chapter 10

DP Movement

0. Introduction

In the last chapter, we looked at how certain basic word order facts could not be generated by X-bar theory alone. Instead, we saw that we need another rule type: the transformation. Transformations take X-bar trees and move elements around in them. The kind of transformation we looked at there moved heads into other heads. In this chapter, we are going to look at transformations that move NPs and DPs. (For the sake of convenience, I'm going to use NP to mean either NP or DP. Nothing turns on this usage. We could equally call the phenomenon DP-movement.)

Unlike head-to-head movement, where movement is motivated by word orders that cannot be generated using X-bar theory, the movement described here frequently takes X-bar generated trees and turns them into other acceptable X-bar generated trees. What motivates the movement is not a failure of X-bar theory, but instead the fact that certain DPs can appear in positions we don't expect from a thematic (theta role) perspective.

1. A Puzzle for the Theory of Theta Roles

Try to sketch out the theta grid for the verb *to leave*. *Leave* requires one obligatory argument: an agent:

1) *leave*

Agent DP
i

This can be seen from the following paradigm.

2) a) Bradley$_i$ left.
   b) Stacy$_i$ left Tucson.
   c) Slavko$_i$ left his wife.
   d) *It left. (where *it* is a dummy pronoun, not a thing)

The only obligatory argument for the verb *leave* is the agent, which is an external (subject) argument. Other arguments are possible (as in 2b and c) but not required. Now, note the following thing about the obligatory agent theta role. The agent role must be assigned to an argument *within the clause* that contains *leave*:

3) a) *[I want Bradley$_i$ [that left]].
   b) *John$_i$ thinks [that left].

When you try to assign the theta role to a DP that is outside the clause (such as the object *Bradley* or *John* in (3)) you get a stunningly ungrammatical sentence. We already have an explanation for this fact: in the last chapter we posited the following constraint:

4) *The Locality Constraint on Theta Role Assignment*
   Theta roles are assigned within the projection of the head that assigns them (i.e., the VP or other predicate).

This constraint requires that the DP getting the theta role be local to the predicate that assigns it. In the sentences in (3) the DP is actually in a different clause than the predicate that assigns it, so (4) predicts them to be ungrammatical.

Now, look at the following sentence:

5) [John$_i$ is likely [to leave]].

John here is the agent of *leaving*, but the DP *John* appears in the main clause, far away from its predicate. Even more surprising is the fact that there seems to be no subject of the embedded clause. This is in direct violation of (4). The solution to this problem is simple: there is a transformation that takes the DP *John* and moves it from the lower clause to the higher clause.

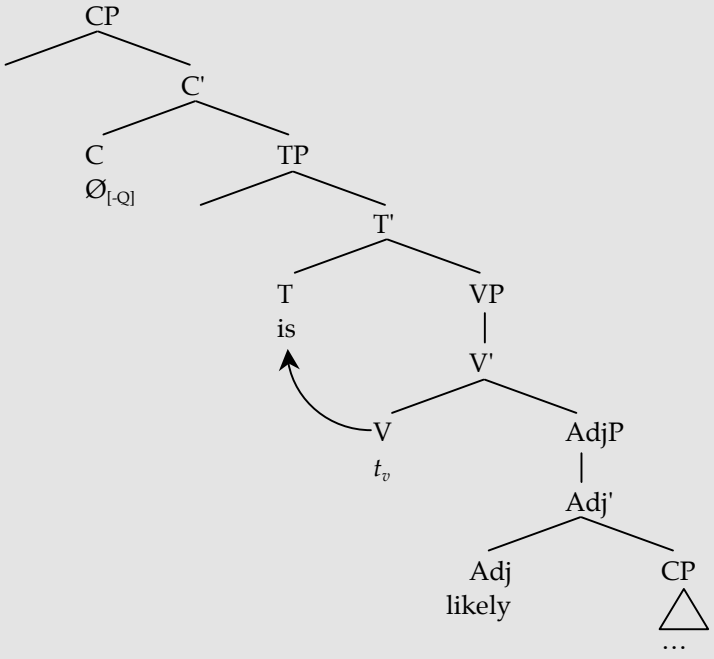
Let's spell this out in more detail. The theta grid for *is likely* includes only one argument: the embedded clause. This is seen in the fact that it can appear as the sole theta marked argument:

6) a) [[That John will leave]$_j$ is likely].
   b) It is likely [that John will leave]$_j$.
   c) *is likely*

Proposition
CP
j

Predicates like *is likely*

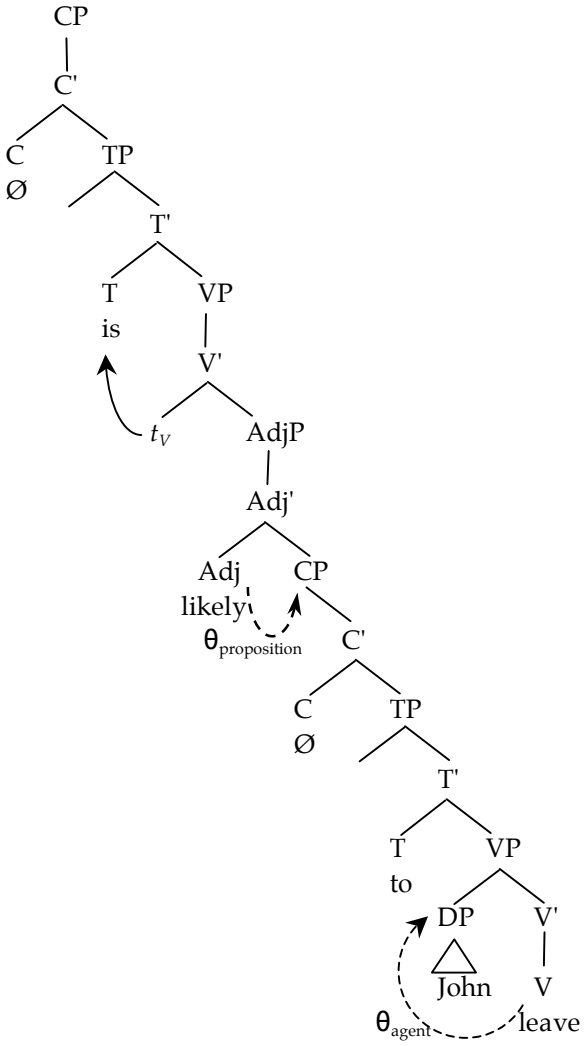
In this chapter we're going to look at a number of predicates that consist of the auxiliary *be* and an adjective such as *likely* or *obvious*, as in *It is likely that Daphne like crème fraiche*. A few words are in order on how to tree this structure. In the last chapter, we argued that auxiliaries like *is* are generated in a V and then raise to the T node. The adjective *likely* (this is an adjective even though it ends in *-ly*, as only other adjectives, like *obvious*, *eager*, *easy*. etc., can appear in this position) is the complement of this verb. These adjectival predicates typically take a CP as a complement. We can tree these forms as below. We'll revise this slightly in chapter 14.



If this is the case, then in sentence (5), *John* is not receiving its theta role from *is likely*. This should be obvious from the meaning of the sentence as well.

