

# Syntactic Theory 2

## Homework 1: Head-Movement and Case

### Due 02/02

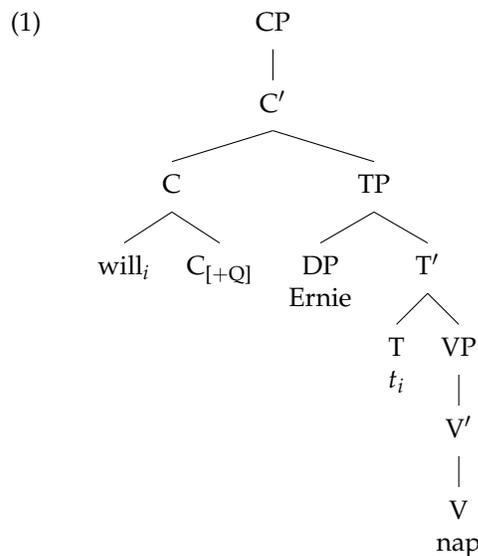
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In Minimalism, we try to re-imagine the modules of grammar found in GB as conditions imposed on a derivation by LF, PF, or by concerns of computational complexity. That is, we want to avoid constraints that are *sui generis* in the syntax. In this homework, we will explore two phenomena – head movement and case – and determine whether we can re-interpret them as LF or PF phenomena.

## 1 Head Movement and Ellipsis

First, we will examine head-movement. Traditionally, head movement is understood as adjunction of one head to the next head up:



Recall that the ECP requires that all traces be “properly governed”, i.e., must be the specifier or complement of a lexical head (N, V, A, or P) OR must be bound by an antecedent.

A. (10 points). Does head-movement obey the ECP? Explain your answer.

Chomsky (1995) suggests that head-movement is not actually syntactic movement, but rather is a morphophonological operation that occurs at PF. In support of this argument, he claims that head-movement never has a semantic effect, and thus likely does not occur in the derivation before LF. Additionally, he points out that head-movement does not target a position that c-commands its tail, unlike A-movement and A'-movement, and appears to obey different kinds of locality conditions (Note that Chomsky implicitly is assuming that the ECP does not apply to operations that occur on the mapping from S-Structure to PF.)

B. (10 points). In English, polar questions require T<sup>0</sup>-to-C<sup>0</sup> movement, at least by PF, to check the [+Q] feature on C<sup>0</sup>, as shown in (2). Is this counterevidence to Chomsky's proposal that head-movement is a PF phenomenon? Defend your answer. If you think that head-movement has no semantic effect, why do you think T<sup>0</sup> might raise to C<sup>0</sup> at PF?

- (2) a. DS: [CP C<sub>[+Q]</sub> [TP Ernie will [VP nap ]]]  
 b. PF: [CP will+C<sub>[+Q]</sub> [TP Ernie t<sub>i</sub> [VP nap ]]]

Let's suppose that Chomsky is right. *wh*-questions will then have the following four representations:

- (3) a. DS: [CP C<sub>[+Q]</sub> [TP Ernie will [VP eat what]]]  
 b. SS: [CP what<sub>i</sub> C<sub>[+Q]</sub> [TP Ernie will [VP eat t<sub>i</sub>]]]  
 c. LF: [CP what<sub>i</sub> C<sub>[+Q]</sub> [TP Ernie will [VP eat t<sub>i</sub>]]]  
 'For which *x*, Ernie will eat *x*'  
 d. PF: [CP what<sub>i</sub> will+C<sub>[+Q]</sub> [TP Ernie [VP eat t<sub>i</sub>]]]  
 /what will Ernie eat/

Is there any evidence for head-movement as a PF phenomenon? Boeckx & Stjepanović (2001) claim that there is. To understand their argument, we need to take a segue into Lasnik's (1995, *et sub*) analysis of pseudogapping. Pseudogapping is a construction in which a VP is deleted, but the direct object (the "remnant") remains:

- (4) Ernie ate some kibble, and Frisky did some milkbones.

Lasnik argues that in these constructions, the remnant object (*some milkbones*) raises out of the VP to the specifier position of a new projection that hosts moved objects – Agr<sub>OP</sub>. Afterwards, the VP elides, represented below as strike-through.

- (5) Ernie ate some kibble, and [TP Frisky did [<sub>Agr<sub>OP</sub></sub> some milkbones<sub>i</sub> Agr<sub>O</sub> [<sub>VP</sub> eat t<sub>i</sub>]]]

This raises a puzzle, however. If objects can raise to Spec, Agr<sub>OP</sub>, why is the following sentence ungrammatical?:

- (6) a. \*Ernie ate some kibble, and Frisky some milkbones ate.  
 b. Ernie ate some kibble, and [TP Frisky [<sub>Agr<sub>OP</sub></sub> some milkbones<sub>i</sub> Agr<sub>O</sub> [<sub>VP</sub> ate t<sub>i</sub>]]]

In later work, Lasnik proposes some solutions to this puzzle. One solution is that the verb raises

to an additional projection, let's call it FP, in non-pseudogapping sentences, picking up the Agr<sub>O</sub> along the way:

(7) Ernie ate some kibble, and [TP Frisky [FP ate<sub>i</sub>+Agr<sub>Oj</sub>+F [Agr<sub>OP</sub> some milkbones  $t_j$  [VP  $t_i$  ]]]]

C. (10 points). Let's suppose that this analysis is right: V<sup>0</sup> raises to F<sup>0</sup>, picking up Agr<sub>O</sub><sup>0</sup> along the way, and objects raise Spec,Agr<sub>OP</sub>. Although this derives the correct word order for non-pseudogapping sentences, it actually breaks the analysis of pseudogapping observed in (5). Explain the problem.

