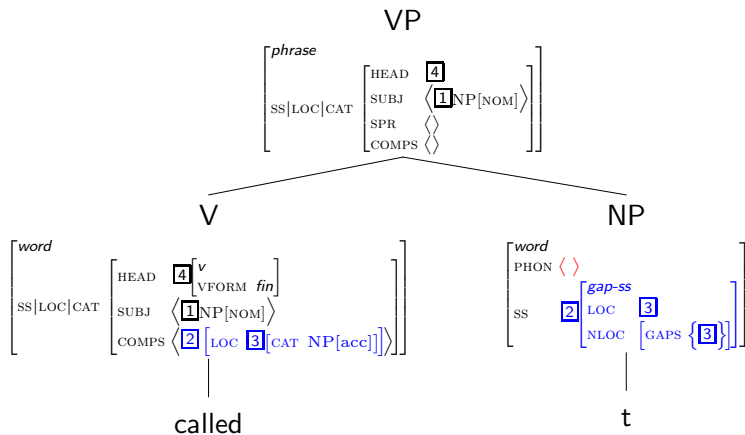
*Mia called her vs. Her Mia called t*



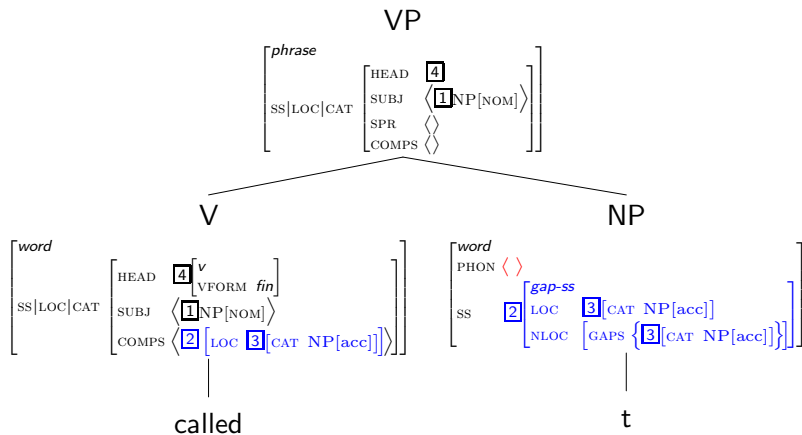




# called t, with generic gap information



# called t, with information from local context

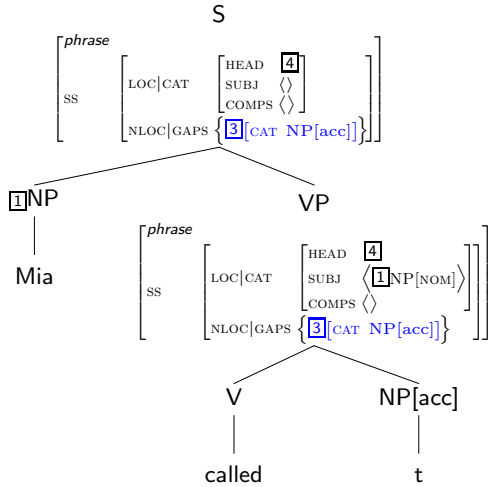


# The Gap Principle

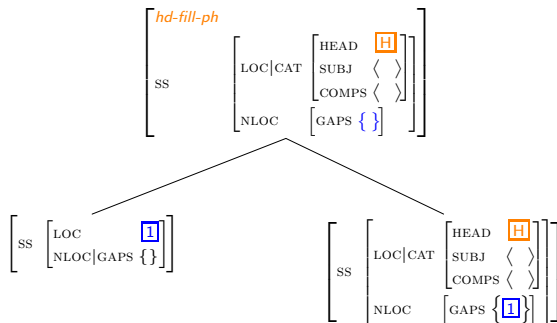
$$\text{canon-ph} \Rightarrow \left[ \begin{array}{l} \text{SS|NLOC|GAPS } \bigcup(\mathbf{1}, \dots, \mathbf{n}) \\ \text{DTRS} \quad \left\langle [\text{SS|NLOC|GAPS } \mathbf{1}], \dots, [\text{SS|NLOC|GAPS } \mathbf{n}] \right\rangle \end{array} \right]$$