There is nothing about *John* that *is likely*, instead it is what *John* is doing (his leaving) that *is likely*. The sentence is a clear violation of the locality condition on theta role assignment in its surface form. In chapter 8, we argued that the theta criterion applies before the transformation of expletive insertion occurs. Translated into our new terminology, this means that the theta criterion holds of D-structure. This means that theta role assignment must also happen before all transformations. We can arrange for *John*'s theta role to be assigned clause internally, at D-structure. The D-structure of the sentence would then look like (7) (Theta marking is indicated with a dotted large arrow):

7)

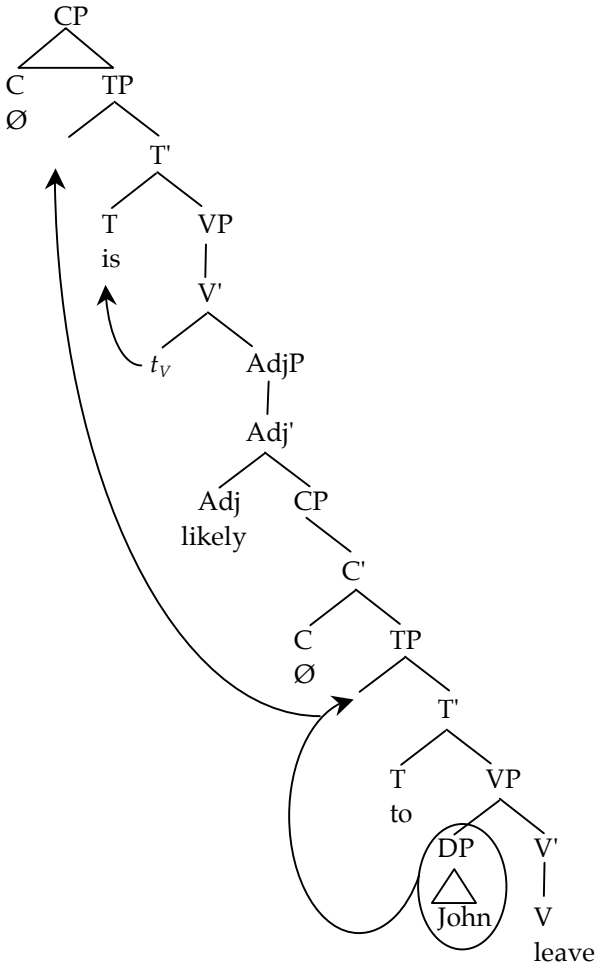


The subject DP is generated in the specifier of the embedded VP where it is assigned the agent theta role. How then do we derive the surface order? We need a transformation that moves this DP to the specifier of the main clause TP. This transformation is called ***DP movement***:

8) *DP movement*
Move a DP to a specifier position.

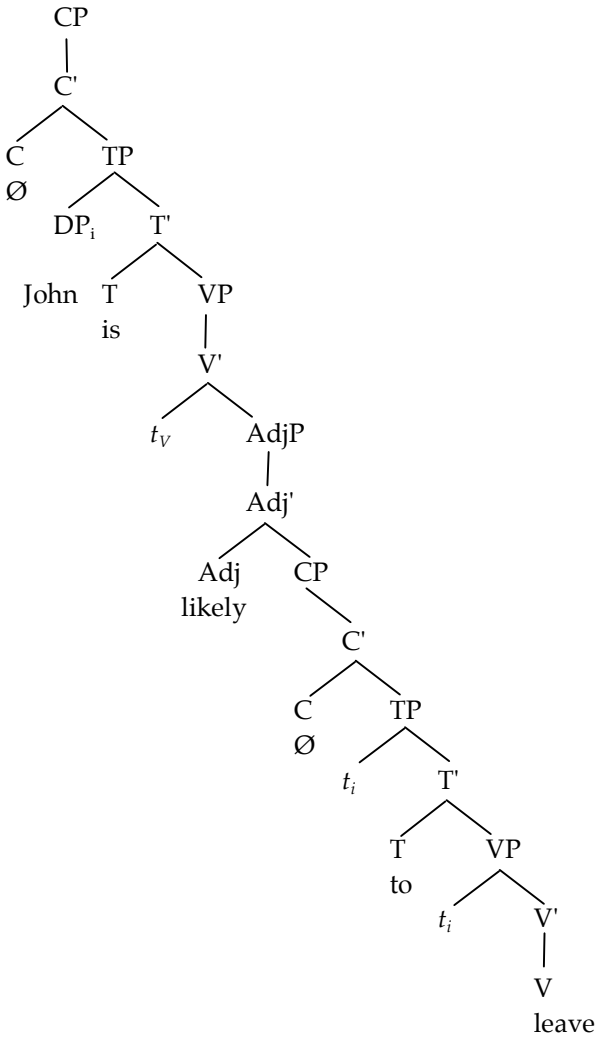
Notice that in the D-structure tree in (7) the specifier of the higher clause's TP is unoccupied. We can thus move the DP *John* into that position resulting in the tree in (9). (Note: the movement stops off in the specifier of the embedded TP and then moves on to the higher TP; we'll discuss why this happens in two hops shortly.)

9)



This particular instance of DP movement is frequently called ***raising***, because you are raising the DP from the lower clause to the higher. The surface structure of this tree looks like (10) where there is a trace (marked *t*) left in each position that the DP has occupied.

10)



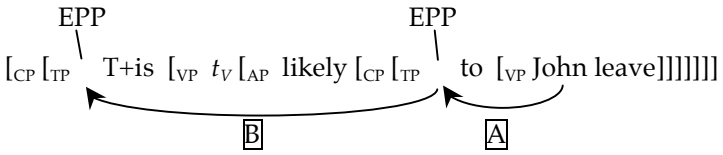
You now have enough information to try General Problem Set 1

As we stated in the last chapter, transformations are very powerful tools, and we want to limit their use. In particular we want to ensure that they only apply when required. Transformations thus need motivations or triggers. Look at the sentences in (11).

11) a) [That John will leave] is likely.
b) It is likely that John will leave.

Recall back to the chapter on the lexicon, the presence of the theta-role-less *it* in (b) is forced by the Extended Projection Principle (EPP) – the requirement that the specifier of TP be filled by something (i.e., the requirement that there is a subject in every sentence). We might speculate then that the absence of a subject is the trigger for DP movement. The DP moves to the TP to satisfy the EPP. Since we have two TPs this applies twice. A The DP moves from its theta position in the specifier of the embedded VP to the lower TP to satisfy this TP's EPP requirement. Then it moves on to the higher TP to satisfy its requirements B.

12)



This explanation seems to work at least partially well. And we'll adopt it for theory-internal reasons to motivate the movement to the embedded specifier at the least. In section 3, we revisit this question and see that the EPP is only a partly satisfactory motivation for DP movement, and will posit an approach using "Case." First, however, let's look at the other main situation that involves DP movement: Passives.

2. PASSIVES

The sentence given in (13) is what is called an ***active*** sentence in traditional grammar:

13) The policeman kissed the puppy. *Active*

The sentence given in (14) by contrast is what is called a ***passive***:

14) The puppy was kissed by the policeman. *Passive*

These two sentences don't mean exactly the same thing. The first one is a sentence about a policeman (*the policeman* is the topic of the sentence); by contrast (14) is a sentence about a puppy (*the puppy* is the topic). However, they do describe the same basic event in the world with the same basic participants: there is some kissing going on, and the kisser (agent) is *the policeman* and the kissee (theme) is *the puppy*. At least on the surface then, these two sentences seem to involve the same thematic information. On

closer examination however, things change. Notice that in the passive sentence, the agent is represented by an optional prepositional phrase headed by *by*. This is an adjunct; as discussed in the chapter on the lexicon, adjuncts are not included in the basic theta grid and are not subject to the theta criterion. If the agent here is an adjunct and not subject to the theta criterion it should be optional. This is indeed the case:

15) The puppy was kissed.

It thus seems that passives and actives have different thematic properties. Actives have an agent and a theme, whereas passives lack the agentive theta role in their theta grids.

