

Theta-role assignment and vP shells

1 Overview

- It was long assumed that θ -role assignment was mediated in part by the Government relation.
- A verb (phrase) had to govern an argument in order for that argument to receive a θ -role from the verb.
- This view developed under early versions of phrase structure, but once the view that sentences are IPs was adopted, this formulation ceased working well.
- Instead of reformulating Government, local θ -role assignment within the verb phrase came to be preferred. This approach does not rely Government.
- The result is the PREDICATE INTERNAL SUBJECT HYPOTHESIS.
 - This is the idea that subjects do not originate in SpecIP.
 - Rather, they move there from a lower position.
- The modern implementation of this idea is the “little” vP.
 - vP introduces external arguments in its specifier which subsequently move to SpecIP.
 - The adoption of this analysis will have effects that reverberate throughout our grammar.

Generally, I'll talk about verbs today.

This is itself an extension of Larson's (1988) VP-shell proposal, which we will also discuss below.

2 External arguments are different

- One observation, perhaps most strongly associated with Marantz (1984) is that internal arguments seem to play a more intimate role in determining the meaning of a verb.
- For example, *kill* can have a number of interpretations depending on the complement it takes.
 - (1) a. He killed a cockroach.
 - b. He killed the conversation.
 - c. He killed an evening watching TV.
 - d. He killed a bottle.
 - e. He killed an audience.
- What the agent does in each of these is fairly different, but what the agent does depends entirely on the object of *kill*.

Killing a cockroach is a very different action from killing a bottle or killing an evening.

- In some sense, then, the role of the agent is determined in part by the patient of the verb.
 - We could say that there are several different verbs *kill*, but there is a lot of redundancy here.
 - But a more elegant solution is to say that the θ role is determined by the whole verb phrase (the verb and object together) rather than just the verb.

We won't hold on to this idea, as such, for long. More important is the idea that the external role is determined somewhat independently from the verb itself, but also as part of a larger VP projection.

3 θ -role assignment under Government

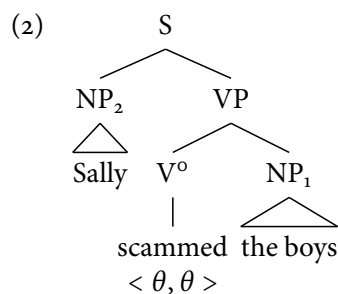
The intuition above is represented in Government-based theories of θ -role assignment, but there are problems implementing it.

3.1 A first pass with c-command

- This will be a bit of a historical perspective, so put yourself into the pre-IP view of the world.
- Under this view, external arguments were base-generated directly under S, as the sister of VP.

$S \rightarrow NP VP$

Thus, in a transitive sentence there is no movement whatsoever.



- With this view in mind, Government can be defined as mutual c-command:

- | | |
|---|--|
| <p>(3) <i>C-command</i>:
 α c-commands β iff</p> <ol style="list-style-type: none"> α does not dominate β; β does not dominate α; the first branching node dominating α also dominates β; and α does not equal β. | <p>(4) <i>Government</i>:
 α governs β iff</p> <ol style="list-style-type: none"> α c-commands β, and β c-commands α. |
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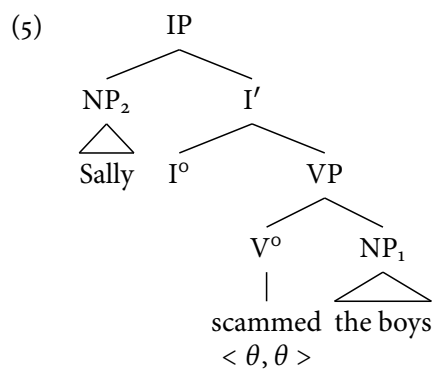
C-command definition of Government

- In (2), V governs NP₁ and VP governs NP₂.
 - The internal θ -role is assigned under Government from V.
 - The external θ -role is assigned under Government from VP.

So this formulation relies crucially on the subject NP and the VP being sisters.

3.2 Infl and m-command

- This view fell apart as soon as the view that sentences were IPs was adopted.
- The problem is that subjects are no longer the sister of VP; VP can no longer govern NP₂.



