

Gapping as low coordination and ATB-movement

Johnson (2009); Vicente (2010)

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Introduction

Gapping is not (VP-)ellipsis (Johnson 2009)

Gapping and pseudogapping are superficially similar. However, while pseudogapping can be analysed as an instance of VP-ellipsis, gapping should be analysed as low (vP) coordination + ATB movement.

A note on the movement analysis of gapping (Vicente 2010)

Applying Johnson's analysis to *complex gaps*, in which the gapping site contains more elements than just a verb, requires a stipulative restriction on evacuating movement.

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1 Gapping and pseudogapping: basics

Gapping is a construction in which (at least) a finite verb in the non-initial conjunct of a coordinate structure is not realized.

- (1) Zoka reads magazines and Asia **reads** books.

More than one verb can be gapped.

- (2) Zoka has read magazines and Asia **has read** books.

Gapping is superficially similar to *pseudogapping*, in which the lexical verb is missing but the auxiliary verb is left behind.

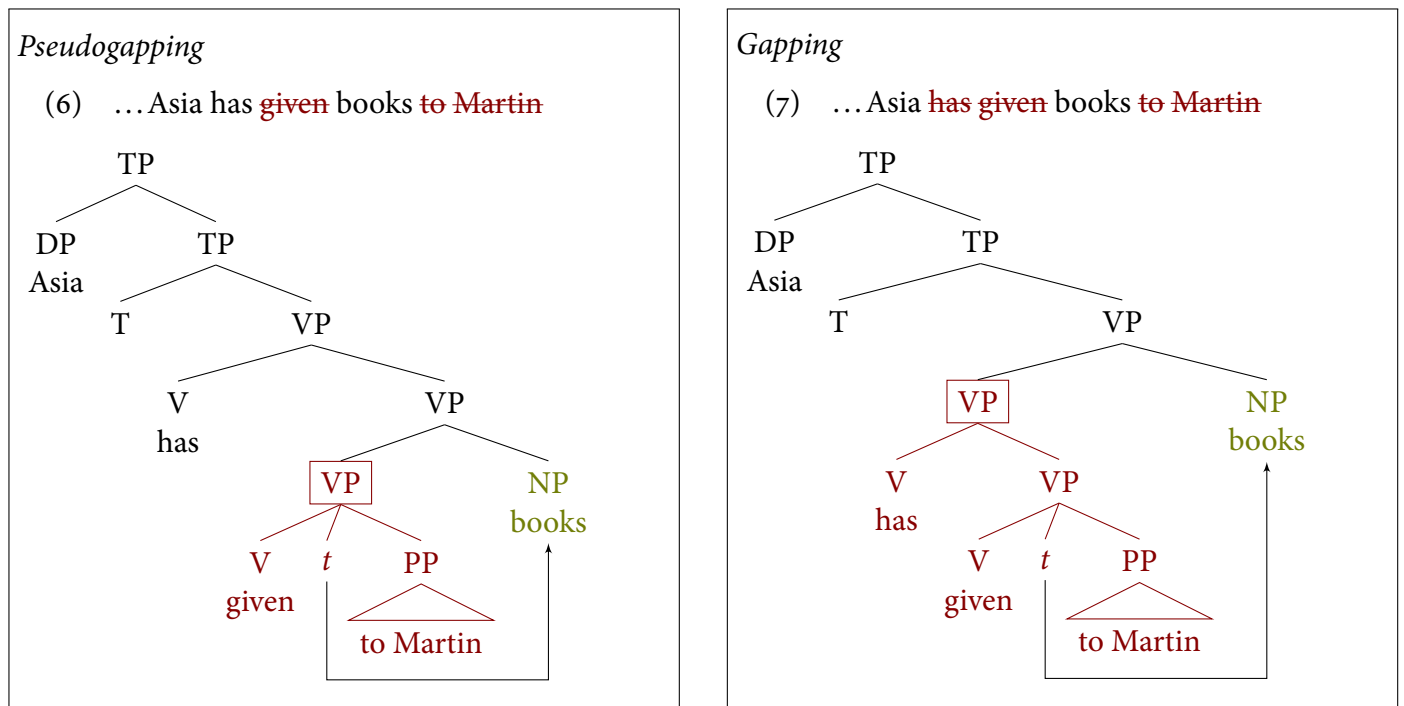
- (3) Zoka has read magazines and Asia has **read** books.

Both gapping and pseudogapping can be combined with deletion of non-verbal constituents.

- (4) a. Gapping: Zoka has given magazines to Martin and Asia **has given** books **to Martin**.
 b. Pseudo-gapping: Zoka has given magazines to Martin and Asia has **given** books **to Martin**.

Because there is no PP-ellipsis in English, the conclusion has been drawn (originally by Sag 1976) that the examples in (4) involve deletion of larger constituents, i.e. VP-ellipsis (preceded by evacuating movement of the elements that are overtly realized).

- (5) Zoka has given magazines to Martin and...



Johnson (2009) takes for granted that pseudogapping is an instance of VP-ellipsis. The question is, is this also true for gapping?

2 Similarities between gapping and pseudogapping

Johnson (2009) lists two similarities between gapping and pseudogapping (noted by Coppock 2001).

1. *Scope ambiguities*: gapping and pseudogapping exhibit the same behaviour with respect to scope ambiguities.
2. *Sloppy anaphora*: when an ellipsis has two pronouns in it, the first one cannot have a strict interpretation if the second one has a sloppy interpretation.

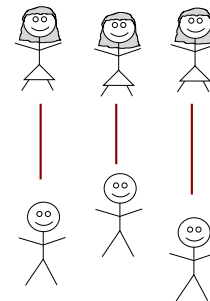
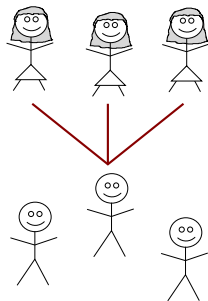
2.1 Quantifier scope ambiguities

The sentence in (8) is ambiguous.

- (8) A student will talk to every alumna.

Two possible meanings:

- “There is a student x such that for every alumna y , x talked to y ”
Surface scope reading: *a student* takes scope over *every alumna* ($\exists x \forall y$)
- “For every alumna y , there is a student x , such that x talked to y ”
Inverse scope reading: *every alumna* takes scope over *a student* ($\forall y \exists x$)



Pseudogapping fixes scope ambiguities:

- (9) A student will talk to every alumna first and Dean Edwards will **talk to every alumna** immediately afterwards.