The explanation for this is not syntactic, instead it is a morphological issue. The passive form of a verb takes special morphology. In English, there are two main passive suffixes. One is (unfortunately) homophonous with the past tense suffix *-ed*. The other is the *-en* suffix. These two are allomorphs of each other. We will use *-en* as the basic form, so as not to confuse the passive morpheme with the past tense. There is a simple morphological operation that derives a passive verb from an active one:

16) kiss+en → kissed, beat+en → beaten, etc.

This morphological operation doesn't only affect the outward pronunciation of the word, it also affects the meaning. More particularly it affects the theta grid of the verb. Whenever the *-en* suffix is present, there is no DP. One way of thinking of this is that the *-en* absorbs (or is itself assigned) the agent role[1].

17) a) *kiss*

Agent DP	Theme DP

b) *kiss+en (→ kissed)*

Agent DP	Theme DP
-en	

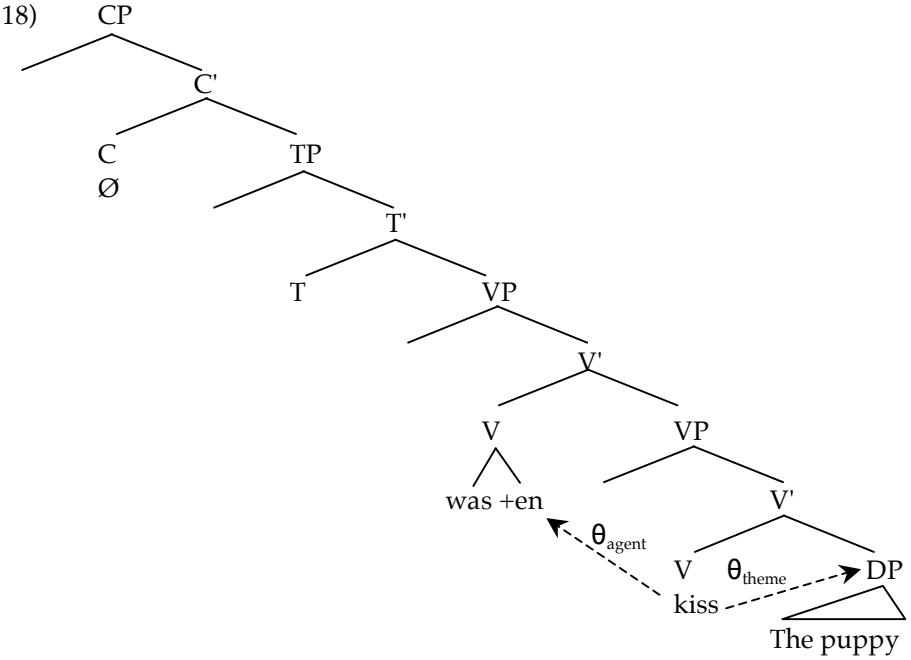
Now, let's look at the word order in the passive and active. In the active, the theme argument appears in object position; in the passive it appears in the subject position. One possible analysis of this is to claim that the theme is

[1] This technically is a violation of our locality constraint as the *-en* is introduced by a different V than its theta assigner. For the moment we'll simply assume that any VP inside a clause counts as the domain for theta role assignment for that main verb in that clause.

generated in object position in both actives and passives, but then is moved to subject position in passives.

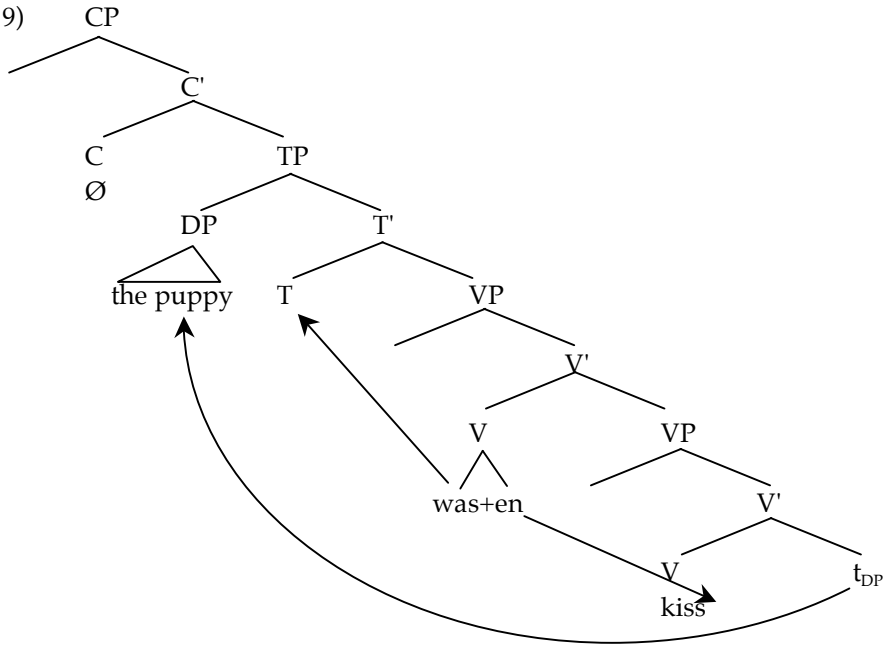
Here is a sample derivation. The D-structure of the passive sentence looks like (18). The dotted arrows in this tree represent theta (θ) assignment, not movement. Because *-en* absorbs the agent role, there is only one DP in this sentence (*the puppy*), the one that gets the theme role. Even if there is a *by* phrase (e.g., *by the policeman*) it does not get its theta role from the verb, it is an adjunct, and adjuncts are never included in theta grids. The theme is the internal argument (i.e., it is not underlined in the theta grid), so it does not appear in the specifier of the VP, it must appear as the complement, like other internal theta roles .

18)



Now, like the raising sentences we looked at in section 1, the EPP is not satisfied here. There is nothing in the specifier of TP. The surface order of the passive can then be derived by DP movement (and head movement of the auxiliary and lowering of the affix).

19)



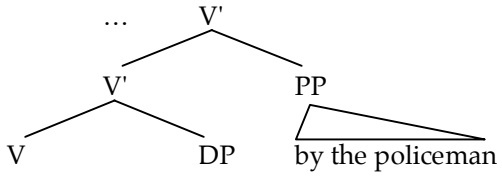
The DP *the puppy* moves to satisfy the EPP.

As mentioned above, passives often also occur with what appears to be the original external argument in a prepositional phrase marked with *by*.

20) The puppy was kissed by the policeman

We treat these *by*-phrases as optional adjuncts. We draw these *by*-phrases in by adjoining them to V':

21)



You now have enough information to try General Problem Set 2. You can also try Challenge Problem Sets 1 & 2

Movement or Underlying External Theme?

One might ask why it isn't simpler to say that the passive morpheme just deletes the agent and makes the theme an external argument in the theta grid.

i)

Agent DP	Theme DP

→

Theme DP

Then the D-structure of the sentence will put the theme into the subject position right from the start with no movement. This is impossible, however, if you look at passives of sentences that take clausal complements. Take the active sentence in (ii):

ii) Wilma considers [Fredrick to be foolish].

In this sentence, *Wilma* is the experiencer of *consider*, and *Fredrick* is the external theta role of the predicate *is foolish*. When *consider* is made into a passive, the subject of the lower clause raises to become the subject of the main clause:

iii) Fredrick$_i$ is considered t_i to be foolish.

Notice that *Fredrick* is never theta-marked by the verb *consider*. As such there is no way to make it the external argument like in (i). Because of cases like (iii), the movement account is preferred.

3. CASE

Up until now, we've motivated the movement of DPs using the EPP. In this section, we look at some data that shows that we might need an additional mechanism to account for movement.

