

Introduction to Generative Syntax

Week 2: Elaborations

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1 Overview

1.1 Last week

- Generative grammars are explicit
- Linguistics is Biology
- Binary branching
- The functional sequence

1.2 This week

- A first glimpse at Movement
- Argument Structure
- Agreement and Case
- More on the passive, case, and subjects
- Long distance Movement and Locality Theory

2 Argument Structure

- (1) Every theory of grammar must specify how syntactic structure relates to meaning.
- (2) We (apparently) conceptualize the world as being made up of events that have causes and effects, there are participants in these events that play various roles.
- (3) Mary built the house.
 - a. Mary is the builder.
 - b. The house is the thing being built.
- (4) Mary built the house.
 - a. Mary is the *agent*

- b. the house is the *patient*
- (5) These participants can be realized linguistically or not. The roles are called *thematic roles* or θ -roles.
- (6) a. John devoured the food.
b. *John devoured.
- (7) a. John ate the food.
b. John ate.
- (8) a. John swallowed the pill.
b. John swallowed.
- (9) As in the examples above, the number of syntactic arguments is usually equal to or lower than the number of semantic arguments.¹
- (10) In general, every linguistically expressed participant role is assigned to exactly one argument expression.
- (11) a. Mary laughed.
b. *John Mary laughed.
c. [_{NP} John and Mary] laughed.
d. *John laughed Mary.
- (12) Typically every argument expression is interpreted as having exactly one participant role.
- (13) a. John saw. \neq John saw himself.
b. John saw Mary. \neq John and Mary saw each other.
- (14) Problems for this generalization include so called control predicates ((15)).
- (15) a. John ordered Mary to leave.
(i) Mary is the recipient of the order
(ii) Mary is the agent of leaving
b. Mary wants to stay.
(i) Mary is the 'agent' of wanting.
(ii) Mary is the 'agent' of staying.
- (16) The syntactic category of an argument is to a certain extent predictable from the semantics.
- (17) What generalizations govern the structural distribution of arguments relative to their predicates and relative to each other? How many roles are linguistically significant? ...
- (18) If a verb has an agent and a patient role, the agent is invariably realized in a structurally more prominent position Baker (1997) - we always find reflexive binding asymmetries, for example.

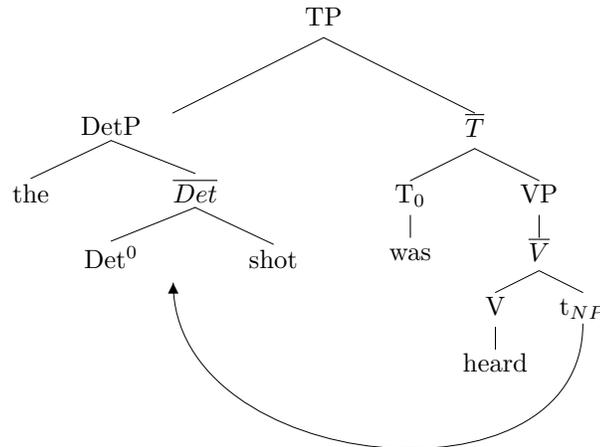
¹Problematic cases include examples like *Betsy perjured herself. A better solution presented itself. Bill prides himself on his stamp collection. The chair has a stain on it. Columbus slept a deep sleep.* Jackendoff (2002) chapter 5.8-5.10.

- (19) *The Uniformity of Theta Assignment Hypothesis* (UTAH)(Baker (1988) p. 46):

Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-Structure.²

- (20) The UTAH dovetails nicely with our analysis of the passive.

(21)



- (22) In Dutch the perfect auxiliary for transitive verbs is *hebben* - to have. But in the passive the auxiliary is *zijn* - to be.

- (23) a. Jan heeft de bal (de kamer in) gerold.
 Jan has the ball (the room in) rolled
 Jan rolled the ball (into the room).
 b. De bal is door Jan de kamer ingerold
 The ball is by Jan the room in-rolled
 The ball was rolled into the room by Jan.

- (24) There are two kinds of transitive verbs: some take the HAVE-auxiliary and some take the BE-auxiliary.