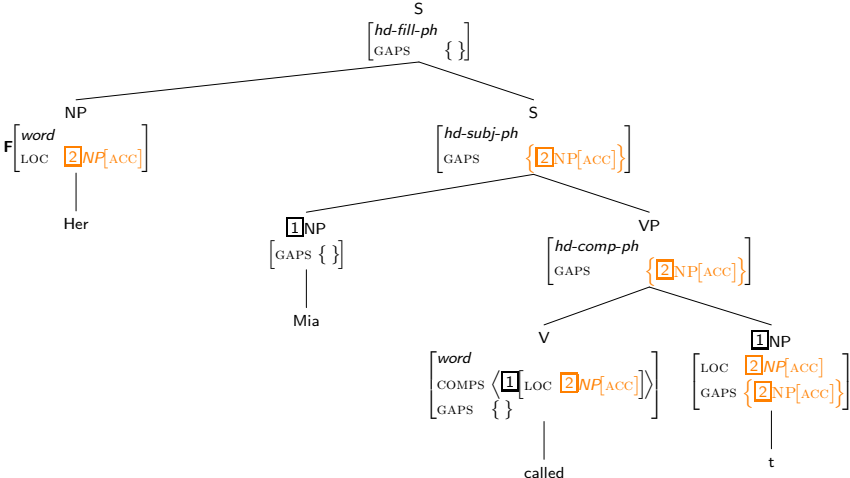
# Mia called her vs. Her Mia called t



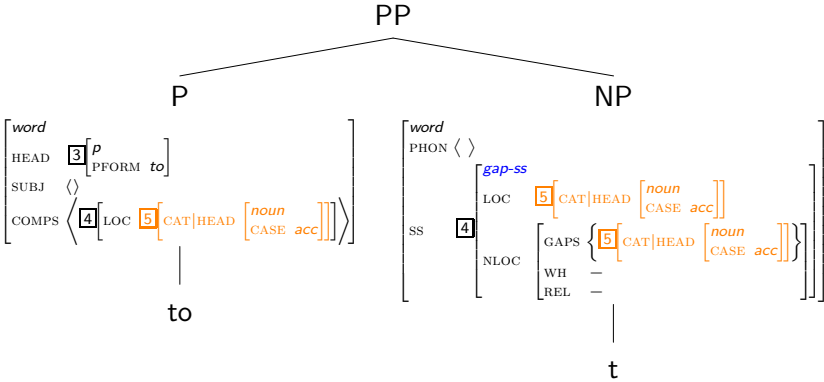
# Head-Filler Phrases



# Her Mia called t



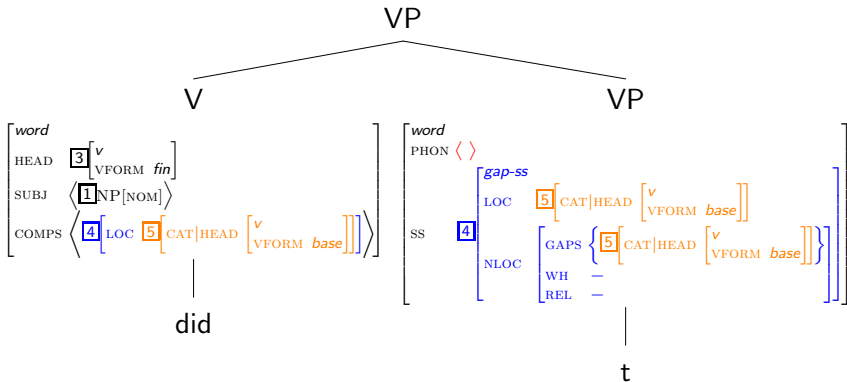
# to t, with information from local context







# did t, with information from local context



# Summary of the filler-gap mechanism

- 1 Distinction between *canon-ss* (for overt expressions) and *gap-ss*
- 2 the gap (whose *synsem*-value is *gap-ss*)
- 3 the Gap Principle
- 4 the Head-Filler Construction

Predicted consequences:

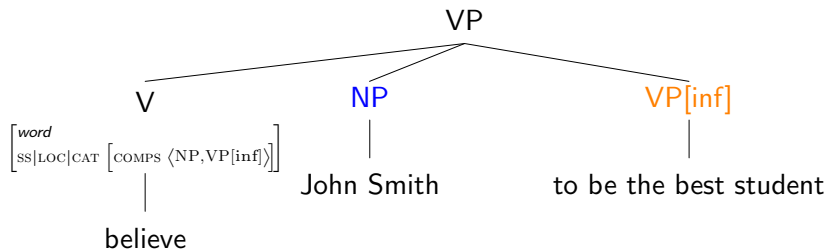
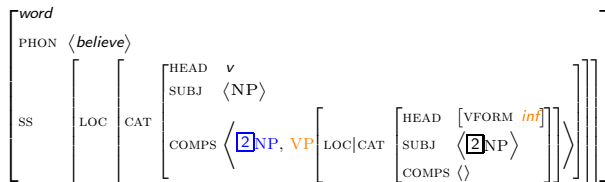
- 1 One-to-one relationship between fillers and gaps
- 2 the category and content features of fillers and gaps match.

## But there are problematic cases: ungrammatical base

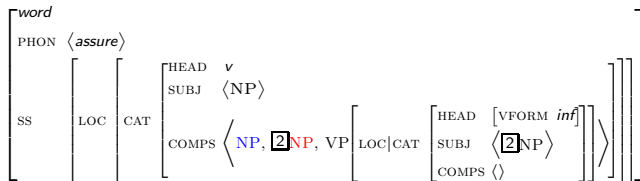
Kayne, 1981, p. XIII:

- (7) a. John Smith, who I assure you to be the best student in the class. . .  
b. \* I assure you John Smith to be. . .

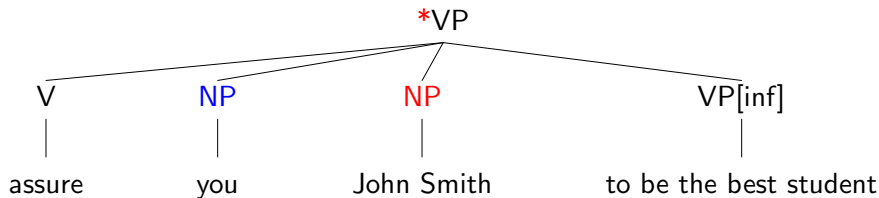
# Raising to object: the word *believe*



# Raising to object: the word *assure*

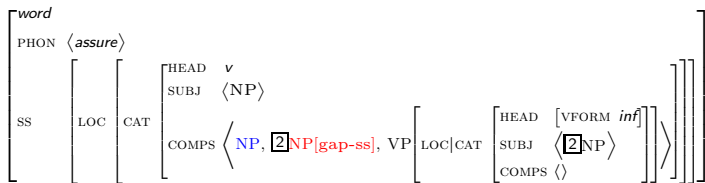


(8) \*I [VP assure [NP you] [NP John Smith] [VP to be ...]]