The quantifier scope relations in the clause with ellipsis in (9) must match those in the clause that holds the antecedent VP. Because the object in the second clause cannot take scope over the subject, the object in the first clause cannot take scope over the subject either.

The same happens in a sentence with gapping:

- (10) A student will talk to every alumna first and Dean Edwards **will talk to every alumna** immediately afterwards.

The object in the first clause in (10) cannot have a wide scope reading, either.

2.2 Sloppy anaphora

When an ellipsis has two pronouns in it, the first one cannot have a strict interpretation if the second one has a sloppy interpretation.

- (11) James will explain how he'd robbed his constituents to the police detectives and Peter will **explain how he'd robbed his constituents** to the federal prosecutors.

Possible readings:

- $James_1$ will explain how he_1 'd robbed his constituents to the police detectives and $Peter_2$ will explain how he_2 'd robbed his_2 .
- $James_1$ will explain how he_1 'd robbed his constituents to the police detectives and $Peter_2$ will explain how $James_1$ 'd robbed his_1 constituents.
- ? $James_1$ will explain how he_1 'd robbed his constituents to the police detectives and $Peter_2$ will explain how he_2 'd robbed $James_1$'s constituents.
- * $James_1$ will explain how he_1 'd robbed his constituents to the police detectives and $Peter_2$ will explain how $James_1$ 'd robbed $Peter_1$'s constituents.

When a gapped fragment ellipsis has two pronouns in it, the first one cannot have a strict interpretation if the second one has a sloppy interpretation, either.

- (12) James will explain how he'd robbed his constituents to the police detectives and Peter ~~will explain how he'd robbed his constituents~~ to the federal prosecutors.

Possible readings:

- James₁ will explain how he₁'d robbed his constituents to the police detectives and Peter₂ will explain how he₂'d robbed his₂.
- James₁ will explain how he₁'d robbed his constituents to the police detectives and Peter₂ will explain how James₁'d robbed his₁ constituents.
- ?James₁ will explain how he₁'d robbed his constituents to the police detectives and Peter₂ will explain how he₂'d robbed James₁'s constituents.
- *James₁ will explain how he₁'d robbed his constituents to the police detectives and Peter₂ will explain how James₁'d robbed Peter₁'s constituents.

3 Differences between gapping and pseudogapping

Johnson (2009) lists four differences between gapping and pseudogapping.

1. *Coordination*: gapping is restricted to coordinations but pseudogapping is not.
2. *Different scope relations*: The subject of the first conjunct can bind the pronoun in the second conjunct in gapping but not in pseudogapping.
3. *Embedded contexts*: Gapping is not possible in embedded contexts but pseudogapping is.
4. *Embedded antecedent*: An antecedent can occur within an embedded clause in pseudogapping but not gapping.

3.1 Coordination

Gapping is restricted to coordinations (13) but pseudogapping is not (14).

- (13) *Some had eaten mussels because others ~~had eaten~~ shrimp.
 (14) Some had eaten mussels because others had ~~eaten~~ shrimp.

Really?

Does (14) really mean "...because others had ~~eaten~~ shrimp" and not "...because others had shrimp"?
 Is (16) equally acceptable?

- (15) *Zoka will read a magazine because Asia ~~will read~~ a book.
 (16) Zoka will read a magazine because Asia will ~~read~~ a book.

3.2 Different scope relations

The subject of the first conjunct can bind the pronoun in the second conjunct in gapping (17) but not in pseudogapping (18).

- (17) No woman_i can join the army and her girlfriend_{i/k} ~~can join~~ the navy.
 (18) No woman_i can join the army and her girlfriend*_{i/k} can ~~join~~ the navy.

3.3 Embedded contexts

Gapping is not possible in embedded contexts (19) but pseudogapping is (19).

- (19) *Some had eaten mussels and she claims that others ~~had eaten~~ shrimp.
 (20) Some had eaten mussels and she claims that others had ~~eaten~~ shrimp.

Question to the native speaker

How about (21)?

- (21) Zoka will read a magazine and she claims that Asia will ~~read~~ a book.

3.4 Embedded antecedents

An antecedent can occur within an embedded clause in pseudogapping (22) but not gapping (23).

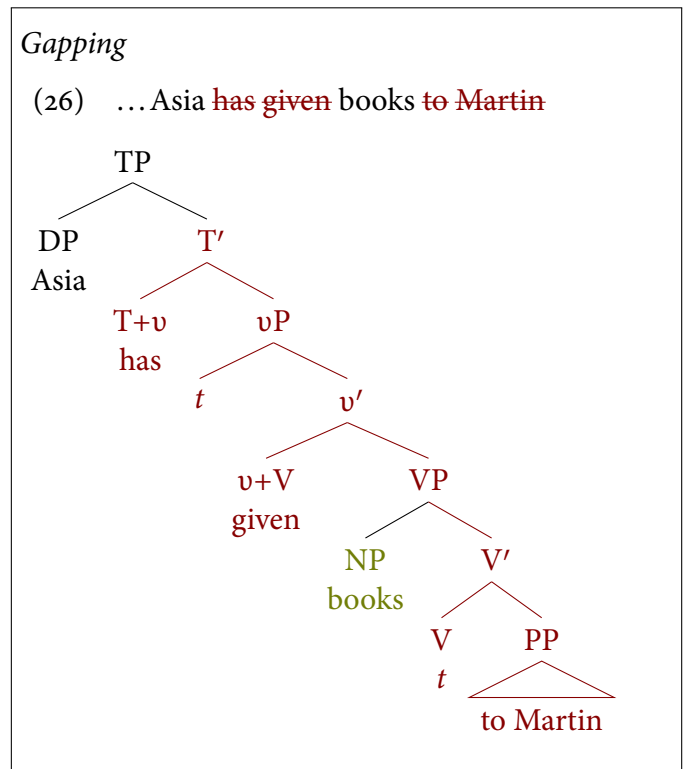
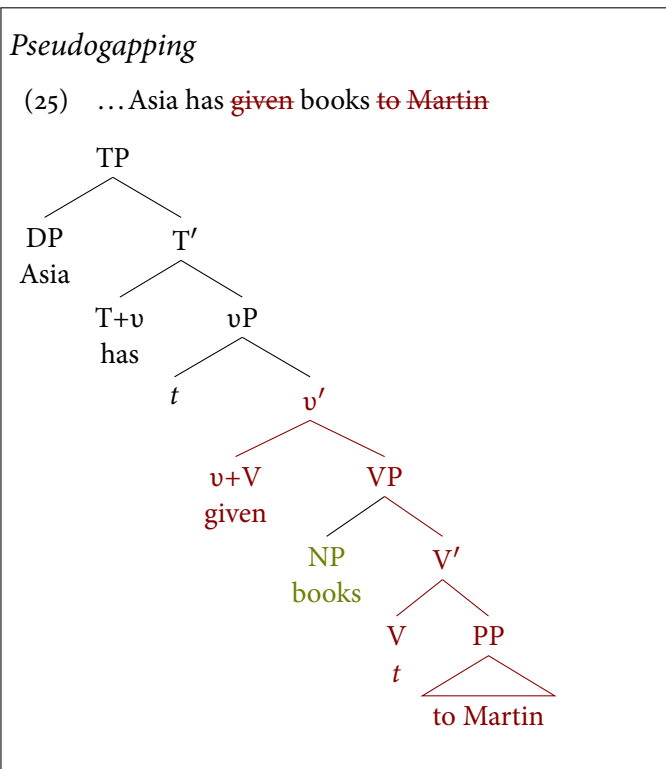
- (22) ?She has said Peter has eaten his peas, and Sally has ~~eaten~~ her green beans, so now we can have dessert.
 (23) *She has said Peter has eaten his peas, and Sally ~~has eaten~~ her green beans, so now we can have dessert.