- (25) a. Jan is uit de boom gevallen.
 Jan is out the tree fallen.
 Jan has fallen off the tree.
 b. Jan is gevallen.
 Jan is fallen
 Jan fell.

²In transformational grammar there was a syntactic structural level called D(eep) Structure, generated purely by phrase structure rules and in accord with lexical specifications but without any transformations such as deletions, movements, etc. having taken place. Phrase Structure Grammars (in the sense of Chomsky (1957)) have certain limitations in their generative power, which necessitates assuming additional transformational tools to capture the full range of natural language data (see Kracht (2003), Partee et al. (1993), Manaster Ramer and Kac (1990) among many others for discussion).

- c. De bal is de kamer in gerold.
The ball is the room in rolled
The balled rolled into the room
- d. Jan heeft gezongen.
Jan has sung
Jan has sung.
- e. Jan heeft geslapen.
Jan has slept
Jan has slept.
- (26) In the examples with the HAVE auxiliary, the subject is the agent or cause of the event described.
In the examples with the BE auxiliary, the subject is not the cause but the undergoer of the event.
The subject θ -role of the HAVE-class verbs (usually called *unergative* verbs) is similar to that of a subject of a transitive verb, the subject θ -role of the BE-class verbs (usually called *unaccusative* verbs) is similar to that of an object of a transitive verb.³
- (27) This leads to the assumption that the object of unaccusative verbs occupies the position also occupied by the objects of transitives (and the subjects of passives) whereas in unergatives the subject does not occupy the canonical object position:
- a. Unaccusative: [DP ... [\bar{V} V t_{DP}]]
b. Unergative: [DP ... [\bar{V} V]]
- (28) Additional complications arise in examples like the following:
- (29) a. Jan is de kamer in gelopen.
Jan is the room in walk
Jan has run into the room.
b. Jan heeft /is gelopen.
Jan has /is run
'Jan has run.'
- (30) There is evidence for the unaccusative/unergative distinction from the Genitive of Negation in Russian.
- (31) a. Ivan ne pročital knigi, knig
Ivan.nom NEG read.msc.sg books.nom.pl, books.gen.pl
Ivan didn't read the books.
b. *Ivana ne pročital(o) knigi, knig
Ivan.gen NEG read.msc.sg(neut.sg) books.nom.pl, books.gen.pl
Ivan didn't read the books.
- (32) a. Knigi ne byli pročítany.
books.nom.pl NEG were.pl read.pl

³The list of literature on this issue is very long. The following are two classics Levin and Rappaport Hovav (1995), Belletti and Rizzi (1981).

- The books weren't read.
- b. Knig ne bylo pročítano.
books.gen.pl NEG was.sg read.sg.neut
The books weren't read.
- (33) a. Pis'mo/ pis'ma ne prišlo.
letternom.sg.neut lettergen.sg.neut NEG arrive.past.sg.neut
The letter didn't arrive./No letter arrived.
- b. Studenty/ *Studentov ne čítajú.
studentsnom.pl *studentsgen.pl NEG read
The students aren't reading./No students are reading.

3 Subjects

- (34) There are certain asymmetries between subjects and objects:
- a. In some languages anaphors are strictly subject oriented (e.g. *sebya* in Russian). In these languages examples like (34-a-i) from last week's handout would be ungrammatical. To the best of my knowledge, there are no languages that have strictly object oriented anaphors, i.e., anaphors that only allow sentences like (34-a-i) but not the other kinds of example.
 - (i) Mary introduced the clown_i to himself_i.
 - (ii) *Mary introduced himself_i to the clown_i.
 - (iii) The clown_i introduced himself_i to Mary.
 - (iv) The clown_i introduced Mary to himself_i.
 - b. The verb forms a constituent together with the object to the exclusion of the subject.
 - (i) Barbara read her email and so did I.
 - (ii) *Barbara read her email and so did her regular mail.
 - (iii) Barbara read her email and I did, too.
 - (iv) *Barbara read her email and did her regular mail, too.
 - (v) Barbara said she has read her email and read her email she certainly has.
 - (vi) *Barbara said she would read her email and Barbara read certainly has her email.
 - c. The category of the subject is severely restricted. Essentially only NPs can be subjects.⁴
 - d. There are many examples of idiomatic expression including the verb and the object excluding the subject, but if the subject is also part of the idiom, then so is the object in the vast majority of cases.
 - (i) John kicked the bucket. = died
 - (ii) John beat the beef. = masturbated
 - (iii) He threw the baby out with the bath. = In an attempt to do something John went too far and achieved an undesirable result in addition to the desired one.
 - (iv) John hit the mark.
 - (v) The shit hit the fan. =
 - (vi) The cat is out of the bag. = The secrete or surprise has been revealed.
 - e. A subject can bind an object anaphor but not the other way around.
 - (i) John likes himself.
 - (ii) Himself likes John.
 - f. A subject quantifier can bind an object within a pronoun but not the other way around (in English). The ban illustrated here is

