

Chapter 5: More on Subjects and Complements

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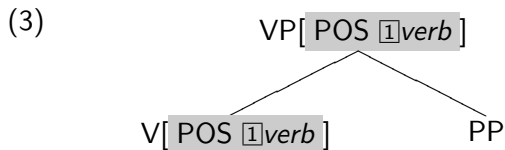
Grammar Rules: X-bar rules

- (1) a. $XP \rightarrow \text{Specifier, Head}$
b. $XP \rightarrow \text{Head, Complement(s)}$
c. $XP \rightarrow \text{Head, Modifier}$

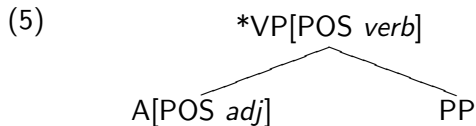
Grammar Rules with Features

- (2) a. Head-Specifier Rule:
 $XP[POS \ 1] \rightarrow \text{Specifier}, X'[POS \ 1]$
- b. Head-Complement Rule:
 $XP[POS \ 1] \rightarrow X[POS \ 1], \text{Complement}(s)$
- c. Head-Modifier Rule:
 $XP[POS \ 1] \rightarrow \text{Modifier}, XP[POS \ 1]$

Head Feature and Head Feature Principle



- (4) The Head Feature Principle (HFP):
 A phrase's head feature (e.g., POS, VFORM, etc.) is identical with that of its head.



Discharging COMPS and SPR (SUBJ) value

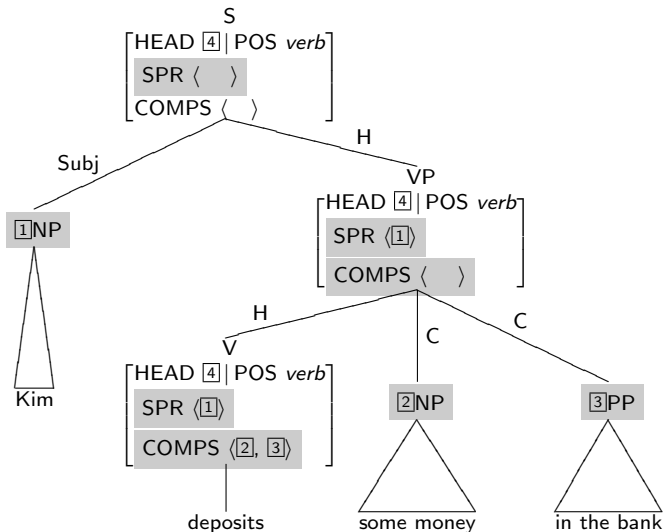
- (6) a. Kim put the book in the box.
 b. *Kim put the book.
 c. *Kim put in the box.
- (7)
$$\left[\begin{array}{l} \text{HEAD} \mid \text{POS } \textit{verb} \\ \text{SPR} \langle \text{NP} \rangle \\ \text{COMPS} \langle \text{NP}, \text{PP} \rangle \end{array} \right]$$
- (8) a. *Is putting the book in the box.
 b. *Talked with Bill about the exam.

Revised Grammar Rules

- (9) a. Head-Specifier Rule:
 $XP[SPR \langle \quad \rangle] \rightarrow \boxed{1}, \mathbf{H}[SPR \langle \boxed{1} \rangle]$
- b. Head-Complement Rule:
 $XP[COMPS \langle \quad \rangle] \rightarrow \mathbf{H}[COMPS \langle \boxed{1}, \dots, \boxed{n} \rangle], \boxed{1}, \dots, \boxed{n}$
- c. Head-Modifier Rule:
 $XP \rightarrow [\mathbf{MOD} \langle \boxed{1} \rangle], \boxed{1}\mathbf{H}$
- (10) The Valence Principle (VALP):
 The mother's SPR and COMPS value is identical with its head daughters minus the discharged value(s).

