Previously, in LX522...

• Last time, we looked at the phenomenon of head-movement.
• Recall, for example, French, which moves V up to T as shown here.
• At DS, the verb heads the VP, and by SS, the verb has moved to head-adjoin to T.
• This was proposed in order to account for word order facts.

It is likely...

• Let’s think back to the case of *It is likely that Mary left* from a couple of weeks ago.
• *Likely* has one θ-role to assign (Proposition) which it assigns to its complement, the embedded CP.
• Consider *leave* in the embedded clause. *Leave* also has one θ-role to assign, which it assigns to *Mary*.

It is likely...

• Moving to SS...
• *Because the EPP requires SpecTP to be filled, Expletive Insertion applies, inserting* *it* into SpecTP, resulting in this SS representation.
• This is the story of *It is likely that Mary left*.

Previously, in LX522...

• Today, we’re going to look at another kind of movement, the movement of DPs.
• In many respects, the idea is similar—a DP will originate in one place in the DS and will appear in a different place in the SS.

It is likely...

• Notice that both θ-roles are assigned to things that are in the same clause as the predicate that assigns the θ-role.
• This is a general property of θ-role assignment:
  • A θ-role must be assigned *locally* (within the same clause).
It is likely…

• Now, consider:
  – Mary is likely [to leave].
• We already know a lot about this sentence; we know that *likely* has one \( \theta \)-role to assign, which it assigns to the embedded clause, we know that *leave* has one \( \theta \)-role to assign, which it assigns to *Mary*.
• There are two problems here:
  – The embedded clause has no subject (*EPP)
  – The \( \theta \)-role assigned to *Mary* seems to be assigned outside of its clause.

It is likely…

– Mary is likely [to leave]

• Concerning \( \theta \)-roles, it’s clear from the meaning that *leave* really *does* assign its \( \theta \)-role to *Mary* and not *likely* (*Mary* is leaving—she’s isn’t in any way *likely*).
• This is definitely not local—*Mary* is not in the same clause as *leave*.

It is likely…

– Mary is likely [to leave]

• And with respect to the EPP, we see that although the main clause TP has something in its specifier (*Mary*), the embedded clause seems to have nothing.
• How can we reconcile this?

It is likely…

– That is, we start out with *Mary* in the embedded clause, in the specifier of TP, receiving its \( \theta \)-role locally.

It is likely…

– That is, we start out with *Mary* in the embedded clause, in the specifier of TP, receiving its \( \theta \)-role locally.
• Then *Mary* moves up to SpecTP in the main clause by SS.
It is likely…

- Notice that this satisfies the EPP in both clauses. The main clause has Mary in SpecTP. The embedded clause has the trace in SpecTP.

It is likely…

- This type of movement is called DP-movement.
- This specific instance of DP-movement, where we move a subject from an embedded clause to a higher clause is generally called *subject raising*.

It is likely…

- Historical idiosyncrasy: Because a lot of terminology was established before the DP had been “discovered,” people often still, out of habit, refer to this kind of movement as NP-movement rather than DP-movement. These are not different things: People who say NP-movement generally mean DP-movement.

Passive

- Now, recall the *passive*. The passive form of a verb seems to directly affect the theta grid of a verb; consider:
  - Bill ate the sandwich.
  - The sandwich was eaten.
- *Eat* has two θ-roles to assign. By putting it in the passive, we seem to have transitive (two θ-role) verb into an intransitive (one θ-role) verb.

Passive

- Here, *Bill* is the Agent (gets the θ-role including Agent) and *the sandwich* is the Theme (gets the θ-role including Theme).
- The sandwich was eaten (by Bill).
- In the passive, the roles are the same but now the Theme is the subject and the Agent is in an optional *by*-phrase (a PP).