⁴Problematic cases here are clausal subjects if they exist (That John left bothers Fred.), and apparent PP subjects (Under the table is a good place to hide.). But overall, and in a crosslinguistic perspective, the generalization is very strong.

- called weak crossover.
- (i) Everybody_i likes his_i mother.
 - (ii) *His_i mother likes everybody_i.
 - (iii) Who_i does likes his_i mother?
 - (iv) *Who_i does his_i mother like.
- g. If a language has both subject and object agreement, the object agreement markers are typically closer to the verb stem than the subject agreement markers.
- h. Baker (1988), Baker (1997) and others claim that in languages that allow argument incorporation, unlike objects, subjects can never be incorporated.
- (i) Wisɪ ibi- musa- tuwi- ban
 two AGR- cat- buy- PAST
 'They bought two cats' (Southern Tiwa, from Sadock (1991))
- i. There are many languages in which every clause must have a subject (English, French, arguably also Spanish, Italian, etc.). Nothing comparable can be said of the object position.⁵
- (i) The basic case
 - Klaus drank vodka.
 - *drank vodka.
 - Klaus drank.
 - (ii) In case there is no semantically contentful subject, a place holder (an expletive) occupies the subject position.⁶
 - It is raining in Troms/o.
 - There is snow on the mountains in Troms/o in July.
 - It seems that the gin and tonic got luke warm.
 - It was claimed that Behrit is hung over.
 - (iii) When the subject of a transitive verb is absent, the object must take the place of the subject: we call this the passive.⁷
 - Klaus saw the students.
 - *was/were seen the students.
 - The students were seen (by Klaus).
 - Klaus saw them.
 - *was/were seen them/they.
 - *Them was/were seen.
 - They were seen.

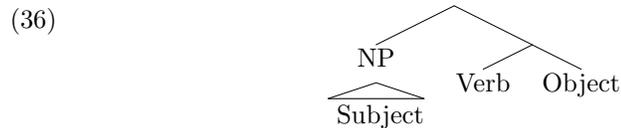
⁵You will look at an initially problematic looking case for English in today's homework.

⁶To the extent that they exist, object expletives are restricted to idiomatic expressions: live it up, go it alone, . . .

⁷Some languages (famously Ukrainian, where the object in passives may surface with accusative, i.e., object case) appear to circumvent this requirement.

3.1 Raising

- (35) Whether all of these asymmetries should be traced back to a single asymmetry (like that in (36)) is dubious.⁸ We will concentrate here on the fact that all clauses must have a subject in this subsection.⁹



- (37) The requirement that all clauses must have a subject gives us a ready explanation for why the theme moves to the subject position in passives (34-i-iii), that themes occupy the subject position with unaccusative verbs (27-a), and the appearance of expletive subjects in (34-i-ii).
- (38) Examples like (34-i-ii) warrant a closer look.
- (39) We argued for a transformational treatment of passives on the basis that the selectional restrictions on the object of the active are across verbs identical to those on the subject of the passive. Now observe the following patterns.
- (40)
- a. John heard the shot.
 - b. John seems to have heard the shot.
 - c. The teacher heard the shot.
 - d. The teacher seems to have heard the shot.
 - e. The congressperson heard the shot.
 - f. The congressperson seems to have heard the shot.
 - g. The cat heard the shot.
 - h. The cat seems to have heard the shot.
 - i. *The artichoke heard the shot.
 - j. *The artichoke seems to have heard the shot.
 - k. *The explosion heard the shot.
 - l. *The explosion seems to have heard the shot.
 - m. *The flame heard the shot.
 - n. *The flame seems to have heard the shot.
 - o. *The wallpaper heard the shot.
 - p. *The wallpaper seems to have heard the shot.
- (41)
- a. It is raining.
 - b. It seems to be raining.
 - c. *John/the teacher/the congressperson/the cat/the artichoke/the explosion/the flame/the wall/there paper is raining.
 - d. *John/the teacher/the congressperson/the cat/the artichoke/the ex-

⁸See Baker (1997), ?, Cardinaletti (1997) for discussion.

