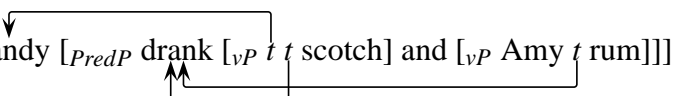


# A note on the movement analysis of gapping\*

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Gapping had traditionally been classified as a subcase of ellipsis until Johnson (1996, 2009) proposed an alternative analysis in terms of ATB verb movement. His analysis of (1) is given in (2), and it rests on the following assumptions: (i) coordination happens at the  $\nu P$  level; (ii) as a consequence of the previous point, the subject of the first conjunct raises to SpecTP, whereas the subject of the second conjunct remains in Spec $\nu P$ ; <sup>1</sup> (iii) the verb undergoes ATB movement out of  $\nu P$  to a position that Johnson identifies as PredP.

(1) Randy drank scotch and Amy [ ] rum.

(2) 

Assumptions (i) and (ii) are also found in Coppock (2001) and Lin (2002), and they are meant to capture the fact that negation and modals that appear to be embedded in the first conjunct actually outscope coordination (Siegel 1984).<sup>2</sup>

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<sup>1</sup>This ought to be a violation of the Coordinate Structure Constraint. Lin (2002) and Johnson (2009) get around this problem by proposing that the CSC is a condition on LF representations, not on surface strings. This is supported by the fact that the first conjunct subject appears to undergo obligatory reconstruction to a  $\nu P$ -internal position. See Lin's work for extensive argumentation of this point.

<sup>2</sup>Siegel observed that (1) also has a  $[\neg \diamond p] \wedge [\neg \diamond q]$  reading, i.e., with coordination taking wide scope. Lin (2002) and Repp (2009) both point out that this reading requires clause-level coordination plus ellipsis. See especially Repp's work for the implications of this fact for Johnson's analysis.

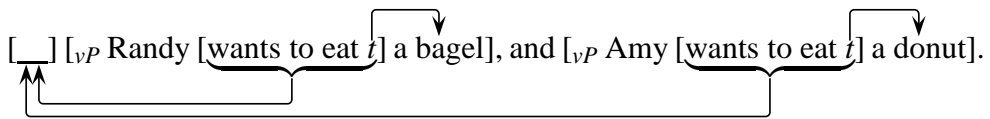
- (3) We can't eat caviar and him [ ] beans.  $[\neg \diamond(p \wedge q)]$   
 (i.e., it is not possible that simultaneously we eat caviar and he eats beans.)

Johnson's innovation, and the focus of this squib, is assumption (iii), namely, the idea that the gap arises as a consequence of ATB verb movement, rather than ellipsis. This idea offers an elegant explanation of some otherwise puzzling properties of gapping –i.e., the fact that, unlike VP ellipsis, gapping may only occur in coordinate structures (4) and cannot be embedded (5). The illicit environments bleed the application of either ATB extraction or verb movement (see Johnson 1996, 2009 for details).

- (4) a. Sandy plays the guitar, {✓and/✓or/\*because/\*after/\*if/\*better than} Betsy [ ] the harmonica.  
 b. Sandy plays the guitar {✓and/✓or/✓because/✓after/✓if/✓better than} Betsy did/ does [ ] (too) .
- (5) a. \* Amanda went to Santa Cruz, and Bill thinks that Claire [ ] to Monterey.  
 b. ✓ Amanda went to Santa Cruz, and Bill thinks that Claire did [ ] too.

Nonetheless, a movement analysis of gapping also has its own complications. This squib focuses on a problem already identified in Johnson (1996, 2009), namely, cases where the gapping site contains more elements than just a verb. Johnson refers to such cases as *complex gaps* and gives examples where the additional material is a direct object (6a), a small clause subject (6b), or a small clause complement (6c). To this list, we can add complements to control verbs (6d). These examples clearly cannot be derived via ATB verb movement if verb movement is head movement. To solve this problem, Johnson proposes that English verb movement is actually remnant predicate movement (cf. Kayne 1998; Baltin 2002), so that the verb may pied pipe some VP-internal constituents. As an illustration, (7) gives the derivation for (6d). For simplicity, I omit any structure above the  $vP$  level and the asymmetric extraction of the first conjunct subject.

