# Syntactic Theory 2
# Week 2: X′-Theory Review

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## 1 Introduction

- One of the innovations of Government & Binding was the idea that "rules" (passive rule, *wh*-movement rule) and "constructions" (verb phrase, clause) were not *sui generis*, but were composed of other, more basic phenomena.
- In GB, theta theory and Case theory were used to explain which DPs can occur in which positions; many "rules" were reduced to appeals to theta assignment and Case assignment
  - **D-Structure**: The representation in which theta roles are assigned
  - **S-Structure**: The representation in which Case is checked
  - **Movement** links D-Structure to S-Structure
- D-Structure encodes the thematic structure of the sentence – the "who-did-what-to-whom" part of the semantics.

(1) a. Dale arrived
b. *Dale Hawk arrived
c. *Dale arrived Hawk

(2) a. Mike gave a ring to Laura
b. Mike gave Laura a ring
c. *Mike gave
d. ?*Mike gave Laura
e. ?*Mike gave a ring

(3) a. Harry ate (a donut)
b. Harry dined *(a donut)
c. Hary devoured (*a donut)

- Verbs (and some nouns and prepositions) assign *theta roles* to specific positions.
- **Theta Criterion:** Every DP must receive a theta role; every theta-role must be assigned to a DP

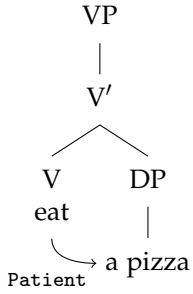
- Theta roles are assigned under **government**, which for our purposes means the relation between a head (= verb, noun, preposition) and its complement or its specifier.
- We need a notion like government because we don't want verbs assigning theta roles too far away –

(4) a. *Donna told that Laura really likes James Dale
intended: 'Donna told Dale that Laura really likes James'
b. *Audrey Dale hopes that it will arrive on time
intended: 'Audrey hopes that Dale will arrive on time'

- We assume that the verb assigns the `Theme` or `Patient` theta-role to its complement:

(5) ⟨eat, V, [ _ DP], THEME ⟩

(5)




- We also need the subject to be constrained by the verb – some verbs (like *rain*) do not assign any theta roles...

(6) a. *The water is raining.
b. It is raining.

- ...and verbs like *seem* do not assign a subject theta role ...

(7) a. It seems to be raining
b. John$_i$ seems $t_i$ to eat too many cookies
c. It seems that John eats too many cookies

- Subjects appear in Spec,TP, because they precede adverbial materials and auxiliaries located in $T^0$:

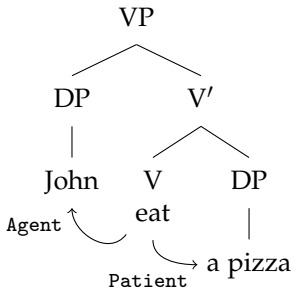
(8) [$_{CP}$ [$_{TP}$ John [$_{T'}$ will [$_{VP}$ surely eat many cookies]]]

- This means we're in a conundrum – we want Theta roles to be assigned to "close" DPs, but the subject appears in a higher position.
- We can solve this by supposing that subjects base-generate in Spec,VP, and move to Spec,TP:

(9) [$_{CP}$ [$_{TP}$ John$_i$ [$_{T'}$ will [$_{VP}$ $t_i$ surely eat many cookies]]]

(10) ⟨eat, V, [ DP _ DP], AGENT, THEME ⟩

(10)




- This is called the **predicate-internal subject hypothesis**, or PISH.