Intended meaning:

- She has said that Peter has eaten his peas.
- Sally has eaten her green beans. (not “She said that Sally has eaten her green beans.”)
- Ergo, we can have dessert.

3.5 Extra: a structural difference

- (24) Zoka has given magazines to Martin and...

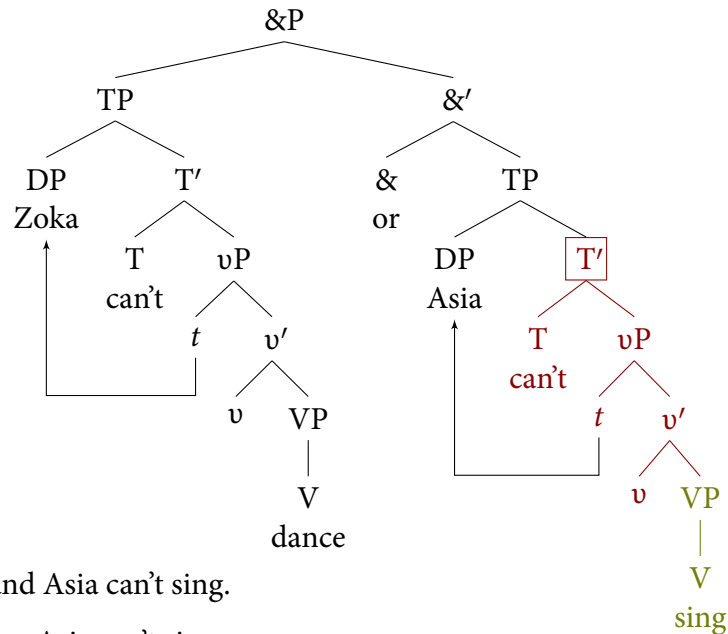


4 Gapping as low coordination + ellipsis

Johnson's proposal: Gapping = vP coordination + VP-ellipsis

- In sentences with gapping, the finite auxiliary lies outside the coordination.
- The rest of the material is deleted by VP-ellipsis.

(27) Zoka can't dance or Asia ~~can't~~ sing.



Meaning

- Zoka can't dance and Asia can't sing.
- *Zoka can't dance or Asia can't sing.

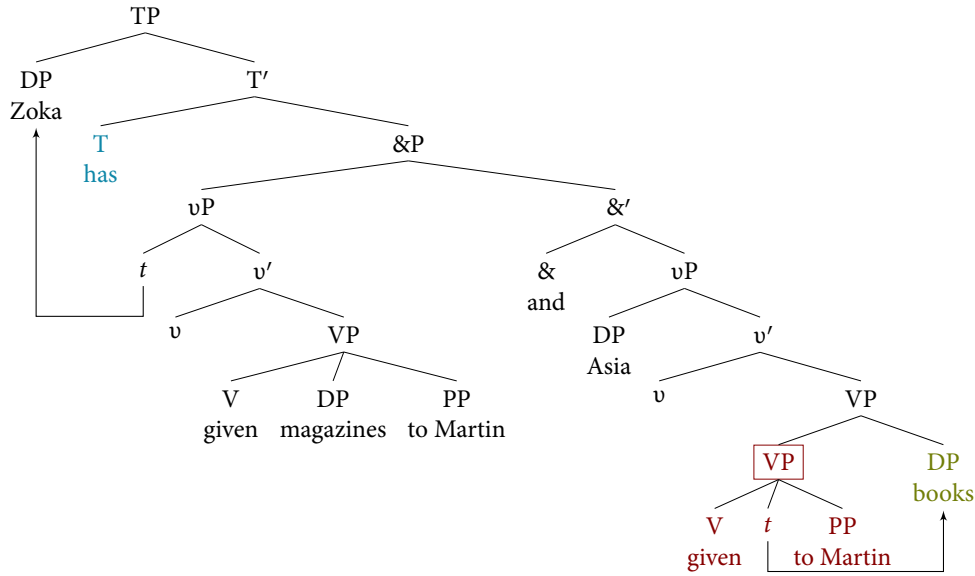
(28) Zoka ~~can't~~ dance or Asia sing.

(Space for your tree)

Necessary assumptions

- Argument movement can violate the Coordinate Structure Constraint (Ross 1967).
- Subjects start out in spec vP (and may stay there).

(29) Zoka **has** given magazines to Martin and Asia **given** books **to Martin**.



4.1 Testing the account

Let's see whether the vP-coordination + ellipsis account can derive the differences between pseudogapping and gapping.