Let's start with raising: as we saw in the last chapter, one way to satisfy the EPP is by inserting an expletive. For some reason this option isn't available in raising environments:

22) *It is likely John to leave. (cf. *It is likely that John left*)

Nor does it explain why *only* the subject DP of an embedded clause can satisfy the EPP; object DP may not move to satisfy this requirement:

23) *Bill$_i$ is likely John to hit t_i.

The same kind of mystery appears in passives. It isn't clear why it isn't simply permissible to satisfy the EPP by inserting an expletive:

24) *It was kissed the puppy.[2]

Our theory predicts that such sentences should be acceptable. In order to explain why they are not, we are going to have to add a new theoretical tool: ***Case***.

In many languages, nouns bearing various grammatical relations take special forms. For example, in Japanese, subjects are marked with the suffix *-ga*, objects are marked with *-o* and indirect objects and certain adjuncts with *-ni*:

25) Asako-ga ronbun-o kai-ta.
Asako-NOM article-ACC wrote-PAST
"Asako wrote the article."

26) Etsuko-ga heya-ni haitte-kita.
Etsuko-NOM room-DAT in-came
"Etsuko came into the room."

These suffixes represent ***grammatical relations*** (see chapter 4). The three most important grammatical relations are ***subject, object***, and ***indirect object***. Notice that these are *not* the same as thematic relations. Thematic relations represent meaning. Grammatical relations represent how a DP is functioning in the sentence syntactically. The morphology associated with grammatical relations is called ***case***. The two cases we will be primarily concerned with here are the ***nominative case***, which is found with subjects, and the ***accusative case***, found with objects.

English is a morphologically poor language. In sentences with full DPs, there is no obvious case marking. Grammatical relations are represented by the position of the noun in the sentence:

27) a) Jennifer swatted Steve.
b) Steve swatted Jennifer.

There is no difference in form between *Jennifer* in (27a), where the DP is functioning as a subject, and (27b), where it is functioning as an object. With pronouns, by contrast, there is a clear morphological difference, as we observed in chapter 1.

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[2] This sentence becomes grammatical if you put a big pause after *kissed*, but notice that in this circumstance, the *it* is not a dummy, but refers to the *puppy*.

28) a) She swatted him.
b) He swatted her.

Most pronouns in English have different forms depending upon what case they are in:

29) ***Nominative***	I	you	he	she	it	we	you	they
Accusative	me	you	him	her	it	us	you	them

Can this be extended to full DPs? Well, consider the general poverty of English morphology. The first and second persons in the present tense form of verbs don't take any overt suffix:

30) a) I walk.
b) You walk. (cf. He/She/It walk<u>s</u>. You walk<u>ed</u>.)

But one wouldn't want to claim that (30 a and b) aren't inflected for tense. Semantically they are. These forms can only refer to the present, they can't refer to the past or the future. We are thus forced to claim that there is an unpronounced or null present tense morpheme in English. It seems reasonable to claim that if there are null tense suffixes, there are also null case suffixes in English. Indeed, in the system we are proposing here all nouns get case – we just don't see it overtly in the pronounced morphology. This is called ***abstract Case***. (Abstract Case normally has a capital C to distinguish it from morphological case.)

Case, then, is a general property of Language. Furthermore it seems to be associated with a syntactic phenomenon – the grammatical function (relations) of DPs. If it is indeed a syntactic property, then it should have a structural trigger. In the case theory of Chomsky (1981), DPs are given Case if and only if they appear in specific positions in the sentence. In particular, nominative case is assigned in the specifier of finite T, and accusative case is assigned as a sister to the verb (prepositions also assign what is often called "Prepositional case" to their complement DP): [3]

31)	NOMinative case	Specifier of finite T
	ACCusative case	Sister to transitive V
	PREPositional case	Assigned by a preposition

Case serves as our motivation for DP movement. You can think of Case as being like a driver's license. You can't drive without a license, and you can only get a license at the Department of Motor Vehicles. So you have to

[3] This is an almost ridiculous oversimplification. There are many prepositional cases (datives, locatives, ablatives, jussives, etc.). We abstract away from this here. We are also ignoring the genitive case normally associated with possessive constructions.

go there to get the license. A DP needs a license to surface in the sentence, and it can only get a license (Case) in specific positions. If it isn't in one of those positions, it must move to get Case. A DP without Case can't drive. This is called the ***Case filter***:

32) *The Case filter*
All DPs must be marked with a Case.
If a DP doesn't get Case the derivation will crash.

One standard way of implementing the Case filter is by using a mechanism known as feature checking. This is based on a notion taken from phonology. The idea is that words are composed of atomic features. A word like *he* is composed of features representing its person, its number, its gender etc. We can represent these features in a matrix:

33) *he*

masculine
3rd person
singular
nominative

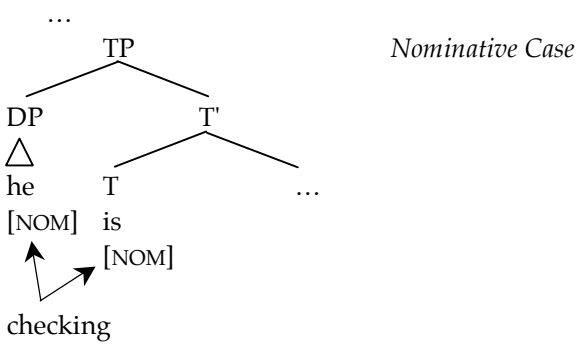
Similarly, we will claim that Case assigners like T have a feature matrix:

34) T (*is*)

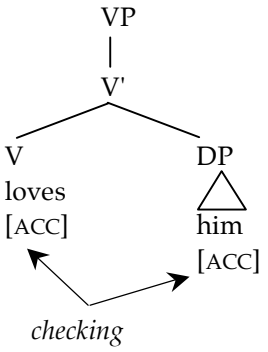
present
3rd person
singular
nominative

You'll notice that both of these feature matrices have a feature [nominative]. The Case filter becomes a requirement that a noun like *he* be close enough to a Case assigner like *is*, to check that the noun has the right features. The noun must be close to its Case assigner:

35)



36) *Accusative Case*



Ergative/Absolutive Languages

In this book, we are looking exclusively at languages that take nominative and accusative cases. These are a fairly common kind of language in the western hemisphere. In nominative/accusative languages, the same case is assigned to the subjects of transitives and the subjects of intransitives (nominative case); a different case (accusative) is assigned to the objects of intransitives.

i) *Nom/Acc languages*

	Nom	***Acc***
Trans	Subject	Object
Intrans	Subject	

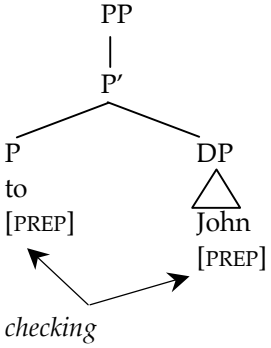
However, there is a huge class of languages that does not use this case pattern, including many Polynesian, Australian, and Central American languages. These languages, called "Ergative/Absolutive" languages, mark the object of transitives and the subject of intransitives using the same case (absolutive); subjects of transitives are marked with a different case: ergative.

ii) *Erg/Abs languages*

	Erg	***Abs***
Trans	Subject	Object
Intrans		Subject

From the perspective of structural case theory, these languages are a mystery and the subject of great debate. They don't fit the theory presented here. Even more mysterious are those languages that use *both* Nom/Acc and Erg/Abs case systems (under different circumstances). This is a topic of a lot of current research in syntax now.

37) *Prepositional Case*



If the noun and the Case assigner are not local (that is, the noun is not in the specifier or complement of the Case assigner), then the feature won't be checked and the Case filter violated. We'll use this notion of locality in feature checking again in chapter 11, when we look at *wh*-movement.