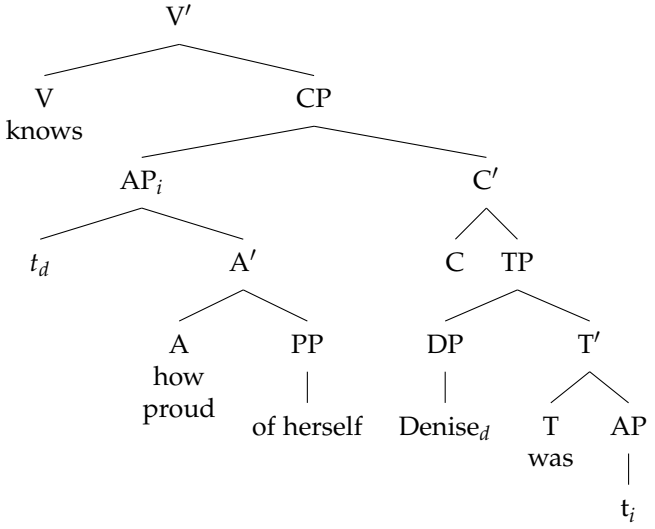
(11) a. Tammy$_t$ knows [$_{CP}$ [$_{DP}$ which pictures of herself$_{t/d}$]$_i$ [$_{TP}$ Denise$_d$ likes $t_i$]]
b. Tammy$_t$ knows [$_{CP}$ [$_{AP}$ how proud of herself$_{*t/d}$]$_i$ [$_{TP}$ Denise$_d$ was $t_i$]]

- Suppose that anaphors can be bound either in their surface position, or in their base position. This explains why *herself* in (11-a) may be bound by the matrix clause subject *Tammy* or by the embedded subject *Denise*.

- If so, then why can't *herself* in (11-b) be bound by the matrix subject *Tammy*? Let's look at the structure:

(12) a. D-Structure:
[$_{CP}$ [$_{TP}$ Tammy [$_{VP}$ knows [$_{CP}$ C [$_{TP}$ was [$_{AP}$ Denise [$_{A'}$ how proud [$_{PP}$ of herself]]]]]]]]

b. Tammy . . .




- Suppose that the binding domain in this sentence is the AP, and that there is a trace of *Denise*, $t_t$ in the predicate AP. If we did not have PISH, then we predict that the anaphor

could be bound by *Tammy*.[1]

- A leading idea is that theta-roles are assigned to specific positions across verbs and across languages:

  (13) **Universal Theta Assignment Hypothesis** (UTAH): Theta-roles are assigned in the same position across languages/constructions (Baker 1988)

- This means that there is no language with a verb "shmeat", where *The pie shmeats Dale* means the same thing as English *Dale eats the pie*.

- Lastly, intransitives come in two kinds – verbs in which the subject plays an agentive role in the event (*sing*), and verbs in which the subject is semantically the patient (*fall*, *break*):

  (14) a. The bird sang
  b. The bird sang a song
  c. The bird sang itself sore
  d. *The FBI agent sang the bird (intended: 'The FBI agent made the bird sing')

  (15) a. The FBI agent arrived
  b. *The FBI agent arrived an arrival
  c. *The FBI agent arrived himself sore
  d. Harry arrived the FBI agent (* in English; okay in other languages)

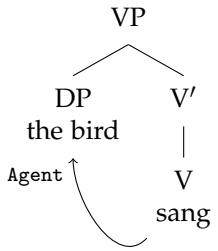
  (16) a. The owl cave door opened
  b. Dale opened the owl cave door

  (17) a. La femme a chant-é
  The woman has sung-PTCP.3SG.M
  'The woman has sung' (French)
  b. La femme est arriv-ée
  The woman is arrived-PTCP.3SG.F
  'The woman has arrived' (French)

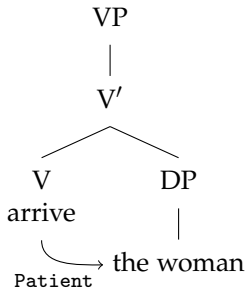
- Verbs like *sing* are called **unergative verbs**, because the subject acts like a prototypical subject in receiving the `Agent` theta-role. Verbs like *arrive* and *break* are called **unaccusative verbs**, because the subject is proposed to underlyingly be an object, i.e., receive the `Patient` theta-role.

[1] The precise formulation for this is also quite complicated, and rests on specific assumptions about how anaphors are licensed that we won't develop in this class.

(18) a.




b.