4.1.1 Coordination in gapping and pseudogapping

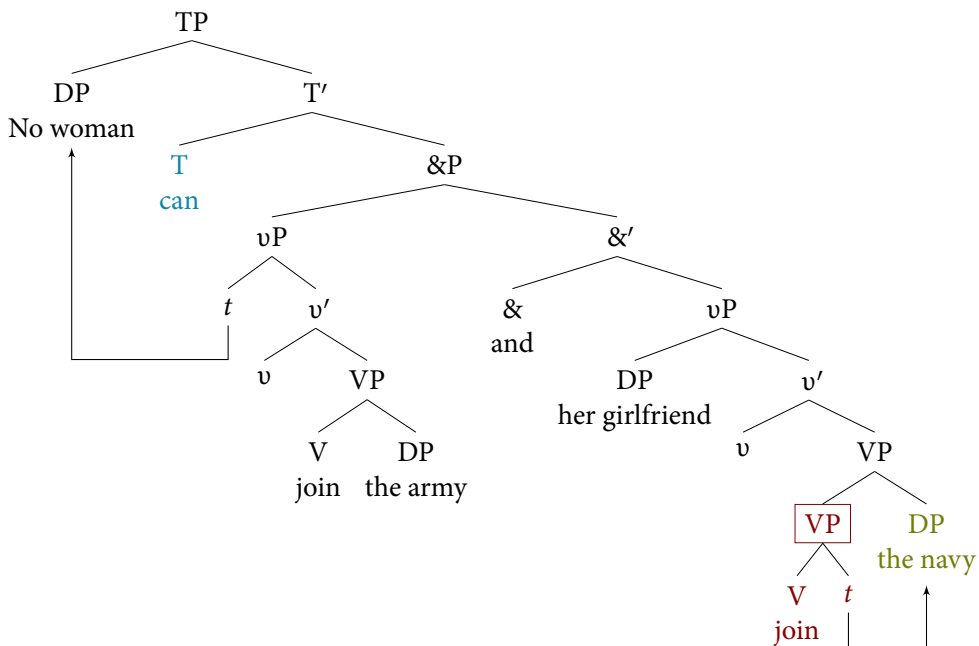
Gapping is restricted to coordinations (30) but pseudogapping is not (31).

- (30) *Some had eaten mussels because others **had eaten** shrimp.
- (31) Some had eaten mussels because others had **eaten** shrimp.

4.1.2 Different scope relations

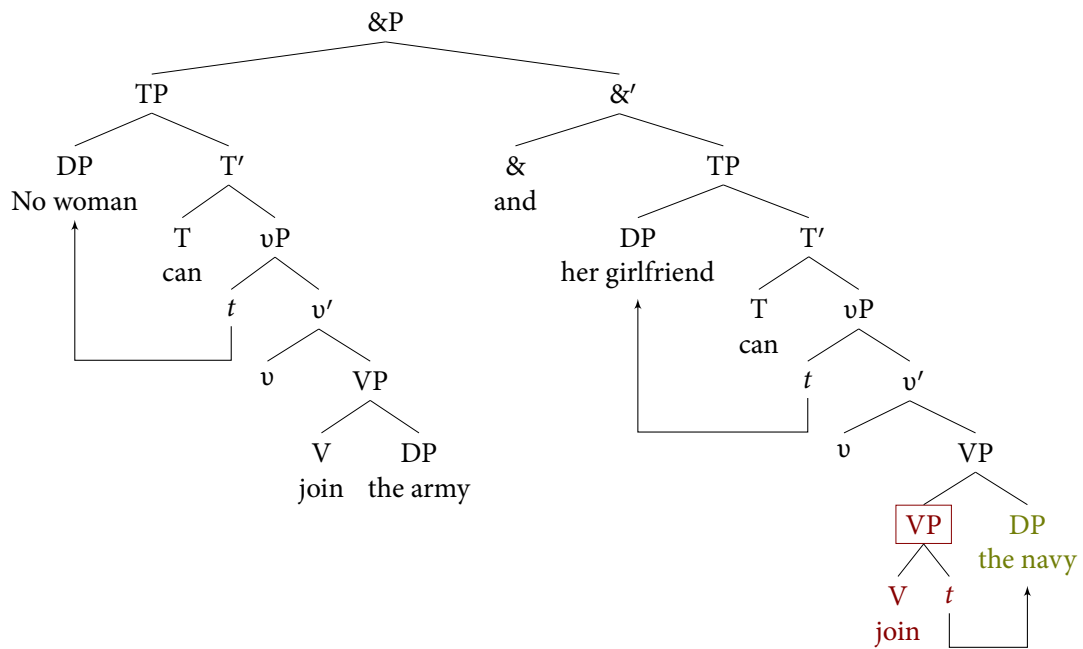
The subject of the first conjunct can bind the pronoun in the second conjunct in gapping (32).

- (32) No woman_i can **join** the army and her girlfriend_{i/k} **join** the navy.



The subject of the first conjunct cannot bind the pronoun in the second conjunct in pseudogapping (33).

(33) No woman_i can join the army and her girlfriend*_{i/k} can **join** the navy.

