Syntax
Ditransitives and vP-Structure

Modul 04-006-2002
Phonology – Morphology – Syntax

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Recap

Recap VP-structure etc.:

- A transitive predicate P merges with an internal argument (IA), which becomes the sister of P (its complement), and with an external argument (EA), which forms the specifier of P (SpecP).
- Cross-linguistically, specifiers seem to be consistently linearized to the left of the lexical head. The linearization of complements relative to the head varies from language to language (and sometimes from category to category).
- Syntactic phenomena (reflexivization, negative polarity, bound variable readings, etc.) are not governed by linear order but by a relation called c-command that holds between nodes of the hierarchically organized representation that is the result of (recursive) application of Merge.
- Intransitive predicates come in two flavors: unergative and unaccusative ones. The distinction is syntactically motivated and should therefore also be reflected by different syntactic representations for the VPs projected by these predicates.

Ditransitives

Two ditransitive constructions in English (see Adger 2003 for discussion):

- In the *prepositional object* construction there are two internal arguments ("objects"): a nominal one (e.g., *the cloak*), and a prepositional one (e.g., *to Lee*) in that order.

  (1) a. Benjamin gave the cloak to Lee.
  b. Calum sent the binoculars to Nathan.
  c. Lee showed the unicorn to Benjamin.

- A variant of this construction, the *dative shift* construction, involves two nominal objects. The first object is called the *indirect/dative object* (e.g., *Lee*), the second one the *direct object* (e.g., *the cloak*).

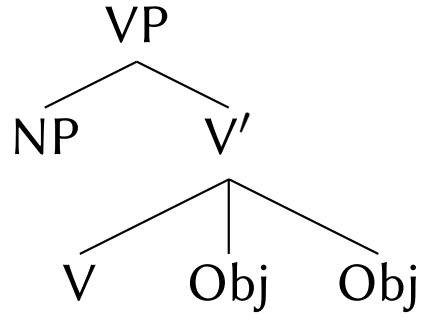
  (2) a. Benjamin gave Lee the cloak.
  b. Calum sent Nathan the binoculars.
  c. Lee showed Benjamin the unicorn.

Three hypotheses

Three hypotheses:

- (3-a) is ternary branchning. Strictly speaking, this analysis is excluded given the assumption that Merge is binary.
- (3-b) is binary left-branching. (The projection line branches to the left while the objects show up on the right.)
- (3-c) is at least partially binary right-branching. (The projection line branches to the right, with the first object being on the left. It is unclear so far whether ?P is right or left branching; in fact, it is unclear what ? is.)

(3) a.



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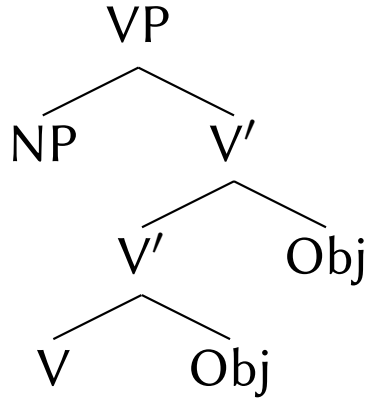

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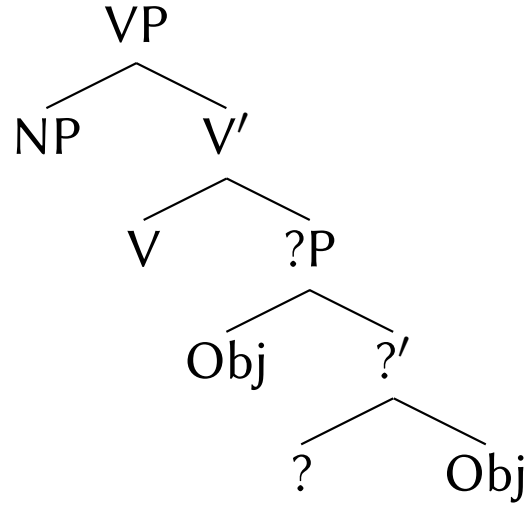


Distinguishing the hypotheses

Prepositional object construction:

- Ternary analysis: verb NP_{obj} and PP_{obj} form a constituent to the exclusion of the subject.
- Binary left-branching analysis: the same fact holds as the one mentioned for the ternary analysis. In addition, verb and NP_{obj} form another constituent to the exclusion of PP_{obj}.
- Binary right-branching analysis: there is no constituent that groups the verb together with one object (to the exclusion of the other). But there is a constituent that contains both objects without the verb and the subject (?P).

Distinguishing the hypotheses

Dative shift construction:

- Ternary analysis: the situation is the same as with the prepositional object construction.
- Binary left-branching analysis: the situation is the same as with the prepositional object construction, except that, now, verb and NP_{iobj} (vs. NP_{dobj}) form a constituent to the exclusion of NP_{dobj} (vs. PP).
- Binary right-branching analysis: the situation is, mutatis mutandis, the same as with the prepositional object construction.

Distinguishing the hypotheses: VP-fronting

VP-fronting:
In English, a verbal projection (excluding the subject) can be fronted. We already made use of this displacement process.

(4) Benjamin said he would run away and . . .

a. . . . he did [run away].

b. . . . [*run away*] he did _.

(5) Madeleine planned to catch the sardines and . . .

a. . . . she did [catch the sardines].

b. . . . [*catch the sardines*] she did _.

Distinguishing the hypotheses: VP-fronting

Predictions:

- Binary left-branching: VP-fronting should be able to affect V plus NP_{obj} to the exclusion of PP_{obj} in the PP-object construction, and V plus NP_{iobj} to the exclusion of NP_{dobj} in the dative shift construction.
- Ternary branching: Nothing of the like is predicted to be possible under this analysis.
- Binary right-branching: See ternary branching analysis. Assuming that fronting may affect ?P, too, there is the potential prediction that the two objects (either NP_{obj} plus PP_{obj}, or NP_{iobj} plus NP_{dobj}, in both cases forming ?P) should be able to undergo fronting without the verb.