## 2 Case Theory

- The Theta Criterion restricts DPs to appear in particular positions at D-Structure. However, there are positions where a thematic role seems to be assigned that a DP *cannot* occur in. Why?[2]

(19)
a. It's surprising (for us) for Pat to sleep so much
b. *It's surprising (for us) Pat to sleep so much
c. Pat was seen.
d. *It was seen Pat.
e. Pat fell.
f. *It fell Pat.
g. John wants Pat to win.
h. *John wants that Pat to win.
i. John asked the time / what time it is.
j. John wondered *the time / what time it is.

- Case Theory, attributed to a letter that Jean-Roger Vergnaud sent Howard Lasnik and Noam Chomsky before the publication of their 1977 paper *Filters and Control*, noticed that the morphological shape of DPs is tied to particular syntactic positions. He argued that DPs must appear in these positions to receive Case.

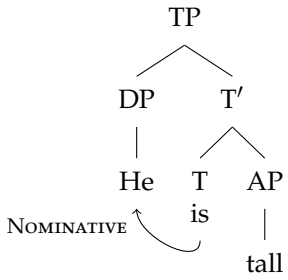
(20)
a. It's surprising (for us) for her to sleep so much.
b. *It's surprising (for us) for she to sleep so much.
c. John believes him to win.

[2]Section largely based on Haegeman 1994

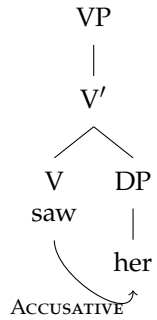
d. *John believes he to win.
e. Pat's sleeping habit is becoming a problem.
f. *Pat sleeping habit is becoming a problem.

- **Case Filter**: Each DP (with phonetic content) must be assigned an (abstract) Case[3]
- The inutition is that DPs in the subject position (Spec,TP) of a **finite clause** receive Nominative Case, DPs in the object position (complement of VP) receive Accusative Case. By extension, DPs in the object of a preposition receive Accusative and/or Oblique Case, and possessor DPs receive Genitive Case. Languages differ superficially in whether the Case is realized morphologically (like Latin, Russian, etc.) or is not morphologically realized (most of English, Chinese varieties, etc.)

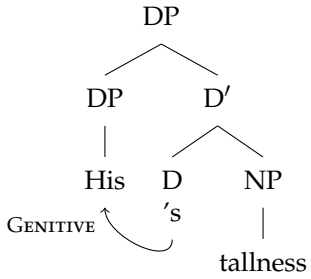
(21) a.




b.




c.

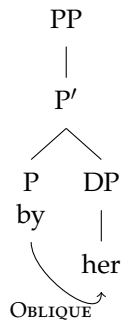



[3]Chomsky & Lasnik (1977) had proposed a quite baroque filter that intended to capture the facts that the Case Filter captured:

(i) *[$_{\alpha}$ NP to VP] unless $\alpha$ is adjacent to and in the domain of Verb or *for* ([-N])

Yikes!

d.




- However, why should some Cases be assigned to specifier positions, and other cases to complements? We can unify these apparently heterogeneous class of positions by suggesting that case assignment takes place under **government**, which we defined earlier. On this view, finite T, V, P, and D assign Nominative, Accusative, Oblique and Genitive Case, respectively.

(22) $\alpha$ governs $\beta$ iff:
   a. $\alpha$ **m-commands** $\beta$
   b. there is no barrier $\gamma$ that governs $\beta$

(23) $\alpha$ **m-commands** $\beta$ iff
   a. $\alpha$ does not dominate $\beta$
   b. $\beta$ does not dominate $\alpha$
   c. the maximal projection of $\alpha$ dominates $\beta$

- Thus, the following sentences are ungrammatical, because the DP is not governed by a Case-assigner:

(24) a. *It's surprising (for us) [$_{CP}$ [$_{TP}$ Pat to sleep so much ]]
   b. *John wants [$_{CP}$ that [$_{TP}$ Pat to win]]

- We need to assume that in these sentences the matrix predicates (*surprising*, *wants*) cannot govern *Pat*, because CP is a barrier to government (it **blocks** government). Additionally, non-finite T (*to*) is not a Case assigner. Thus, the Case filter is violated because *Pat* is sheltered from Case assignment in both sentences.