- (6) a. Philip read things quickly, and Mike [ ] thoroughly.  
 b. Some found Mittie clever with pictures, and others [ ] good with children.  
 c. I made Sal fond of it on Tuesday, and [ ] Holly [ ] on Wednesday [=... and I made Holly fond of it on Wednesday]  
 d. Randy wants to eat a bagel, and Amy [ ] a donut.

- (7)  [ ] [<sub>vP</sub> Randy [wants to eat *t*] a bagel], and [<sub>vP</sub> Amy [wants to eat *t*] a donut].

A prediction of this analysis (which Johnson does not discuss) is that, if the gapped strings in (6) have undergone movement, then they should also be movable in other environments. This, however, is incorrect: as (8) shows, the same strings that can be gapped cannot be topicalized.<sup>3</sup> This contrast is unexpected.

- (8) a. \* Read things, Mike (did) quickly.  
 b. \* Find Mittie, some (did) clever with pictures.  
 c. \* Make fond of it, I (did) Sal on Tuesday.  
 d. \* Want to write, Randy (did) a novel.

Importantly, (8) can't be explained by appealing to a generalized ban on remnant topicalization in English, irrespective of what its underlying cause could be: Huang (1993) shows that the fronted predicate in (9a) is a remnant predicate containing the *vP*-internal trace of the subject. The same holds for (9b).

- (9) a. [*t<sub>i</sub>* read a book], Amy<sub>*i*</sub> certainly will.  
 b. ? [Believed *t<sub>i</sub>* to be a gem], [Amanda's recent thesis]<sub>*i*</sub> certainly was.

It is tempting to analyze the asymmetry between (8) and (9) as an instance of den Besten and Webelhuth's (1987) generalization that remnant movement is possible only if the evacuating movement that creates the remnant constituent is independently attested in the language in question: (9a-b) are grammatical because the evacuating movement is regular subject raising to SpecTP, whereas (8a-d) are ungrammatical because English lacks a productive process that moves *vP*-internal constituents out of *vP*. At this point, a movement analysis of (6) requires the assumption that evacuating movements to the periphery of *vP* actually exist, but can only feed short verb movement, not topicalization.

- (10) Evacuating movements to the periphery of *vP* are licit if they are followed by *vP* movement to PredP, but not if they are followed by *vP* topicalization.

How plausible is (10)? To answer this question, we must remember that exceptional evacuating movements to the periphery of *vP* are already attested elsewhere:

<sup>3</sup>This situation is not exclusive to English: other languages (e.g., Dutch and German, as one reviewer points out) also allow gapping of strings that cannot be topicalized.

the standard analysis of pseudogapping (Jayaseelan 1990; Lasnik 1999; Takahashi 2004; Gengel 2007) requires evacuation of  $vP$ -internal constituents to the periphery of  $vP$  before  $vP$  ellipsis applies. If we take pseudogapping into account too, we can modify (10) to (11).

- (11) Evacuating movements to the periphery of  $vP$  are licit if they are followed by either (i)  $vP$  ellipsis or (ii)  $vP$  movement to  $\text{PredP}$ , but not otherwise.

These two exceptions have a rather different status: (11i) has some plausibility, as other types of ellipsis are known to also license evacuating movements that are not available otherwise (see Merchant 2004 for exceptional focus fronting under stripping, and Lasnik 2006 for exceptional Heavy NP Shift of *wh*- phrases under sluicing). However, (11ii) appears to be the only instance of movement that licenses exceptional evacuating movements. Ideally, we would like to show that (11ii) can be subsumed under the same mechanisms that allow (11i). However, this is unlikely: we will see in §2 that two mechanisms that can potentially derive (11i) cannot be extended to account for (11ii) –therefore failing to distinguish (6) from (8) and (9). Whatever mechanism accounts for (11ii) must be different from the mechanism that accounts for (11i). Since (to my knowledge) no independent mechanism has yet been proposed for (11ii), the only option currently left to us is to encode it as a primitive.