There is no longer a mutual c-command relation between VP and NP₂.

NP₂ c-commands VP, but VP does not c-command NP₂, so this is a case of ASYMMETRIC C-COMMAND.

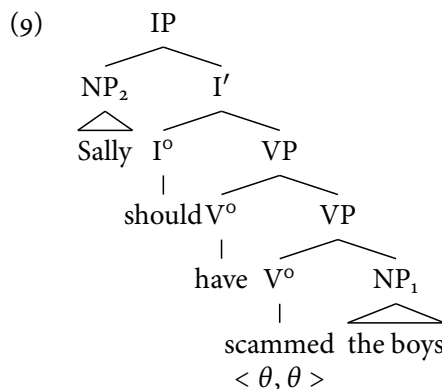
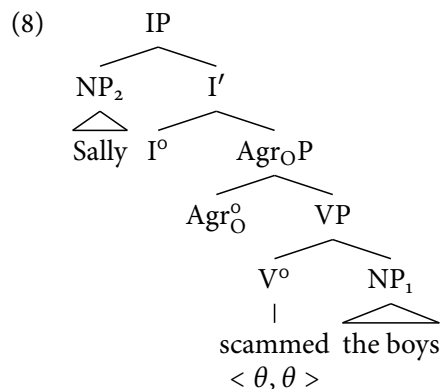
- There are two possibilities for a fix here:
 - VP assigns its θ -role to I⁰ under Government, and then I⁰ reassigns the θ role to NP₂ as part of a spec-head relation.
 - Restate Government in terms of m-command:

- (6) *M-command*:
 α m-commands β iff
- α does not dominate β ;
 - β does not dominate α ;
 - every maximal projection dominating α also dominates β ; and
 - α does not equal β .

- (7) *Government*:
 α governs β iff
- α m-commands β , and
 - β m-commands α .

M-command definition of Government

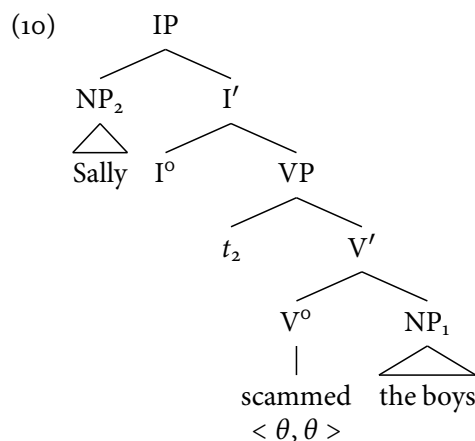
- But even these changes have their problems. If any projection intervenes between IP and the verb, the Government relation will be interrupted.



The book discusses Agr_{OP}, but assuming that auxiliaries are generated as heads below I⁰ (Travis 1984), the same problem arises.

3.3 The Internal Subject Hypothesis: No Government necessary

- Rather than try to re-revise the definition of Government, it is possible to simply reconceptualize how external arguments interact with the syntactic structure.
- Rather than assuming that external arguments are base-generated in SpecIP, we assume instead that they move to this position.
- This allows all θ -roles associated with a verb to be assigned in VP.



We can still capture the intuition that the object and verb together since V' is a constituent.

- There were already some clues that this is on the right track:
 - For instance, the subjects of passives and unaccusative verbs – internal arguments – had already been thought to originate inside of VP.
 - This just gives external arguments a similar treatment.
- Notice, too, that this brings another, Minimalist advantage: We need not refer to Government to explain θ -role assignment.
 - We need only refer to primitive relations inside of the VP.
 - The internal argument receives its θ -role under a head–comp relation.
 - The external argument receives its θ -role under a spec–head relation.

See, for instance, Perlmutter 1978.

This is compatible with the idea that θ -roles are assigned at Merge (TARF), discussed in the previous chapter.

4 Empirical evidence for internal subjects

- The book presents several points of evidence supporting the idea that subjects begin life in a position lower than SpecIP.
 1. Idioms and raising
 2. The coordinate structure constraint (csc)
 3. Binding
 4. Floating quantifiers
 5. vso orders
- I'll talk about the most straightforward of these today: low subjects and the csc
- We can talk about idioms if there is time.