- However, these sentences have grammatical analogs with *for*:

(25) a. It's surprising [$_{CP}$ for [$_{TP}$ Pat/her to sleep so much]]
   b. John wants [$_{CP}$ for [$_{TP}$ Pat/her to win]]

- We can postulate that the C *for* is a Case assigner. However, we must now postulate that *for* can govern into the specifier of TP, i.e., TP is not a barrier.

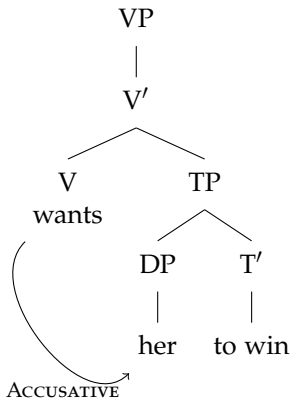
- With this complication to government, we can also explain another set of facts. Suppose that some verbs do not select for CPs, but they select directly for TPs. If TPs are not "barriers",

then the matrix V can assign accusative Case through the TP to the embedded subject:

(26) a. John [$_{VP}$ wants [$_{DP}$ her]]
   (i) John [$_{VP}$ wants [$_{TP}$ her to win]
   (ii) *John [$_{VP}$ wants [$_{CP}$ that [$_{TP}$ her/she to win]]]
   (iii) John [$_{VP}$ saw [$_{DP}$ her]]
   (iv) John [$_{VP}$ saw [$_{TP}$ her arrive]
   (v) *John [$_{VP}$ saw [$_{CP}$ that [$_{TP}$ she to arrive]]]

(27) a. *John [$_{VP}$ hoped [$_{DP}$ her ]]
   b. *John [$_{VP}$ hoped [$_{TP}$ her to win]]
   c. John [$_{VP}$ hoped [$_{CP}$ for [$_{TP}$ her to win]]]

(28)




- Stating this intuition formally is quite complex; we will largely ignore it for now. **This should bother you.**
- A verb assigning case to the embedded clause subject is called **Exceptional Case Marking**
- Case Theory postulates that only certain lexical heads – finite T, V, D, and P – assign Case. Conspicuously, N and A are absent. This explains why we see prepositions pop up in certain nominalizations or complex adjective constructions. Otherwise, a DP will find itself without Case:

(29) a. [$_{TP}$ The vikings T [$_{VP}$ invaded England]]
   b. *[$_{DP}$ The vikings' D [$_{NP}$ invasion England]]
   c. [$_{DP}$ The vikings' D [$_{NP}$ invasion [$_{PP}$ of England]]]

(30) a. *[$_{TP}$ The vikings were [$_{AP}$ proud their ships]]
   b. [$_{TP}$ The vikings were [$_{AP}$ proud [$_{PP}$ of their ships]]]

- On this view, we can think of *of* as being a "dummy" preposition, inserted solely to license the DP that receives its theta role from the adjective/preposition. That is, *invasion* and *proud* assign the theta role to *England* and *their ships* respectively, but the *of* assigns Oblique Case in both contexts.

- With Case Theory and Theta Theory in our repertoire, we can provide a better analysis of unergative/unaccusatives phenomena, and passives
- Recall that unergative and unaccustives look similar at S-Structure/PF, even though they have different D-Structures, according to UTAH:

  (31) a. $[_{TP}\ [_{VP}$ John arrived$]]] \rightarrow [_{TP}$ John$_i$ $[_{VP}$ $t_i$ arrived$]]$
  b. $[_{TP}\ [_{VP}$ fell John$]] \rightarrow [_{TP}$ John$_i$ $[_{VP}$ fell $t_i]]$

