When silence gets in the way: extraction from *do*-ellipsis in British dialects*

Gary Thoms & Craig Sailor

University of Glasgow, University of Tromsø

1. Introduction

In most contexts where predicate ellipsis (henceforth "VPE") would be licensed in e.g. Standard American English, speakers of British English[1] may use a non-finite form of *do* adjacent to the putative ellipsis site:

(1) a. Kim isn't running for office now, but she has **done** ~~[run for office]~~ in the past.
b. Q: Do you have a copy of *Aspects* in your office?
A: I should **do** ~~[have a copy of Aspects in my office]~~.

To probe the syntax of this phenomenon, much of the prior literature examines the extent to which an element outside the putative ellipsis site may be related to a position inside that site by a movement dependency (Haddican 2007, Aelbrecht 2010, Thoms 2011, Baltin 2012). Since at least Johnson (2001), we have known extraction to be a fairly reliable diagnostic for the presence of unpronounced structure inside a silent anaphor, given that extraction out of overt anaphors is prohibited, owing to their atomic structure (see Merchant 2013: §26.2.2 for an overview of this diagnostic). To that end, the phenomenon in (1) is said to tolerate (most kinds of) A-movement, whereas A′-movement exhibits mixed properties:

(2) *A-movement out of* do-*ellipsis acceptable*
a. John might arrive on time, and Bill might (do), too. ✓*unaccusative*
b. John might seem to enjoy that, and Bill might (do), too. ✓*raising*

(3) *A′-movement out of* do-*ellipsis mixed*
a. I don't know what Tom will buy, but I know what Fred will (*do). **wh-mvt.*
b. Hazelnuts, I won't eat. Peanuts, I might (do). ✓*topicalization*

*We would like to thank the audiences from LSA 2017, LAGB 2018, and NELS 48 for helpful comments.

[1] *Do*-ellipsis is attested in certain other varieties as well (e.g. in Australian English). The data reported here are exclusively from British varieties.

The acceptability of (2) and (3b) is sufficient to establish the presence of silent predicate structure adjacent to *do*; therefore, we refer to this phenomenon as *do*-ellipsis. However, the non-uniform extraction possibilities seen in (3a) versus (3b) warrant further investigation, especially since previous approaches to *do*-ellipsis predict more uniform behaviour (e.g. either all movement of a particular type should be allowed or blocked).

We address two significant questions that arise from this. First, do the extraction possibilities and impossibilities form a natural class? Second, given that movement out VPE sites is generally available, why does *do*-ellipsis behave differently?

Our answer to the first question is affirmative, and builds on an observation initially made, but not adequately explained, in Thoms (2011): movement out of *do*-ellipsis is apparently blocked just in case that movement reconstructs. In the analysis we develop here, this allergy to reconstruction is epiphenomenal: it is a side-effect of the underlying mechanism involved in the movement dependency. That is, *do*-ellipsis is incompatible with true copy-based movement, which is required for reconstruction. However, it tolerates null operator-based movement dependencies, which independently do not reconstruct.

Our answer to the second question addresses why this should be. We argue that the *do* which characterizes *do*-ellipsis is a little-*v* with enclitic properties (following Haddican 2007), and that copies left behind by successive-cyclic movement through [Spec, *v*P] are interveners when *do* looks leftward for a verbal host. If a given dependency involves reconstruction, it involves leaving copies in [Spec, *v*P], and so it interferes for encliticization of *do*. By contrast, dependencies which do not reconstruct can be derived by base-generation plus operator movement, and so they need not leave copies of the displaced XP in [Spec, *v*P]; rather, this position is filled by a copy of a null operator. We claim that dependencies of the latter type can escape *do*-ellipsis because the null operators involved lack a phonological specification in their lexical entry: they are "born" silent, and are therefore never interveners for a PF rule like *do*-cliticization.

To build this argument, we begin by laying out the full spread of data showing the movement dependencies that can and cannot take place in the context of *do*-ellipsis.

2. Extraction asymmetries out of *do*-ellipsis

To address the first question posed above – do the (im)possible dependencies out of *do*-ellipsis form a natural class? – we provide the full range of data[2] from various movement types, drawing on both the previous literature and some novel observations. What emerges is a rather chaotic empirical profile. At the end of this section, we state a straightforward – if puzzling – *anti-reconstruction constraint* to gather up the facts below; and, in the next section, we attempt to derive this constraint from basic principles.

[2]The data in this section are mostly presented as minimal pairs involving *do*-ellipsis vs. regular VPE to illustrate that it is extraction out of *do*-ellipsis in particular, and not out of predicate ellipsis in general, that is restricted in the relevant way.

2.1 Wh-movement: prohibited

First, we see that wh-movement is barred out of the *do*-ellipsis site, as observed many times before (Baltin 2007, Haddican 2007):

(4) I don't know which book Tom will read, but I know which one Fred will (*do).

Baltin (2007) took this to indicate that BrE *do* was more like *do so* than like VPE. *Do so* has been argued to involve an atomic VP proform – a *deep anaphor* (Houser 2010, contra Hankamer & Sag 1976) – which, lacking internal structure, precludes extraction:

(5) I know who Mary will hire, and who she won't (*do so).