4.1 vso order and low subjects

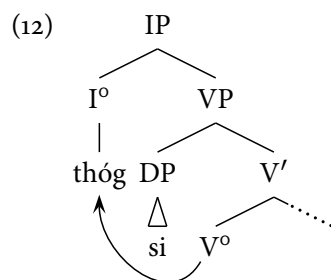
- Verb–subject–object orders in several languages can be derived by leaving a subject in a low position and moving the verb above the subject.
- Irish is, perhaps, the most celebrated case of this.

See, e.g., McCloskey 1991, 1996.

- (11) Thóg si teach dófa ar an Mhullach Dubh.
 raised she house for.them on the Mullaghduff
 ‘She built a house for them in Mullaghduff.’

Irish.

- It is generally agreed that subjects do not move to SpecIP in Irish.
- Rather, Irish has V^0 -to- I^0 (like French) but subjects remain in a lower position:



- Another case is Spanish, which is typically svo, but allows vso orders.

- (13) a. Juan comió las manzanas. b. Comió Juan las manzanas.
 Juan ate the apples ate Juan the apples
 ‘Juan ate the apples.’ ‘Juan ate the apples.’

The case of Spanish is not in the reading, but the word order alternation makes it fairly clear that there must be different positions for the subject.

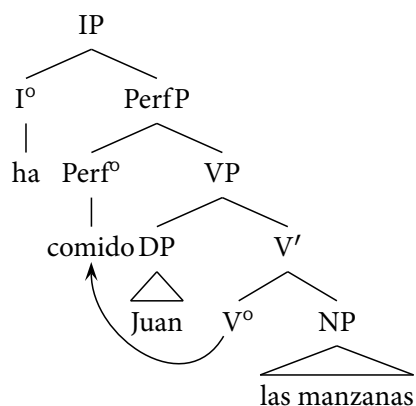
- One might think that this is simply a case of the verb optionally moving above the subject – say, from I^0 to C^0 .
- However, when we add auxiliaries to the mix, we can see that the subject must either precede all of the verbs or follow all of them. It cannot come in between, meaning that we are not simply moving a verb in I^0 to C^0 .

This would be the parallel of English subject–auxiliary inversion.

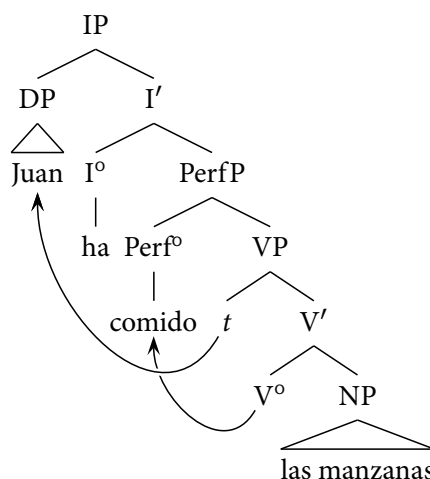
- (14) a. Juan ha comido las manzanas.
 Juan has eaten the apples
 ‘Juan has eaten the apples.’
 b. Ha comido Juan las manzanas.
 has eaten Juan the apples
 ‘Juan has eaten the apples.’
 c. *Ha Juan comido las manzanas.
 has Juan eaten the apples
 ‘Juan has eaten the apples.’

- The simplest view of this is that in vso orders, subjects remain low in SpecVP, like in Irish (Ordóñez 1998).

(15) *vso order:*



(16) *svo order:*



One complication is that we need more than one Infl position to do this (I've labeled it PerfP here); see Depiante and Vicente 2012. This is not weird – it looks like the verb almost always leaves the VP in Spanish.

- Thus, we can explain this alternation in position by appealing to the idea that the subject begins low and then only sometimes moves to the higher position.

4.2 The coordinate structure constraint

- We can infer from the Coordinate Structure Constraint (csc) that there must be movement out of active VPs.
- The csc states that it is impossible to move out conjoined XPs unless you move out of both conjuncts.

(17) Who_i do you think [Sally scammed t_i] and [Mary defrauded t_i]?

(18) *Who_i do you think [Sally scammed t_i] and [Mary defrauded Bill]?