<table>
<thead>
<tr>
<th>eat</th>
<th>Agent</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
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<table>
<thead>
<tr>
<th>eat+en</th>
<th>Agent</th>
<th>Theme</th>
</tr>
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<tr>
<td></td>
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</tbody>
</table>
Passive

- Now, what does the structure of a passive sentence look like?
- There are two possibilities we could entertain.
  - The Theme in the passive becomes an external $\theta$-role (as opposed to in the active, where the Theme gets an internal $\theta$-role).
  - The Theme in both cases gets an internal $\theta$-role, but in the passive, it moves to the subject position.
- Let’s pursue the second option first…

Active

- Let’s start with the DS tree for the active sentence, Bill ate the sandwich.
- Here, the (internal) Theme $\theta$-role is assigned to the object DP and the (external) Agent $\theta$-role is assigned to the subject DP.
- Now, suppose that for the passive we simply eliminate the external $\theta$-role…

Passive

- (The passive also requires the addition of the auxiliary verb be, but this is not relevant to the point at hand)
- We have changed the main verb to the passive form, thereby removing the external $\theta$-role, leaving us with this DS for
  - The sandwich was eaten.
- Now, what needs to happen?

Passive

- The sandwich was eaten.
- Now, what needs to happen?
  - SpecTP must be filled (EPP).
  - The word order needs to be altered from was eaten the sandwich to the sandwich was eaten.
- It should be clear where this is going—here, we posit another instance of DP-movement, like with raising. In the passive, the object moves to SpecTP satisfying the EPP.

Passive

- The sandwich was eaten.
- So, to review, the idea is that the active and the passive have very similar DS representations, except that the passive has had its external $\theta$-role removed and thus no subject is generated in SpecTP (as required by the Theta Criterion). Then the object moves into SpecTP, satisfying the EPP at SS.

Passive

- The sandwich was eaten by Bill.
- As for the optionally expressed Agent in the by-phrase, we take this to be like any optionally expressed adjoined phrase, a PP adjoined to $V'$.
- As expected, the by-phrase can be re-ordered with respect to other adjuncts.
  - The sandwich was eaten…
  - …by Bill under the tree at noon.
  - …under the tree by Bill at noon.
  - …at noon under the tree by Bill.
Passive

- Let’s return for a moment to the two possibilities we could have entertained…
  - The Theme in the passive becomes an external $\theta$-role (as opposed to in the active, where the Theme gets an internal $\theta$-role).
  - The Theme in both cases gets an internal $\theta$-role, but in the passive, it moves to the subject position.
- We have worked out what the second option looks like, let’s take a second to see why the first option wouldn’t have worked.

Not the passive

- The first option hypothesizes that the passive form of the verb removes the external $\theta$-role and promotes the internal $\theta$-role to an external $\theta$-role:

$$
\begin{array}{ccc}
\text{Agent} & \text{Theme} & \text{eat} \\
1 & 1 & 1 \\
\end{array}
$$

- Under this view, then, the Theme is not moved into SpecTP but rather just starts out there.

Not the passive

- Consider this active sentence.
  - Wilma considers [Fred to be foolish].
- And suppose we want to make a passive. We eliminate the external $\theta$-role from considers (meaning the role assigned to Wilma above). Then we make the internal $\theta$-role (assigned to the embedded proposition) external. What should the result be?

Not the passive

- The predicted result is:
  - *[Fred to be foolish] was considered.
- …which is not what we want. Rather, what we want is:
  - Fred was considered [to be foolish].
- But notice, Fred was never assigned a $\theta$-role by considered (Fred’s $\theta$-role comes from foolish) so we couldn’t have changed the $\theta$-role Fred got to be external.

Passive

- Fred i is considered [i to be foolish]
- However, the account of the passive that we developed before, where the object moves into SpecTP has no trouble explaining this. This is basically a case of subject raising, the EPP needs to be satisfied and is satisfied by moving Fred into the main clause’s SpecTP.