Distinguishing the hypotheses: VP-fronting

No positive evidence for left-branching:

- VP-fronting of verb plus both objects is grammatical ((6-a), (7-a)).
- Fronting of verb and NP_{obj} to the exclusion of PP_{obj}, and fronting of verb and NP_{iobj} to the exclusion of NP_{dobj} is ungrammatical ((6-b) and (7-b)). Thus, there is no evidence for the constituency of V plus NP_{obj}/NP_{iobj} to the exclusion of PP_{obj}/NP_{dobj}.
- All three hypotheses are compatible with (6-a)/(7-a).

(6) a. Benjamin said he would give the cloak to Lee . . .
. . . and [give the cloak to Lee] he did.

b. Benjamin said he would give the cloak to Lee . . .
*. . . and [*give the cloak*] he did _ to Lee.

(7) a. Benjamin said he would give Lee the cloak . . .
. . . and [give Lee the cloak] he did.

b. Benjamin said he would give Lee the cloak . . .
*. . . and [*give Lee*] he did _ the cloak.

Distinguishing the hypotheses: VP-fronting

No positive evidence for right-branching:

- Fronting of ?P, which contains both objects (NP_{obj} plus PP_{obj} or NP_{iobj} plus NP_{dobj}) to the exclusion of the verb, is equally ungrammatical, see (8-a,b).
- Thus, there is no evidence for the existence of a constituent ?P.

(8) a. Benjamin thought he would give the cloak to Lee . . .
*. . . and [*the cloak to Lee*] he gave _.

b. Benjamin thought he would give Lee the cloak . . .
*. . . and [*Lee the cloak*] he gave _.

Distinguishing the hypotheses: VP-ellipsis

VP-ellipsis:
VPs without the subject can be elided (deleted) in English under appropriate circumstances. This is illustrated in (9) and (10).

(9) *Q:* Who *ran away*?
A: Mary did Δ. (Δ = *run away*)

(10) *Q:* Who *killed John*?
A: Mary did Δ. (Δ = *kill John*)

Distinguishing the hypotheses: VP-ellipsis

Predictions:

- Binary left-branching: VP-ellipsis should be able to affect V plus NP_{obj} to the exclusion of PP_{obj} in the PP-object construction, and V plus NP_{iobj} to the exclusion of NP_{dobj} in the dative shift construction.
- Ternary branching: Nothing of the like is predicted to be possible under this analysis.
- Binary right-branching: See ternary branching analysis. Assuming that ellipsis may affect ?P, too, there is the potential prediction that the two objects (either NP_{obj} plus PP_{obj}, or NP_{iobj} plus NP_{dobj}) should be elidable without the verb.

Distinguishing the hypotheses: VP-ellipsis

No positive evidence for left-branching:

- Ellipsis of the full VP (verb plus both objects) is grammatical (11).
- Eliding verb and NP_{obj} to the exclusion of PP_{obj}, or eliding verb and NP_{iobj} to the exclusion of NP_{dobj} is ungrammatical ((12) and (13)). Thus, there is no evidence for the constituency of V plus NP_{obj}/NP_{iobj} to the exclusion of PP_{obj}/NP_{dobj}.
- All three hypotheses are compatible with (11).

(11) *Q:* Who *gave the cloak to Lee*?
A: Benjamin did Δ. (Δ = *give the cloak to Lee*)

(12) *Q:* Who *gave the cloak to someone*?
A: *Benjamin (did) Δ to Lee. (Δ = *give the cloak*)

(13) *Q:* Who *gave Lee something*?
A: *Benjamin (did) Δ the cloak. (Δ = *give Lee*)

Distinguishing the hypotheses: VP-ellipsis

No positive evidence for right-branching:

- Elision of ?P, which contains both objects (NP_{obj} plus PP_{obj} or NP_{iobj} plus NP_{dobj}) to the exclusion of the verb, is ungrammatical, see (14) and (15).
- Thus, there is no evidence for the existence of a constituent ?P.

(14) Q: Who *gave the cloak to Lee*?
A: *Benjamin gave Δ. (Δ = *the cloak to Lee*)

(15) Q: Who *gave Lee the cloak*?
A: *Benjamin gave Δ. (Δ = *Lee the cloak*)

Interim conclusion

Conclusion:

- The constituency tests of VP-fronting and VP-deletion did not give back any positive results that would allow to distinguish the three hypotheses from another.
- Therefore, one has to look for alternative diagnostics.

Claim:
Decisive evidence for a binary right-branching analysis for the dative shift construction can be gained by making use of c-command tests.

Reflexivization in the dative shift construction

Central observation (Barss and Lasnik 1986):

- In the dative shift construction, the indirect object can figure as the antecedent of a reflexivized direct object (16-a).
- The inverse configuration is ungrammatical (16-b).

(16) a. Emily showed Benjamin$_i$ himself$_i$ in the mirror.
b. *Emily showed himself$_i$ Benjamin$_i$ in the mirror.

Recall:
We have seen that reflexivization involves c-command: a reflexive pronoun β requires a c-commanding coreferent expression α as its antecedent.

Reflexivization in the dative shift construction

Predictions:

- The ternary branching analysis predicts that both (16-a) and (16-b) should be grammatical.
- The binary left-branching analysis predicts that (16-b) should be grammatical and (16-a) should be ungrammatical.
- The binary right-branching analysis predicts that (16-b) should be ungrammatical and (16-a) should be grammatical.