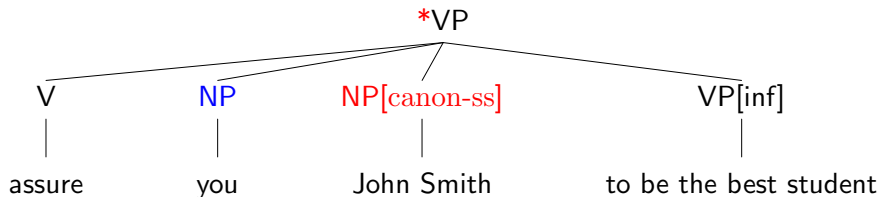


## Raising to object: the word *assure*

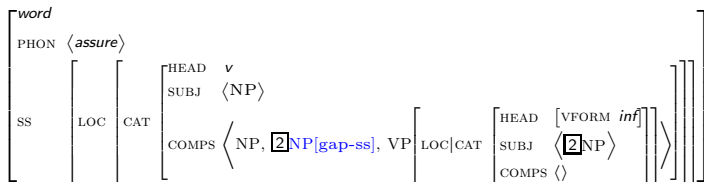
Working out a proposal in Bouma, Malouf, and Sag 2001:



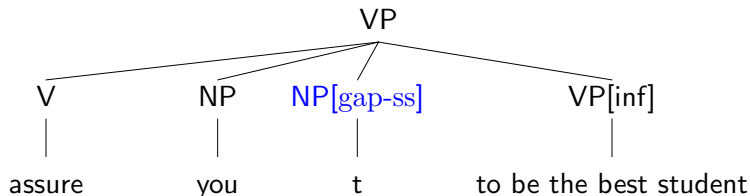
(9) \* I [VP assure [NP you] [NP John Smith] [VP to be ... ]]



# Raising to object: the word *assure*



- (10) John Smith,  
 who<sub>i</sub> I [VP assure [NP you] [NP t<sub>i</sub>] [VP to be the best student]] ...

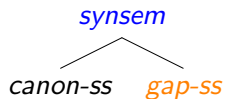
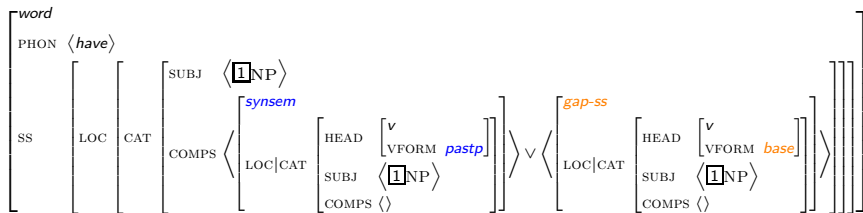




## VP-Preposing (Bresnan 2000, p. 18)

- (11) a. She said she would meet me,  
b. and she has [VP met me].  
c. \* and she has [VP meet me].
- (12) a. She said she would meet me,  
b. and [VP met me] she has.  
c. and [VP meet me] she has.

# Lexical solution I: the auxiliary word *have*



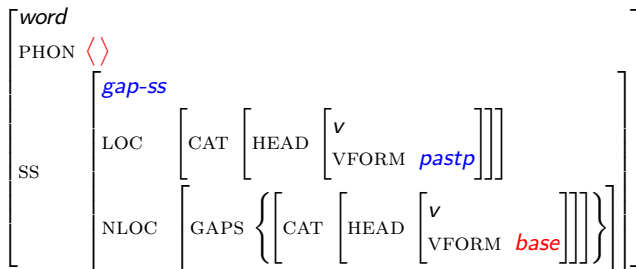
$\left[ \begin{array}{l} \text{word} \\ \text{PHON } \textit{overt-phon} \end{array} \right] \Rightarrow [\text{SS } \textit{canon-ss}]$

$\left[ \begin{array}{l} \text{word} \\ \text{PHON } \langle \rangle \end{array} \right] \Rightarrow [\text{SS } \textit{gap-ss}]$

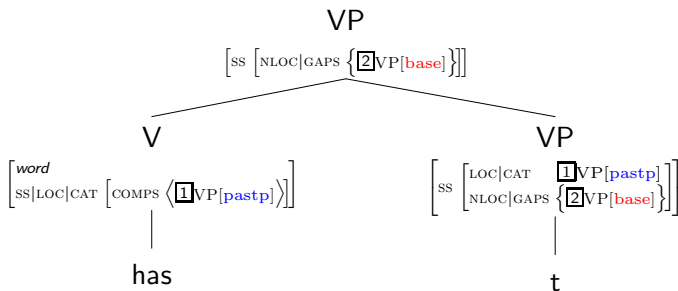
## VP-Preposing (Bresnan 2000, p. 18)

- (13) a. She said she would meet me,  
b. and she has [VP met me].  
c. \* and she has [VP meet me].
- (14) a. She said she would meet me,  
b. and [VP met me] she has.  
c. and [VP meet me] she has.