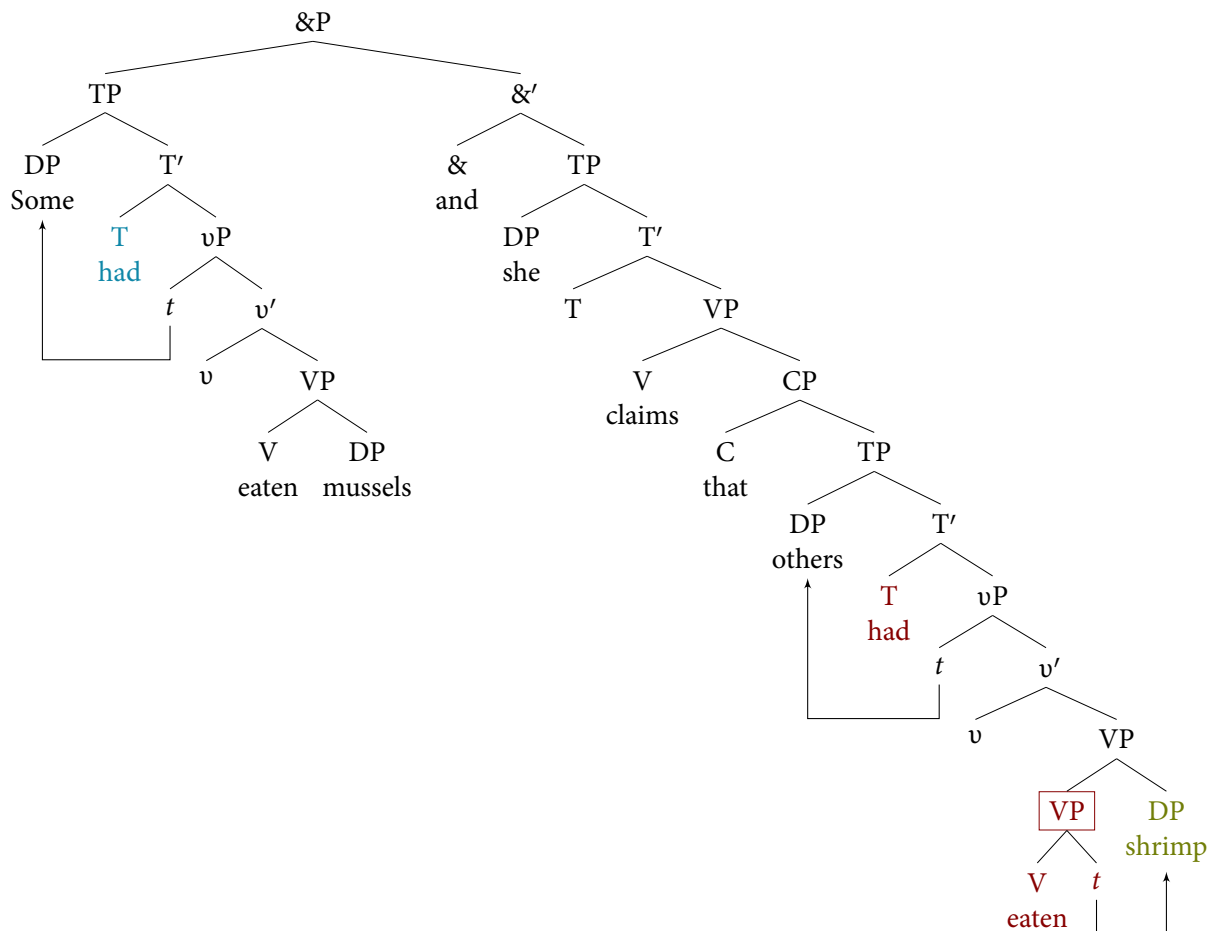


4.1.3 Embedded contexts

Gapping is not possible in embedded contexts (34), pseudogapping is (35).

(34) *Some **had** eaten mussels and she claims that others **had eaten** shrimp.

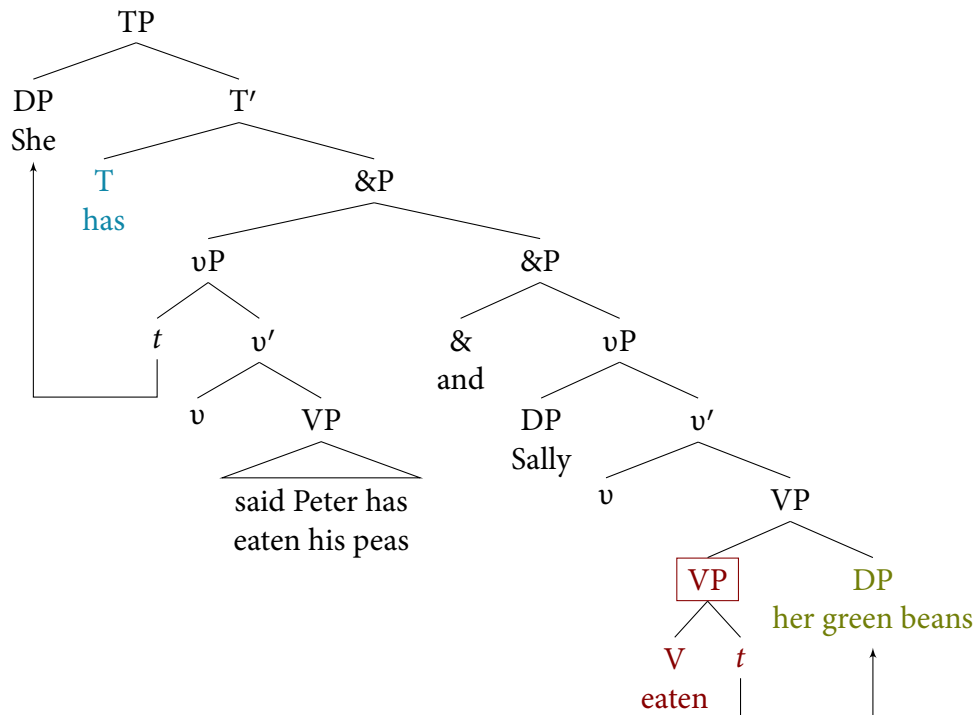
(35) Some had eaten mussels and she claims that others had **eaten** shrimp.



4.1.4 Embedded antecedents

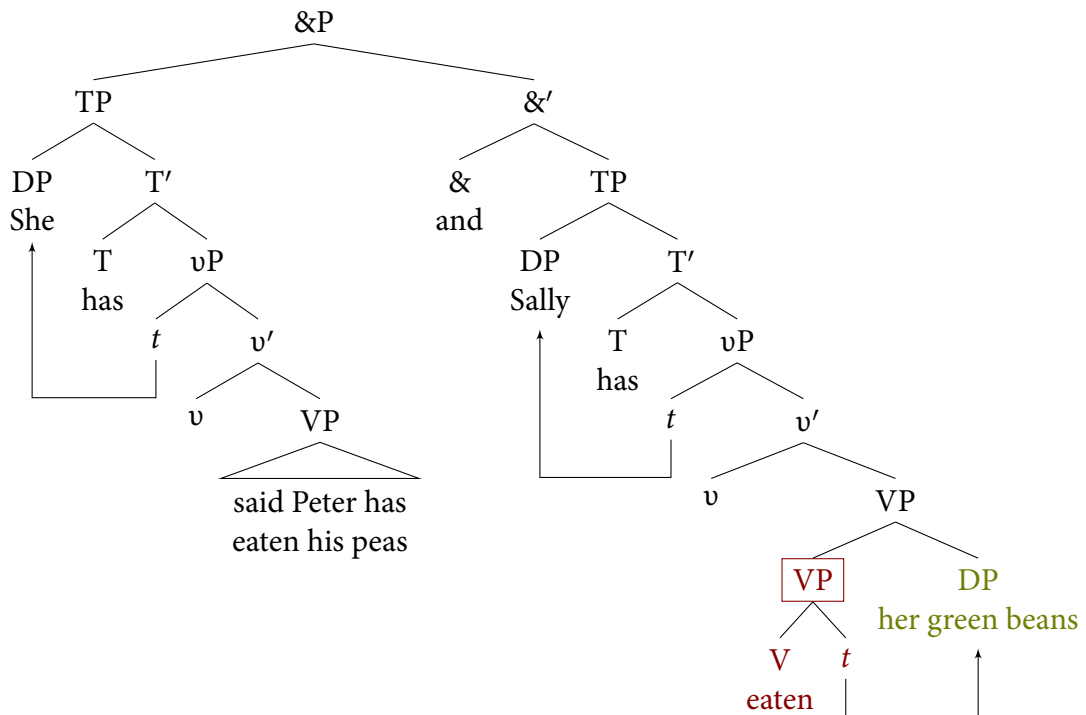
An antecedent cannot occur within an embedded clause in gapping (36).