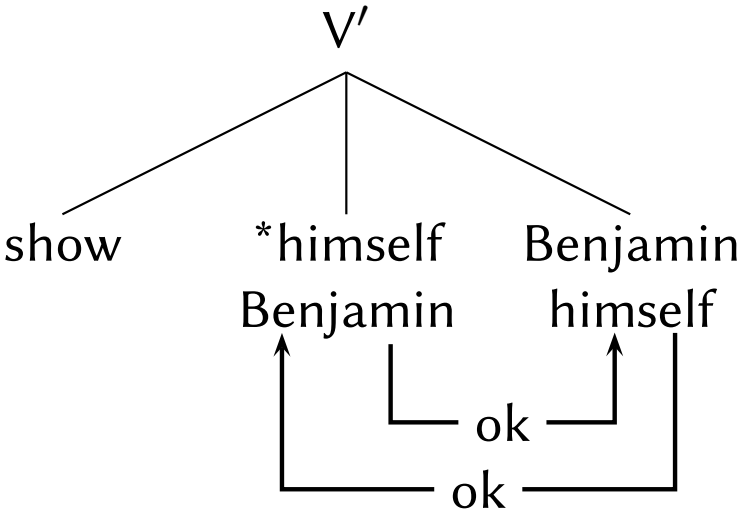
Consequence:
Only the binary right-branching analysis makes the correct predictions for the reflexivization facts when it comes to the dative shift construction. In what follows, this will be illustrated in detail.

Ternary branching and dative shift

Ternary branching:

- NP_{iobj} (Θ-role "goal") c-commands NP_{dobj} (Θ-role "theme"). Therefore, reflexivization of NP_{dobj} (with NP_{iobj} as antecedent) should be possible (correct prediction).
- NP_{dobj} c-commands NP_{iobj}. Therefore, reflexivization of NP_{iobj} (with NP_{dobj} as antecedent) should be possible (incorrect prediction).

(17)

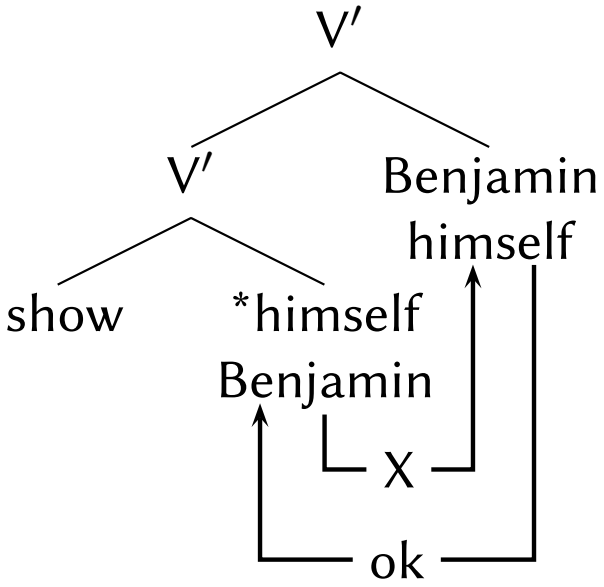


Binary left-branching and dative shift

Binary left-brancing:

- NP_{iobj} does not c-command NP_{dobj}. Therefore, reflexivization of NP_{dobj} (with NP_{iobj} as antecedent) should be impossible (incorrect prediction).
- NP_{dobj} c-commands NP_{iobj}. Therefore reflexivization of NP_{iobj} (with NP_{dobj} as antecedent) should be possible (incorrect prediction).

(18)

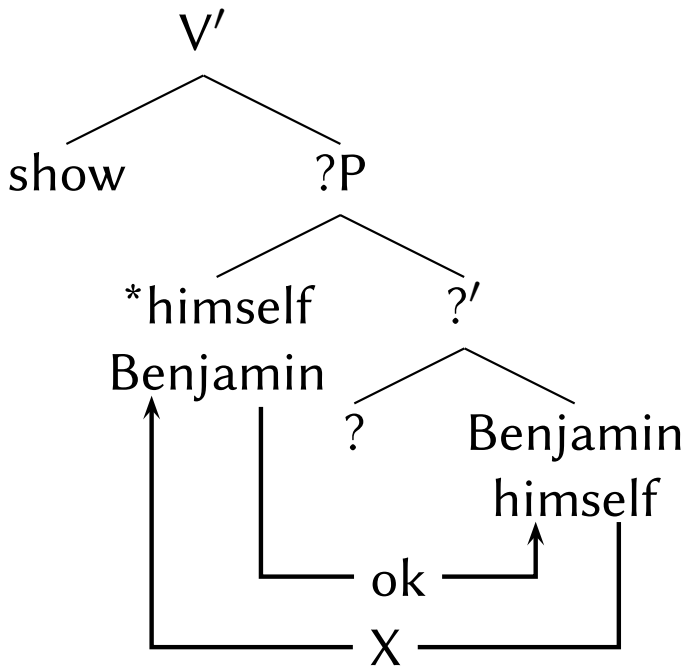


Binary right-branching and dative shift

Binary right-branching:

- NP_{iobj} c-commands NP_{dobj}. Therefore, reflexivization of NP_{dobj} (with NP_{iobj} as antecedent) should be possible (correct prediction).
- NP_{dobj} does not c-command NP_{iobj}. Therefore reflexivization of NP_{iobj} (with NP_{dobj} as antecedent) should be impossible (correct prediction).

(19)



Reflexivization in the prepositional object construction

Note:

- Strictly speaking, the same type of evidence cannot be gained on the basis of the prepositional object construction.
- In particular, in this construction there is no c-command of *himself* by *Benjamin* due to the presence of the PP-node in (20-b).
- Therefore, the ungrammaticality of (20-b) follows already from the presence of the PP, and thus (20-b) is also compatible with the ternary branching analysis and the binary left-branching analysis.

(20) a. Emily showed Benjamin$_i$ [$_{\text{PP}}$ to himself$_i$] in the mirror.
b. *Emily showed himself$_i$ [$_{\text{PP}}$ to Benjamin$_i$] in the mirror.