The csc was first discovered, like so many other facts about movement, by Ross (1967).

This leads to a configuration known as Across-the-Board (or ATB) Movement, where it appears that a single element is extracted from each conjunct.

- Now, we know that the subjects of passives originate inside of VP.

(19) Sally_k was [_{VP} found t_k innocent].

- If we coordinate an active verb phrase with a passive verb phrase, then, it stands to reason that there must have been movement out of the active VP in addition to the passive VP:

(20) Sally_k [_{VP} t_k scammed Bill] but [_{VP} was found t_k innocent].

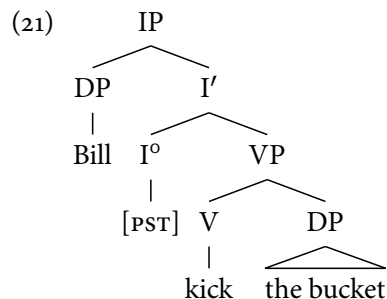
If there is movement out of the second conjunct, there must have been movement out of the first.

- Thus, assuming the csc is a strong constraint on movement, we can infer that there must be movement out of the active VP.

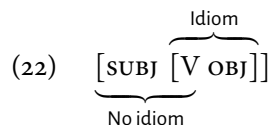
4.3 Idioms

- It appears that idioms correspond to syntactic constituents.
- For instance, in a case like *Bill kicked the bucket*, the idiomatic part of the sentence is just *kick the bucket* – the (traditional) verb phrase minus tense marking and the subject.

See, again, Marantz 1984.



- We don't seem to find idioms that include the subject and the verb but exclude the object.



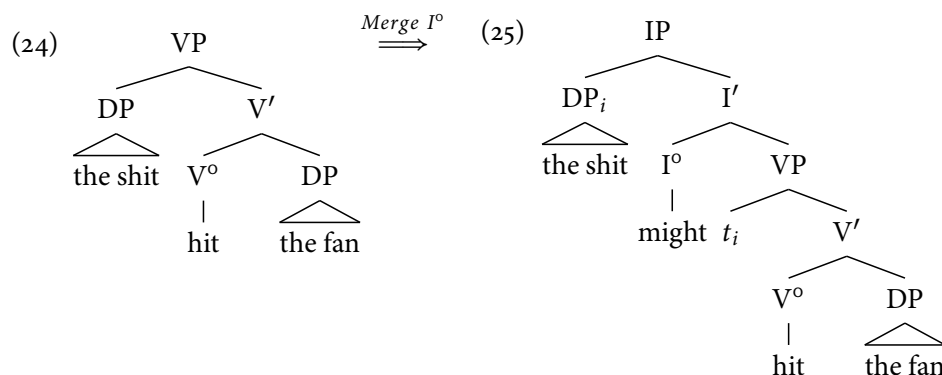
One possible exception:
Something's eating DP.

- We do, however, find idioms that include the subject, verb, and object together:

- (23) a. The shit hit the fan.
 b. The shit might hit the fan.
 c. The shit seems to be hitting the fan.

- Critically, [*the shit [hit the fan]*] is the idiomatic part of these utterances.
 - Everything else – tense, modals, auxiliaries, the raising predicate *seem* – contributes meaning, but does not affect the idiom's interpretation.
 - This suggests that there is a point in there derivation where the idiom is a constituent by itself (24), and subsequent derivation scatters the parts (25).

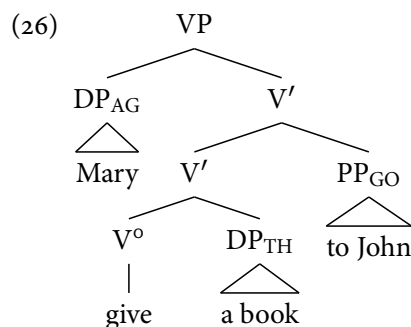
Put another way, the idiomatic interpretation persists despite all this extra material.



- So, if subjects merge in a lower position, they can form idiomatic constituents before movement.