Note that the problem is not just that (11ii) can currently only be expressed as a primitive: this shortcoming must be combined with the fact that (11ii) is only necessary under a movement analysis of gapping. An elliptical alternative doesn't require remnant movement, and therefore it doesn't require postulating whether exceptional evacuating movements are possible (or not) in specific cases. This much raises the possibility that (11ii) is actually simply an artifact of the movement theory of gapping –i.e., a way to replicate the effects of ellipsis in an analysis that, erroneously, doesn't posit ellipsis.

## 1 Against a mixed analysis

One important underlying assumption in Johnson (1996, 2009) is that, under a movement analysis of gapping, complex gaps can only arise as a consequence of remnant predicate movement. This section shows that this assumption is correct. Suppose we adopted the position that (6) involves a step of verb movement, but not of the remnant kind. If so, a rather natural way of tackling those examples would be to say that the head-to-head movement of the verb is supplemented with

a step of ellipsis. The ATB movement step derives the verbal gap and accounts for the points discussed above (restriction to coordinate structures and impossibility of embedding). The ellipsis step derives complex gaps while avoiding the complications related to remnant movement. Representation (12) exemplifies this analysis for (6a).

- (12) [<sub>TP</sub> Phil [<sub>PredP</sub> read [<sub>vP</sub> t things quickly] and [<sub>vP</sub> Mike [<sub>t</sub> things] thoroughly]]]
- 

This analysis requires us to postulate a novel type of ellipsis which, while superficially akin to VP ellipsis and pseudogapping, elides less structure than either one, so as to allow the verb to survive it. Independently of the plausibility of postulating a new kind of ellipsis,<sup>4</sup> a more pressing problem is that, if we allow the verb to move out of an ellipsis site, then we also predict English to exhibit a type of verb-stranding VP ellipsis (as in Hebrew or Irish, cf. Goldberg 2005), contrary to fact.

- (13) \* Amanda is baking a cake. Kelly is also baking [<sub>t</sub> a cake].
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In short, Johnson (1996, 2009) is correct in assuming that, within a movement analysis of gapping, complex gaps must be derived via remnant movement, rather than a combination of head movement and ellipsis. This is the analysis I'll concentrate on.

## 2 Licensing evacuating movements

I am assuming that the evacuating movements involved in gapping must land in the periphery of vP (or some comparable position), in the same way as the evacuating movements involved in pseudogapping. I will not consider the type of evacuating movements assumed in other works that analyze verb movement as remnant movement (e.g., Koopman and Szabolcsi 2000), where the landing sites for evacuated constituents are relatively low in the expanded VP area. The reason is that any predicate-internal constituent can be gapped, which in a movement theory of gapping entails that the verb pied-pipes a relatively large category (vP or similar). Therefore, remnants of gapping can only escape pied-piping if they are evacuated to the periphery of vP, or a similarly high position.

<sup>4</sup>Note that Johnson (2009, §3) shows that run-of-the-mill VP ellipsis is bled in the environments that feed gapping. It is unclear whether the same restriction would apply to this putative new kind of ellipsis. Also, it is unclear whether one can assume this type of process in Spanish, which lacks VP ellipsis.