But:

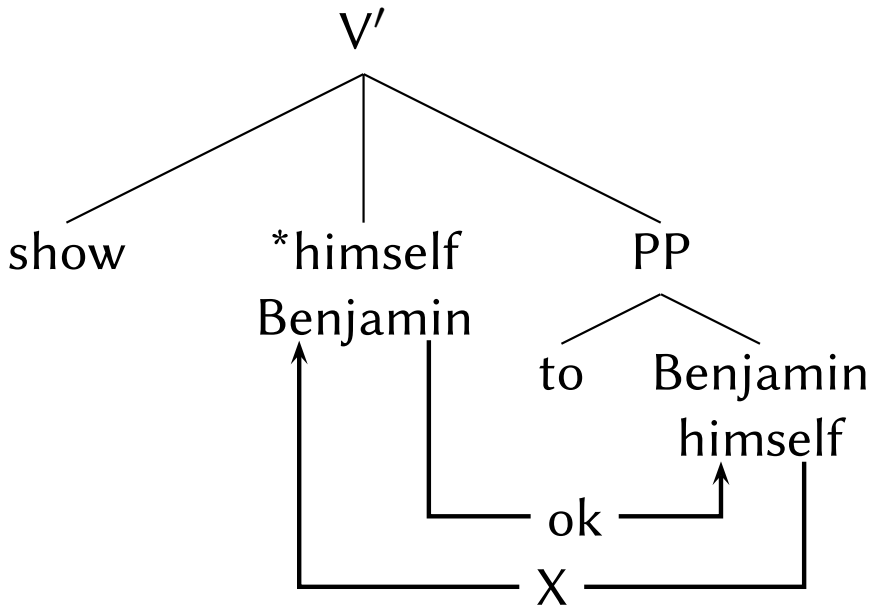
- The grammaticality of (20-a) poses a problem for the binary left-branching analysis. Therefore, this analysis can also be excluded on the basis of the prepositional object construction.

Ternary branching and prepositional objects

Ternary branching:

- The bare NP_{obj} c-commands the NP_{obj} within the PP. Therefore, reflexivization of the NP_{obj} within the PP (with the bare NP_{obj} as antecedent) should be possible (correct prediction).
- The NP_{obj} within the PP does not c-command the bare NP_{obj}. Therefore, reflexivization of the bare NP_{obj} should be impossible (correct prediction).

(21)

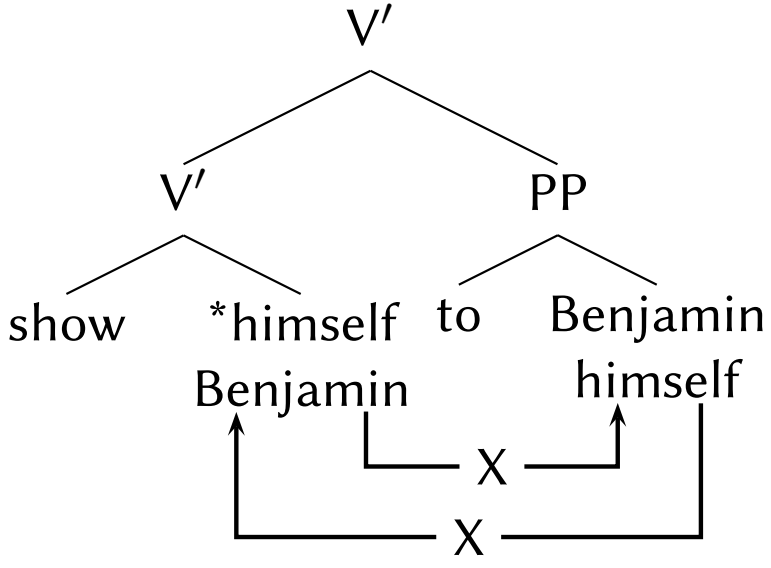


Binary left-branching and prepositional objects

Binary left-branching:

- The bare NP_{obj} does not c-command the NP_{obj} within the PP. Therefore, reflexivization of the NP_{obj} within the PP (with the bare NP_{obj} as antecedent) should be impossible (incorrect prediction).
- The NP_{obj} within the PP does not c-command the bare NP_{obj}. Therefore, reflexivization of the bare NP_{obj} (with NP_{obj} within PP as antecedent) should be impossible (correct prediction).

(22)

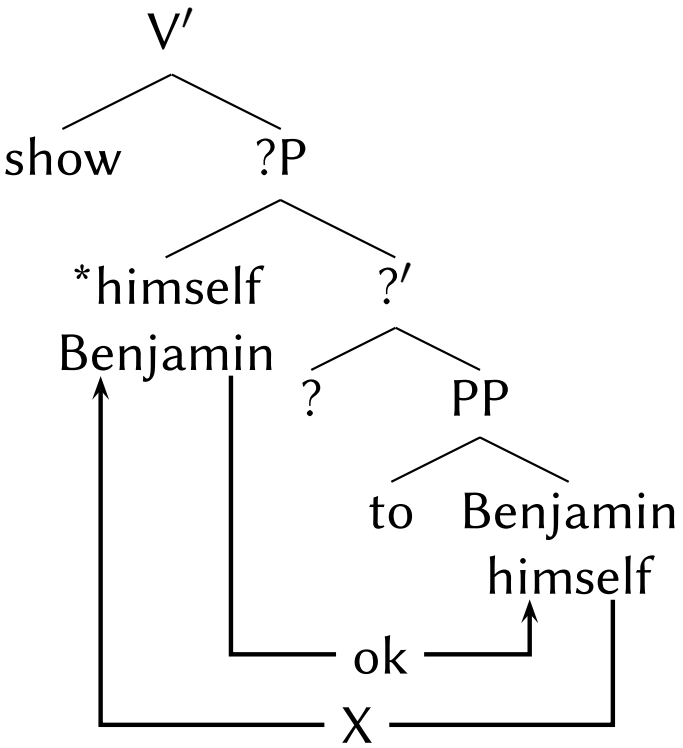


Binary right-branching and prepositional objects

Binary right-branching:

- The bare NP_{obj} c-commands the NP_{obj} within the PP. Therefore, reflexivization of the NP_{obj} within the PP (with the bare NP_{obj} as antecedent) should be possible (correct prediction).
- NP_{obj} within PP does not c-command the bare NP_{obj}. Reflexivization of the bare NP_{obj} should be impossible (correct prediction).