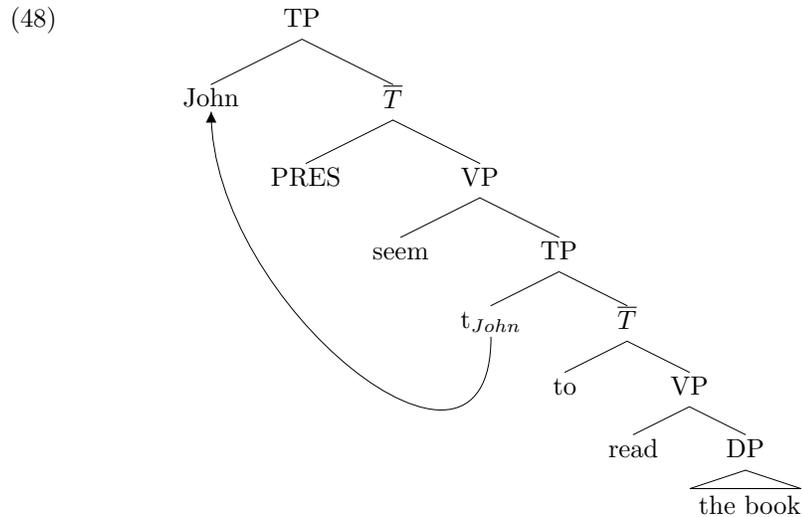
⁹For historical reasons (see Chomsky (1981)) this requirement has come to be known as the *Extended Projection Principle* or EPP. This is a misnomer, but I will continue to use the term anyway. For some discussion of the proper formulation of the EPP see Chomsky (1995), Lasnik (1992), ?, Bošković (1997), Bošković (2002), Grohmann et al. (2000)

- plosion/the flame/the wall paper/there seems to be raining.
- (42) a. There was a riot in the park.
 b. *John/the teacher/the congressperson/the cat/the artichoke/the explosion/the flame/the wall/there paper is a riot in the park.¹⁰
 c. *John/the teacher/the congressperson/the cat/the artichoke/the explosion/the flame/the wall/there paper seems to be a riot in the park.¹¹
- (43) a. The shit hit the fan.
 b. The shit seems to have hit the fan.
 c. The cat is out of the bag.
 d. The cat seems to be out of the bag.
- (44) It seems that...
 a. ... the criminal was handcuffed by the police.
 b. ... the murderers were handcuffed by the police.
 c. ... the mayor was handcuffed by the police.
 d. ... the students were handcuffed by the police.
 e. *... the windows were handcuffed by the police.
 f. *... the dream was handcuffed by the police.
 g. *... the sounds were handcuffed by the police.
- (45) a. The criminal seems to have been handcuffed by the police.
 b. The murderers seem to have been handcuffed by the police.
 c. The mayor seems to have been handcuffed by the police.
 d. The students seem to have been handcuffed by the police.
 e. *The windows seem to have been handcuffed by the police.
 f. *The dream seems to have been handcuffed by the police.
 g. *The sounds seem to have been handcuffed by the police.
- (46) The generalization is clear: verbs like *seem* (and others not exemplified here like *appear* and adjectives like *likely*, *certain*... do not impose their own restriction on the subject position. Whatever is a possible subject of the lower clause is also a possible subject of *seem* and whatever is not a possible subject for the lower clause is not a possible subject of *seem*. This warrants a transformational treatment.
- (47) The lower clauses have a subject, initially or transformationally, which is stolen by the upper clause because the upper clause needs to satisfy the EPP.¹²

¹⁰At a stretch, these sentences do have an idiomatic reading of *x is a great success in the park*.

¹¹The same caveat applies as to the previous example.