- (36) *She has said Peter has eaten his peas, and Sally eaten her green beans, so now we can have dessert.



An antecedent can occur in an embedded clause in pseudogapping (37).

- (37) ?She has said Peter has eaten his peas, and Sally has eaten her green beans(, so now we can have dessert).



5 Replacing ellipsis

The examples in (36) and (37) and in (39)–(41), discussed below, lead Johnson to conclude that ellipsis is not licensed in clauses with gapping. He formalises this as in (38).

- (38) An elided VP must be a sister* to a licensing X. Licensing Xs in English include T and certain instances of *have* and *be*.

5.1 Triple coordinations

Another argument indicating that VP-ellipsis is blocked in clauses with gapping is related to the behaviour of examples with three conjuncts. In triple coordinations...

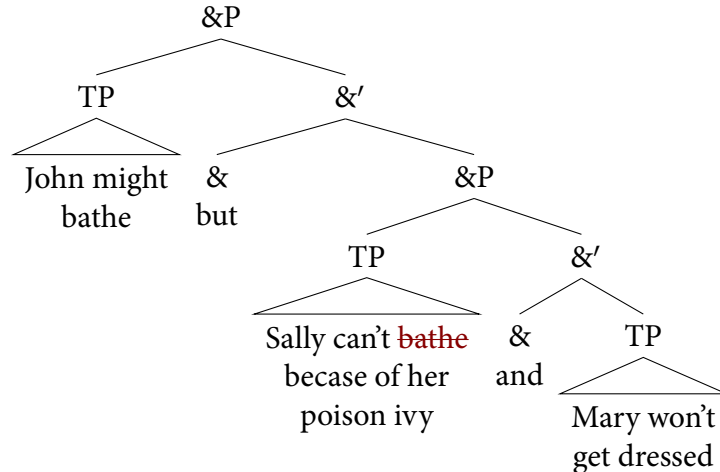
- ...it is possible to elide the VP in the second conjunct (39).
- ...it is possible to gap the auxiliary in the third conjunct (40).
- ...it is not possible to do both at the same time (41).

(39) John might bathe, but Sally can't bathe because of her poison ivy and Mary won't get dressed, so we may as well give up.

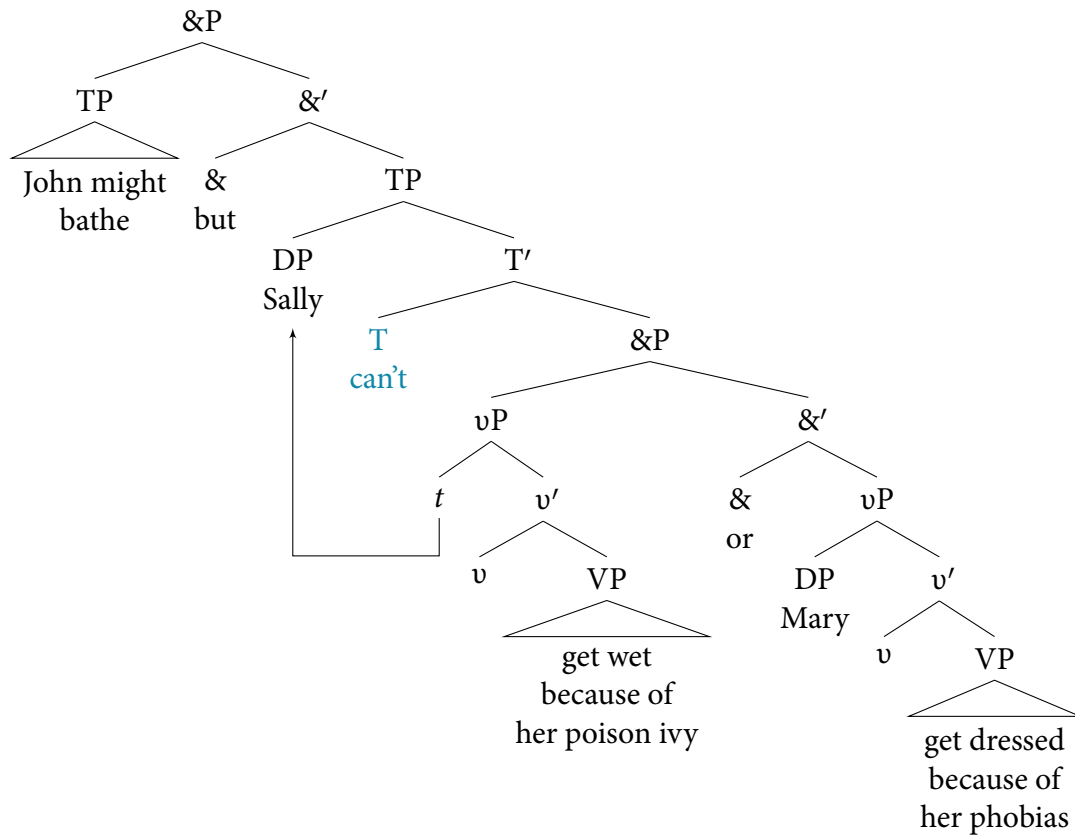
(40) John might bathe, but Sally can't get wet because of her poison ivy or Mary get dressed because of her phobias, so we may as well give up.