(23)



Summary

Results:

- According to the binary left-branching analysis, the bare NP_{obj} of a prepositional object construction should not be able to serve as antecedent for a reflexive NP_{obj} within PP. This prediction is wrong.
- Ternary and binary right-branching analyses both make correct predictions for the prepositional object construction.
- According to the ternary branching analysis, NP_{dobj} of a dative sift construction should be able to serve as antecedent for a reflexive NP_{iobj}. This prediction is wrong.
- According to the binary left-branching analysis, NP_{dobj} in the dative shift construction should be able to serve as antecedent for a reflexive NP_{iobj} but not vice versa. Both predictions are wrong.
- Only the binary right-branching analysis makes the correct predictions throughout.

Causatives and little v

Question:
What category does the mysterious "?" stand for that we made use of by formulating the binary right-branching hypothesis (see (19) and (23))?

Recall:

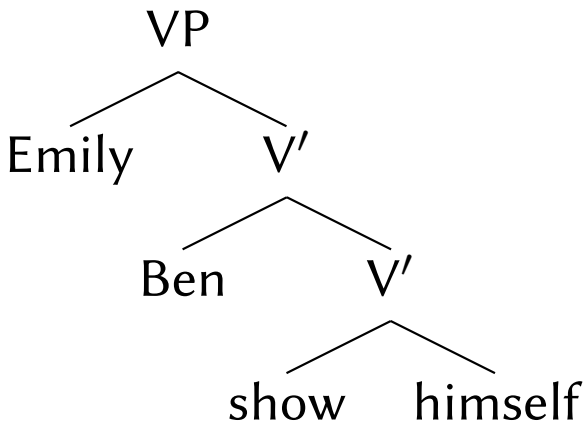
- Θ-roles are associated with C-selection features. C-selection features must be checked under sisterhood (via Merge).
- It follows that an argument that realizes some Θ-role θ is to be merged within the projection of the predicate that assigns θ.
- In the case of a ditransitive predicate this means that three arguments must be merged within VP.

Causatives and little v

Problem:

- Assuming for the moment that the structure of a ditransitive only involves a VP (and considering a dative shift construction), the following problem arises.
- One element is merged first (the NP_{dobj}, occupying the complement position of VP), and two elements are merged later (NP_{idobj} and NP_{subj}, occupying multiple specifier positions of VP).
- But this results in the wrong word order **Emily Ben showed himself*, siehe (24).

(24) *

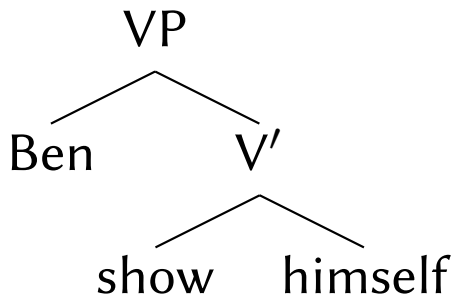


Causatives and little v

Idea:

- The mysterious ?-projection is a VP, i.e., ? = V. In this way, the Θ-roles associated with both objects can be realized locally within the verbal projection (25).
- At first sight, this rather adds a problem than solving one. Because now the word order is still wrong, and the subject has not been integrated yet. So how can the subject ever realize its agent Θ-role within VP?
- Surprising answer (Marantz 1984; Chomsky 1995; Kratzer 1996): The agent-role associated with the subject is realized outside of VP!

(25) *



Causatives and little v

Argument (Marantz 1984):

- The meaning of a verbal projection is strongly influenced by the nature of the IA (and its Θ-role), see (26) and (27). This means that verb and IA entertain a tight semantic relation.
- In contrast, the agent-role associated with the EA does not seem to be part of the meaning of VP proper because it does not influence the VP-meaning in the same way as the IA.

(26)
a. kill a cockroach ("cause it to die")
b. kill a bottle ("empty it")
c. kill a conversation ("cause it to end")
d. kill an audience ("wow them")
e. kill an evening ("while away the time span of an evening")

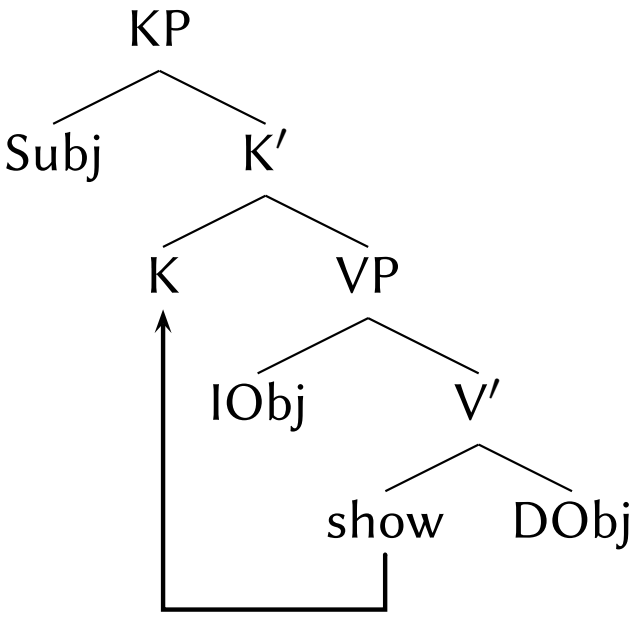
(27)
a. throw a baseball ("cause it by your arm to fly")
b. throw support behind a candidate ("promote him")
c. throw a party ("organize it")
d. throw a fit ("flip out")

Causatives and little v

Where does the agent-role come from?

- The subject realizes the agent-role in the specifier of a higher lexical head K.
- The correct word order in ditransitives then follows if the lexical verb, which is merged as part of VP, is displaced (*moved*) to the position occupied by K after having assigned its Θ-roles.
- (This is called head-movement.)