## Lexical solution II: a dishonest gap



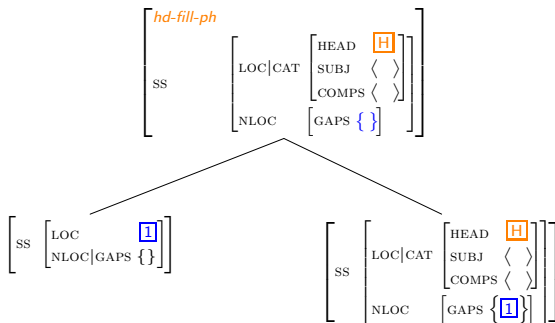
## Lexical solution II: a dishonest gap



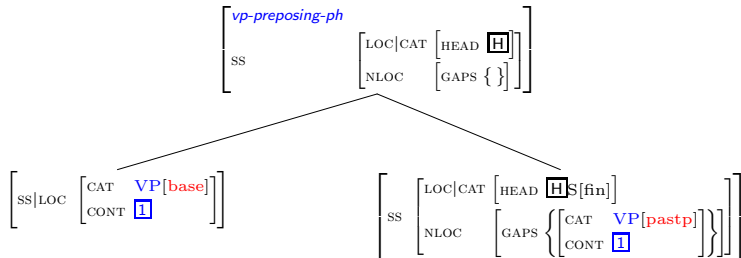
- (15) a. She said she would meet me,  
b. and [VP meet me]<sub>i</sub> she has [VP t]<sub>i</sub>.

# A constructional solution

Head-Filler Phrases:



# A constructional solution: a VP-preposing construction

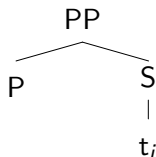
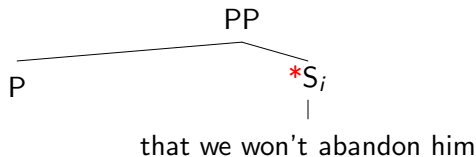


- (16) a. She said she would meet me,  
 b. and [VP meet me]<sub>i</sub> she has [VP t<sub>i</sub>].

# Mismatches in the Distribution of Finite Argument Clauses

Higgins 1973, p. 17f:

- (17) a. \* You may depend [PP upon [S that we won't abandon him]].  
b. [S That we won't abandon him]<sub>i</sub> you may definitely depend [PP on t<sub>i</sub>].



Generalization 1: Finite argument clauses **cannot** appear in the complement position of prepositions.

Generalization 2: Finite argument clauses **can** be preposed from the complement position of prepositions.



# The distribution of finite subject clauses

Subject clauses:

(18) [<sub>S</sub> That John showed up] pleased me.

## The distribution of finite subject clauses

Kuno 1973 (following Ross 1967, Rosenbaum 1967):

(19) \* **Did** [<sub>S</sub> that John showed up] please you?

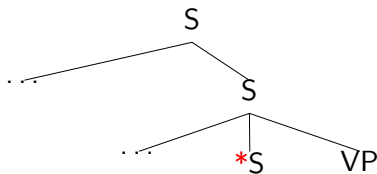
(20) ?\* [**That** [<sub>S</sub> that John showed up] pleased her] was obvious.

(21) a. \* I don't know [**how well-known** [that the world is round] is].

Higgins 1973:

(22) a. \* How likely **is** [<sub>S</sub> that John will come]?

b. How likely is it [<sub>S</sub> that John will come]?



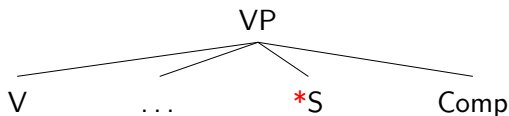
Generalization 3: Finite subject clauses cannot appear in non-initial positions.

# The distribution of finite complement clauses

Kuno:

- (23) a. \* I believe [<sub>S</sub> that the earth is round] **to be obvious to everyone**  
b. \* John called [<sub>S</sub> that Mary had left] **to my attention**.
- (24) a. John proved [<sub>S</sub> that the earth is round] **when he was fifteen**.  
b. John said [<sub>S</sub> that he was angry] **with a sweet, tender voice**.

Generalization 4: Finite complement clauses can be followed by **modifiers** but not by other **obligatory complements** of the same verb:



# Argument clauses can occur sentence-initially

Subject clauses:

(25) [<sub>S</sub> That John showed up] pleased me.

Complement clauses (Higgins 1973):

- (26) a. [<sub>S</sub> That he had solved the problem]<sub>i</sub>; we didn't really find *t<sub>i</sub>* very surprising.  
b. [<sub>S</sub> That we won't abandon him]<sub>i</sub>; you may definitely depend on *t<sub>i</sub>*.

# Conditions on the Preposability of Finite Argument Clauses

- (27) a. He was unhappy [<sub>S</sub> that Sue was late again].  
b. \* He was unhappy **about** [<sub>S</sub> that Sue was late again].
- (28) a. [<sub>S</sub> That Sue was late again] he was unhappy **about** t  
b. \* [<sub>S</sub> That Sue was late again] he was unhappy t
- (29) a. Mary informed Bill [<sub>S</sub> that Sue was late again].  
b. \* [<sub>S</sub> That Sue was late again] Mary informed Bill t

Based on Stowell 1981: Raising verbs vs. raising adjectives

- (30) a. It **is likely** [<sub>S</sub> that John is guilty].  
b. It **seems** [<sub>S</sub> that John is guilty].
- (31) a. [<sub>S</sub> That John is guilty] **is likely**.  
b. \* [<sub>S</sub> That John is guilty] **seems**.

## Which *that*-clauses can be preposed?

Generalization 5: *that*-clauses can only be preposed from positions in which proposition-denoting NPs can occur.

Prototypical proposition-denoting NP: demonstrative pronoun *that*:

- (32) a. [<sub>S</sub> That I tried to cheat]<sup>prop</sup> is true.  
b. [<sub>S</sub> A: You tried to cheat]<sub>p</sub>. B:[<sub>NP</sub> That]<sub>p</sub> is true.

