Syntax
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Lecture Notes
(3)

Hierarchy of Projections (HoP) Revised:

- (C>) T > (Neg >) (M >) (Perf >) (Prog >) (Pass >) *v* > V > D > N

How did we get here?

To answer this question, let's start from the first new entry in HoP, namely, the Determiner. The introduction of D into the Hierarchy of Projection, follows from our exploration of the nature of noun phrases (NPs). We've been analyzing phrases like "the students" and "the intelligent students" as NP's. However, on many occasions we've suggested that they might actually be Determiner Phrases (DPs). One reasoning we've previously explored for this analysis is that it would follow from our analysis of the head parameter in English, namely, that English is a head-initial language. If we think of the noun as the head in the merger between the noun and the determiner, this would go against what we already know about the position of the head in relation to the complement from other instances in English, like that between verbs and their objects/complements.

Determiners

But before we go into that in more detail, let's first examine the category Determiner.

So, we ask: What are determiners?

Well, as usual, we answer such questions by observing the distribution of words traditionally grouped as one category. Take the phrase "the intelligent students" above as a start. We label the first word as Determiner (D), the second as Adjective (A), and we know from their position in the phrase that they both precede a Noun (N). So why not

label them both as Adjective (A)? In other words, we're asking: What differentiates determiners from adjectives to warrant giving them a category of their own?

First, note that adjectives can **iterate** in the same phrase. In other words, you can have more than one adjective modifying the same noun. In this regard they very much resemble adverbs (Adv) modifying verbs. And like Adv(P), their position in the structure is **adjunctive**, i.e., they adjoin to a full projection – in the case of APs, they adjoin to an NP, but do not change its features, i.e., it remains an NP.

Determiners on the other hand are unique, cannot iterate, and they must occupy the first position in the sequence that thus far we've been labeling as a noun phrase (NP). To be sure, Determiner is a class of words that includes the word 'the' in the phrase above, as well as others that can occupy the same position like 'these' as in 'these intelligent students,' and pronouns which would replace the whole sequence as in 'they' instead of 'these intelligent students.' Thus, you can stack up adjectives in the same phrase as in "these young intelligent hardworking students," but you cannot have more than one determiner as in the ungrammatical phrases "*the these young intelligent hardworking students," and "*they these intelligent students." There are then different types of determiners, but they all make up one category. Accordingly, following from our attempt to formalize the system, we will say that they all have the feature [D], just like we did for other categories like [T] and [V].

Now, we know that most verbs have c-selectional properties, i.e., they cannot stand alone, but need something to complement/complete them. If we say 'students,' it sort of feels complete, but if we say 'the,' it does not. The word 'the' needs something to make it complete. Thus, it makes sense to think that it needs a complement, or, as we're used to saying now, that it has c-selectional properties, namely [*u*N*]. Thus, determiners are the ones that do the selecting and in turn are the ones that project, i.e., they are heads that require noun (phrase) complements. To sum up the, "the students" and the "these young intelligent hardworking students" are DP's not NP's. To be sure we still have the NP 'students,' in the DP "the students," but now we think the determiner 'the' merges with it as a complement. In the second phrase ("these young intelligent hardworking students"), the NP 'students' has three AP adjuncts, before it merges with the determiner/head 'these.'

Let's consider the ramifications of this analysis for the system we've developed thus far. First, we need to modify c-selectional properties of verbs from [*u*N*] to [*u*D*]. And the tense node [T] also has a [*u*D*] (which we've also sometimes been calling "the EPP"). And so with prepositions; they too have a [*u*D*]. However, this creates a problem in the system. Consider sentence (1) below.

1. The water boiled.

Ok, so we can easily modify the derivation to fit with this new analysis. Here is how: the verb 'boil' is unaccusative, meaning the subject in Spec-TP originates as the daughter of VP ("the water" is Theme), i.e., as the complement of V. In other words, we propose that V has a [*u*D*] which gets checked when it merges with the DP "the water." Then, the DP "the water" moves into Spec-TP to check the [*u*D*] on T (or, equivalently, to satisfy the EPP). Fair enough. But here is the problem. Observe sentence (2) below.