(28)



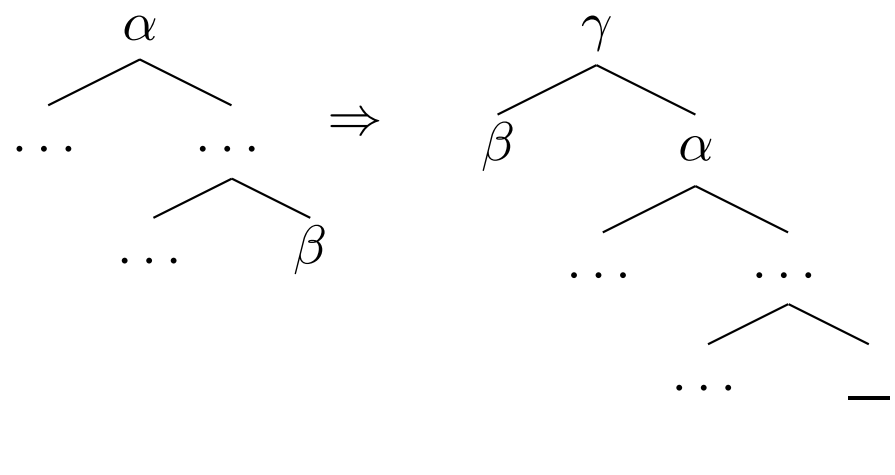
Excursion: Movement

Movement:

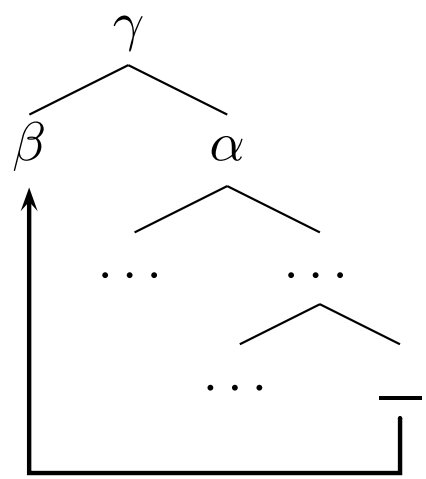
- We already presupposed that syntax exhibits displacement/ movement when we discussed constituency tests. Technically, movement can be seen as an instance of Merge (recall (29)).
- The difference between (*external*) *Merge* and Move (*internal Merge*) is that in the latter one of the elements (e.g. β) is not taken from the lexicon or from the set of objects previously created but from *inside* the other element participating in Merge (e.g., α), see (30-a,b) ((30-b) = shorthand for (30-a)).

(29) $\text{Merge}(\alpha, \beta) \rightarrow \{\alpha, \beta\}$

(30) a.



b.



Excursion: Movement

General comment:

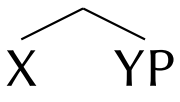
- Movement usually serves to solve an apparent contradiction: Some element α needs to occupy two different positions in order to fulfill different requirements.
- In the present case, the contractory requirements are a) local Θ-assignment by the verb to the objects, and b) linearization of the lexical verb relative to the indirect object.
- The contradiction is solved by assuming that α (in the present case: the verb) fulfills each of the requirements in a different representation, both of which are connected by the "transformation" of movement.

Excursion: Movement

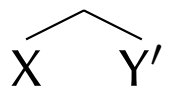
Assumptions:

- A head that undergoes external Merge only combines with a phrase (31-a-c). Moreover, a head cannot be merged as a specifier (32).
- As we will see later, these assumptions can be derived (from the *Strict Cycle Condition*), i.e., they are actually corollaries of the theory.

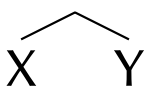
(31) a.



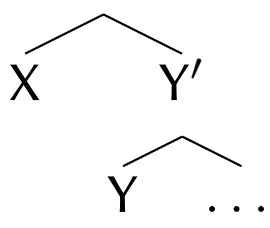
b. *



c. *



(32) *

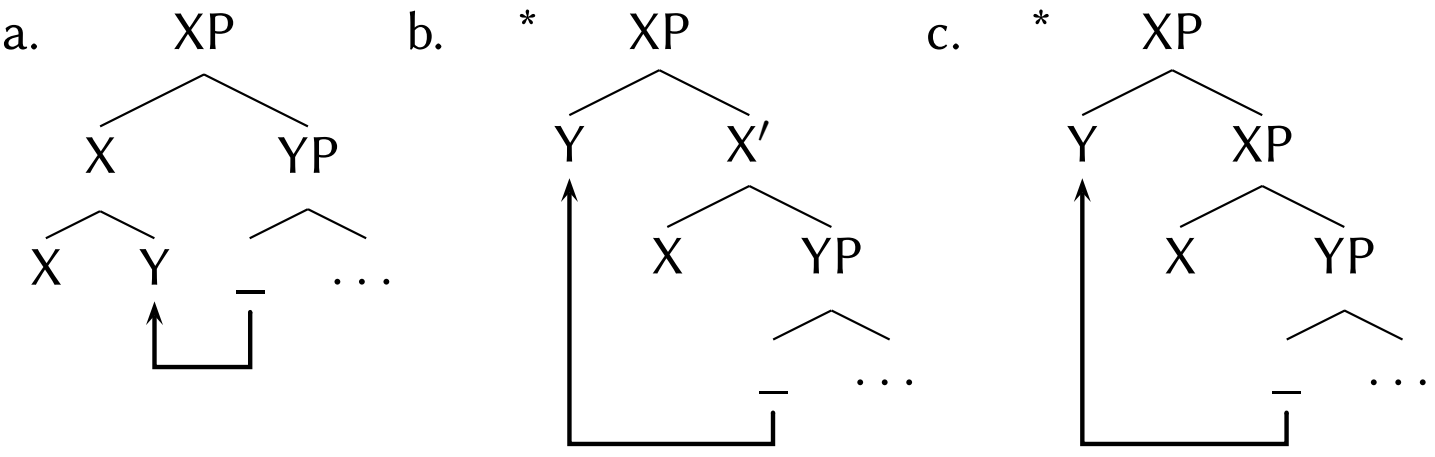


Excursion: Movement

More assumptions:

- A head that undergoes internal Merge adjoins to another head (33-a). By assumption, it cannot become a specifier of (33-b) or adjoin to a phrase (33-c).
- As we will see, (33-a) is a potential problem for strict cyclicity.