(41) *John might bathe, but Sally can't bathe because of her poison ivy or Mary get dressed because of her phobias, so we may as well give up.

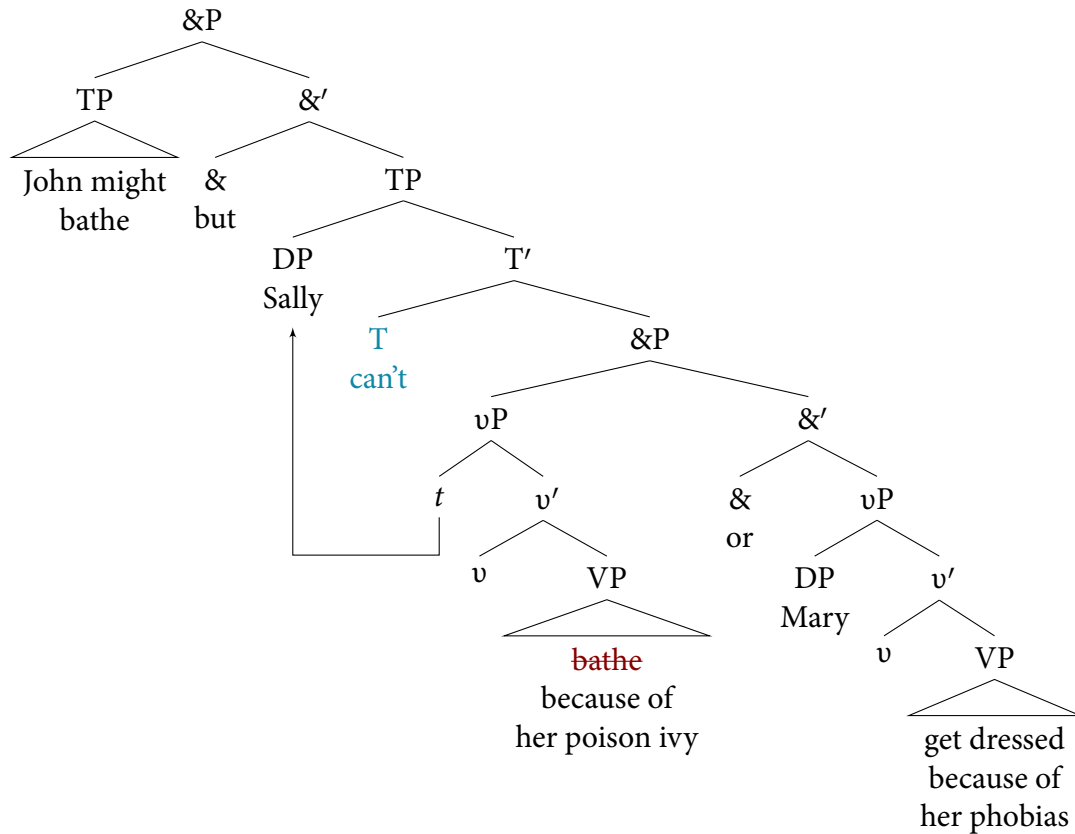
(42) John might bathe, but Sally can't bathe because of her poison ivy and Mary won't get dressed, so we may as well give up.



- (43) John might bathe, but Sally **can't** get wet because of her poison ivy or Mary get dressed because of her phobias, so we may as well give up.



- (44) *John might bathe, but Sally **can't bathe** because of her poison ivy or Mary get dressed because of her phobias, so we may as well give up.

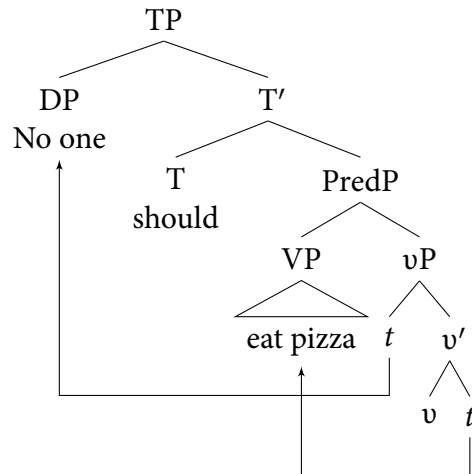


5.2 Solution

Johnson proposes that in sentences with gapping, the gapped VPs stand outside the coordination.

Ancillary assumption: VPs might move leftwards, to PredP.

(45) No one should eat pizza.



(this means that the licensing condition on ellipsis [see 38] has to be modified: the licensing Xs must include Pred).

Gapping arises when vPs have been coordinated and VP-movement to Pred occurs across the board.

(46) Simone *will eat pizza* for dinner and Marie-Luise for breakfast.

(Space for your tree)

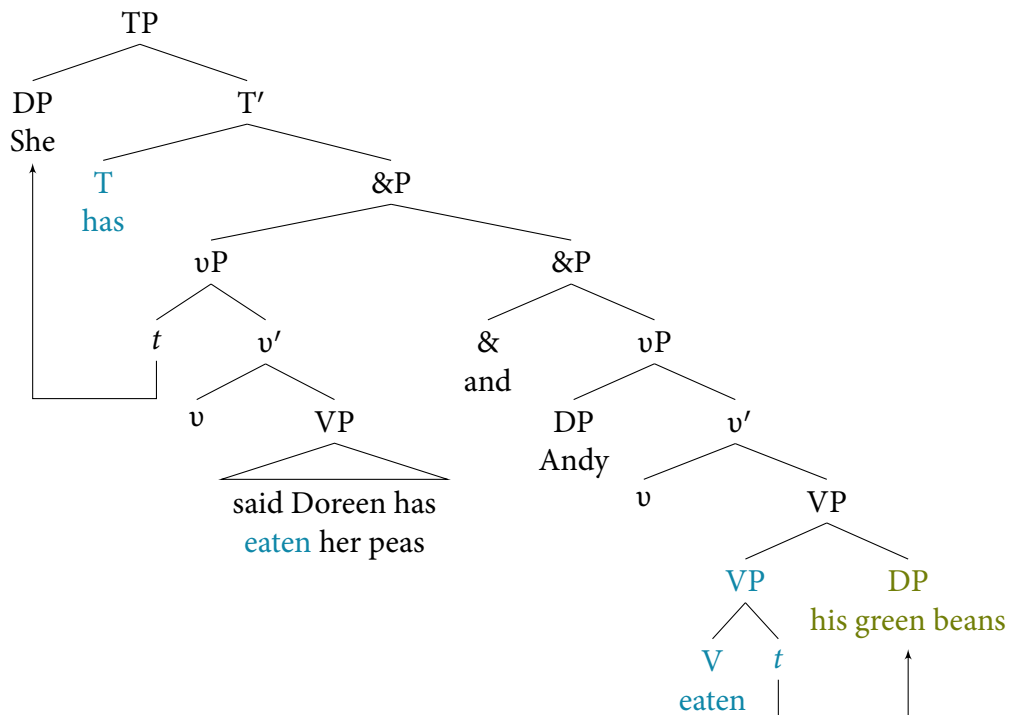
ATB-movement can be accompanied by evacuating movement of the object.

