On gapping and remnant movement*

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To derive complex gaps, Johnson (2009) proposes that the VP of each coordinate undergoes across-the-board movement to a functional projection located just outside the coordination structure. This gets rid of material from the second coordinate, but it also leaves an empty category in the first coordinate. So far, this way of removing additional material in gapping has not been a problem. But what if one of the remnants underlyingly precedes part of the VP? Assuming that the correlate of this remnant stays inside the first coordinate, across-the-board movement would derive the wrong surface form for gapping. It would incorrectly locate the correlate after the material inside the VP, since the VP surfaces outside and to the left of everything inside the first coordinate.

Hankamer and Depiante (2005:14) identify a syntactic context with this profile. In (1), the first remnant is the direct object of an object control verb; its correlate in the first coordinate is followed in linear order by VP-internal material.¹

(1) I have persuaded Tom to write a novel, and ∆ Bill ∆ a short story.

To show that (1) is a problem for the across-the-board movement account, I make the usual assumption that an object control verb selects for an infinitival complement as its complement. The verb’s direct object, which controls the PRO subject of the embedded clause, receives a theta-role in Spec-VP.² Usually, V would raise to a higher functional projection, but this head movement is plausibly bled by across-the-board movement of VP from each coordinate into Spec-PredP:

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¹This is material from a larger manuscript (http://lingbuzz.auf.net/lingbuzz/001628/) that will eventually be published as a squib in *Linguistic Inquiry*.

²Because the direct object is an argument of the object control verb, the matrix verb phrase must be coordinated in (1). There is no smaller constituent that contains both pairs of remnants and correlates.

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Across-the-board movement of the VP from each coordinate carries along the embedded infinitival clause contained within it. Because the correlate *Tom* is still located inside the first coordinate, however, this generates the following undesired, and in fact ungrammatical, string:

(3)  * I have persuaded to write Tom a novel, and Bill a short story.

The across-the-board movement account therefore fails to derive the complex gaps in (1), in which one remnant is the direct object of an object control predicate.

What could the proponent of across-the-board movement do to save the account? Johnson considers (pp. 314–318) a similar case where predicate shift produces an illicit word order. At some
stage of the derivation for the complex gap in (4), across-the-board movement of VP from each coordinate incorrectly orders the verb and direct object before the subject of the first coordinate.

(4) Ice cream gives me brain-freeze, if I eat it too fast, and beans ∆ indigestion, if I eat them too slow. (Johnson 2009:314)

To see this, consider the structure of (4) just after VP has moved leftward in an across-the-board fashion (I omit the conditional clauses for clarity):

(5) TP
   ┌────┐
   │    │
   │ T' │
   │     │
   │ T   │
   │     │
   │ PredP │
   │       │
   │ VP_1 │
   │       │
   │ gives me t_2 │
   │       │
   │ Pred' │
   │       │
   │  vP   │
   │ &     │
   │  and  │
   │       │
   │ vP    │
   │       │
   │ DP    │
   │       │
   │ ice cream │
   │ &     │
   │  v'    │
   │       │
   │  vP   │
   │       │
   │ DP    │
   │       │
   │ beans │
   │       │
   │ v     │
   │       │
   │ DP    │
   │       │
   └────┘
   ┌────┐
   │    │
   │ t_1 │
   │     │
   │ DP_2 │
   │     │
   │ brain-freeze │
   │ &     │
   │  v'    │
   │       │
   │  vP   │
   │       │
   │ DP    │
   │       │
   │ t_1   │
   │     │
   │ indigestion │

At this point in the derivation, the VP incorrectly precedes the subject of the first coordinate, *ice cream*. But as Johnson observes, additional movement operations apply to derive the correct linear order. In particular, the subject of the first coordinate moves to Spec-TP to get case.

Perhaps something similar is going on in (1). What if the correlate and the infinitival clause, too, could escape the first coordinate? On the face of it, this is not implausible if predicate shift is part of a larger family of scrambling operations that move elements leftward into the middle field. So, we are contemplating the possibility that the sentence in (1) has the following derivation:
First, the remnants *Bill* and *a short story* and the correlate *a novel* raise in each coordinate. Then, the embedded infinitival clauses (TP₄) scramble in an across-the-board fashion to a functional projection located immediately outside the coordination structure. Next, the correlate *Tom* (DP₃) scrambles (from just the first coordinate) to a position immediately above the infinitival clause. This last step is essential so that the lower segment of VP in each coordinate is identical. Finally, VP undergoes predicate shift in an across-the-board fashion to another, yet higher, functional projection. (These functional projections in the middle field are labeled FP just for convenience.)

While these additional movement operations are able, in combination with predicate shift, to derive the sentence in (1), they do so at great cost. The proponent of the across-the-board movement account must make three implausible assumptions to maintain the derivation in (6):

1. The additional scrambling operations in (6) would have to be blocked outside of low-
coordination structures without predicate shift. In general, moving an embedded infinitival clause, as in (7a), or a direct object, as in (7b), into the middle field is ungrammatical.