(33) a. b. * c. *



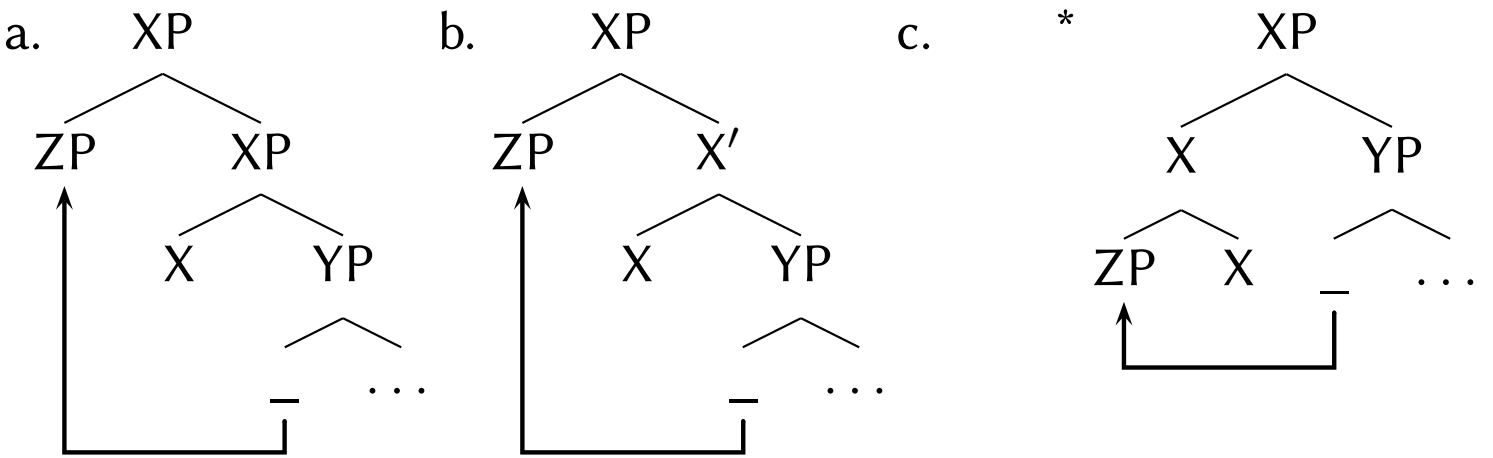
Aside:
In Matushansky (2006), it is proposed that (33-b) is in fact what happens in the case of head-movement (with a subsequent PF-operation that lowers Y, combining it with X).

Excursion: Movement

More assumptions (continued):

- A phrase that moves adjoins to another phrase (34-a) or becomes its specifier (34-b). It cannot adjoin to a head (34-c) (but: Pesetsky 2013).
- Exception to (34-c): An element that is simultaneously head and phrase can move from specifier/complement position and adjoin to a head. This would be a lexical item that does not bear any [uF]; Keyword: *cliticization*.

(34)



Hunch:

As far as I can see, these assumptions do not follow directly from anything that is independently needed in the theory. Thus, it seems that some additional principle has to be invoked (keyword: *structure preservation*).

Excursion: Movement

Question:
What happens to the position from which a category α is moved away? Shouldn't it vanish from the representation that results from movement?

Answer:

- This is an open question. There are different possibilities: a) Movement leaves nothing behind (i.e., the position moved from ceases to exist). b) Movement of α leaves a copy of α behind that is not pronounced. c) Movement leaves a new element (with properties of its own) behind, traditionally called a *trace*.
- In what follows, we will not decide between these options. Sometimes we will mark the position left by movement as __, sometimes as $\langle\alpha\rangle$ (suggesting the presence of a unpronounced copy).

Causatives and little v

Observation:
The causatives (35-a-c) are paraphrases of the ditransitives in (36-a-c). This suggests that there is a tight relation between causatives and (ditransitive) constructions without (overt) causative verb.

(35) a. Emily caused Benjamin to see himself in the mirror.
b. Benjamin caused Lee to have the cloak.
c. Benjamin caused the book to go to Ross.

(36) a. Emily showed Benjamin himself in the mirror.
b. Benjamin gave Lee the cloak.
c. Benjamin sent the book to Ross.

Causatives and little v

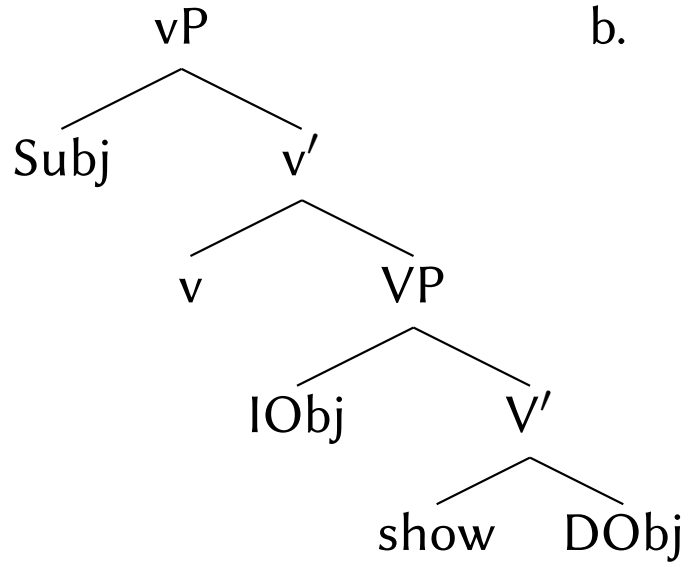
The "VP"-shell hypothesis (cf. already Larson 1988):

- The lexical head K, which in English (or German) is phonetically empty (not perceivable in the acoustic signal) encodes the causation meaning of the agent-role.
- K is usually called v (speak: "little V", Chomsky 1995); sometimes the name Voice is used instead (Kratzer 1996).
- The vP-projection is a verbal shell above VP. The EA, which realizes the agent-role, is merged as a specifier of v (Specv) (37-a). The lexical verb is displaced by movement (more precisely: head-movement) towards the causative head v and adjoins to it (37-b).