5 Ditransitives

- Once we adopt the internal subject hypothesis, we have to deal with ditransitives – verbs that take two internal arguments. There are a few ways of doing this.
- For now, we can still assume that the external argument merges in the specifier of VP. The internal arguments could then be generated lower:



We have to stretch our \bar{X} -structure a bit to accommodate two bar levels. It may be worth questioning whether we want to do this, depending on our assumptions.

- We can assume, further, that the theme argument is more closely related to the verb than the goal argument and must therefore merge first.
- However, there are various ways we can see that this structure is misguided.
 - The big problem is that the structure here predicts that material in the theme DP does not c-command material in the goal PP.
 - This is demonstrably false.

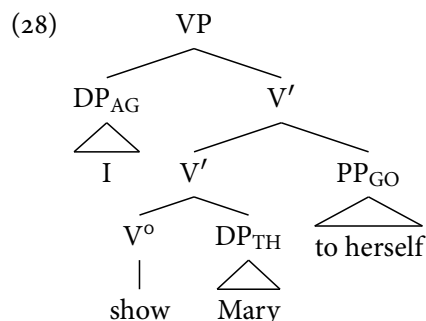
I'll discuss reflexives and quantifiers below. Hornstein et al. (2005) also discuss negative polarity items and *wh*-superiority effects.

5.1 Reflexives

- Consider the reflexive pronoun in the following two examples:

- (27) a. I showed Mary to herself.
 b. *I showed herself to Mary.

- Principle A requires that a reflexive pronoun be locally c-commanded.
- The structure in (26) cannot explain why (27a) is grammatical. *Mary* does not c-command *herself* in a tree with such a structure:



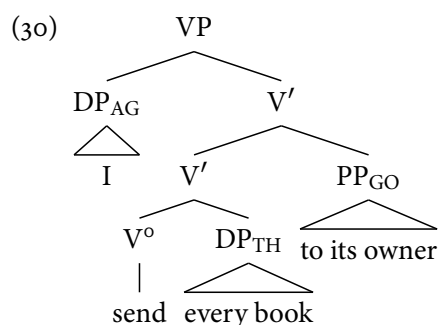
The problem with this structure is that theme should never c-command the goal, and therefore, by Principle A, it should never be able to bind a reflexive in the goal.

5.2 Quantifiers

- Consider now the relation between the DPs containing *every* and the DPs they quantify over:

- (29) a. I sent every_i book to its_i owner.
 b. *I sent her_i book to every_i student.

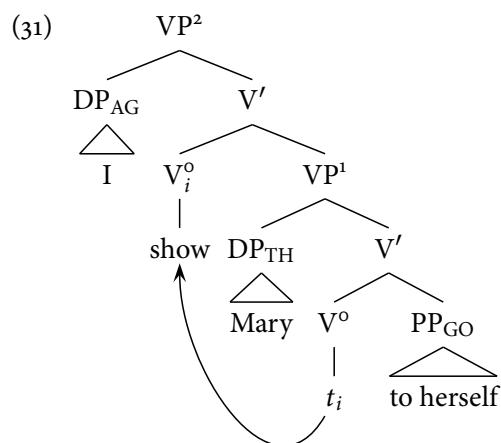
- Just as with reflexive binding, quantifiers must c-command the elements they quantify over.
- Again, the structure in (26) predicts that the theme should not be able to quantify into the goal PP in (29a) since *every book* does not c-command *its owner*:



6 Shells

- This all suggests that we some need to make sure that theme DPs c-command goal PPs. We also, of course, need to get the word order right.
- A very influential solution to this problem comes from Larson (1988), who proposes that we take what we thought was a single verb phrase and divide it up into two phrases:

On the assignment, you will look at double object constructions which lack PPs.



- The verb begins in a lower verb phrase and moves to a higher one, raising past the theme DP.
- This solves the c-command problem – the theme c-commands the goal – but what about everything we just said about θ -role assignment?

This is not unlike the derivation of vso order we saw before.

6.1 How we get there

- In order to explain things like reflexives and quantificationally bound pronouns that we need theme arguments of ditransitives to c-command goal PPs.