Boeckx & Stjepanović claim that we can avoid this problem if we take VP ellipsis and head-movement to both occur on the PF branch. For Boeckx & Stjepanović, V<sup>0</sup>-raising occurs in the PF component because the V<sup>0</sup> does not have all of its morphological features, and thus is an illegitimate PF object. When VP ellipsis occurs, the illegitimate PF object is deleted, negating the necessity for V<sup>0</sup>-raising.<sup>1</sup> Thus, no V<sup>0</sup>-raising occurs.

D. (5 points). Give the structure of a pseudo-gapping sentence assuming Boeckx & Stjepanović's analysis. Use strike-out to represent ellipsis, and put a \* next to the part of the structure that is an "illegitimate PF object" before deletion.

Boeckx & Stjepanović's analysis has an Economy flavor to it. Because ellipsis destroys the need for a V to raise, there is no V-raising in pseudogapping constructions. First, ellipsis occurs, deleting the VP, including the "defective" verb. Then, we check whether we need to raise the V<sup>0</sup> to join it with F<sup>0</sup>, making it a legitimate PF object. By hypothesis, deleted objects are no longer "illegitimate". Thus, V<sup>0</sup>-raising is no longer required. Since it's no longer required, by Economy considerations, it's impossible to do.<sup>2</sup> This extends to general cases of ellipsis, as well. We shouldn't expect a verb to ever "escape" VP-ellipsis by raising out of the VP:

- (8) a. Ernie ate some kibble, and Frisky did too.  
 b. Ernie ate some kibble, and [TP Frisky did [FP F [VP ~~eat some kibble~~] too]]
- (9) a. \*Ernie ate some kibble, and Frisky ate too.  
 b. Ernie ate some kibble, and [TP Frisky did [FP ate+F [VP ~~eat some kibble~~] too]]

Boeckx & Stjepanović's analysis thus seems to capture the facts for English. However, there are languages where the equivalent of (9) is grammatical, such as Hebrew (Goldberg 2005):

- (10) a. Ehud hizmin otanu le-mesiba, ve-ani xoševet še-Dani gam hizmin.  
 Ehud invited us to-party, and-I think that-Dani also invited  
 'Ehud invited us to the party, and I think that Dani did ~~invite us to a party too~~'

<sup>1</sup>There is precedence for this. Ellipsis is known to remedy other grammatical violations. For instance, some island violations can be repaired by ellipsis:

- (i) a. \*John likes someone's dog, but I don't remember whose<sub>i</sub> [TP he likes  $t_i$  dog].  
 b. John likes someone's dog, but I don't remember whose<sub>i</sub> ~~he likes  $t_i$  dog~~

The explanation for this fact is parallel to Boeckx & Stjepanović's analysis of the pseudogapping puzzle. Specifically, the trace  $t_i$  is an illegitimate PF object – \* $t_i$ . However, PF deletion completely strips the TP away, including the "illegitimate PF object" \* $t_i$ .

<sup>2</sup>This contrasts with GB, where "anything goes" in the generation stage, and then needs to be filtered out after the fact

- b. ... še- [TP Dani gam hizmin<sub>i</sub> [VP t<sub>i</sub> -otanu -le-mesiba ]]  
 that Dani also invited us to-party

E. (5 points) Does this present a problem for Boeckx & Stjepanović's analysis? Why or why not? Explain your answer.

F. (10 points) There are a few possible solutions to this answer. How might you characterize the difference? **Hint:** Recall that in phonology, we can order rules to set up feeding and/or bleeding relations.

## 2 Case Theory

Next, we will examine Case Theory. Case Theory is a powerful tool for explaining the distribution of DPs in a sentence in GB. However, it seems very "syntax-internal" – it makes no reference to the semantic component or the phonological component. As Minimalists, we would like to somehow re-interpret Case-Theory as LF or PF conditions. There are two candidates:

- (11) **Visibility Condition:** LF requires that a phrase with a theta-role surfaces in a Case position for the theta-role to be "visible".<sup>3</sup>
- (12) **Morphological Condition:** PF requires that a DP surfaces in a Case position, in order to assign a phonological shape to it (i.e., "I don't know how to pronounce this pronoun until you give me a case – is it nominative (*he*)? or is it accusative (*him*)?")