## Which *that*-clauses can be preposed?

Subject clauses:

- (33) a. [S That John showed up] pleased me.  
b. [S John showed up]<sub>*p*</sub>. [NP That]<sub>*p*</sub> pleased me.

Complement clauses:

- (34) a. [S That he had solved the problem]<sub>*i*</sub>; we didn't really find *t<sub>i</sub>* very surprising.  
b. [S He had solved the problem]<sub>*p*</sub>. We didn't really find [NP that]<sub>*p*</sub> very surprising.
- (35) a. [S That we won't abandon him]<sub>*i*</sub>; you may definitely depend on *t<sub>i</sub>*.  
b. [S We won't abandon him]<sub>*p*</sub>. You may definitely depend on [NP that]<sub>*p*</sub>.

## Which *that*-clauses can be preposed?

- (36) a. [<sub>S</sub> That Sue was late again] he was unhappy about t  
b. [<sub>S</sub> Sue was late again]<sub>ρ</sub>. He was unhappy about [<sub>NP</sub> that]<sub>ρ</sub>.
- (37) a. \* [<sub>S</sub> That Sue was late again] he was unhappy t  
b. \* [<sub>S</sub> Sue was late again]<sub>ρ</sub>. He was unhappy [<sub>NP</sub> that]<sub>ρ</sub>.
- (38) a. \* [<sub>S</sub> That Sue was late again] Mary informed Bill t  
b. \* [<sub>S</sub> Sue was late again]<sub>ρ</sub>. Mary informed Bill [<sub>NP</sub> that]<sub>ρ</sub>.



## Which *that*-clauses can be preposed?

- (39) a. \* [<sub>S</sub> That John is guilty] seems.  
b. \* [<sub>S</sub> John is guilty]<sub>ρ</sub>. [<sub>NP</sub> That]<sub>ρ</sub> seems.
- (40) a. [<sub>S</sub> That John is guilty] is likely.  
b. [<sub>S</sub> John is guilty]<sub>ρ</sub>. [<sub>NP</sub> That]<sub>ρ</sub> is likely.

Generalization 5: *that*-clauses can only be preposed from positions in which proposition-denoting NPs can occur.

## Complementizer drop

Based on Rosenbaum 1967, 38:

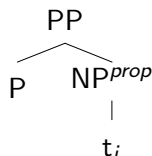
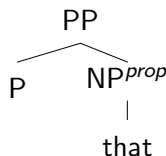
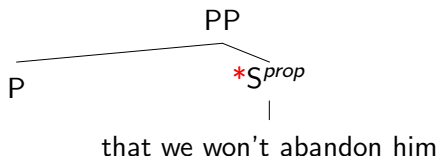
- (41) a. I doubt [(that) John came yesterday] quite seriously.  
b. I convinced Bill [(that) John was not so bad].

Webelhuth 1992, 84f:

- (42) a. [\***(That)** John left] is a pity.  
b. [\***(That)** he has done that]<sub>i</sub>; I can't believe t<sub>i</sub>.

Generalization 6: The complementizer *that* cannot be dropped in sentence-initial subordinate clauses.

# Capturing the Generalizations: Generalization 1

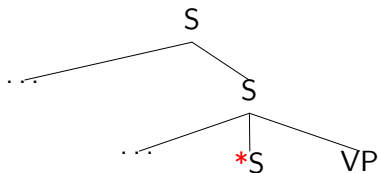


Generalization 1: Finite argument clauses cannot appear in the complement position of prepositions.

C1: The Propositional Complement-of-P Constraint:

$$\left[ \begin{array}{l} \textit{word} \\ \text{SS|LOC|CAT} \left[ \begin{array}{l} \text{HEAD } p \\ \text{COMPS } \langle [\text{CONT } \textit{prop}] \rangle \end{array} \right] \end{array} \right] \Rightarrow \left[ \begin{array}{l} \textit{word} \\ \text{SS|LOC|CAT} \left[ \text{COMPS } \langle \text{NP} \rangle \right] \end{array} \right]$$

## Capturing the Generalizations: Generalization 3



Generalization 3: Finite subject clauses cannot appear in non-initial positions.

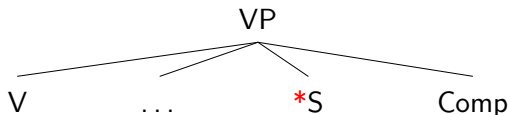
C2: The Propositional Subject Constraint:

$$\left[ \begin{array}{l} \textit{word} \\ \text{SS|LOC|CAT|SUBJ} \langle [\text{CONT} \textit{prop}] \rangle \end{array} \right] \Rightarrow \left[ \begin{array}{l} \textit{word} \\ \text{SS|LOC|CAT|SUBJ} \langle \text{NP} \rangle \end{array} \right]$$

(Cf. Koster 1975)

## Capturing the Generalizations: Generalization 4

Generalization 4: Finite complement clauses can be followed by modifiers but not by other obligatory complements of the same verb:



Definition:

$$S =_{abbr} \left[ \begin{array}{l} \text{synsem} \\ \text{SS|LOC} \left[ \begin{array}{l} \text{CAT} \left[ \text{HEAD } \textit{verbal} \right] \\ \text{CONT} \textit{prop} \end{array} \right] \end{array} \right]$$

C3: The S-Linearization Constraint (cf. Kim and Sag 2005)

Complement  $\prec$  S

## Capturing the Generalizations: Generalizations 2, 5, and 6

Generalization 2: Finite argument clauses can be preposed from the complement position of prepositions.