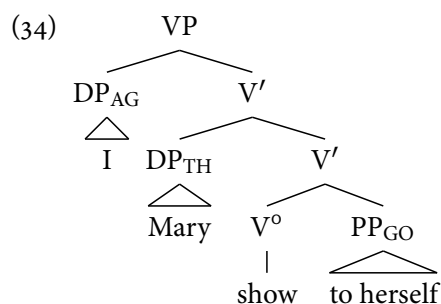
(32) a. I showed Mary to herself.

b. *I showed herself to Mary.

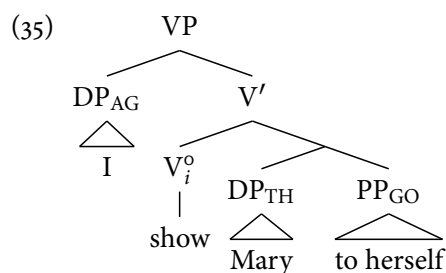
(33) a. I sent every_i book to its_i owner.

b. *I sent her_i book to every_i student.

- Doing this while respecting \bar{X} -theory and getting the word order correct is tricky.
- We could do something like what we did for subjects and assume that the theme is in a specifier of VP.



- This gets the c-command relations correct, but there are some obvious problems:
 - The word order is definitely wrong: *I Mary showed to herself.
- What we really want is something like this:



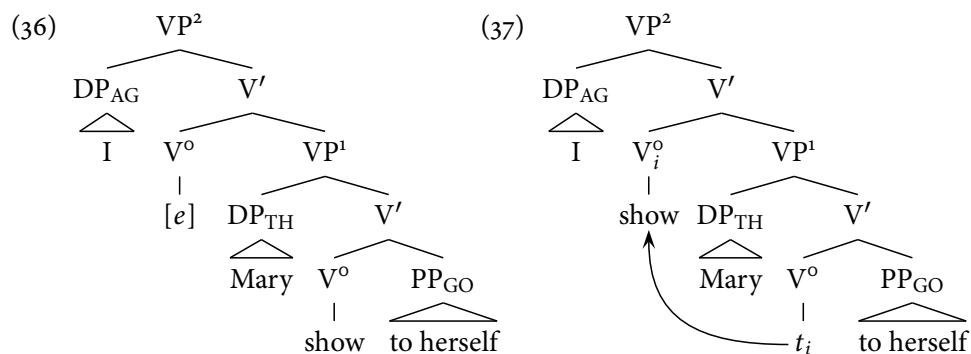
- But this still doesn't quite work:
 - Depending on your assumptions, material in the goal PP may be able to c-command the theme, predicting that (32b) and (33b) should be acceptable.
 - It violates \bar{X} -theory pretty clearly.

We also have to have multiple specifiers. We will allow this eventually, but right now we don't have good reason for doing so.

In other words, we lose the asymmetric c-command that (34) provides. This is a problem not unrelated to Part 2 of your assignment.

6.2 Multiple VP layers

- Larson’s (1988) key move was to assume that ditransitives actually introduce two VPs, or SHELLS.
- The assumption was that at D-structure the higher VP lacked a verb, and so the verb of the lower VP moves to occupy this empty position.