Grammar Rules and HFP

(11)



verb forms

(12) Types of English Verb Forms:

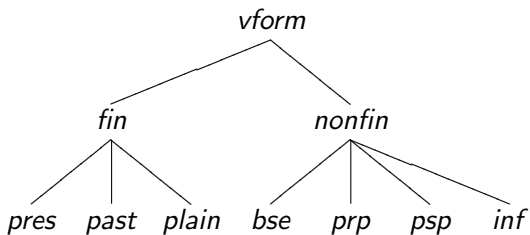
Finiteness	Verb forms	Example
<i>fin</i>	<i>pres</i>	He <i>drives</i> a car.
	<i>past</i>	He <i>drove</i> a car.
	<i>plain</i>	They <i>drive</i> a car.
<i>nonfin</i>	<i>bse</i>	He wants to <i>drive</i> a car.
	<i>prp</i>	<i>Driving</i> a car, he sang a song.
		He was <i>driving</i> .
		He is proud of <i>driving</i> a car.
<i>psp</i>	<i>Driven</i> by the mentor, he worked.	
	The car was <i>driven</i> by him. He has <i>driven</i> the car.	
	<i>inf</i>	He has <i>to drive</i> .

Form sharing and finitie vs. nonfinite

- (13) a. They write/wrote to her.
b. They are/*be kind to her.
- (14) a. They want to write/*wrote to her.
b. They want to be/*are kind to her.

verb form hierarchy

(15)

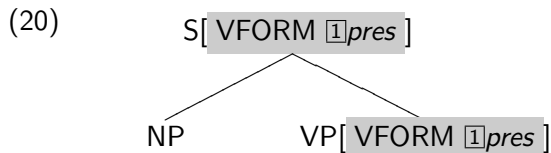


referring to a VFORM value

- (16) a. [VFORM *fin*]
b. [VFORM *prp*]
- (17) a. The student [knows the answers].
b. The student [knew the answers].
c. The students [know the answers].
- (18) a. *The student [knowing the answers].
b. *The student [known the answers].

Basic constraint

- (19) English Declarative Sentence Rule:
For an English declarative sentence to be well-formed, its verb form value (VFORM) must be finite.



Participle forms

- (21) Usages of the Present Participle:
- He is writing another long book about beavers.
(part of the the progressive aspect construction)
 - Broadly speaking, the project was successful.
(used as a sentence modifier)
 - He is proud of his son's passing the bar exam.
(used in a gerundive construction)
- (22) Usages of the Past Participle:
- The chicken has eaten.
(part of the perfect aspect construction)
 - The chicken was eaten.
(part of the passive voice construction)
 - Seen from this perspective, there is no easy solution.
(used as a sentence modifier)

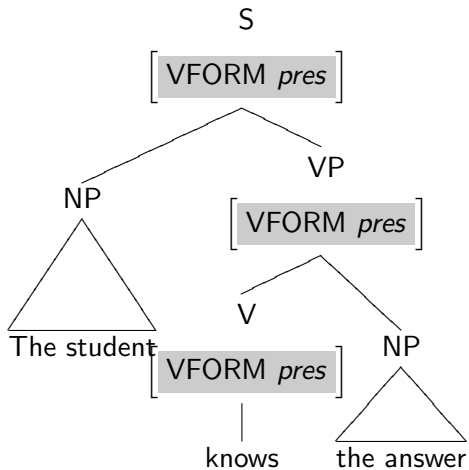
Lexical entry for the verb

(23)

$\langle \textit{knows} \rangle$					
HEAD	<table style="border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">POS</td> <td style="padding: 5px;"><i>verb</i></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">VFORM</td> <td style="padding: 5px;"><i>pres</i></td> </tr> </table>	POS	<i>verb</i>	VFORM	<i>pres</i>
POS	<i>verb</i>				
VFORM	<i>pres</i>				
VAL	<table style="border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SPR</td> <td style="padding: 5px;">$\langle \boxed{1} \text{NP} \rangle$</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">COMPS</td> <td style="padding: 5px;">$\langle \boxed{2} \text{NP} \rangle$</td> </tr> </table>	SPR	$\langle \boxed{1} \text{NP} \rangle$	COMPS	$\langle \boxed{2} \text{NP} \rangle$
SPR	$\langle \boxed{1} \text{NP} \rangle$				
COMPS	$\langle \boxed{2} \text{NP} \rangle$				
ARG-ST	$\langle \boxed{1}, \boxed{2} \rangle$				