Generalization 5: *that*-clauses can only be preposed from positions in which proposition-denoting NPs can occur.

- (43) a. [S That we won't abandon him]<sub>i</sub>; you may definitely depend  
[PP on t<sub>i</sub>].
- b. [S We won't abandon him]<sub>p</sub>. You may definitely depend  
[PP on [NP that]<sub>p</sub>].

Generalization 6: The complementizer *that* cannot be dropped in sentence-initial subordinate clauses.

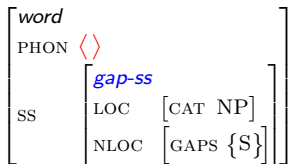
⇒ Generalization 5 entails Generalization 2!

## Capturing the Generalizations: Generalizations 5, and 6

- (44) a. He was unhappy (\*about) [<sub>S</sub> that Sue was late again].  
b. [<sub>S</sub> That Sue was late again] he was unhappy \*(about) t

Proposals in the literature (among others):

- The Sentence-Trace Universal (Webelhuth 1992, 94): *Sentences can only bind NP-traces*: ad hoc.
- Bouma, Malouf, and Sag 2001: "dishonest" trace approach: too weak.



C4: The S-Canonicity Constraint:

$S \Rightarrow \text{canon-ss}$

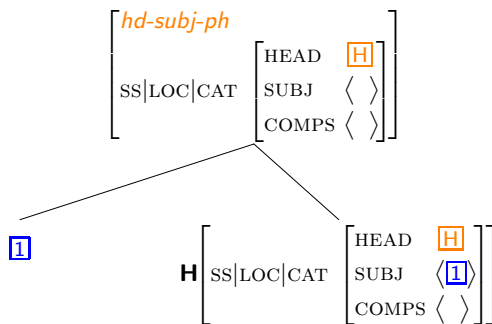
## That derives part of Generalization 5

Generalization 5: *that*-clauses can only be preposed from positions in which proposition-denoting NPs can occur.

What about the rest?



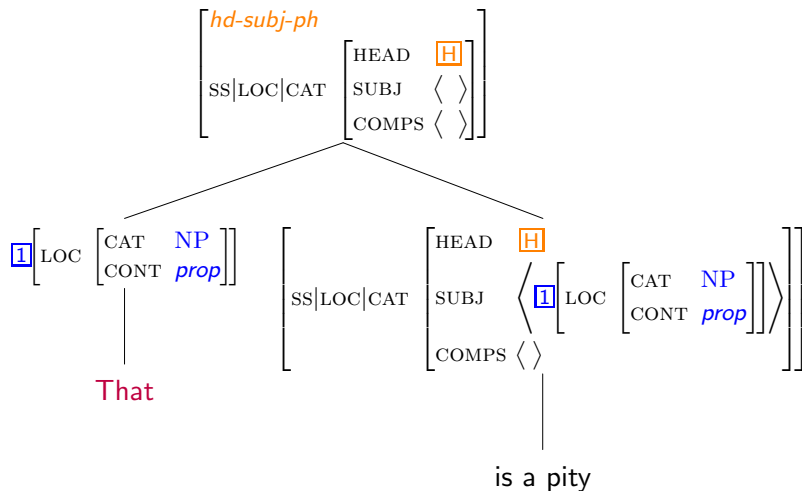
# Head-Subject Phrases



C2: The Propositional Subject Constraint:

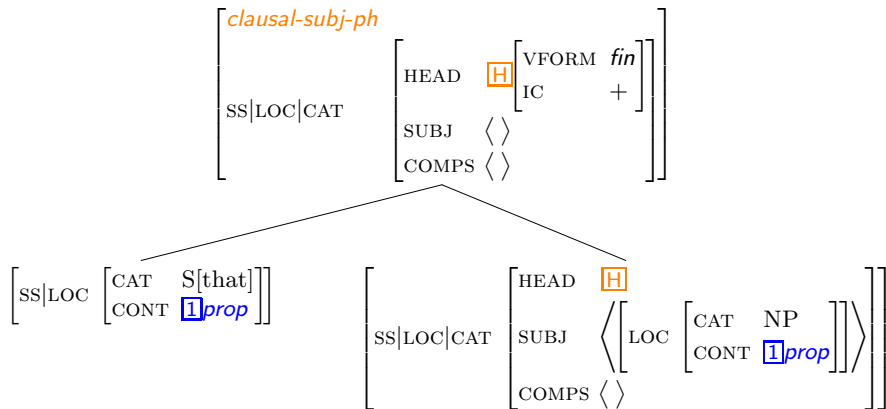
$$\left[ \begin{array}{l} \textit{word} \\ \text{SS|LOC|CAT|SUBJ } \langle [\text{CONT } \textit{prop}] \rangle \end{array} \right] \Rightarrow \left[ \begin{array}{l} \textit{word} \\ \text{SS|LOC|CAT|SUBJ } \langle \text{NP} \rangle \end{array} \right]$$