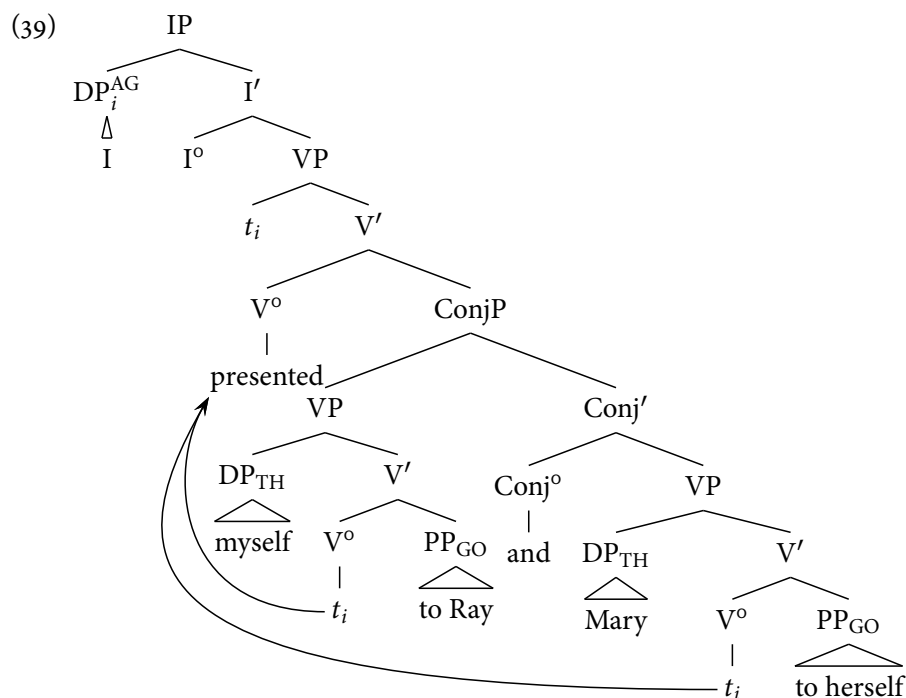


- The critical thing here is that *showed* has three θ -roles to assign, so it must move to a position where it can discharge its third θ -role.
- There is some independent evidence for verb movement in ditransitives, involving across-the-board movement:

Remember, the Coordinate Structure Constraint requires movement out one conjunct if there is movement out of the other.

(38) I presented [myself to Ray] and [Mary to herself].

- The bracketed strings must be phrasal constituents; they are coordinated.
- If they are phrases, they must have some head.
- On this analysis, those things are verb phrases that share the verb *present*.



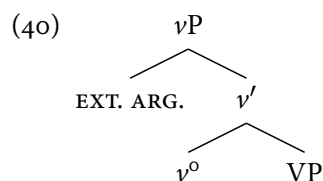
See Larson 1988: 345.

6.3 ‘Little’ v^0

- The shell analysis was a breakthrough. But it is imperfect.
 - The Theta Criterion was thought to hold at DS, but we need the verb to move to assign all of its θ -roles.
 - How is it possible for a VP – the upper shell – not to have a head? We don’t want to have empty head positions that are just placeholders.
- Building on work by Hale and Keyser (1993), Chomsky (1995) proposes that the upper verbal shell is not projected from an empty head, but from a phonetically null light verb v^0 .

Though now that we’ve seen θ -role assignment need not refer to DS, is this still a problem for us? Does TARP get around this problem?

See also Johnson 1991.

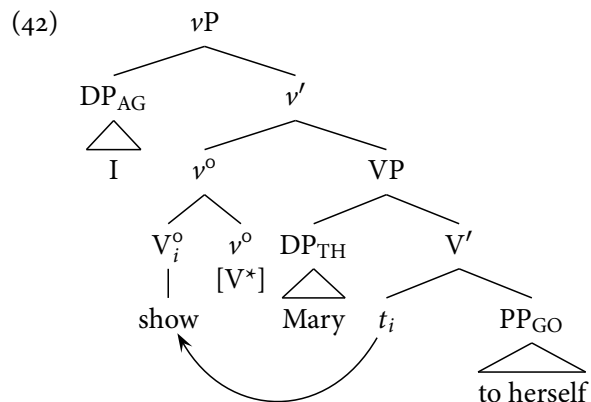


- A light verb is a verb whose meaning is heavily dependent on the meaning of its complement.
- For instance, *take* doesn’t really do anything in the following sentences except be a verb.

This is somewhat related to what I began the lecture with, with the meanings of verbs being partially determined by their objects. Light verbs, however, tend to have little meaning of their own (that is, they are semantically bleached). They are often grammaticalized from full main verbs.

- (41) a. Sally took a shower. (= Sally showered.)
 b. Sally took a nap. (= Sally napped.)

- The assumption is that v^0 has a strong [V] feature that triggers overt movement of the verb from VP.



- Some languages employ this sort of predicate formation overtly. For example, Persian (Farsi) creates verbs by combining a light verb with some non-verbal element (Folli et al. 2005).