You now have enough information to try General Problem Set 3

4. RAISING: REPRISE

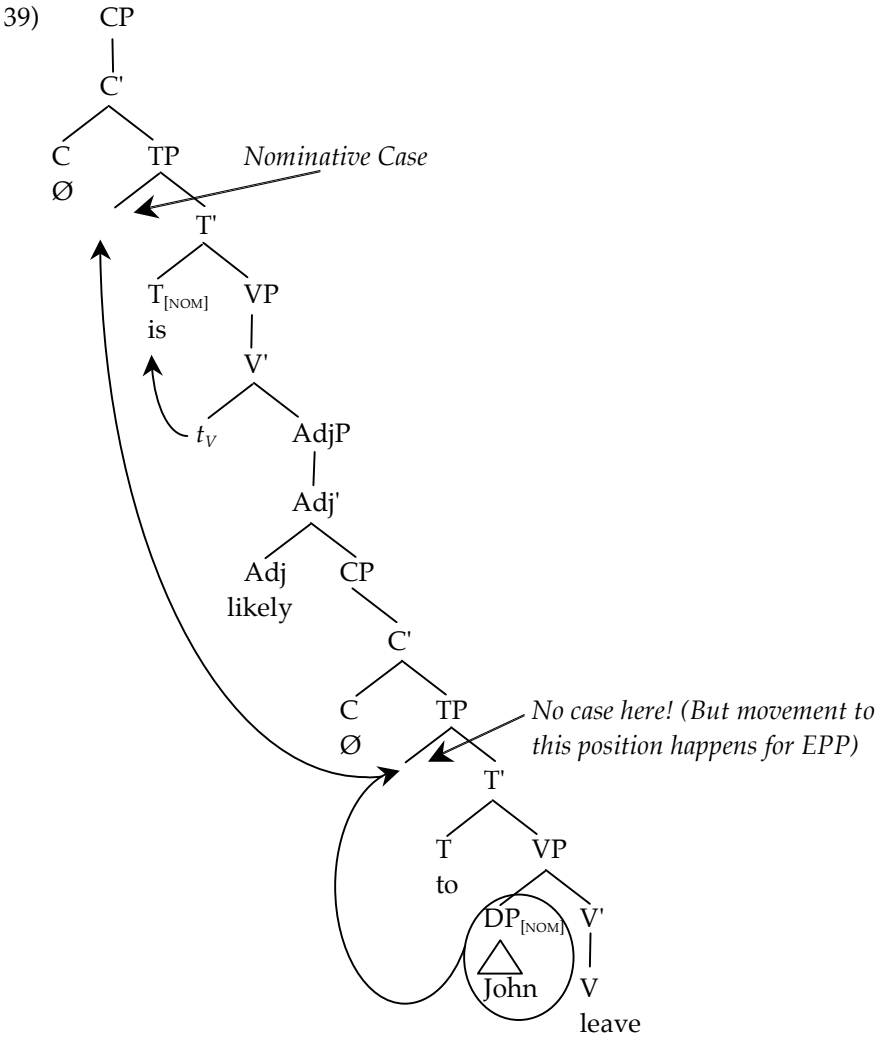
Let's now return to the raising sentences we were looking at in section 1, and we'll expand the paradigm to include the following:

38) a) It is likely that Patrick left.
b) That Patrick left is likely.
c) *Patrick is likely that t_i left.
d) *It is likely Patrick to leave.
e) *Patrick to leave is likely.
f) Patrick is likely t_i to leave.

Sentences (38a–c) involve a tensed (finite) embedded clause. Sentence (38a) shows that one can satisfy the EPP with an expletive, provided the embedded clause is finite. Sentence (38d) shows that an expletive won't suffice with a non-finite embedded clause. Sentence (38b) shows that a tensed clause can satisfy the EPP, but a non-finite one cannot (38e). Finally, we see that raising is possible with a non-finite clause (38f) but not a finite one (38c). This is quite a complicated set of facts, but it turns out that the distribution turns on a single issue. Above we saw that DPs are assigned nominative Case only in the specifier of finite T. (In other words, non-finite T does not have a [NOM] feature, whereas finite T does.) Sentences (38d–f) are *non-finite*. This means that the DP *Patrick* cannot get nominative Case in the specifier of the embed-

ded clause. The ungrammaticality of (38 d and e) are now explained: *Patrick* is not getting Case, so the sentence violates the Case filter. In sentence (38f) by contrast, the DP has moved to the specifier of the *finite* main clause T; it can receive Case here, so the sentence is grammatical:

39)



John starts out where it gets its theta role (the specifier of VP), then it moves to the specifier of the embedded TP, where it satisfies the EPP for that TP. But this is not a case position, the T *to* shows that the clause is non-finite. So the DP moves from this position to the specifier of the higher TP, where it can check its nominative Case. This is a pattern that is repeated over and

over again. DPs always move from positions where they can't check Case (but where they get a theta role) to positions where they get Case.

The distribution of raising in sentences (39a–c) is also now explained. These clauses have an embedded finite T. As such the DP *Patrick* can get nominative Case in the specifier of embedded T. It does not have to move. If it did move, it would move without reason, as it already has Case.

You now have enough information to try General Problem Set 4 and Challenge Problem Set 3

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5. PASSIVES: REPRISE

Case theory also allows an explanation of passive constructions. However, this requires an additional piece of machinery to be added to the passive morphology. Only active transitive verbs can assign accusative Case:

40) He kissed her.

Passive verbs cannot:

41) a) She was kissed.
    b) *She was kissed him.[4]
    c) *It was kissed her. (where *it* is an expletive)

It thus appears that not only does the passive suffix absorb the verb's external theta role, it also absorbs the verb's ability to assign accusative Case. This is a rough version of what is called ***Burzio's Generalization*** (after Burzio 1986): *A predicate that assigns no external theta role cannot assign accusative Case.* The passive morpheme thus has the following two functions:

42) The passive morpheme *-en*
    a) absorbs a verb's external theta role.
    b) checks a verb's [ACC] Case feature.

Recall that the *-en* suffix lowers and attaches to the V. This movement also creates a local configuration. The verb and the *-en* suffix are adjacent. In fact, the *-en* is closer to the verb than the DP.