¹²In the tree the information that the clause is in the present tense is not indicated on the verb but on the higher functional head tense.

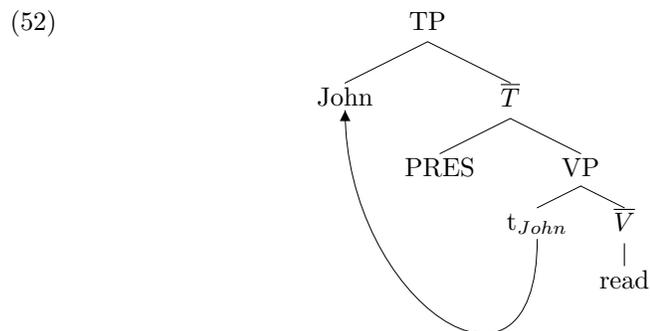


(49) But if it is possible to stick in an expletive subject to fulfill the EPP and it is also possible to move a DP to fulfill the EPP, what explains the following pattern? We turn to this in the section on case and agreement.

- (50)
- *It seems John to be smart.
 - ✓It seems that John is smart.
 - ✓John seems to be smart.
 - *John seems that is smart.

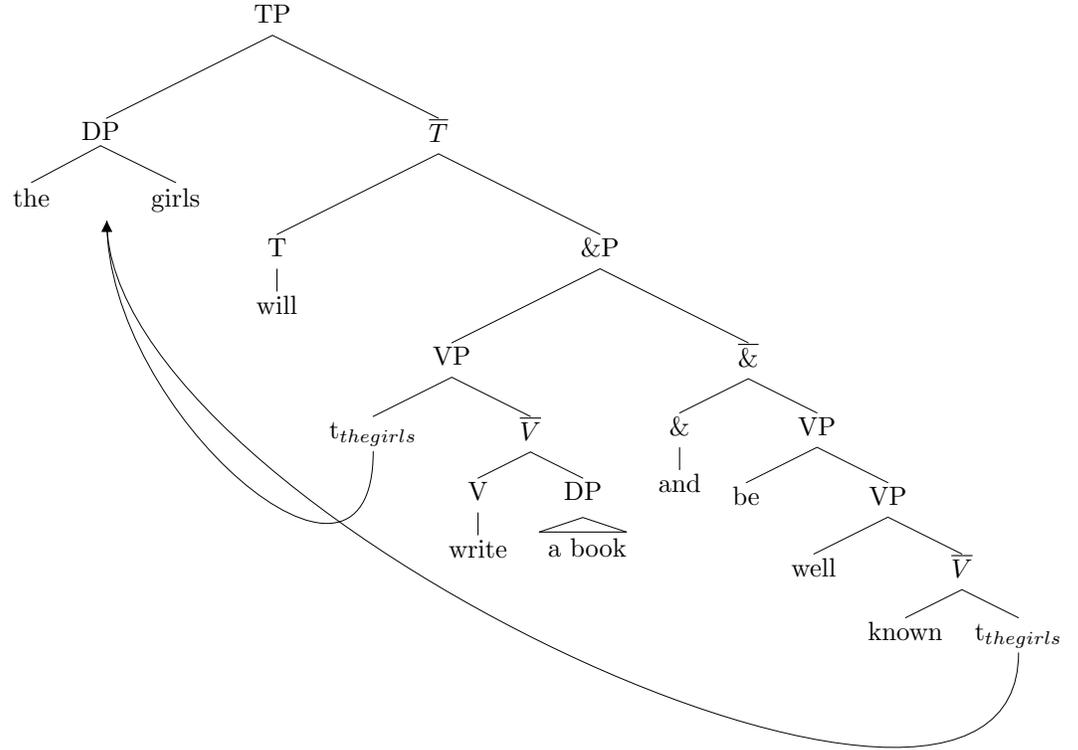
3.2 The VP internal subject hypothesis

(51) It has been argued that even subjects of transitives and of unergatives do not 'start out' in their surface position in the specifier of TP.¹³