Nagging questions

- Things have been working out well so far, but there are a couple of things that are still unexplained…
  - If in the passive, movement of the object into subject position is done in order to satisfy the EPP, why couldn’t we instead insert it in SpecTP like we do in it rains or it is likely that…?
  - Similarly, for raising, what is wrong with *It is likely John to leave?
- The answer to this will be Case—which we turn to now.
Case

- As has been mentioned before, many languages mark the grammatical relations of their DPs with case markers.
  - Korean: 
kul = subject, (l)ul = object
    Chelswu-ka Sunhi-lul manna-so ta
    Chelswu-nom Sunhi-acc met-past-decl
    ‘Chelswu met Sunhi.’
  - Japanese: ga = subject, o = object
    Akira ga ringo o tabeta
    ‘Akira ate an apple.’

English pronouns and case

- In English, although we generally don’t mark the grammatical relations with case…
  - The president met the students.
  - The students met the president.
- …we do mark the grammatical relations of the pronouns with case…
  - He met her.
  - She met him.

English pronouns and case

- A pronoun in subject position of a finite clause has nominative (subject) case:
  - I left; he left; she left; we left; they left.
- A pronoun in object position has accusative (object) case:
  - I met me; I met him; I met her;
  - I met us; I met them.

In the spirit of global unity…

- Given that
  - some languages show case marking on all nouns (not just pronouns)
  - in English we see case marking on at least some nouns (the pronouns)
  - We’re striving to create a syntactic system that explains all languages
- We will suppose that all English nouns get case too, it’s just that you can’t see it on anything but the pronouns.

In the spirit of global unity…

- This is in a sense an extension of the idea that even though you can’t see a present tense marker on walk in you walk and I walk, the fact that we do see it on he walks and the fact that we see past tense markers on I walked and you walked, we simply assume that there is always a tense/agreement suffix, but that sometimes it is pronounced as -ed, sometimes as -s, and sometimes as .

In the spirit of global unity…

- That is, there is an abstract tense/agreement suffix which is always present and which can be morphologically realized in a couple of different ways.
- Returning to Case, we suppose that there is an abstract Case marker on all nouns, but that it is morphologically realized as in English except on the pronouns.
Case

- Case is tied to *syntactic position*; a subject (that is, the DP in SpecTP) gets one Case (nominative), the object (sister of a transitive V) gets a different Case (accusative).
- We formalize this idea that all nouns have abstract Case by making it a requirement—all nouns in a grammatical sentence must *show* their syntactic position.

Case vs. θ-roles

- It is important to notice that Case is *not* correlated with θ-roles.
  - I met him (at the airport).
  - He was met by me (at the airport).
- In both sentences, the Theme is the same—*him*. But in the first sentence, *him* is marked with accusative Case, and in the second sentence *he* is marked with nominative Case.

Case vs. θ-roles

- Case has to do with where the DP *ends up* at SS, and θ-roles have to do with where the DP *starts out* at DS.

Case Theory

- Case Filter (SS)
  All DPs must have Case

- Case is available (roughly)
  - To the specifier of a finite T (nominative)
  - To the sister of a V or a P (accusative, oblique)

Case Theory

- The idea is that there are a few privileged positions in the syntactic structure in which Case is available—if a DP starts out in a position where no Case is available, it must *move* to a position where it can get Case (or face ungrammaticality).

Privileged positions

- In particular, there are certain elements of the structure which are Case-assigners. These are things which can *provide* Case to a DP.
  - Finite T is a Case assigner, it provides nominative Case.
  - Transitive verbs are Case assigners, they provide accusative Case.
  - Prepositions are Case assigners, they provide oblique Case.
Licensing

• In order to get Case from a Case-assigner, the DP has to be close to the Case-assigner – (we'll postpone discussion of what exactly it means to be “close” for a while).
• Some places which are close enough to get case are SpecTP (close to T) or sister to V (close to V).