- Why do the patients in the unaccusative structures raise to Spec,TP? For that matter, why don't subjects remain in Spec,VP in unergatives or with transitives? With Case Theory, we argue that these DPs must raise to be assigned Nominative Case, otherwise they are ungrammatical.
- Similarly, let's examine the Passive:

  (32) a. $[_{TP}$ was $[_{VP}$ eaten the pizza$]] \rightarrow [_{TP}$ the pizza$_i$ was $[_{VP}$ was eaten $t_i]]$

- Traditionally, the passive is analyzed as suppression of the Accusative Case. The theme must move to Spec,TP to receive Nominative Case, otherwise the sentence will violate the Case Filter. Notice that we must also suppose that the Agent theta role is suppressed in the passive, otherwise this sentence would violate the Theta-Criterion.[4]
- Notice that the passive has three ingredients here:

  a. *by*-phrase
  b. Passive morphology (*be. . . -en*)
  c. DP movement (for Case)

- Thus, there is no "passive operation" in GB, which is consistent with the "do what you want, then we'll see if you broke the law" approach to GB.
- A further complication: how tightly linked are morphological case and abstract Case? To examine this, we need to distinguish **structural case** and **inherent case**. Structural Case is Case that's tied to a specific position – such as Nominative (and possibly Genitive in DPs like *the city's destruction*, in which *the city* is the theme of the destruction event). Inherent Case is Case that's specific to a lexical item, and is prototypically assigned under Theta Role assignment. Prepositions typically assign inherent Case, and verbs can assign Inherent Case to some of their object:s

  (33) a. Hans hat $[_{VP}$ mich gesehen$]$
  Hans has me.Acc seen
  'Hans saw me' (German)

[4]The *by* phrase is a bit more mysterious. We might just have to say that there is a preposition in English *by* that assigns the agent theta role. However, that doesn't seem quite right – the theta role of the *by* phrase seems to be colored by the semantics of the verb – e.g., we can say *The US is bordered by Canada*. Here, we don't want to say that *Canada* receives the agent theta role.

b. Hans hat [$_{VP}$ mir geholfen]
Hans has me.DAT helped
'Hans has helped me' (German)

- Structural Case seems to be assigned at/before S-Structure, as observed in the cases[5] of unaccusatives and passives. However, inherent Case survives in passivization. This implies that inherent Case is assigned earlier, presumably D-Structure.

(34) a. Sie sieht ihn.
She.ACC sees him.ACC
'She sees him' (German)
b. Er wird gesehen.
He.NOM was seen
'He was seen'
c. *Ihn wird gesehen.
He.ACC was seen.
intended: 'He was seen'

(35) a. Sie hilft ihm.
She.NOM helps him.DAT
'She helps him'
b. *Er wird geholfen
He.NOM was helped
intended: 'He was helped'
c. Ihm wird geholfen
He.DAT was helped
'He was helped'

- This demonstrates that Accusative case is suppressed (or "absorbed") – it says nothing about Dative Case. Additionally, Nominative Case doesn't "overwrite" inherent Case when the DP moves to Spec,TP.

- Some languages appear to not have the EPP:

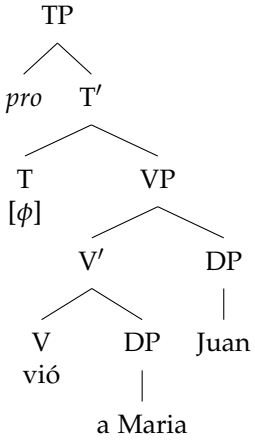
(36) a. Llueve
rains
'It rains' (Spanish)
b. Llegó ayer
arrived yesterday
'She/he arrived yesterday' (Spanish)
c. Parece que está durmiendo
seems that is sleeping
'It seems that she/he is sleeping' (Spanish)
d. Se cayó el hombre
SE fell the man
'The man fell down' (Spanish)

[5]Pun intended.

- However, Rizzi (1982) argues that these languages satisfy the EPP by having rich inflection which licenses a null pronominal *pro* in Spec,TP:

(37) a. Vio a María Juan
Saw Acc Mary John
'John saw Mary'

b.

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