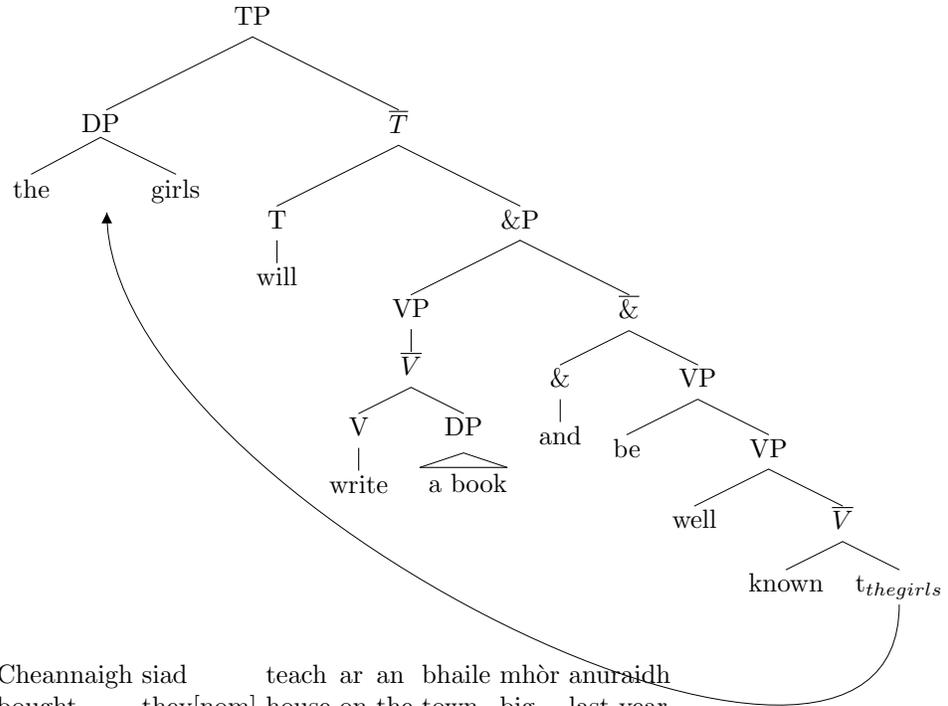
¹³Recall that the specifier of XP is the non-projecting daughter of XP.

- (53) Some simple arguments for this assumption come from the following facts:
- (54) a. The girls will write a book and be awarded a prize for it.
 b. Maria asked for red wine and was given white.



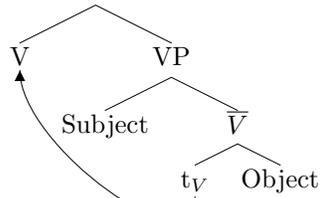
- (55) Without the VP-internal subject hypothesis, the movement shown here violates the coordinate structure constraint according to which extraction out of only of the conjuncts is impossible.
- a. What did you buy and Mary sell?
 b. *What did you buy and Mary sell the car?
 c. *What did you buy a house and Mary sell?

- (56) Another argument has been derived from the existence of VSO languages. The next example is from McCloskey (1997) where in addition to these two, six more arguments are summarized.



(57) Cheannaigh siad teach ar an bhaile mhòr anuraidh
 bought they[nom] house on the town big last-year
 'They bought a house in town last year.'

(58)



(59) If the VP-internal subject hypothesis is correct, then all the difference between passive and unaccusative subjects on the one hand and transitive active and unergative subjects on the other is not whether they move, but from from where.

4 Case and Agreement

- (60) In many languages nouns, even when number is kept constant, come in a number of different forms depending on the syntactic environment in which they appear.
- | | | | | | | | |
|----|-----------|-------|-------|-------|-------|-------|--------|
| a. | English | nom | acc | gen | | | |
| | 3p.sg.prn | he | him | his | | | |
| | Russian | nom | gen | dat | acc | prep | inst |
| b. | father | otec | otca | otcu | otca | otce | otcom |
| | book | kniga | knigi | knige | knigu | knigi | knigoj |
- (61) Following ideas by Roman Jakobson (Jakobson (1936), Jakobson (1984)), generative grammarians (e.g. Chomsky (1986)) have distinguished between two types of case: structural case and inherent case.
- (62) Structural case is assigned independently of θ -role assignment. Nominative and accusative case in English are clear examples of this:
- (63) a. I[nom] saw her[acc]
 b. She[nom] was seen by me[acc]
- (64) a. He[nom] has left
 b. He[nom] is likely to have left
 c. John believes him[acc] to have left
 d. John believes him[acc] to be likely to have left¹⁴
- (65) Inherent case is case that does not alternate depending on syntactic configuration, but that is determined by the predicate that also assigns the noun phrase a θ -role.
- (66) a. Ich helfe ihm.
 I.nom help him.dat
 'I help him.'
 b. Ihm wird von mir geholfen.
 He.dat becomes by me.dat helped
 'He is being helped by me.'
- (67) The division into alternating, structural, case and non-alternating, inherent, case is a first division. It is tempting to try to give inherent case markers semantic content on the basis of the observation, for example, that in many languages the case assigned by the verb *help* is the same (dative) as the case assigned to the indirect object of the verb *give* (dative).¹⁵