Accreditation revoked

• The thing which makes Case Theory run is the fact that under certain situations T or V cannot assign Case.
• For T, only finite T is a Case-assigner— a nonfinite T does not assign Case.
• For V, only transitive verbs assign Case— intransitive verbs and passive verbs do not assign Case.

Back to raising…

• Let’s go back to Mary is likely to leave. Recall that this is the DS.
• In the embedded clause, Mary is in SpecTP, but nonfinite T cannot assign Case.
• Unless the DP Mary moves, the Case Filter will be violated at SS.

Back to raising…

• When the DP Mary moves up to the main clause SpecTP, it gets close enough to the finite T to receive Case (thus satisfying the Case filter).
• So, this movement does two things: It satisfies the EPP and it satisfies the Case Filter.

Back to raising…

• Notice that this explains why…
  – *It is likely Mary to leave
• …is ungrammatical, though: Even though the sentence satisfies the EPP, it violates the Case Filter (Mary doesn’t get Case).

Back to raising…

• When the embedded clause is finite…
  – It is likely that she left.
• …everything is fine because she gets (nominative) Case from the embedded finite T.
Back to passives…

• We had a similar question about what was wrong with:
  – *It was eaten the sandwich
  • …where it appears that even though the EPP could be satisfied by inserting the expletive it, the sentence is still ungrammatical.

Back to passives…

• What we can say here is that the addition of the passive morpheme -en to a transitive verb not only removes its external θ-role, but also revokes its ability to assign Case.
• Burzio’s Generalization
  A verb which does not assign an external θ-role cannot assign accusative Case.

Active again…

• Let’s review the DS tree for the active sentence, *Bill ate the sandwich*.
  • Here, *eat* assigns two θ-roles, the internal θ-role (Theme) to the DP *the sandwich*, and the external θ-role (Agent) to the DP *Bill*.
  • Since it assigns an external θ-role, *eat* is also a Case-assigner.

Active again…

• At SS, *Bill* gets (nominative) Case from the finite T, and *the sandwich* gets (accusative) Case from the V.

Passive again…

– The sandwich was eaten.
• Now, let’s look at the passive sentence.
  • The external θ-role was removed from *eaten* and thus V can no longer assign Case.
  • Unless the DP *the sandwich* moves to a place where it can get Case, it will violate the Case Filter at SS.

Passive again…

• By moving the DP *the sandwich* to SpecTP we satisfy both the Case Filter and the EPP.
• Simply satisfying the EPP by inserting *it* into SpecTP wouldn’t solve the problem of getting Case for *the sandwich*; hence the ungrammaticality of
  *It was eaten the sandwich.*
Flavors of intransitives…
• Let’s think for a moment about intransitive verbs. These are verbs have a theta grid with a single $\theta$-role to assign. Like walk, say.
• Walk: Agent.
• Now, think about the passive of a transitive verb; this is a verb with only a single *internal* $\theta$-role.
• Eat: Agent Theme
• Eaten: Theme
• Taken together, it might occur to us to wonder whether there might be intransitive verbs that inherently (like eaten) have only a single internal $\theta$-role to assign…

Unaccusatives
• And it turns out that, yes, such verbs do exist. For example:
  • Fall: Theme.
  • Fall is an “inherently passive” verb, an unaccusative verb. It has only one $\theta$-role to assign, and that $\theta$-role is an *internal* $\theta$-role. Because it has no external $\theta$-role, by Burzio’s Generalization, it also cannot assign accusative Case.

Unaccusatives vs. unergatives
• There are many reasons to think that verbs like fall have only an internal argument.
  • First, the subject is really a Theme as far as thematic relations go, it is affected, not an agent. Themes are always objects.
  • Another suggestive piece of evidence comes from Romance languages like French, where passives and verbs like fall act similarly, and differently from other (truly agentive) intransitive verbs.
    • Jean est tombé. ‘John fell.’ (past unaccusative)
    • Le fromage a été mangé. ‘The cheese was eaten.’ (passive)
    • Jean a marché. ‘John walked.’ (past unergative)

Unaccusatives vs. unergatives
• The point is really that we can distinguish two types of single-argument (intransitive) verbs in terms of their theta grid with respect to whether they have an external $\theta$-role to assign or not. Their (highly unintuitive) names, for the record, are:
  • Unaccusatives: Have one, internal $\theta$-role.
  • Unergatives: Have one, external $\theta$-role.