VFORM and HFP

(24)



various constructions in English where we need to refer to VFORM values

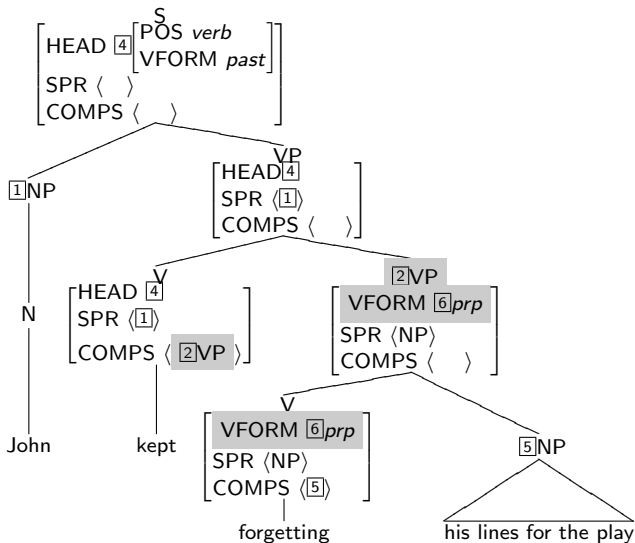
- (25) a. The monkeys kept [forgetting/*forgot/*forgotten their lines].
(*prp*)
- b. We caught them [eating/*ate/*eat/*eaten the bananas]. (*prp*)
- c. John made Mary [cook/*to cook/*cooking Korean food]. (*bse*)

VFORM specification

- (26) a. $\left[\begin{array}{l} \langle \text{keep} \rangle \\ \text{HEAD} \mid \text{POS} \quad \textit{verb} \\ \text{COMPS} \quad \langle \text{VP}[\textit{prp}] \rangle \end{array} \right]$
- b. $\left[\begin{array}{l} \langle \text{make} \rangle \\ \text{HEAD} \mid \text{POS} \quad \textit{verb} \\ \text{COMPS} \quad \langle \text{NP}, \text{VP}[\textit{bse}] \rangle \end{array} \right]$

tree

(27)



two types of adjectives and complement types

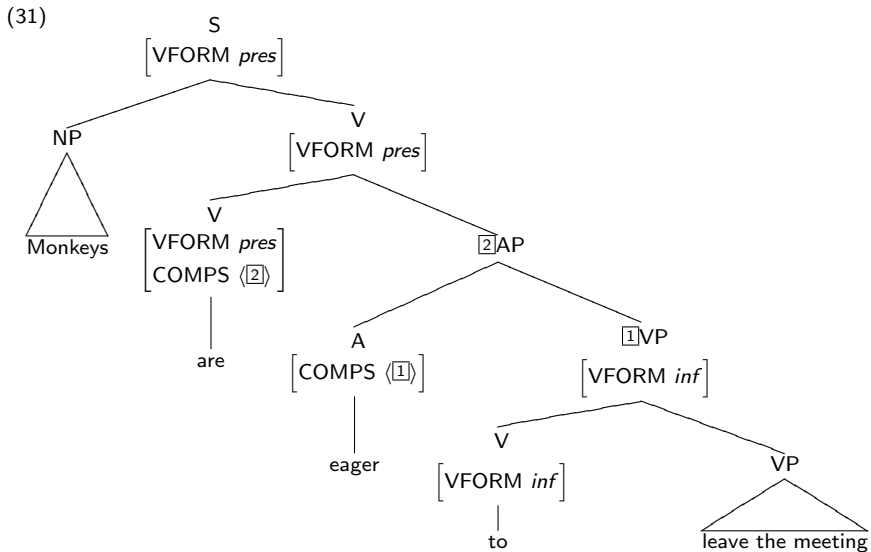
- (28) a. The monkey seems despondent (that it is in a cage).
b. He seems intelligent (*to study medicine).
- (29) a. Monkeys are eager [to leave/*leaving the compound].
b. The chickens seem fond [of/*with the farmer].
c. The foxes seem compatible [with/*for the chickens].
d. These are similar [to/* with the bottles].
e. The teacher is proud [of/*with his students].
f. The contract is subject [to/*for approval by my committee].

lexical entries

(30) a. $\left[\begin{array}{ll} \langle \text{eager} \rangle & \\ \text{HEAD} \mid \text{POS} & \text{adj} \\ \text{SPR} & \langle \text{NP} \rangle \\ \text{COMPS} & \langle \text{VP}[\text{VFORM } \textit{inf}] \rangle \end{array} \right]$

b. $\left[\begin{array}{ll} \langle \text{fond} \rangle & \\ \text{HEAD} \mid \text{POS} & \text{adj} \\ \text{SPR} & \langle \text{NP} \rangle \\ \text{COMPS} & \langle \text{PP}[\text{PFORM } \textit{of}] \rangle \end{array} \right]$