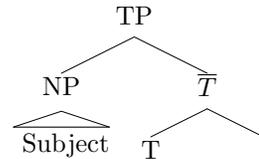
¹⁴The verb *believe* is called an Exceptional Case Marking (ECM) verb, because it assigns accusative case to the subject of the embedded infinitival without assigning a θ -role to it. You can convince yourself of that by constructing paradigms that are similar to those we constructed for passives and raising.

¹⁵In many approaches nominative and accusative are simply diacritics, however, there are recent attempts to integrate case more tightly with the rest of the theory of grammar (see e.g. Pesetsky and Torrego (2001), Pesetsky and Torrego (to appear)).

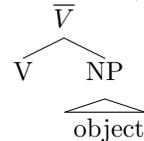
- (68) There is a distinction between structural case, which is assigned independently of θ -role assignment and inherent case, which is assigned together with a θ -role.¹⁶ This does not mean that the case is determined by the θ -role, however, there seem to be some links. A typology and a theory of the θ -role to case mapping is still outstanding.
- (69) Independently of these open questions, Government and Binding theory adopted the view that all argumental noun phrases must be assigned case (Vergnaud (1977), Chomsky (1981)). This requirement is known as the case filter.
- (70) Since structural case is assigned, by assumption, in a particular structural configuration, it provides an incentive for noun phrases to move into such configurations if they aren't there already.
- (71) a. *It seems John to be smart.
 b. ✓It seems that John is smart.
 c. ✓John seems to be smart.
 d. *John seems that is smart.
- (72) Under this perspective, we can interpret example (71-a) to mean that infinitives cannot assign structural case. What's wrong with (71-a) is that *John* is not assigned case.
- (73) a. To go home would be nice.
 b. *John to go home would be nice.
 c. For John to go home would be nice.
- (74) a. Ede loves mathematics.
 Ede[nom] V mathematics[acc]
 b. *Ede's love mathematics.
 Ede[gen] N mathematics[?]
 c. Ede's love of mathematics
 Ede[gen] N P mathematics[acc]
- (75) a. Ede believes mathematics to be fun
 Ede[nom] V mathemtiacs[acc] INF
 b. *Ede's belief mathematics to be fun
 Ede[gen] N mathematics[?] INF
 c. *Ede's belief of/for mathematics to be fun
 Ede[gen] N P mathematics[?] INF
- (76) It is unclear why the option of using the prepositional complementizer *for* never exists when an infinitive is embedded under a noun.
- (77) Traditionally, three environments have been recognized in which structural case can be assigned:

¹⁶Notice that these two options might not be so far apart if a very strong version of UTAH is correct under which a θ -role is a configuration (Hale and Keyser (1993), Hale and Keyser (2002)).

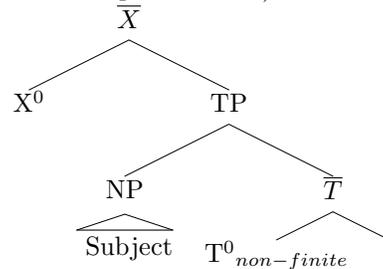
- a. Spec Head Agreement (e.g. with finite tense)



- b. Sisterhood (e.g. with a transitive verb)



- c. Head to Spec of complement (Exceptional Case Marking, prepositional complementizers)