Bill fell

Revisiting VSO order in Irish
• Recall these examples from last time (Irish):
  • An bhfaca tú an madra?
  • Q See you the dog
  • ‘Did you see the dog?’
  • Duirt mé gur phóg Máire an lucharachán.
  • Said I that kissed Mary the leprechaun
  • ‘I said that Mary kissed the leprechaun.’
• VSO order was supposed to be derived by verb movement, but since an and gur are in C, it must not be movement to C but rather to T.
A VP-internal subject?

- We ended up with a representation like this one, where the subject was in SpecVP rather than in SpecTP.
- That is, the subject appears to be VP-internal in Irish.
- If this is right, there are a couple of things that must be true in Irish under our current approach.

A VP-internal subject?

- First, since all DPs need Case, it must be possible for the subject to get Case in SpecVP in Irish.
- Second, since SpecTP is empty at SS, it must be that the EPP is not active in Irish.
- We need to conclude that these are dimensions along which languages can vary.

A VP-internal subject?

- Parameter: EPP
  - On: SpecTP must be filled (English)
  - Off: no restriction on SpecTP (Irish)
  - (Note for later: we will want to revise this in light of future developments, but for the moment we are forced to this conclusion)

A VP-internal subject?

- How does the subject get Case in SpecVP?
  - Recall that we said before that a DP has to be close enough to its Case-assigner.
    - Being in SpecTP was close enough to T, being sister of V was close enough to V.
  - But this configuration also appears to have the DP close to the Case-assigner. If we suppose this is close enough for Case assignment, everything is fine.

Government

- We will at some point want to define more precisely what counts as close enough for Case-assignment. Right now we have three places which count as close enough (to the Case-assigning head X)
  - Sister
  - Specifier
  - Specifier of sister

Government

- These three environments
  - Sister
  - Specifier
  - Specifier of sister
- …are together sometimes called the positions which are governed by the head X.
  - (For now, we will not go into a more formal definition, but we will look at this later.)
Government

- The idea is then that a Case-assigning head X can assign Case to a DP which is any of these positions.
- Case-assignment can only take place between a Case-assigner and a DP within the radius of government.

A VP-internal subject?

- Back to the question of the VP-internal subject.
- Since the guiding intuition of our approach has been that languages are fundamentally alike, it is a bit jarring to think that English and Irish could differ in such a deep way as this.

- All the students will leave.
- The students will all leave.
- *The students will leave all.

• The idea is that all the students is a unit at DS, which we can write as a “QP” (Quantifier Phrase) headed by all.
• Then, at this point, one of two things can happen—either the QP moves to SpecTP or the DP does.
• If the QP moves, we get the first sentence above.
• If just the DP moves, we get the second sentence above.
• Yet neither option could produce the third sentence…
A VP-internal subject?

– All the students will leave.
– The students will all leave.
– *The students will leave all.

• Notice that this gives a reasonably natural way to explain where *all can be, but it is not available unless we believe that the subject originates at DS somewhere below the position of will.

θ-role assignment

• If we suppose that the subject originates in SpecVP, then we can also strengthen our view of where θ-roles can be assigned.
• Earlier, we’d supposed that θ-roles can only be assigned within the same clause.
• Now, we can in fact go further:
  • A predicate can only assign its θ-roles within the maximal projection of that predicate.
  – A V can only assign its θ-roles within the VP.

Small clauses

• Armed with the VP-internal subject hypothesis, we are also now in a position to understand another type of sentence which we have not thus far considered.
  • I find Bill intolerable.
  • I consider Bill incompetent.
  • I want Bill off this ship. (Immediately!)