(7)  
   a. * I will [TP to write a novel]\textsubscript{1} promise t\textsubscript{1}.  
   b. * Liz has [DP the man holding a martini]\textsubscript{1} met t\textsubscript{1}.

These scrambling operations in English are thus even less plausible than predicate shift itself. While the free application of predicate shift outside of coordinations is unmotivated, it does not generate ungrammatical strings.

2. Both scrambling operations in (6) would have apply together before predicate shift. Across-the-board movement of just the infinitival clause without raising of the correlate from the first coordinate is ungrammatical:

(8) * I\textsubscript{1} [VP t\textsubscript{3} persuaded t\textsubscript{4}]\textsubscript{2} [TP to write t\textsubscript{5}]\textsubscript{4} [[VP t\textsubscript{1} [DP Tom]\textsubscript{3} t\textsubscript{2} [DP a novel]\textsubscript{5}], and [VP t\textsubscript{1} [DP Bill]\textsubscript{3} t\textsubscript{2} [DP a short story]\textsubscript{5}]].

Movement of one constituent usually does not depend on the movement of another constituent in this way.

3. The scrambling operations in (6) would have to apply obligatorily when there is predicate shift. As we already observed in (2), predicate shift all by itself derives an ungrammatical string:

(9) * I\textsubscript{1} [VP t\textsubscript{3} persuaded to write t\textsubscript{4}]\textsubscript{2} [[VP t\textsubscript{1} [DP Tom]\textsubscript{3} t\textsubscript{2} [DP a novel]\textsubscript{4}], and [VP t\textsubscript{1} [DP Bill]\textsubscript{3} t\textsubscript{2} [DP a short story]\textsubscript{4}]].

In contrast, scrambling into the middle field is, at least in German and Dutch, an optional movement operation (Thráinsson 2003:188).

Given what we know about movement in English and about these specific movement operations in other, related languages, these three assumptions strike me ad hoc. They are required solely to preserve across-the-board movement as the mechanism that derives complex gaps. It would be preferable not to have to make them.

To make matters worse, the specific combination of movement operations in (6) must be available in English, even though it is not permitted in other languages. Müller (1996) observes for German that, if a certain movement operation applies to an element, the same operation cannot then also apply to a constituent containing that element. For instance, in (10a–b), because one or more phrases have scrambled out of the VP into the middle field, the VP itself cannot scramble (to a position above the subject, which is allowed in German). There is nothing wrong with scrambling the VP, so long as nothing has scrambled out of it, as the relative grammaticality of (10c) shows. And, there is nothing wrong with moving the VP when one or more phrases have scrambled out of it, as long as this happens by some other movement operation, such as topicalization in (10d).

\footnote{I thank Danny Fox (p.c.) for suggesting this argument.}
The derivation in (6) is practically identical to the derivation of the ungrammatical sentence in (10b). Since predicate shift is a middle field operation, the derivation in (6) should be subsumed by Müller’s generalization, and it, too, should be ungrammatical. The object DP and the embedded infinitival clause scramble out of VP before it undergoes predicate shift.

The proponent of the across-the-board movement account could probably avoid some of these problems if they permitted movement to happen merely to conserve the shape of a sentence. In discussing (4), Johnson mentions recent work by Müller (2000) and Williams (2003), who propose that once linear relations are established at some level of representation — say, at the vP phase boundary — movement can apply freely thereafter to preserve those relations. With these more liberal assumptions, the additional scrambling operations in the derivation in (6) could apply to preserve the linear relations between constituents inside the first coordinate, which otherwise would be disturbed by predicate shift.

However, if leftward movement is freely available to preserve the linear order of constituents in the first coordinate, then the across-the-board movement account becomes difficult, if not impossible, to test empirically. Moving the VP from each coordinate in an across-the-board fashion could never possibly change the linear relations previously established for the first coordinate. Its only observable effect, then, would be to remove additional material in the second coordinate. But this is exactly what a nonmovement operation like VP-ellipsis does. Deleting the VP in the second coordinate removes additional material without affecting linear relations in the first coordinate.

So, either the across-the-board movement account requires a number of implausible assumptions to derive a sentence like (6), or if movement can apply more liberally to conserve the shape of sentences, it is difficult to see what empirical consequences, if any, would differentiate the across-the-board movement account from a nonmovement account. Either of these is sufficient reason, I believe, to replace across-the-board movement with another mechanism for deriving complex gaps.

Moreover, recall that across-the-board movement plays no role in accounting for the unique properties of gapping. The syntax of low coordination does all the work in deriving the first two properties; and, across-the-board movement is insufficient for deriving the third property, the No Embedding Generalization. For these reasons, I will argue next that gapping uses VP-ellipsis to
remove additional material. It does all the same work that across-the-board movement does without any of the messy consequences.

References