- (78) There are various suggestion how it might be possible to reduce these to two or even only one environment (Chomsky and Lasnik (1993), Postal (1974), Lasnik and Saito (1991), Lasnik (1998), Lasnik (1999), Abels (2003), among many others), but we will not go into that here.
- (79) Example (71-d) might then be ruled out by some locality condition ('this kind of movement never leaves a tensed clause') or a ban against assigning case several times to the noun phrase (though there appear to be case stacking languages Kracht (2003)) or by an economy condition: things only move if they have to for their own sake.
- (80) The discussion of expletive constructions is related and enormous (e.g. Chomsky (1995), Chomsky (1999), Chomsky (2000), Chomsky (2001), Bošković (1997), Lasnik (1992), Lasnik (1995), Moro (1997), Moro (2000), among many many others).

5 (Long Distance) Movement and Locality

Properties of *wh*-question formation in English

- (81) a. What has John done?
 b. When will John leave?
 c. Who left?
- (82) a. Mary asked Frank what John had done.
 b. Irma is wondering when John will leave.
 c. Frank told me who left.
- (83) a. *Mary asked Frank that — \emptyset John had done what.
 b. *Irma is wondering that — \emptyset John will leave when.
 c. *Frank told me that who left.
- (84) a. *Mary asked t_{who} [who John had done that].
 b. Frank is wondering [$_{CP}$ who Mary asked t_{who} [$_{CP}$ whether John had done that]].
 c. *Frank thinks [[t_{who} is wondering [$_{CP}$ who (whether) John will leave tomorrow]].
 d. Who does Frank think [$_{CP}$ t_{who} is wondering [$_{CP}$ whether John will leave tomorrow]].
- (85) a. Who did Jane tell to bring what?
 b. *Who what did Jane tell to bring?
 c. *Jane told who to bring what?
 d. *What who did Jane tell to bring?
- (86) a. What did Mary say t_{what} ?
 b. What does John think that Mary said t_{what} ?
 c. What did Frank say that John thinks that Mary said t_{what} ?
 d. What does Mary believe that Frank said that John thinks that Mary said?
 e. What did Angela claim that Mary believes that Frank said that John thinks that Mary said? etc.

Generalizations: In English *wh*-questions exactly one *wh*-phrase moves to the front a clause, which is thereby marked as interrogative (so-called echo- and quizmaster questions have slightly different properties). The movement is upward to a *c*-commanding position, never downward or sideward.

- (87) Superiority
- a. Who did Jane tell t_{who} to bring what?
 b. *What did Jane tell who to bring t_{what} ?
 c. Who bought what?
 d. ?*What did who buy?

Superiority Condition (Huang (1982)) [No *wh*-element may be moved across another *wh*-element that is superior to it, i.e., that c-commands it.]

- (88) *Wh*-islands
- When did the boy tell his mother t_{when} [that he had hurt himself]?
 - When did the boy tell his mother t_{when} [how he had hurt himself t_{how}]?
 - When did the boy tell his mother [that he had hurt himself t_{when}]?
 - *When did the boy tell his mother [how he had hurt himself t_{how} t_{when}]?
- (89) *How do you wonder whether to fix the car t_{how} (or not)?
- (90)
- What do you think [[the answer to this question] means t_{what}]?
 - What do you think [[the answer to the question [whether this sentence is grammatical]] means t_{what}]?
 - Which decisions does [the answer to the question how many prime numbers there are t_{how} many] influence t_{which} decisions?
- (91) *Wh*-island Condition (Huang 1982)
No *wh*-phrase may cross a CP with a [+*wh*] element in [Spec, CP] or C.
- (92) Rizzi (1990) noticed that together with a relevant typology of categories (in his case Operators, vs. Arguments, vs. Heads) many locality conditions boil down to a very simple constraint called Relativized Minimality.
- (93) Relativized Minimality:
- $$\begin{array}{c} \checkmark. \quad \alpha \quad \beta \quad \alpha \\ \quad \quad \curvearrowright \\ * \quad \alpha \quad \alpha \quad \alpha \\ \quad \quad \curvearrowleft \end{array}$$
- (94)
- John will have left.
 - Will John t_{will} have left?
 - *Have John will t_{have} left?
- (95)
- John seems t_{John} to be believed t_{John} to have been arrested t_{John} .
 - *John seems that it is believed t_{John} to have been arrested.

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