A VP-internal subject?

• There are several other, more complex (but perhaps even more convincing) arguments for the VP-internal Subject Hypothesis as well, but let us take this as good enough evidence to adopt it.

• VP-Internal Subject Hypothesis
  The subject originates in the specifier of VP at DS.

θ-role assignment

• A predicate can only assign its θ-roles within the maximal projection of that predicate.
  – A V can only assign its θ-roles within the VP.

• Adopting this requires a (very) slight tweak in what we consider to be an external θ-role. We can no longer consider it to be a θ-role assigned external to the VP, since there are no longer any such θ-roles. Instead, we say that the external θ-role is the θ-role assigned to SpecVP.

Small clauses

• I find Bill intolerable.
• I consider Bill incompetent.
• I want Bill off this ship. (Immediately!)

• These have a pretty similar meaning as sentences with *to be* inserted after *Bill, but yet there’s no *to and no be… there’s no evidence of a TP or a VP in *Bill intolerable.*
**Small clauses**

- A common way to look at these sentences is as containing *small clauses*—a little proposition headed not by a verb but by another kind of predicate, like an adjective.
- Just like the subject of a regular clause, the subject of a small clause is in its specifier.
- But unlike in a regular clause, it stays there, so we can see it in the specifier of the predicate.

**Genitive Case**

- Consider
  - The president’s brother left.
- Every DP needs to get Case.
- The entire DP *the president’s brother* gets Case like any other DP—in this case it gets nominative Case from the finite T.
- But where does *the president* get its Case?

**Small clauses**

- Even in a small clause, all DPs need to get Case.
- In this sentence *I* gets nominative Case from the finite main clause T. Where does *Bill* get Case?

**Genitive Case**

- In general, Case-assigners don’t get to assign two Cases, so it can’t be T—plus, the possessor DP is not in the government radius of T.
- This leaves us one choice…
Genitive Case

- In general, Case-assigners don’t get to assign two Cases, so it can’t be T—plus, the possessor DP is not in the government radius of T.
- This leaves us one choice…
- The case that possessors receive is called genitive Case and it is assigned by the possessive D’s.

Let’s regroup

- This time, we saw that we also need to allow for movement of DPs as well. For example,
  - Raising: Bill is likely [t_i to win the race].
  - Passive: [The sandwich] was eaten [t_i].
  - Unaccusatives: Bill fell [t_i].
  - Ordinary subjects: Bill [t_i] will leave.

Let’s regroup

- We also concluded that the subject does not originate in SpecTP at DS, but rather in SpecVP and moves to SpecTP. This allowed us to say that:
  - A predicate can only assign its θ-roles within the maximal projection of that predicate:
    - A V can only assign its θ-roles within the VP.
  - Finally, we looked at nonverbal predicates which also seem to be able to head “small clauses”, as in I find Bill intolerable and which also have their subject in their specifier.

Let’s regroup

- Last time, we saw that we needed to differentiate two different levels of structure (DS and SS) and allow for movement of parts of the structure in order to get the word order facts of English and of other languages. X-bar theory alone wouldn’t allow us to describe the facts.
- Last time, we saw examples of head-movement, moving the head of an X-bar structure up the tree to the next head up. For example, V-to-T, T-to-C, and N-to-D movement.

Let’s regroup

- We saw the role that Case plays, summarized here…
- Case Filter: All DPs must have Case at SS.
- Finite T assigns nominative Case.
- Transitive V assigns accusative Case.
- P assigns oblique Case.
- A case-assigner can only assign Case to a DP within its “radius of government”:
  - Its specifier
  - Its sister
  - The specifier of its sister.

The Y model

- We have now explored a large part of the top section of the “Y model” introduced to you a few weeks ago. Still to come are wh-movement and then our explorations of the “LF branch” and (question formation).