2. Water boils.

If we go with the analysis in the last paragraph, how can we account for the fact that 'water' seems to be only an NP which does not extend further into a DP as with the phrase "the water" which has an overt determiner? Well, the answer is that "water" in "water boils" is also a DP. It's just that the determiner is null (Ø), empty, or not pronounced. The null determiner is their with proper nouns (e.g., Omar), bare plurals (e.g., students), and mass nouns (e.g., water). Thus, this is a subtype just like articles and pronouns which are all determiners. It has specific c-selectional properties in that it selects NPs with specific features as in the examples in the previous sentence. Thus, we can say that "*student studied the text" is ungrammatical because the null determiner rules out singular NP complements, whereas "a student studied for the text" or "the student studies for the text" is grammatical because the determiners "a" and "the" license or allow them. Similarly, "*a students studied the text" is ungrammatical because "a" rules out or does not select a plural NP complement.

Note that our analysis thus far suggests a hierarchy of projection in relation to nouns in that we're proposing that every NP extends into a DP just like we proposed that every VP extends into a TP. At this stage the Hierarchy of Projections for nouns is:

- D > N.

Passives

Let's now explore the second new entry in HoP, the Passive (Pass). Note first that unlike D, it is not always there in the derivation which is why we have it in brackets. This means that it enters the derivation per HoP only if it is given by Numerate, just like the other Auxiliaries in HoP. And just like other Auxiliaries in HoP it has a [*u*Infl:] which can be valued by whatever is above it in the hierarchy. It itself can also value *v* as Pass. Observe sentence (3) below.

3. The American President is being ridiculed by the press.

Note here that the word being is the constituent that occupies that Pass node in the hierarchy in this passive sentence. Right above it is the word 'is' which occupies the Prog node. The Prepositional Phrase "by the press" is an adjunct that attaches to the PassP after Pass merges with the *v*P per HoP. Note also that the passivized verb looks very much like an unaccusative verb, i.e. the Theme DP "The American President" originates as the daughter of VP before it moves into Spec-TP to check the EPP, where v is agentless, i.e., does not assign an Agent theta-role. Again, this is very much like an unaccusative verb like "boil" in the "Water boils."

More importantly here, pay attention to how first Pass values the [*u*Infl:] on *v* as Pass and checks and deletes it. Then in sentence (3) as given by Numerate and per HoP, it is Prog which values the "be" in Pass as Prog (which is why we have it as "being") and checks and deletes that feature.

The Syntax of Interrogatives

Thus far we've only dealt with (simple) declarative sentences. Now, we want to explore the syntax of interrogatives briefly. This how we introduced the last new constituent in HoP, namely C.

Yes-No Questions

Let's start with Yes-No Questions (YNQs).
Observe sentences (4) and (5) below.

4. Suad will marry Omar.
5. Will Suad marry Omar?

Sentence (4) is declarative. Sentence (5) is interrogative. It is a specific type of interrogative sentence called "yes-no question" because of the type of response typical for it. It is also said to be formed from inverting the position of the subject with that of the auxiliary (subject-auxiliary inversion [SAI]). We want to think that we can derive this sentence in the same manner we've been deriving declaratives as in its counterpart in (4).

However, it is not a matter of inverting the subject with the auxiliary; rather, we think that there is a higher position than T (Remember the subject is in Spec-TP), to which the auxiliary in T– in sentences (4) and (5) the modal *will*, which has moved into T from M— moves, one which extends the projection further than TP. That position is C. It is the one that typical complementizers ©, like 'that,' 'if,' and 'for' occupy. Thus, just like V moves to *v*, and Prog, Perf, and M, move into T – when valued by it – T moves into C in questions. And as in these types of movements, we also think that when T moves into C in questions, it is motivated by feature-checking.

Wh-Questions

Observe sentences (6) and (7) below.

6. Whom will Saud Mary?
7. Who will Mary Omar?

From (6), we see that T also moves to C in wh-questions. However there's a wh-word that has also moved to the front of the sentence. In this case 'who' originates as the complement of V (Theme, daughter of VP) before it moves into Spec-CP. In sentence (7), however, 'who' originates in Spec-*v*P, where it is assigned the Agent theta role (as daughter of *v*P), then moves into Spec-TP to satisfy the EPP, then moves to Spec-CP to check the wh-feature on C.