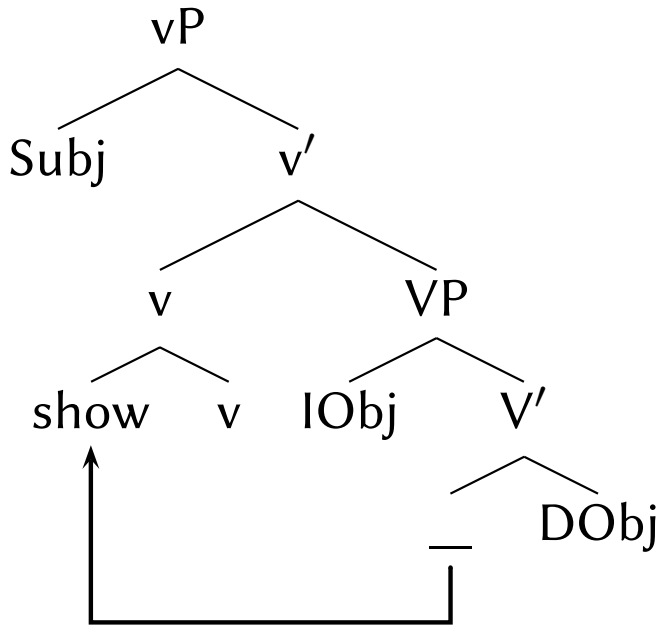
Causatives and little v

(37)

a.



b.



Causatives and little v

Note:
The fact that v is phonetically empty in English is a lexical idiosyncrasy. There are languages that realize v overtly (i.e., audibly): Chichewa (38) (e.g. Baker 1988) or Malagasy (39) (Hung 1988).

(38) Mtsikana anau-**gw**-**its**-a kuti mtsuku __.
girl AGR-fall-v-ASP the waterpot
'The girl made the waterpot fall.'

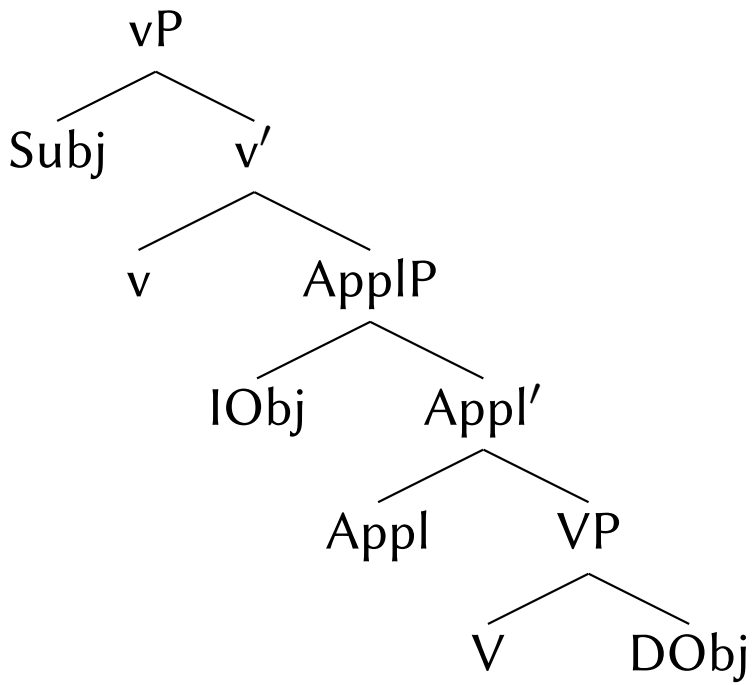
(39) M-**an**-**saga** ny lamba __ amin ny savony Rasoa
TEMP-v-wash the cloths with the soap Rasoa
'Rasoa washes the cloths with the soap.'

The Applicative Phrase

Aside:

- Sometimes, it is assumed that a second object is introduced in the specifier position of an additional head, the so called applicative head Appl.
- Under this assumption, ApplP constitutes a verbal projection in between VP and vP (40).

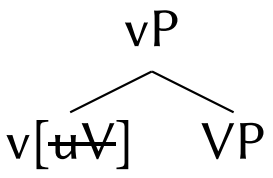
(40)



Selection without Θ-roles

Note:

- Somehow, it must be ensured that v merges with VP, and not with some other category. A way to do this is by assuming that v bears a C-selection feature [uV] (alongside its [uN] associated with the agent-role).
- So far, we have only made use of C-selectional features that are associated with Θ-roles. This changes now because VP does not realize a Θ-role of v.

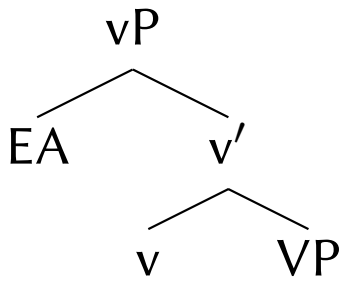
(41) Merge(v[uV], VP) → 

Unergative vs. unaccusative predicates revisited

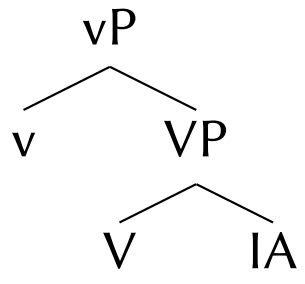
Recall:

- Last time we noted that one would like to distinguish unergative intransitive verbs (e.g., *run*) from unaccusative intransitive verbs (e.g., *collapse*) structurally (in order to solve the "linking problem" and for empirical reasons).
- This turned out to be tricky, however. The problem was that if only one argument is merged, it will always show up as the sister of the verb (no matter which Θ-role it bears), unless special assumptions are made.
- With the agent-role realized by merging the EA in Specv, this problem vanishes. The structure of unergative predicates is now given in (42-a), the structure of unaccusative predicates in (42-b).

(42) a.



b.



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