tree



noun complements

- (32) a. their proximity to their neighbors/*for their neighbors
b. Bill's faith in/*for Fred's sister
c. the king of/*in English
d. the desire to become famous/*for success
e. the bottom of/*in the barrel

lexical entry

- (33) a. $\left[\begin{array}{l} \langle \text{proximity} \rangle \\ \text{HEAD} \mid \text{POS} \quad \textit{noun} \\ \text{SPR} \quad \langle \text{[1]DP} \rangle \\ \text{COMPS} \quad \langle \text{[2]PP}[\text{PFORM } \textit{to}] \rangle \end{array} \right]$
- b. $\left[\begin{array}{l} \langle \text{faith} \rangle \\ \text{HEAD} \mid \text{POS} \quad \textit{noun} \\ \text{SPR} \quad \langle \text{[1]DP} \rangle \\ \text{COMPS} \quad \langle \text{[2]PP}[\text{PFORM } \textit{in}] \rangle \end{array} \right]$

restrictions on the subject

- (34) a. John/Some books/The spy disappeared.
b. The teacher/The monkey/He fooled the students.
- (35) a. It/*John/*There rains.
b. There/*The spy lies a man in the park.

lexical entries

(36) a.
$$\left[\begin{array}{ll} \langle \text{rained} \rangle & \\ \text{SPR} & \langle \text{NP[NFORM } it] \rangle \\ \text{COMPS} & \langle \quad \rangle \end{array} \right]$$

b.
$$\left[\begin{array}{ll} \langle \text{fooled} \rangle & \\ \text{SPR} & \langle \text{NP[NFORM } norm] \rangle \\ \text{COMPS} & \langle \text{NP} \rangle \end{array} \right]$$

(37)
$$\left[\begin{array}{ll} \langle \text{rain} \rangle & \\ \text{SPR} & \langle \text{NP[NFORM } it] \rangle \\ \text{COMPS} & \langle \quad \rangle \\ \text{ARG-ST} & \langle \quad \rangle \end{array} \right]$$

There

- (38) a. There exists only one truly amphibian mammal.
b. There arose a great storm.
- (39) a. There exist few solutions which are cost-effective.
b. There is a riot in the park.
c. There remained just a few problems to be solved.
- (40) a. *There runs a man in the park.
b. *There sings a man loudly.

The verb 'exist'

(41) a.
$$\left[\begin{array}{ll} \langle \text{exists} \rangle & \\ \text{SPR} & \langle \boxed{1} \text{NP} \rangle \\ \text{COMPS} & \langle \quad \rangle \\ \text{ARG-ST} & \langle \boxed{1} \rangle \end{array} \right]$$

b.
$$\left[\begin{array}{ll} \langle \text{exists} \rangle & \\ \text{SPR} & \langle \text{NP}[\text{NFORM } \textit{there}] \rangle \\ \text{COMPS} & \langle \boxed{1} \text{NP} \rangle \\ \text{ARG-ST} & \langle \boxed{1} \rangle \end{array} \right]$$

clausal complement

- (42) a. I think (that) the press has a check-and-balance function.
 b. They believe (that) Charles Darwin's theory of evolution is just a scientific theory.

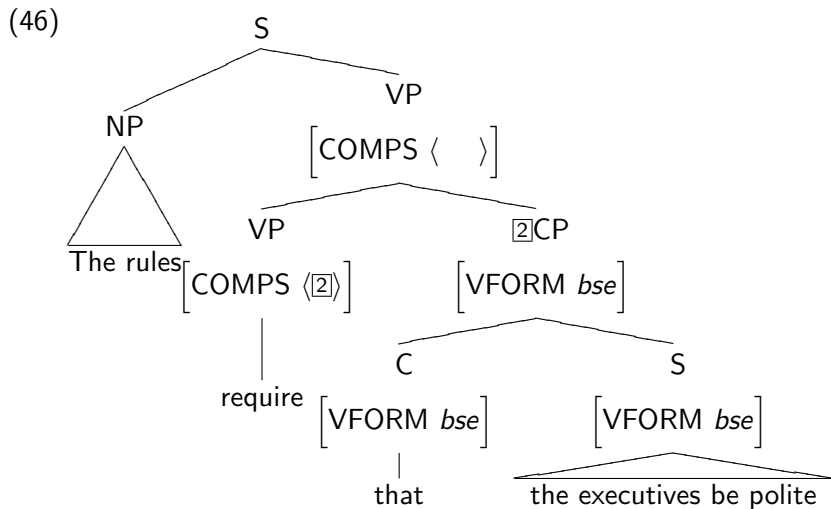
- (43) a. $\left[\text{COMPS} \quad \langle \text{S}[\text{VFORM } \textit{fin}] \rangle \right]$
 b. $\left[\text{COMPS} \quad \langle \text{CP}[\text{VFORM } \textit{fin}] \rangle \right]$