(47) Daniela will eat salad and Siri pizza.

(Space for your tree)

Recall that an antecedent cannot occur within an embedded clause in gapping (48). How does the ATB approach solve the problem?

(48) *She has said Doreen has eaten her peas, and Andy eaten his green beans, so now we can have dessert.



6 Similarities between gapping and pseudogapping revisited

Are the similarities between gapping and pseudogapping lost in an across-the-board treatment of gapping? Recall that the similarities were:

1. *Scope ambiguities*: gapping and pseudogapping exhibit the same behaviour with respect to scope ambiguities.
2. *Sloppy anaphora*: when an ellipsis has two pronouns in it, the first one cannot have a strict interpretation if the second one has a sloppy interpretation.

6.1 Sloppy anaphora

When an ellipsis has two pronouns in it, the first one cannot have a strict interpretation if the second one has a sloppy interpretation (49). The same is true of gapping (50).

- (49) James will explain how he'd robbed his constituents to the police detectives and Peter will **explain how he'd robbed his constituents** to the federal prosecutors.
- (50) James **will explain how he'd robbed his constituents** to the police detectives and Peter to the federal prosecutors.

If gapping is an instance of ATB-movement, there is no reason for it to have the same characteristics as VP-ellipsis. However, Johnson points out that ATB-movement has the same constraints on strict/sloppy interpretations:

- (51) It's [_{VP} explain how he'd robbed his constituents] that James can and Peter can't.

Possible readings:

- James₁ can explain how he₁'d robbed his constituents and Peter₂ can't explain how he₂'d robbed his₂.
- James₁ can explain how he₁'d robbed his constituents and Peter₂ can't explain how James₁'d robbed his₁ constituents.
- ?James₁ can explain how he₁'d robbed his constituents and Peter₂ can't explain how he₂'d robbed James₁'s constituents.
- *James₁ can explain how he₁'d robbed his constituents and Peter₂ can't explain how James₁'d robbed Peter₁'s constituents.

6.2 Quantifier scope ambiguities

Both pseudogapping (52) and gapping (53) fix scope ambiguities:

- (52) A student will talk to every alumna first and Dean Edwards will **talk to every alumna** immediately afterwards.
- (53) A student **will talk to every alumna** first and Dean Edwards immediately afterwards.

This similarity remains unaccounted for.

7 A problem with complex gaps

Vicente (2010) notes a problem with the ATB-movement analysis of gapping, related to complex gaps, i.e. cases where the gapping site contains more elements than just a verb.

- (54) A gap with a direct object:
Phil **read things** quickly, and Mike [____] thoroughly.
- (55) A gap with a small clause subject:
Some **found Mittie** clever with pictures, and others [____] good with children.
- (56) A gap with a small clause complement:
I **made Sal fond of it** on Tuesday, and [____] Holly [____] on Wednesday.
- (57) A gap with a complement to control verb:
Randy **wants to write** a novel, and Amy [____] a play.

If the gapped strings in (54)-(57) have undergone movement, they should be moveable in other environments. This is not the case.

- (58) *Read things, Mike (did) quickly.
(59) *Find Mittie, some (did) clever with pictures.
(60) *Make fond of it, I (did) Sal on Tuesday.
(61) *Want to write, Randy (did) a novel.

This can't be explained by appealing to a ban on remnant topicalization, which is allowed in English.

- (62) [t_i read a book], Amy $_i$ certainly will.
(63) ?[Believed t_i to be a gem], [Amanda's recent thesis] $_i$ certainly was.

The difference between (54)-(57) vs. (62)-(63) could be that remnant movement is only possible if the evacuating movement is independently attested. The movement in (62)-(63) is regular subject raising to Spec TP. There is no productive process in English that moves vP-internal constituents out of vP.

Johnson's analysis requires the assumption that evacuating movement to the periphery of vP exists but can only feed short verb movement or VP-ellipsis, not topicalization.

- (64) Evacuating movements to the periphery of vP are licit if they are followed by either (a) vP-ellipsis of (b) vP-movement to PredP, but not otherwise.

While (64a) is plausible (other types of ellipsis also license evacuating movements that are not attested otherwise), according to Vicente (64b) is an artefact of the analysis.

One way to avoid the stipulative restriction would be to say that complex gaps are the result of head movement supplemented by ellipsis.

- (65) [_{TP} Phil read [_{PredP} [_{vP} t things quickly] and [_{vP} Mike [\neq things] thoroughly]]]

However...

- The analysis requires us to postulate a novel type of ellipsis
- If we allow verbs to move out of an ellipsis site, we predict English to exhibit a type of verb-stranding VP-ellipsis (66), contrary to fact.

- (66) *Amanda is baking a cake. Kelly is also baking [\neq a cake]

This means that complex gaps must be derived via remnant movement, rather than a combination of movement and ellipsis.

Summary

- Johnson (2009) argues that gapping should be analysed as low (vP) coordination accompanied by ATB-movement of the gapped VP to PredP.
- The analysis accounts for the differences between gapping and pseudogapping: coordination, different scope relations, embedded contexts, embedded antecedents.
- At least some of the similarities between gapping and pseudogapping are not unique to ellipsis so they cannot be taken as a diagnostic to discover the identity of gapping.
- Vicente (2010) notes that applying the analysis to sentences with complex gaps requires a stipulative restriction on evacuating movement.

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