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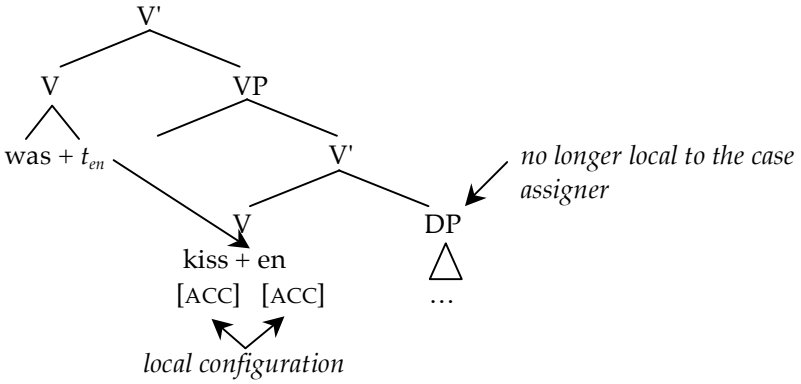
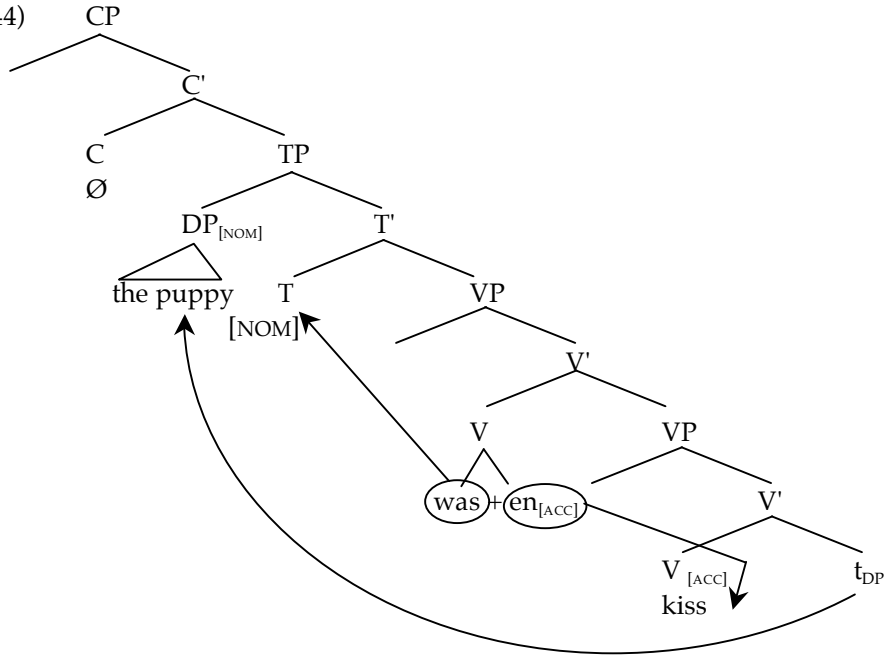
[4] This sentence is also a violation of the theta criterion.

43) …



Since the *-en* absorbs the accusative case, there is now no case for the DP, so it must move to get Case. With this in mind, reconsider the passive sentence we looked at in section 2:

44)



The passive morphology has conspired to absorb both the accusative case and the external theta role. This means that there is no DP in the specifier of the finite T. There is a Case position open so the theme DP can move to the specifier of TP. Now we have the trigger for DP movement in passives: A DP moves to get Case from its Caseless theta position to the nominative Case

assigning specifier of TP. Notice that this DP now moves for two reasons. First it moves to satisfy the EPP, but it also must move to get Case.

Inherently Passive Verbs: Unaccusatives

One of the interesting discoveries of the 1980s was the fact that there is a set of verbs in many languages that are inherently passive. That is they have only an internal argument, and they don't assign accusative case. These are called ***unaccusative verbs*** (or less commonly ***ergative verbs***). Compare the two sentences in (i) and (ii)

i) Stacy danced at the palace.
ii) Stacy arrived at the palace.

The first sentence is a regular intransitive (often called ***unergative***) where *Stacy* bears an external agent theta role. The sentence in (ii) by contrast has no external theta role. *Stacy* is a theme that originates in the object position of the sentence. *Stacy* is then raised to subject position to satisfy the Case filter, just like a passive. These predicates are passive without having any passive morphology. The arguments for this are well beyond the scope of this textbook. But note the following two differences between the predicates in (i) and (ii). The unergative predicate in (i) can optionally take a direct object. Unaccusative predicates cannot (something that is predicted, if their subject is underlyingly an object):

iii) Stacy danced a jig.
iv) *Stacy arrived a letter.

Unaccusatives also allow an alternative word order (called **there *inversion***) where the underlying object remains in object position. Since unergative subjects aren't generated in object position, they aren't allowed to appear there with *there* inversion.

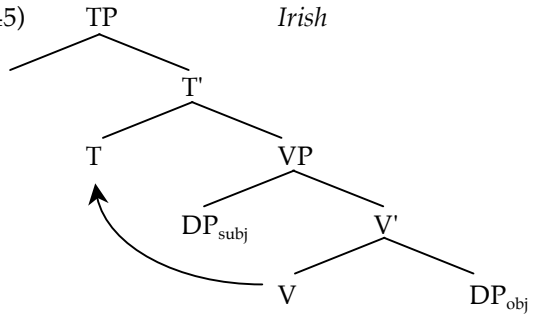
v) *There danced three men at the palace.
vi) ?There arrived three men at the palace.

You now have enough information to try General Problem Set 5

6. CLOSING UP A LOOSE END

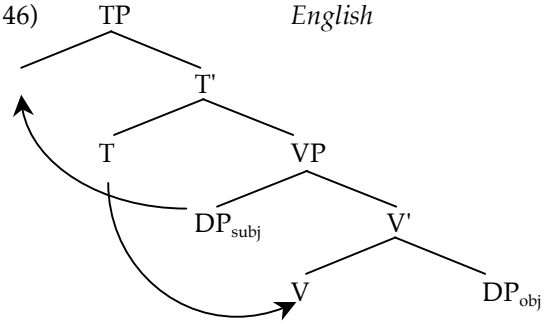
In the last chapter, we were forced to argue (on the basis of evidence from the VSO language Irish) that subject DPs were generated in the specifier of VP not TP.

45) *Irish*



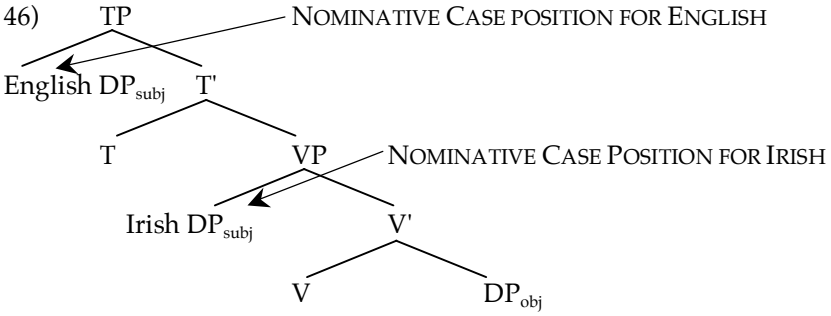
The problem, then, was why subject DPs appear before T in languages like English. The solution should now be clear: All subject DPs move to the specifier of finite T to get Case. In actives and intransitives, this is from the specifier of VP. In passives, the movement is from the underlying object position.

46) *English*



The difference between SVO languages like English and VSO languages is in where nominative Case is assigned. In SVO languages, nominative Case is assigned in the specifier of finite T. In VSO languages, nominative Case is assigned when the DP is immediately c-commanded by finite T (which allows it to remain inside VP).

46)



You now have enough information to try General Problem Sets 6 – 9

7. CONCLUSION

In this chapter, we've looked at situations where DPs don't appear in the positions we expect them to (given our knowledge of theta theory). We have argued that these sentences involve movement of DPs to various specifier positions. The motivation for this come from Case. The Case filter requires all DPs to check a Case in a specific structural position. We looked at two situations where DPs don't get Case in their D-structure position. In raising structures, a DP is in the specifier of an embedded clause with non-finite T. In this position, it can't receive Case so it raises to the specifier of the finite T in the higher clause. We also looked at passive structures. The passive morpheme does two things: it takes the role of external argument and absorbs the verb's ability to assign accusative Case. This results in a structure where there is no subject DP, and the object cannot receive Case in its base position. The DP must move to the specifier of T to get Case.