clausal complement

(44) $\left[\begin{array}{l} \langle \text{believe} \rangle \\ \text{HEAD} \mid \text{POS} \quad \textit{verb} \\ \text{COMPS} \quad \langle [\text{VFORM } \textit{fin}] \rangle \end{array} \right]$

- (45) a. John demanded [that she stop phoning him].
 b. The rules require [that the executives be polite].

tree



that

(47) $\left[\begin{array}{l} \langle \text{that} \rangle \\ \text{HEAD} \quad \left[\begin{array}{l} \text{POS } \textit{comp} \\ \text{VFORM } \boxed{1} \end{array} \right] \\ \text{SPR} \quad \langle \quad \rangle \\ \text{COMPS} \quad \langle \text{S}[\text{VFORM } \boxed{1}] \rangle \end{array} \right]$

warn type

- (48) a. Joe warned the class that the exam would be difficult.
b. We told Tom that he should consult an accountant.
c. Mary convinced me that the argument was sound.

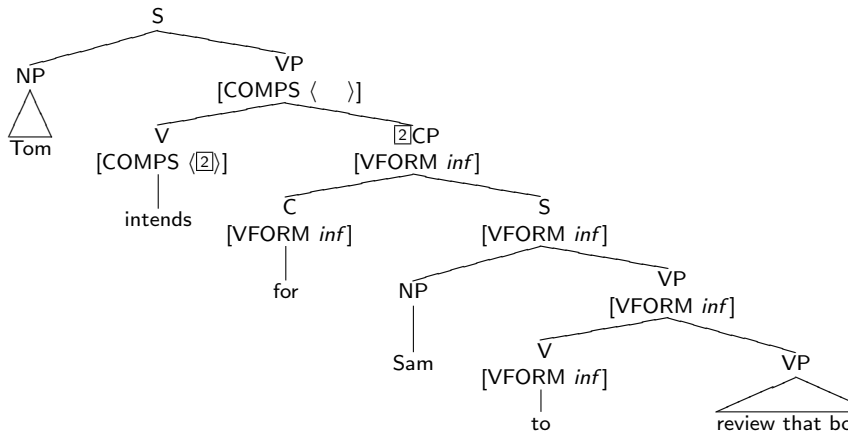
(49) [COMPS ⟨ NP, CP[VFORM *fin*]⟩]

intend type

- (50) a. Tom intends for Sam to review that book.
b. John would prefer for the children to finish the oatmeal.

tree

(51)



lexical entries

(52)
$$\left[\begin{array}{l} \langle \text{intends} \rangle \\ \text{HEAD} \left[\begin{array}{ll} \text{POS} & \textit{verb} \\ \text{VFORM} & \textit{pres} \end{array} \right] \\ \text{COMPS} \langle \text{CP}[\text{VFORM} \textit{inf}] \rangle \end{array} \right]$$

(53) a.
$$\left[\begin{array}{l} \langle \text{for} \rangle \\ \text{HEAD} \left[\begin{array}{ll} \text{POS} & \textit{comp} \\ \text{VFORM} & \textit{inf} \end{array} \right] \\ \text{COMPS} \langle \text{S}[\text{VFORM} \textit{inf}] \rangle \end{array} \right]$$

b.
$$\left[\begin{array}{l} \langle \text{to} \rangle \\ \text{HEAD} \left[\begin{array}{ll} \text{POS} & \textit{verb} \\ \text{VFORM} & \textit{inf} \end{array} \right] \\ \text{COMPS} \langle \text{VP}[\text{VFORM} \textit{bse}] \rangle \end{array} \right]$$

S[inf] as a constituent

- (54) a. For John to either [make up such a story] or [repeat it] is outrageous.
(coordination of *bse* VPs)
- b. For John either [to make up such a story] or [to repeat it] is outrageous.
(coordination of *inf* VPs)
- c. For [John to tell Bill such a lie] and [Bill to believe it] is outrageous.
(coordination of *inf* Ss)

more on 'intend'

- (55) a. John intends to review the book.
 b. John would prefer to finish the oatmeal.