### 2.1 Linearization constraints

A potential way to unify (11i) and (11ii) is to assume that both are instances of a repair-by-deletion effect. An unqualified appeal to this effect will obviously not do, as the point of Johnson's analysis is that gapping does not involve deletion. However, the underlying logic of repair-by-deletion analyses is that the source of ungrammaticality lies exclusively on the PF representation of the sentence (see Merchant 2001). Therefore, one could argue that evacuating movements create a problem at PF that can be solved by either (i) deleting the relevant portion, or (ii) moving it away. Johnson (2009, 314-318) already develops a solution along these lines in order to solve an independent word order problem. More precisely, he assumes that the problematic aspect is the interaction of the evacuating movements with the linearization algorithm. To see if this hypothesis is extensible to the problem at hand, let us start (as he does) from Takahashi's (2004) analysis of the pseudogapping example (14), which requires Object Shift of *me* to the left of *give*. Object Shift creates a [*me* > *give*] linearization statement which contradicts the [*give* > *me*] statement created by merger. By hypothesis, contradictory statements result in a crash at PF (Fox and Pesetsky 2004). Ellipsis solves this problem by preventing a portion of the structure from being computed at PF.

(14) He might give you a hug, but he won't me [~~give~~ a hug].

By assumption, a comparable gapping example would also involve Object Shift to the periphery of  $\nu$ P, creating the same linearization conflict. Consequently, one could say that remnant predicate movement has the same repair effect as ellipsis. However, on closer inspection, this line of analysis fails to account for the contrast between (6) and (8). For such an account to work, we would need to say that remnant short verb movement can repair linearization conflicts, whereas remnant topicalization cannot. Consider now the base structure ( $\nu$ P-coordination) for (6a), given below as (15), and the linearization statements established at that point (16). Note that I am deliberately obviating the linearization of the subject: as the grammaticality of (9) shows, predicate movement across a subject doesn't cause any linearization conflicts, so the position of subjects is orthogonal to the discussion here.<sup>5</sup>

(15) [ $\nu$ P Phil read things quickly] and [ $\nu$ P Mike read things thoroughly].

<sup>5</sup>I have deliberately ignored the contribution of phase boundaries. In Fox and Pesetsky (2004), movement to a phase edge licenses alteration of a previously established linearization statement. Since the point of the text is that linearization statements are not altered, the effect of phase edges is orthogonal to the discussion.

$$(16) \quad \left\{ \begin{array}{l} \textit{read} > \textit{things} \\ \textit{read} > \textit{quickly} \\ \textit{things} > \textit{quickly} \end{array} \right\} \quad \left\{ \begin{array}{l} \textit{read} > \textit{things} \\ \textit{read} > \textit{thoroughly} \\ \textit{things} > \textit{thoroughly} \end{array} \right\}$$

As the reader can easily confirm, these statements remain unaltered under gapping (17a), suggesting that either (i) remnant short verb movement does not create linearization conflicts to begin with, or (ii) any conflict similar to (14) is undone by predicate movement. Note, however, that they also remain unaltered under remnant topicalization. This parallelism incorrectly predicts (17b) to be as grammatical as (17a). In short, an appeal to linearization conflicts cannot distinguish between (6) and (8), and therefore cannot derive (11ii) either.

- (17) a. Phil reads things quickly, and Mike [ ] thoroughly.  
       [*same linearization statements as (16)*]  
       b. \* Read things, Mike does thoroughly  
       [*same linearization statements as the second set of (16)*]

## 2.2 Focus-driven movements

Alternatively, one could capitalize on the fact that the remnants of ellipsis are necessarily focalized, and assume that they need to move out of the ellipsis site so that ellipsis does not destroy focus information (see Gengel 2007, who proposes that the remnants of pseudogapping move to a  $\nu$ P-level focus slot). One may then hypothesize that focus is also the driving force behind the evacuating movements in gapping, as the remnants of gapping are also necessarily focalized. However, as in the previous section, an unqualified appeal to focalization is not enough: under Johnson's assumptions, gapping does not involve deletion, unlike pseudogapping. Therefore, we cannot say that the remnants of gapping move to a focus position to escape deletion. Rather, we are forced to say that overt movement to the periphery of  $\nu$ P is necessary for all focalized  $\nu$ P internal constituents, irrespective of whether ellipsis happens subsequently. For the sake of the argument, I will just assume this conclusion and ignore its larger consequences.