# Head-Subject Phrases

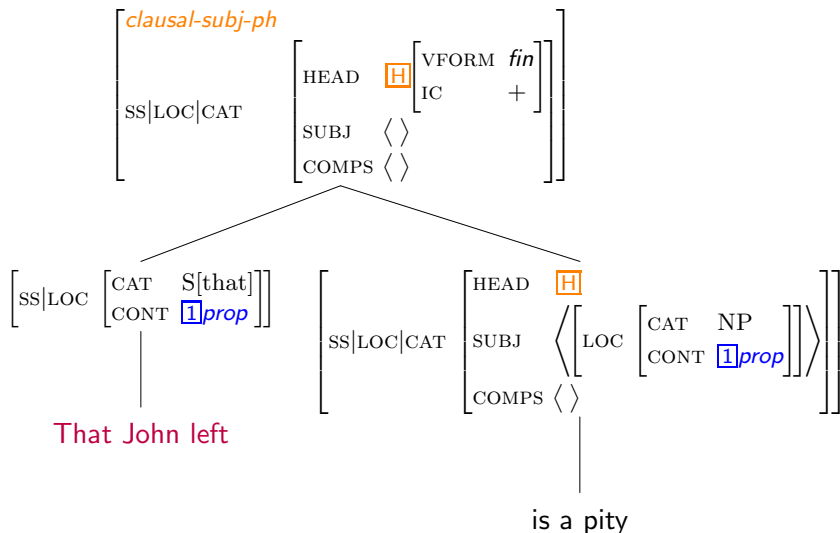


Target: [<sub>S</sub> That John left] is a pity.

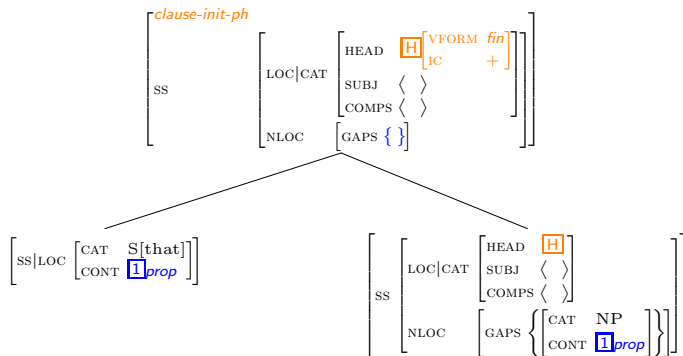
# Phrasal Schemas: Clausal-Subject Phrases



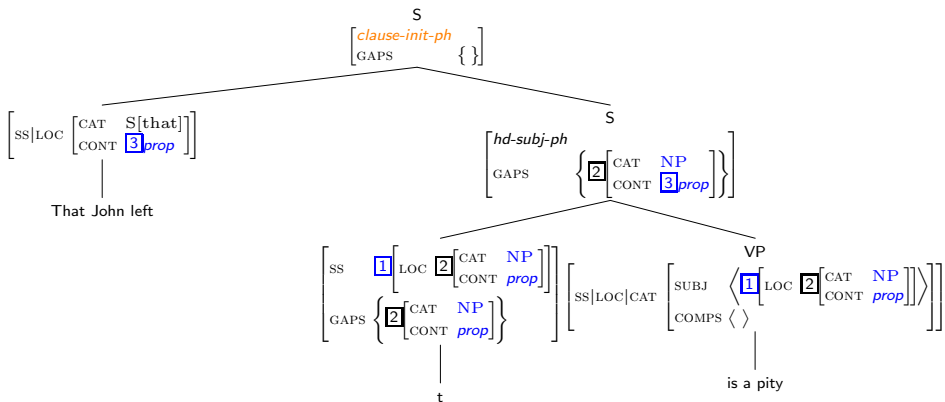
# Phrasal Schemas: Clausal-Subject Phrases



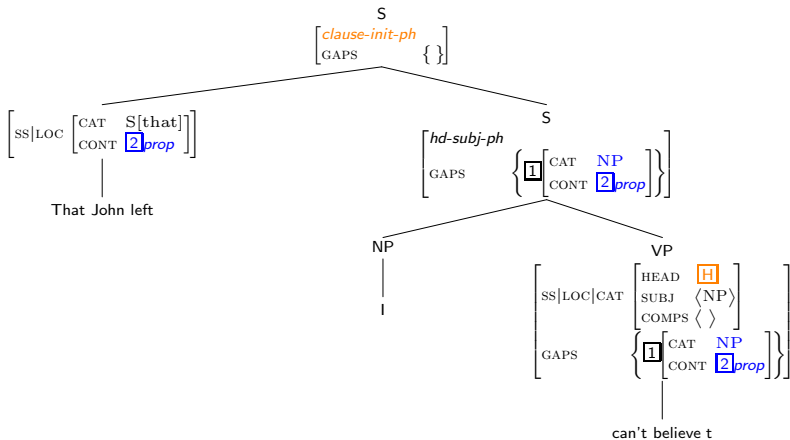
# Clause-Initial Phrases



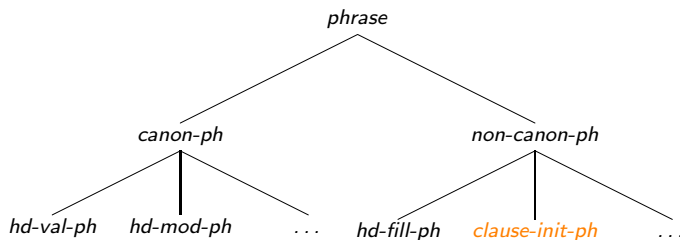
# That John left is a pity



# That John left I can't believe



# Sign Hierarchy



Generalization 5: *that*-clauses can only be preposed from positions in which proposition-denoting NPs can occur.

Generalization 6: The complementizer *that* cannot be dropped in sentence-initial subordinate clauses.