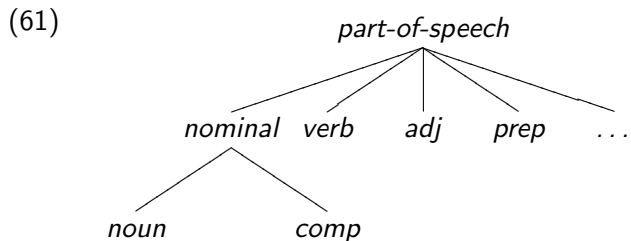
- (56) $\left[\begin{array}{l} \langle \text{intend} \rangle \\ \text{HEAD} \mid \text{POS} \quad \textit{verb} \\ \text{COMPS} \langle [\text{VFORM} \quad \textit{inf}] \rangle \end{array} \right]$

try-type

- (57) a. Tom tried to ask a question.
b. *Tom tried for Bill to ask a question.
- (58) a. Tom tends to avoid confrontations.
b. *Tom tends for Mary to avoid confrontations.
- (59) a. Joe hoped to find a solution.
b. *Joe hoped for Beth to find a solution.

believe-type

- (60) a. John believed it/that he is honest.
 b. John mentioned the issue to me/mentioned to me that the question is an issue.



three different types

- (62) a. She pinched [his arm] as hard as she could.
b. *She pinched [that he feels pain].
- (63) a. We hope [that such a vaccine could be available in ten years].
b. *We hope [the availability of such a vaccine in ten years].
- (64) a. Cohen proved [the independence of the continuum hypothesis].
b. Cohen proved [that the continuum hypothesis was independent].

three different argument structure

- (65) a. [ARG-ST ⟨ NP, NP[POS *noun*], ... ⟩]
b. [ARG-ST ⟨ NP, CP[POS *comp*], ... ⟩]
c. [ARG-ST ⟨ NP, [POS *nominal*], ... ⟩]

clausal subject

- (66) a. [John] bothers me.
 b. [That John snores] bothers me.

- (67) a. [John] loves Bill
 b. *[That John snores] loves Bill.

- (68) a. $\left[\begin{array}{ll} \text{SPR} & \langle \boxed{1}[\text{POS } \textit{nominal}] \rangle \\ \text{COMPS} & \langle \boxed{2}\text{NP} \rangle \\ \text{ARG-ST} & \langle \boxed{1}, \boxed{2} \rangle \end{array} \right]$
- b. $\left[\begin{array}{ll} \text{SPR} & \langle \boxed{1}\text{NP} \rangle \\ \text{COMPS} & \langle \boxed{2}\text{NP} \rangle \\ \text{ARG-ST} & \langle \boxed{1}, \boxed{2} \rangle \end{array} \right]$

other clausal subject types

- (69) a. [That John sold the ostrich] surprised Bill.
(*that*-clause CP subject)
- b. [(For John) to train his horse] would be desirable.
(infinitival CP or VP subject)
- c. [That the king or queen be present] is a requirement on all Royal weddings.
(subjunctive *that*-clause CP subject)
- d. [Which otter you should adopt first] is unclear.
(*wh*-question CP subject)

clausal subject not possible

- (70) a. *That Fred was unpopular nominated Bill.
 b. *That Tom missed the lecture was enjoyable.
 c. *For John to remove the mother is undeniable.
 d. *How much money Gordon spent is true.

(71) a.
$$\left[\begin{array}{l} \langle \text{nominate} \rangle \\ \text{VAL} \left[\begin{array}{l} \text{SPR} \quad \langle \boxed{1} \text{NP} \rangle \\ \text{COMPS} \quad \langle \boxed{2} \text{NP} \rangle \end{array} \right] \\ \text{ARG-ST} \langle \boxed{1}, \boxed{2} \rangle \end{array} \right]$$

b.
$$\left[\begin{array}{l} \langle \text{surprise} \rangle \\ \text{VAL} \left[\begin{array}{l} \text{SPR} \quad \langle \boxed{1} [\text{POS } \textit{nominal}] \rangle \\ \text{COMPS} \quad \langle \boxed{2} \text{NP} \rangle \end{array} \right] \\ \text{ARG-ST} \langle \boxed{1}, \boxed{2} \rangle \end{array} \right]$$