IDEAS, RULES, AND CONSTRAINTS INTRODUCED IN THIS CHAPTER

i) ***DP Movement***: Move a DP to a specifier position.

ii) ***Raising***: A specific instance of DP movement. The DP moves from the specifier of an embedded non-finite T to the specifier of a finite T in the main clause where it can get Case.

iii) ***case (lower case c)***: The special form DPs get depending upon their place in the sentence.

iv) ***Case (capital C)***: The licensing that a DP requires: Nominative is found on subjects (specifier of finite T). Accusative is found on objects (complement to V).

v) ***The Case Filter***: All DPs must be marked with Case.

vi) ***Passives***: A particular verb form where the external argument (often the agent or experiencer) is suppressed and the theme appears in subject position. The movement of the theme is also an instance of DP movement.

vii) ***The Morphology of Passives***: The suffix *-en*:
a) absorbs a verb's external theta role
b) absorbs a verb's ability to assign accusative Case to its sister.

viii) ***Burzio's Generalization***: The idea that if a verb does not assign an external argument (i.e., is passive or unaccusative), then it can't assign accusative case.

ix) ***Unaccusatives***: Inherently passive verbs like *arrive*.

FURTHER READING

Baker, Mark, Kyle Johnson, and Ian Roberts (1989) Passive arguments raised. *Linguistic Inquiry* 20, 219–51.

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Perlmutter, David and Paul Postal (1984) The 1-Advancement Exclusiveness Law. In David Perlmutter and Carol Rosen (eds.), *Studies in Relational Grammar*. Chicago: University of Chicago Press. pp. 81–125.

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GENERAL PROBLEM SETS

1. HAITIAN CREOLE

[Data Analysis and Critical Thinking; Intermediate]

In the text, we suggested that DP movement leaves what is called a trace (*t*) at the D-structure position of the DP. In English, you can't hear this trace. Now consider the following data from Haitian Creole. (Data from Déprez 1992.)

a) Sanble Jan pati.
seems John left
"It seems that John left."

b) Jan sanble li pati.
John seems he leave
"John seems he to have left."

c) *Jan sanble pati.

Questions:

1) How does this data support the idea that raising constructions involve movement from the lower clause to the higher clause, and the movement leaves a trace?
2) Is sentence (b) a violation of the theta criterion? How might we make sure that it isn't?

2. ARIZONA TEWA

[Data Analysis; Basic]

The following data is from Arizona Tewa (Data from Kroskrity 1985):

a) hę'i sen né'i 'enú mánk^{hw}ę́di.
that man this boy 3.3.hit
"That man hit this boy."

b) né'i 'enú hę'i sen-di 'ók^{hw}ę́di.
This boy that man-DAT 3.PASS.hit
"This boy was hit by that man."

c) na:bí k^{w}iyó hę'i p'o mánsunt'ó.
my woman that water 3.3.drink
"My wife will drink that water."

d) hę'i p'o nasunti.
that water 3.PASS.drunk
"That water was drunk."

1) Determine the X-bar parameter settings for Tewa.
2) Draw trees for (a) and (c). Assume Tewa is an affix lowering language.
3) Describe in your own words the differences between (a) and (b) and between (c) and (d)
4) Draw the trees of (b) and (d) showing all the movements.

3. PERSIAN ACCUSATIVE CASE[5]

[Data Analysis and Critical Thinking; Intermediate]

In the text above, we claimed that some verbs have an accusative feature [ACC] that must get checked by a complement DP. In English, we only see the realization of this feature on pronouns. This question focuses on the [ACC] feature in Persian.

[5] Thanks to Jila Ghomeshi for contributing this problem set.

Background: Persian is an SOV language. There is no Case distinction among Persian pronouns. For example, the pronoun *man* "I, me" doesn't change whether it is a subject, object of a preposition or possessor (see (a) below). (iii) shows that possessors are linked to head nouns with a vowel glossed as EZ (for *Ezâfe*).

a) i) *Man* ruznâme xarid-am.
I newspaper bought-1SG
"I bought a newspaper."

ii) Simâ az *man* ruznâme xâst.
Sima from me newspaper wanted.3SG
"Sima wanted a newspaper from me."

iii) Ruznâme-ye *man* injâ-st.
newspaper-EZ me here-is
"My newspaper is here."

Hypothesis: It looks like the clitic *-râ* (which is pronounced as *-o* or *-ro,* depending on whether the preceding word ends in a vowel or not) is the realization of the [ACC] feature based on examples like the following:

b) i) Man jiân-o didam.
I Jian-RÂ saw.1SG
"I saw Jian."

ii) *Man jiân did-am.
I Jian saw-1SG

c) i) Jiân man-o did.
Jian I-RÂ saw.3SG
"Jian saw me."

ii) *Jiân man did.
Jian I saw.3SG

d) i) Jiân in ketâb-o xarid.
Jian this book-RÂ bought.3SG
"Jian bought this book."

ii) *Jiân in ketâb xarid.
Jian this book bought.3SG

One possible analysis is that Persian verbs have an [ACC] feature that gets checked by *-râ*. That is, *-râ* contributes the [ACC] feature to the DP that can be used to check the feature of the verb.

The problem: Not all direct objects show up with *-râ*. Yet we don't want to say that the ones without *-râ* don't check the [ACC] feature of the verb.

e) i) Jiân ye ketâb xund.
Jian a book read.3SG
"Jian read a book."

ii) Jiân ketâb-o xund.
Jian book-RÂ read.3SG
"Jian read the book."

f) i) Man se-tâ qalam xarid-am.
I three pen bought-1SG
"I bought three pens."

ii) Man se-tâ qalam-o xarid-am.
I three pen-RÂ bought-1SG
"I bought the three pens."

g) i) Jiân pirhan xarid.
Jian shirt bought.3SG
"Jian bought a shirt."

ii) Jiân pirhan-o xarid.
Jian shirt+RÂ bought.3SG
"Jian bought the shirt."

Suggest a solution to this problem.

4. TURKISH

[Data Analysis, Critical Thinking; Advanced]

In this chapter, we argued that the reason DPs raise from embedded clauses to main clauses is that they cannot get Case in the embedded clause. Consider the following data from Turkish. What problems does this cause for our theory? Is there a simple way to explain why Turkish nouns raise? (Data from Moore 1998.)

a) Biz süt içiyoruz.
we milk drink
"We are drinking milk."

b) Biz$_i$ sana [$_{CP}$ t$_i$ süt içtik] gibi göründük.
We you-DAT milk drank like appear
"We appear to you [$_{CP}$ drunk milk]."

5. IMPERSONALS IN UKRAINIAN, KANNADA, AND IRISH

[Data Analysis; Intermediate]

(The Ukrainian and Kannada data are taken from Goodall 1993. The Ukrainian data originally comes from Sobin 1985. The Kannada data is originally from Cole and Sridhar 1976. The Irish data is slightly modified from Stenson 1989.)

Many languages contain a construction similar to the passive called ***the impersonal passive***. Consider the following data from Ukrainian, Kannada, and Irish. Pay careful attention to the Case marking on the various nouns.

a) Cerkvu bulo zbudovano v 1640 roc'i. *Ukrainian*
Church-ACC was built in 1640 year
"The Church was built in the year 1640."

b) Rama-nannu kollalayitu. *Kannada*
Ramma-ACC kill.PASS
"Rama was killed."

c) Buaileadh iad sa gcluife deireanach. *Irish*
beat.PAST.PASS them.ACC in the game last
"They were beaten in the last game."

What is the difference between these impersonal passive constructions and more traditional passives of English? Suggest a parameter that will account for the difference between languages like Ukrainian, Kannada, and Irish and languages like English. (Hint: the parameter will have to do with the way the passive morphology works.)

6. ENGLISH

[Application of Skills; Basic to Advanced]

Draw the D-structure trees for the following sentences. Be explicit about what transformations derived the S-structure tree (if any). Recall that we have the following transformations: Expletive insertion, DP movement (both raising and passive), affix lowering, verb movement, T $\rightarrow$ C movement, and *do*-support/insertion. Annotate the D-structure tree with arrows to show the derivation of the S-structure.

a) Marie is likely to leave the store.
b) The money was hidden in the drawer.
c) Donny is likely to have been kissed by the puppy.
d) It seems that Sonny loves Cher.
e) Has the rice been eaten?