## Some Speculations (Check that you still have your purse!)

### The OED on THAT:

This use of *that* is generally held to have arisen out of the dem. pron. pointing to the clause which it introduces. Cf. (1) He onced lived here: we all know *thát*; (2) *That* (now *this*) we all know: he once lived here; (3) We all know *that* (or *this*): he once lived here; (4) We all know *thăt* he once lived here... In 1, 2, 3 *that* is a demonstrative pronoun in apposition to the statement 'he once lived here'; in 4 it has sunk into a conjunctive particle ...

## Some Speculations (Check that you still have your watch!)

Fischer et al. 2000, 62 "An Outline of Old English Syntax"

*Finite object clauses always follow all other clause material.*

(Cf. also Michell 1985, 18, Traugott 1992,234.)

Fischer et al. 2000, 95 "An Outline of Middle English Syntax"

*... 'subject clauses' in Middle English only rarely occurred in initial position and it may therefore be preferable to interpret them as complements ...*

- (45) But bet is that a wyghtes tonge reste.  
but better is that a creature's tongue rests/remains silent  
(Chaucer *Parliament* 514)

# Diachronic Development

Stage 1: S-canonicity, Cat(*that*) = pronoun

- 1 Advantage: Processing advantages (Behaghel, Hawkins, Wasow)
- 2 Advantage: Avoidance of garden-path effects for non-final subordinate clauses:

- (46) a. [**\*(That)** John left] is a pity.  
b. [**\*(That)** he has done that]<sub>i</sub> I can't believe t<sub>i</sub>.

Compare:

- (47) a. The student [<sub>RC</sub> \*(who<sub>i</sub>) t<sub>i</sub> liked me] called back.  
b. The student [<sub>RC</sub> (who<sub>i</sub>) I liked t<sub>i</sub>] called back.

- 3 Disadvantage: No clauses in canonical topic position:

- (48) a. [That John left] is a pity.  
b. [That he has done that]<sub>i</sub> I can't believe t<sub>i</sub>.

# Diachronic Development

Stage 2: S-canonicity,  $\text{Cat}(\textit{that}) = \text{pronoun, complementizer}$

- 1 Advantage: Processing advantages (Behaghel, Hawkins, Wasow)
- 2 Advantage: Avoidance of garden-path effects for non-final *that*-less subordinate clauses:

- (49) a. [*\*(That)* John left] is a pity.  
b. [*\*(That)* he has done that]<sub>i</sub>; I can't believe t<sub>i</sub>.

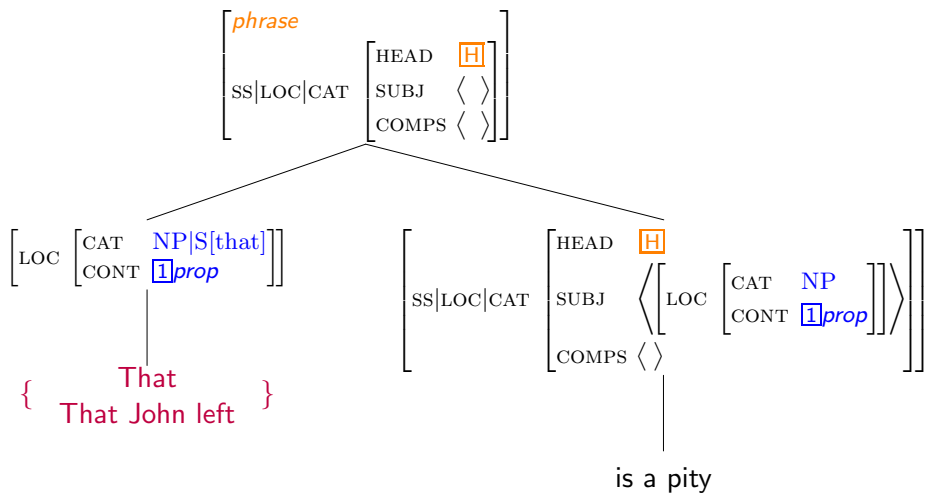
- 3 Disadvantage: No clauses in canonical topic position:

- (50) a. [That John left] is a pity.  
b. [That he has done that]<sub>i</sub>; I can't believe t<sub>i</sub>.

Consequence: the development of a subordinate clause marker lays the foundation for overcoming the disadvantage of Stage 2:

Innovate a construction that allows *that*-clauses  
in sentence-initial position!

# Analogy



## Stage 3

Stage 3: S-canonicity,  $\text{Cat}(\textit{that}) = \text{pronoun, complementizer/}$   
 $\text{subordinator, clause-init-ph:}$

- 1 Advantage: Processing advantages (Behaghel, Hawkins, Wasow)
- 2 Advantage: Avoidance of garden-path effects for non-final *that-less* subordinate clauses:
- 3 Advantage: *that-clauses* can appear in canonical topic position!

But:

Subject clauses prefer to extrapose at a ratio of 7.8:1 (Kaltenböck 2005)!

This shows: ease of processing still an issue!

# Summary of the analysis of the distribution of argument clauses

1 construction (*clause-init-ph*) + 4 constraints:

C1: The Propositional Complement-of-P Constraint

C2: The Propositional Subject Constraint

C3: The S-Linearization Constraint

C4: The S-Canonicity Constraint

Overall hypothesis:

the distributional paradigm is the result of a compromise between the semantic/pragmatic system and the processor.

## Summary of the Whole Talk

- 1 “Movement mismatches all involve some sort of **restriction and/or mismatch** that is not found in canonical “movement.”
- 2 In this talk I have argued that the same kind of **lexical-constructural tools** that account for canonical “movement” phenomena are sufficient to **capture “movement mismatches”** as well.