A Note on the Movement
Analysis of Gapping

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1 Complex Gaps and Remnant Movement

Gapping had traditionally been classified as a subcase of ellipsis until Johnson (1996, 2009) proposed an alternative analysis in terms of across-the-board (ATB) verb movement. His analysis of (1) is given in (2), and it rests on the following assumptions: (a) coordination happens at the vP level; (b) as a consequence, the subject of the first conjunct raises to Spec,TP, whereas the subject of the second conjunct remains in Spec,vP;[1] (c) the verb undergoes ATB movement out of vP to a position that Johnson identifies as PredP.

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

(2) [$_{TP}$ Randy [$_{PredP}$ drank [$_{vP}$ *t t* scotch] and [$_{vP}$ Amy *t* rum]]]

Assumptions (a) and (b) 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 take scope outside coordination (Siegel 1984).[2]

(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 (c), 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: the facts 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).

[1] This ought to be a violation of the Coordinate Structure Constraint. Lin (2002) and Johnson (2009) get around this problem by proposing that the constraint 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 vP-internal position. See Lin 2002 for extensive argumentation on this point.

[2] Siegel observes that (1) also has a $[\neg \Diamond p] \wedge [\neg \Diamond q]$ reading, that is, 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 2009 for the implications of this fact for Johnson's analysis.

(5) a. *Amanda went to Santa Cruz, and Bill thinks that Claire [____] to Monterrey.

 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 by 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 (see 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. Phil 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 write a novel, and Amy [____] a play.

(7) [____] [$_{vP}$ Randy [wants to write t] a novel], and [$_{vP}$ Amy [wants to write t] a play]
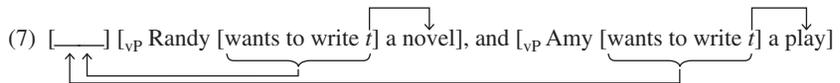
A prediction of this analysis (which Johnson does not discuss) is that, if the gapped strings in (6) have undergone movement, then they should also be movable in other environments. This, however, is incorrect: as (8) shows, the same strings that can be gapped cannot be topicalized.[3] This contrast 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) cannot be explained by appealing to a generalized ban on remnant topicalization in English, regardless 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).

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[3] 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.

(9) a. [t_i read a book], Amy$_i$ certainly will.

  b. ?[Believed t_i to be a gem], [Amanda's recent thesis]$_i$ 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 Spec,TP, 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: 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 (a) vP-ellipsis or (b) vP-movement to PredP, but not otherwise.

These two exceptions have a rather different status. (11a) 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, (11b) appears to be the only instance of movement that licenses exceptional evacuating movements. Ideally, we would like to show that (11b) can be subsumed under the same mechanisms that allow (11a). However, this is unlikely: we will see in section 3 that two mechanisms that can potentially derive (11a) cannot be extended to account for (11b), therefore failing to distinguish (6) from (8) and (9). Whatever mechanism accounts for (11b) must be different from the mechanism that accounts for (11a). Since (to my knowledge) no independent mechanism has yet been proposed for (11b), the only option currently left to us is to encode it as a primitive.

Note that the problem is not just that (11b) can currently only be expressed as a primitive: this shortcoming must be combined with the fact that (11b) is only necessary under a movement analysis of gapping. An elliptical alternative does not require remnant movement, and there-

fore it does not require postulating whether exceptional evacuating movements are possible (or not) in specific cases. This much raises the possibility that (11b) is actually simply an artifact of the movement theory of gapping—that is, a way to replicate the effects of ellipsis in an analysis that, erroneously, does not posit ellipsis.

2 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) [$_{TP}$ Phil [$_{PredP}$ read [$_{vP}$ *t* things quickly] and [$_{vP}$ Mike [*t* things] thoroughly]]]

This analysis requires us to postulate a novel type of ellipsis that, although 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,[4] 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; see Goldberg 2005), contrary to fact.

(13) *Amanda is baking a cake. Kelly is also baking [*t* a cake].

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 will concentrate on.

3 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

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[4] Note that Johnson (2009:sec. 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.

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.

3.1 Linearization Constraints

A potential way to unify (11a) and (11b) 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 in 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 deleting the relevant portion or 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 can be extended 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 that 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 *t* a hug].

By assumption, a comparable gapping example would also involve object shift to the periphery of vP, 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 (vP-coordination) for (6a), given in (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 does not cause any

linearization conflicts, so the position of subjects is orthogonal to the discussion here.[5]

(15) [$_{vP}$ Phil read things quickly] and [$_{vP}$ Mike read things thoroughly].

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

As the reader can easily confirm, these statements remain unaltered under gapping (17a), suggesting that either (a) remnant short verb movement does not create linearization conflicts to begin with, or (b) 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 (11b) either.

(17) a.   Phil read things quickly, and Mike [＿＿＿] thoroughly. [same linearization statements as (16)]
b.   *Read things, Mike did thoroughly. [same linearization statements as the second set of (16)]

3.2 Focus-Driven Movements

Alternatively, one could capitalize on the fact that the remnants of ellipsis are necessarily focused, and assume that they need to move out of the ellipsis site so that ellipsis does not destroy focus information (see Gengel 2007, where it is proposed that the remnants of pseudo-gapping move to a vP-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 focused. However, as in the previous section, an unqualified appeal to focus 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 vP is necessary for all focused vP-internal constituents, whether ellipsis happens subsequently or not. 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 vP-topicalization somehow blocks focusing of vP-internal elements: since they cannot evacuate vP, they are necessarily dragged along when vP is topicalized. It is not clear, though, why a restriction like

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[5] 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.

this ought to exist, regardless 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 contain examples from Brazilian Portuguese (18a) and Spanish (18b) with simultaneous verb topicalization (qua the predicate cleft construction) and object focus. While there are some differences between predicate clefting in these languages and English vP-topicalization (see the cited works), these examples show that, in principle, there is nothing wrong with this specific discourse configuration.