Given this conclusion, (8) can only be blocked by assuming that  $\nu$ P topicalization somehow blocks focalization of  $\nu$ P-internal elements: since they cannot evacuate  $\nu$ P, they are necessarily dragged along when  $\nu$ P is topicalized. It is not clear, though, why a restriction like this ought to exist, irrespective of how it should be implemented. Notably, other languages do not seem to have a comparable restriction: Bastos (2001, 58-67) and Vicente (2007, 65-68) provide examples from

Brazilian Portuguese (18a) and Spanish (18b) with simultaneous verb topicalization (*qua* the predicate cleft construction) and object focalization. While there are some differences between predicate clefting in these languages and English  $vP$  topicalization (cf. the cited works), these examples show that, in principle, there is nothing wrong with this specific discourse configuration.

- (18) a. [<sub>TOP</sub> Vender], o João vendeu [<sub>FOC</sub> A CASA ]  
           sell       the João sold       the house  
       b. [<sub>TOP</sub> Lavar], Juan ha lavado [<sub>FOC</sub> EL COCHE ]  
           wash    Juan has washed       the car

Suppose, nevertheless, that one can somehow solve this problem. If so, it is important to note that the whole proposal would still be predicated of the assumption that focus is the only possible trigger for the evacuating movements. If constituents could evacuate  $vP$  irrespective of focus, then we could only capture (8) through an overall ban on evacuating movements followed by  $vP$  topicalization, which would amount to a mere restatement of (11). A logical consequence of this conclusion is that unfocalized constituents are necessarily pied-piped when  $vP$  undergoes movement.

Consider now a consequence of this prediction: we want to say that  $vP$  movement to PredP happens also in non-gapping sentences, lest we define an *ad hoc* type of movement just to deal with gapping. Given the previous paragraph, we predict that, in non-gapping sentences, unfocalized  $vP$  internal constituents are necessarily contained in the  $vP$  that moves to PredP. Now, we independently know that moved phrases are islands for movement. This explains the unambiguity of (19), where the pied-piped object cannot QR out of the fronted phrase<sup>6</sup>

- (19) [date every boy], a girl has. [ $\checkmark \exists > \forall / * \forall > \exists$ ]

Consequently, we predict unfocalized  $vP$  internal quantifiers to be unable to take scope over  $vP$ -external quantifiers. This, however, is incorrect: (20B) appears in an all-new-information environment that precludes focus to fall exclusively on the

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<sup>6</sup>A reviewer proposes that short  $vP$  movement may differ from  $vP$  topicalization in not creating scope islands, in which case the availability of a [ $\checkmark > 2$ ] reading in (20) would be irrelevant. Note, however, that most analyses of remnant predicate movement (Koopman and Szabolcsi 2000; Lechner 2009) operate on the assumption that no such asymmetry exists. While the reviewer's reasoning is correct, I believe that the burden of proof lies on whoever wishes to deny that short  $vP$  movement creates scope islands.



object,<sup>7</sup> yet the inverse scope reading is still available.

(20) A: How does the review process work?

B: Two reviewers evaluate every abstract, and then we accept the 20 abstracts with the highest scores. [ $\forall > 2$  reading available]

In order to derive the inverse scope reading, the object needs to evacuate  $vP$  prior to movement to PredP. Crucially, this movement needs to be independent of focus factors. However, if we accept that constituents can evacuate  $vP$  irrespective of focus effects, then we cannot derive (11ii) as a consequence of focus licensing evacuating movements only in certain environments. Therefore, (11ii) still needs to be formulated as a primitive.

### 3 Conclusions

Exception (11ii) cannot be assimilated to the processes that license exceptional evacuating movements under ellipsis, and must therefore remain as a primitive of the movement analysis of gapping. This raises the possibility that (11ii) is simply an artifact of erroneously treating gapping as a case of movement, rather than ellipsis. I find this conclusion rather unfortunate, as it endangers the inherent advantages of a movement analysis of gapping.

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<sup>7</sup>Note that the wide focus reading also circumvents the possibility that narrow focus on either the subject or the verb might interfere with QR. Thanks to an anonymous reviewer for pointing this out.

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