These theories make predictions. The Visibility Condition predicts that all phrases that receive theta-roles must receive Case, but no other phrases do not. The Morphological Condition predicts that all DPs (and perhaps only DPs) that are pronounced must receive Case, but no other phrases. Unfortunately, neither of these approaches seem to work, as we will soon see.

For this assignment, remember that Case is assigned in the configurations in (13), and recall that passive verbs cannot assign Accusative Case, non-finite T<sup>0</sup> cannot assign Nominative Case, and adjectives assign no Case whatsoever.

- (13) a. [VP active-verb [TP him<sub>ACC</sub> to ... ]]  
 b. [TP she<sub>NOM</sub> finite-T [VP ... ]]  
 c. [CP for [TP he<sub>OBL</sub> to ... ]]  
 d. [PP of him<sub>OBL</sub>]

Now, let's examine the following data:

- (14) a. It rains.  
 b. I expected [TP it to [VP rain]]  
 c. \*It was expected [TP it to [VP to rain]]
- (15) a. There was a party.  
 b. I expected there to be a party.

<sup>3</sup>Variants of this was Chomsky's favorite interpretation of Case Theory for a while, even before *The Minimalist Program*. The notion of "visibility" here is unclear.

- c. \*It was expected there to be a party.
- d. \*There was expected there to be party.

**G.** (10 points). Explain how the data in (14) and (15) is problematic for the Visibility Condition. **Hint:** first, ask yourself which DPs receive a theta role, and then ask yourself which DPs need Case. Do these align?

Next, examine the following data.

- (16) a. John is proud \*(of) himself.
- b. John is proud \*(of) [<sub>CP</sub> that John arrived]
- (17) a. [<sub>CP</sub> That John arrived] was believed (by everyone).
- b. It was believed [<sub>CP</sub> that John arrived]
- c. John was believed.
- d. \*It was believed John.

**H.** (10 points). Is this data problematic for the Visibility Condition, Morphological Condition, or both? Explain your answer.

Next, examine the following data. Recall that PRO is the silent pronoun that receives a theta role, and is controlled by another DP in the clause<sup>4</sup>, or may receive an “arbitrary” interpretation, marked here as PRO<sub>ARB</sub>

- (18) a. John<sub>i</sub> wanted [<sub>CP</sub> [<sub>TP</sub> PRO<sub>i</sub> to go to the pool]]
- b. \*John wanted [<sub>CP</sub> [<sub>TP</sub> he to go to the pool]]
- (19) a. \*John<sub>i</sub> said [<sub>CP</sub> that [<sub>TP</sub> PRO<sub>i</sub> goes to the pool]]
- b. John said [<sub>CP</sub> that [<sub>TP</sub> he goes to the pool]]
- (20) a. [<sub>CP</sub> PRO<sub>ARB</sub> To go to the pool] in the winter is a bad idea.
- b. \*[<sub>CP</sub> Him to go to the pool] in the winter is a bad idea.
- (21) a. \*[<sub>CP</sub> For PRO<sub>ARB</sub> going to the pool] in the winter is a bad idea.
- b. [<sub>CP</sub> For him to go to the pool] in the winter is a bad idea.

**I.** (10 points). Is this pattern of data expected under the Visibility Condition? The Morphological Condition? Explain your answer.

Next, we will examine the distribution of silent referential pronouns (*pro*) in Spanish. These are distinct from PRO. PRO is obligatorily controlled in some contexts, but in other contexts is permitted to have an “arbitrary” interpretation, akin to “someone or another”. *pro*, conversely, has the same semantic and pragmatic effects as any 3rd person pronoun, i.e., a specific individual whose interpretation is fixed by discourse context. Assume that the positions in which Nominative and Accusative Case are assigned are the same as in English, and that both receive theta roles.

- (22) a. Juan dijo [<sub>CP</sub> que [<sub>TP</sub> *pro* llegó]]  
           Juan said       that       *pro* arrived

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<sup>4</sup>Control also imparts a *de se* reading. See the GB review handout for discussion on this.

- ‘Juan said that she/he arrived’  
 where the reference of she/he is determined by discourse
- b. \*Juan<sub>i</sub> dijo [CP que [TP PRO<sub>ARB/i</sub> llegó]]  
 Juan said that PRO arrived  
 intended: ‘Juan said that he-himself arrived’  
 OR ‘Juan said that someone-or-another arrived’.
- (23) a. Juan<sub>i</sub> quiere [CP [TP PRO<sub>i</sub> ir]]  
 Juan wants PRO to-go  
 ‘Juan wants to go’, / ‘Juan wants himself to go’
- b. \*Juan<sub>i</sub> quiere [CP [TP *pro* ir]]  
 Juan wants *pro* to-go  
 intended: ‘Juan wants her/him to go’  
 where the reference of her/him is determined by discourse

J. (10 points). Is this pattern of data expected under the Visibility Condition? The Morphological Condition? Explain your answer.

K. (10 points). Do you have any questions, comments, concerns, or ideas about Head Movement, Case, or the Minimalist idea of moving constraints to the LF and PF components?

## Bibliography

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