(18) a. [$_{TOP}$ Vender], o João vendeu [$_{FOC}$ A CASA].
         sell   the João sold   the house
     b. [$_{TOP}$ Lavar], Juan ha lavado [$_{FOC}$ 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 on the assumption that focus is the only possible trigger for the evacuating movements. If constituents could evacuate vP regardless 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 unfocused 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 nongapping sentences, lest we define an ad hoc type of movement just to deal with gapping. Given the previous paragraph, we predict that, in nongapping sentences, unfocused 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 evacuate the fronted phrase via quantifier raising (QR).[6]

(19) [Date every boy], a girl has.   [∃ > ∀/*∀ > ∃]

Consequently, we predict unfocused 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 from falling exclusively on the object,[7] yet the inverse scope reading is still available.

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[6] A reviewer proposes that short vP-movement may differ from vP-topicalization in not creating scope islands, in which case the availability of a [∀ > 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 those who deny that short vP-movement creates scope islands.

[7] 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.

(20) A: How does the review process work?
      B: Two reviewers evaluate every abstract, and then we ac-
          cept the 20 abstracts with the highest scores.

                                   [∀ > 2 reading available]

For the inverse scope reading to be derived, the object needs to evacu-
ate vP prior to movement to PredP. Crucially, this movement needs
to be independent of focus factors. However, if we accept that constitu-
ents can evacuate vP regardless of focus effects, then we cannot derive
(11b) as a consequence of focus licensing evacuating movements only
in certain environments. Therefore, (11b) still needs to be formulated
as a primitive.

4 Conclusions

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

References

Baltin, Mark. 2002. Movement to the higher V is remnant movement.
        Linguistic Inquiry 33:653–659.

Bastos, Ana. 2001. Fazer, eu faço! Master's thesis, Universidade Esta-
        dual de Campinas.

Besten, Hans den, and Gert Webelhuth. 1987. Remnant topicalization
        and VP structure in the Germanic OV languages. *GLOW News-
        letter* 18:15–16.

Coppock, Elizabeth. 2001. Gapping: In defense of deletion. In *CLS
        37: Proceedings of the 37th Regional Meeting of the Chicago
        Linguistic Society*, ed. by Mary Andronis, Christopher Ball,
        Heidi Elson, and Sylvain Neuvel, 133–148. Chicago: Univer-
        sity of Chicago, Chicago Linguistic Society.

Fox, Danny, and David Pesetsky. 2004. Cyclic linearization and syn-
        tactic structure. *Theoretical Linguistics* 31:1–46.

Gengel, Kirsten. 2007. Focus and ellipsis. Doctoral dissertation, Uni-
        versität Stuttgart.

Goldberg, Lotus. 2005. Verb stranding VP ellipsis. Doctoral disserta-
        tion, McGill University, Montreal.

Huang, C.-T. James. 1993. Reconstruction and the structure of VP:
        Some theoretical consequences. *Linguistic Inquiry* 24:103–
        138.

Jayaseelan, K. A. 1990. Incomplete VP deletion and gapping. *Linguis-
        tic Analysis* 24:60–81.

Johnson, Kyle. 1996. In search of the English middle field. Ms., Uni-
        versity of Massachusetts, Amherst.

Johnson, Kyle. 2009. Gapping is not (VP-) ellipsis. *Linguistic Inquiry* 40:289–328.

Kayne, Richard. 1998. Overt vs. covert movement. *Syntax* 1:128–191.

Koopman, Hilda, and Anna Szabolcsi. 2000. *Verbal complexes*. Cambridge, MA: MIT Press.

Lasnik, Howard. 1999. Pseudogapping puzzles. In *Fragments: Studies in ellipsis and gapping*, ed. by Shalom Lappin and Elabbas Benmamoun, 141–174. Oxford: Oxford University Press.

Lasnik, Howard. 2006. Multiple sluicing in English. Ms., University of Maryland, College Park.

Lechner, Winfried. 2009. A puzzle for remnant movement analyses of verb-second. *Linguistic Inquiry* 40:346–356.

Lin, Vivian. 2002. Coordination and sharing at the interfaces. Doctoral dissertation, MIT, Cambridge, MA.

Merchant, Jason. 2001. *The syntax of silence*. Oxford: Oxford University Press.

Merchant, Jason. 2004. Fragments and ellipsis. *Linguistics and Philosophy* 6:661–738.

Repp, Sophie. 2009. *Negation and gapping*. Oxford: Oxford University Press.

Siegel, Muffy. 1984. Gapping and interpretation. *Linguistic Inquiry* 15:523–530.

Takahashi, Shoichi. 2004. Pseudogapping and cyclic linearization. In *NELS 34: Proceedings of the 34th Annual Meeting of the North East Linguistic Society*, ed. by Keir Moulton and Matthew Wolf, 471–585. Amherst: University of Massachusetts, Graduate Linguistic Student Association.

Vicente, Luis. 2007. The syntax of heads and phrases. Doctoral dissertation, Leiden University.