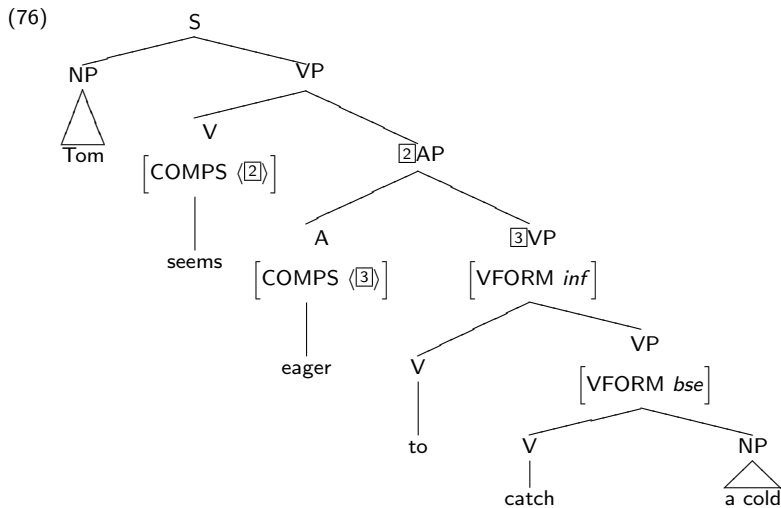
adjectives selecting a clausal COMP

- (72) a. Tom is confident [that the elephants respect him].
b. Tom is insistent [that the witnesses be truthful].
- (73) a. Tom seems eager [for her brother to catch a cold].
b. Tom seems eager [to catch a cold].
- (74) a. I am ashamed that I neglected you.
b. I am delighted that Mary finished his thesis.
c. We are content for the cleaners to return the drapes next week.

lexical entries

- (75) a. $\left[\begin{array}{ll} \langle \text{confident} \rangle & \\ \text{HEAD} \mid \text{POS} & \textit{adj} \\ \text{COMPS} & \langle \text{CP}[\text{VFORM } \textit{fin}] \rangle \end{array} \right]$
- b. $\left[\begin{array}{ll} \langle \text{insistent} \rangle & \\ \text{HEAD} \mid \text{POS} & \textit{adj} \\ \text{COMPS} & \langle \text{CP}[\text{VFORM } \textit{bse}] \rangle \end{array} \right]$
- c. $\left[\begin{array}{ll} \langle \text{eager} \rangle & \\ \text{HEAD} \mid \text{POS} & \textit{adj} \\ \text{COMPS} & \langle [\text{VFORM } \textit{inf}] \rangle \end{array} \right]$

tree



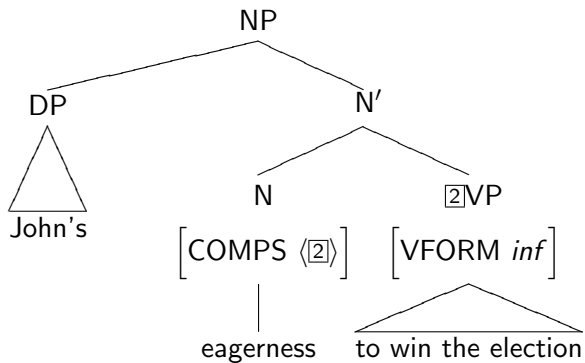
nouns selecting a clausal complement

- (77) a. (John's) eagerness [for Harry to win the election]
 b. (John's) eagerness [to win the election]

- (78) $\left[\begin{array}{l} \langle \text{eagerness} \rangle \\ \text{HEAD} \mid \text{POS} \quad \textit{noun} \\ \text{COMPS} \quad \langle [\text{VFORM } \textit{inf}] \rangle \end{array} \right]$

tree

(79)



relation between verb and noun

- (80) a. Bill alleged that Fred signed the check.
b. We believe that the directors were present.
c. We convinced him that the operation is safe.
- (81) a. the allegation that Fred signed the check
b. the belief that the directors were present
c. his conviction that the operation is safe

nouns selecting no clausal complement

- (82) a. *his attention that the earth is round
b. *his article that the earth is flat
c. *the ignorance that James can play the flute
d. *the expertise that she knows how to bake croissants

prepositions selecting a question

- (83) a. *Alan is thinking about [that his students are eager to learn English].
b. *Fred is counting on [for Tom to make an announcement].
- (84) a. The outcome depends on [how many candidates participate in the election].
b. Fred is thinking about [whether he should stay in Seoul].