7. English Ungrammatical Sentences

[Application of Skills; Basic to Intermediate]

Explain why the following sentences are ungrammatical. Some sentences may have more than one problem with them.

a) *It seems Sonny to love Cher.
b) *Bill was bitten the dog.
c) *Donny is likely that left.

8. Unaccusatives and Passives

[Critical Thinking; Advanced]

In a textbox above, we mentioned the existence of a class of verbs that are essentially inherently passive. These are called unaccusatives. A surprising property of unaccusative verbs is that they don't allow passivization.[6] (Data from Perlmutter and Postal 1984.)

a) The Shah slept in a bed.
b) The bed was slept in by the Shah.
c) Dust fell on the bed. *unaccusative*
d) *The bed was fallen on by the dust. *unaccusative*

Similar effects are seen in the following Dutch sentences. Sentence (e) is not unaccusative (we call these "unergatives"), while sentence (f) is. Both these sentences are impersonal passives. English doesn't have this construction, so they are difficult to translate into English.

e) In de zomer wordt er hier vaak gezwommen.
"In the summer, there is swimming here."

f) *In de zomer wordt er hier vaak verdronken.
"In the summer, there is drowning here."

Your task is to figure out why passives of unaccusatives (like c, d, and f) are not allowed. The following data might help you:

g) Bill was hit by the baseball.
h) *Was been hit by Bill by the baseball. (passive of a passive)
i) Bill gave Sue the book.
j) Sue was given the book by Bill.
k) *The book was been given by Bill by Sue. (passive of a passive)

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[6] Strictly speaking, the data in (a–d) do not involve passivization, since the NP that is moved comes from inside a PP. The technical term for these constructions is pseudo-passivization. The differences between pseudo-passivization and passivization are not relevant to this problem set.

9. ICELANDIC QUIRKY CASE

[Data Analysis and Critical Thinking; Advanced]

In Icelandic, some verbs assign irregular case marking to particular arguments. For example, the verb *hjálpað* "help" assigns dative case to its theme argument. (Data from Zaenen, Maling, and Thráinsson 1985.)

a) Ég hjálpaði honum.
I helped him-DAT
"I helped him."

This kind of irregular case marking is called ***quirky Case*** and it seems to be linked to the theta grid of the particular predicate. The dative case is obligatorily linked with whatever noun takes the theme role:

hjálpað "help"

Agent DP	Theme DP
i	K

Dative Case

Now consider the following data from Icelandic DP movement constructions.

b) Honum$_k$ var hjálpað t_K.
him-DAT was helped
"He was helped."

c) Ég tel honum$_k$ [t_k hafa verið hjálpað t_k i prófinu].
I believe him-DAT have been helped in the-exam
"I believe him [to have been helped in the exam]."

What problem does this cause for the theory of DP movement we have proposed above? Can you think of a solution? (A number of possibilities exist, be creative.)

CHALLENGE PROBLEM SETS

CHALLENGE PROBLEM SET 1: MIDDLES AND PASSIVES

[Critical Thinking; Challenge]

Middles are English constructions that are little bit like passives. An example of an active/middle pair is seen below:

a) I cut the soft bread.

b) The soft bread cuts easily.

In (b), the theme appears in the subject position. One analysis of this order has the theme undergoing DP movement to subject position.

Consider now the following triplet of sentences. The first sentence is called a middle, the second an active, and the third a causative.

c) The boat sank. *middle*
d) The torpedo sank the boat. *active*
e) The captain sank the boat (with a torpedo). *causative*

Part 1: Describe the relationship between the active, middle, and causative in terms of their theta grids.

Part 2: Now consider the passives of sentences (c–e). Why should sentence (f) be ungrammatical, but (g) and (h) grammatical?

f) *Was sunk (by the boat).
(also * It was sunk by the boat, where *it* is an expletive)
g) The boat was sunk by the torpedo.
h) The boat was sunk by the captain (with a torpedo).

CHALLENGE PROBLEM SET 2: PASSIVES AND DOUBLE OBJECTS

[Critical Thinking; Challenge]

(For more information on the phenomenon discussed in this problem set, see Larson 1988.) English has two constructions that surface with ditranstive verbs. One is called the prepositional construction, the other the double object construction:[7]

a) I sent a book to Louis. *prepositional*
b) I sent Louis a book. *double object*

It is possible to make passives out of these constructions. But some additional restrictions on how passives work are needed. Consider the following data and posit a restriction on DP movement in passives to account for the ill-formedness of the ungrammatical sentences. Pay careful attention to sentence (g).

[7] There is a great deal of literature that tries to derive the double object construction from the prepositional construction using NP movement (see for example Larson 1988). The relationship between the two constructions is not relevant to the question in this problem set, but is an interesting puzzle in and of itself.

c) A book was sent to Louis.
d) *Louis was sent a book to.
e) *To Louis was sent a book.[8]
f) Louis was sent a book.
g) *A book was sent Louis.

CHALLENGE PROBLEM SET 3: TWO KINDS OF RAISING

[Critical Thinking; Challenge]

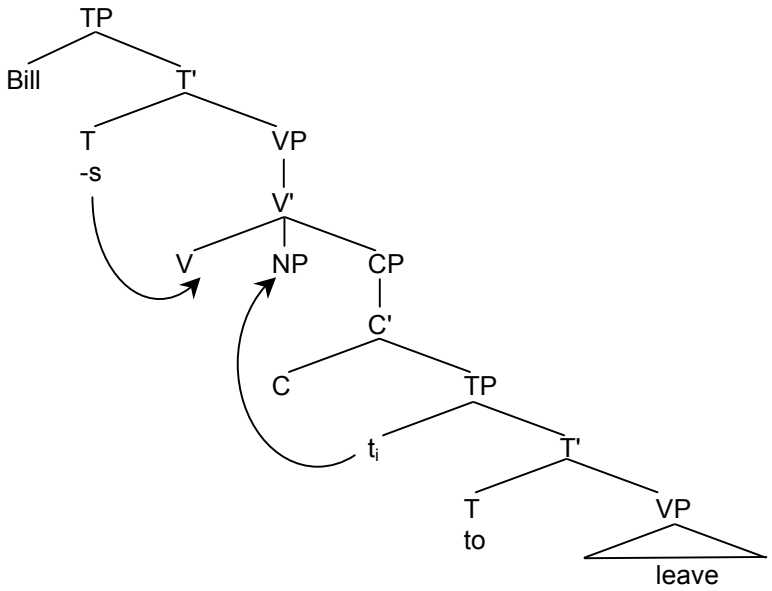
In the text, we proposed that subjects of non-finite clauses can raise to the subject position of finite clauses in sentences like (a):

a) John$_i$ seems [t_i to have left].

This kind of raising is sometimes called ***subject-to-subject raising***. Now consider the following sentence:

b) Bill wants John to leave.

This sentence should be ungrammatical, because *to* is a non-finite T, so can't assign Case to *John*. One hypothesis that has been proposed to account for this says there is also a process of ***subject-to-object raising***:



How does the following data support this analysis?

[8] This may be marginally acceptable in poetic or flowery speech. Assume for the purposes of this problem set that this is ungrammatical.

c) John wants Bill to leave.
d) John wants him to leave.
e) John believes him to have been at the game.
f) ?John$_i$ believes himself$_i$ to have been at the game.
g) *John$_i$ believes him$_i$ to have been at the game.
h) He is believed (by John) to have been at the game.