- (43) a. time mâ unâro shekast dâd.
 team we they defeat gave
 ‘We defeated them’ Folli et al. 2005
- b. Kimea amdan be ghazâ dast zad.
 Kimea intentionally to food hand hit
 ‘Kimea intentionally touched the food.’ Folli et al. 2005
- c. Rostam hamishe harf mizan-e.
 Rostam always speech hit.PRES-3SG
 ‘Rostam always talks.’ Toosarvandani 2009: 65

- The result of this is that the external argument is introduced by v^o , whereas internal arguments are introduced in the domain of VP.

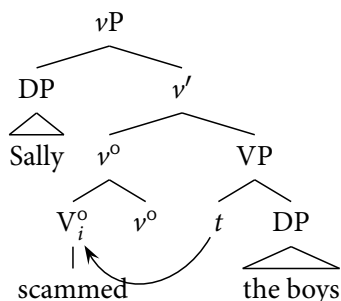
7 Beyond ditransitives

- The usual assumption nowadays is that the v^o analysis does not just explain ditransitive clauses, but all (transitive) verb phrases.
- The difference between transitive and intransitive can be modeled as whether there is a v^o or not.

7.1 Transitive verbs

- The assumption nowadays is that all transitive clauses contain v^o .

(44) Sally scammed the boys

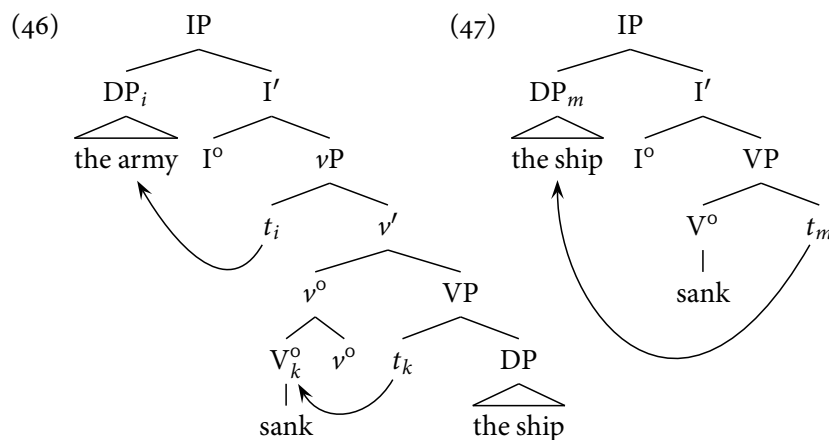


- The assumption is that v^o assigns the agent θ -role to the external argument rather than the main verb itself. For how this works semantically, see Kratzer 1996.
- That means that external roles (e.g., Agent) are assigned locally to Spec vP , whereas internal roles (like theme and goal) are assigned locally within VP.

7.2 Burzio's Generalization and unaccusatives

- Part of the reason we think this is that verbs can alternate in their transitivity. There is also a way of understanding the passive in the v^o analysis of the clause, based on the assumptions here.
- (45) a. The army sank the ship.
 b. The ship sank.

- In both sentences, *the ship* receives a patient role, and this suggests that in both examples that *the ship* is the internal argument of *sink*.
- A simple way of explaining this is that the intransitive version of *sink* doesn't come with a v^0 head to assign an agent role, but that the VP in each is the same.



An alternative view is that there is a v^0 in unaccusatives, but it is a different one than what is found in transitive clauses does not assign an external θ -role.

- What is interesting about this proposal is that Burzio (1986) proposed that verbs cannot assign accusative Case if they do not license an external θ -role.
- This suggests that v^0 is responsible for assigning accusative Case to the complement of the main verb.
 - If the object does not receive Case it must move to SpecIP to receive Case.
 - If v^0 is absent, then there is nothing there to assign Case.
- There is evidence that v^0 comes and goes in some languages; for instance, the causative suffix in Kannada:

(48) *Kannada*:

- Neer kud-i-tu.
 water boil-PST-3SG.NEUT
 ‘The water boiled.’
- *Naan-u neer-annu kud-id-e
 I-NOM water-ACC boil-PST-1SG
Intended: I boiled the water.
- Naan-u neer-annu kud-is-id-e
 I-NOM water-ACC boil-CAUS-PST-1SG
 I boiled the water.

There are some typos in the glosses in the book. I've fixed them here.

The causative morpheme comes between inflectional material and the verb, suggesting it is v^0 .

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