In his early work on these constructions, Baltin (2007) took their shared ban on wh-movement to indicate that *do*-ellipsis and *do so* are more or less the same phenomenon, superficially differing only in whether the predicate proform is overt (as in *do so*) or non-overt (as in *do*-ellipsis). This sort of approach actually predicts that <u>all</u> types of movement dependencies should be blocked, not just wh-movement. As subsequent work has shown, this is too restrictive, as certain types of movement out of *do*-ellipsis are in fact tolerated; for instance, Baltin himself noted that data from A-raising, e.g. (2), was not compatible with the unified proform analysis.[3] In the following subsections we note further cases of acceptable A′-extraction from *do*-ellipsis which complicate the empirical picture further.

2.2 Topicalization: possible

As noted by Abels (2012:31), topicalization out of *do*-ellipsis is possible:[4]

(6) Hazelnuts, I won't eat. Peanuts, I might (do).

Thus, the class of prohibited movement dependencies out of *do*-ellipsis is evidently not so broad as the set of all A′-movements.

2.3 Relativization: possible

When the head of a relative clause is associated with a position inside the *do*-ellipsis site, we see mixed properties. Acceptable examples are attested (Baker 1984):

(7) A man who steals does not incur the same measure of public reprobation which he would have (done) in the past.

[3]For recent insights on the apparent extraction possibilities out of *do so*, see Bruening (to appear).

[4]Haddican (2007) claims that such examples are ungrammatical, but, as noted in Abels (2012:31) (and confirmed with additional consultants), native speakers in fact accept such examples.

However, various minimally-different examples are unacceptable. For instance, relative clauses whose heads denote (certain kinds of) amounts, as well as headless (free) relative clauses, are incompatible with *do*-ellipsis (Abels 2012:32):

(8) a. I put in my pocket all the money I could (??do).
b. He buys what he can (*do).

As Abels points out, the relative clauses in (7) belong to a class that Bianchi (2004) argues require a matching analysis, in which the head of the relative clause originates outside the relative, and is associated with a null operator at the left edge of the relative clause. On the other hand, the relative clauses in (8) belong to a class that, according to Bianchi, can only be captured with a raising analysis, in which the head of the relative clause originates in the gap position and moves out.

Clearly, *do*-ellipsis is sensitive to these independently-motivated structural differences between matching and raising relative clauses, but why should this be? We address this question, taking cues from Thoms (2011), further below.

2.4 Comparatives: possible

Similarly, the movement dependency involved in comparatives (Chomsky 1977) is compatible with *do*-ellipsis. Examples again come from Baker (1984) and Algeo (2006: §15.1.3):

(9) a. He ate more than he should have (done).
b. Had Blader taken more champagne on board than he should have (done)?

We expect comparatives to pattern together with relative clauses, and in particular matching relatives: Bresnan (1973), Lechner (2004), Kennedy & Merchant (2000) and others have analysed comparatives as essentially a subtype of matching relative.

2.5 Quantifier raising: possible

Even covert A′-movement is possible out of the site of *do*-ellipsis, once certain factors are controlled for (which we return to below; Thoms 2011, Abels 2012):

(10) Rab won't try more than two thirds of the exam. I won't (do), either. $[+\frac{2}{3} > \neg]$

Here, the object can take scope over negation, giving a reading like *There is more than two thirds of the exam that I won't try*, i.e. one that is true if I only attempt less than a third of the exam. Under standard assumptions, this reading is generated by covert A′-movement (quantifier raising: QR) of the object to a position above negation, so the availability of inverse scope out of *do*-ellipsis indicates that QR is possible in these contexts.

2.6 Summary and discussion: reconstruction is incompatible with *do*-ellipsis

A summary of the extraction (im)possibilities with *do*-ellipsis is below:

(11)

Compatible with *do*-ellipsis	**Incompatible with *do*-ellipsis**
Comparatives	Wh-movement
Topicalization (non-quantified)	Topicalization (quantified)
Relativization (matching)	Relativization (raising)
Quantifier raising	

Recall one of the questions we started off with: do the extraction (im)possibilities form natural classes? We can now conclude that they do. As originally observed in Thoms (2011), the unacceptable movement dependencies with *do*-ellipsis are just those that involve reconstruction. There is ample evidence for reconstruction in wh-movement (Fox 1999), and the presence of reconstruction effects is definitional of raising-type relative clauses (Bianchi 2004). On the other hand, the A′-dependencies which escape *do*-ellipsis – topicalization, matching relatives and comparatives – typically resist reconstruction (see Lasnik & Stowell 1991 on topicalization, Sauerland 2004 on matching relatives, and Chomsky 1977, Kennedy & Merchant 2000 on comparatives), and all have been analysed in terms of movement of a null operator (see especially Lasnik & Stowell 1991). Finally, in the case of QR, reconstruction is presumably impossible because it would render the operation semantically vacuous (and hence undetectable in the relevant test cases).

What about A-movement? We saw that raising from *do*-ellipsis is possible, so clearly A-movement is not banned outright.[5] Given the foregoing, we predict that forcing reconstruction in an A-chain will yield unacceptability. As we see below, construing the subject below negation is possible with regular VPE, but not with *do*-ellipsis. This makes sense if the inverse scope reading is derived by A-reconstruction (Sauerland 2004).

(12) a. Every boy won't finish the exam, and every girl won't, either. $[\neg > \forall]$
b. Every boy won't finish the exam, and every girl won't **do**, either. $??[\neg > \forall]$

This also gives us an explanation for an apparent conflict between the data presented in (10) above, which showed QR escaping from *do*-ellipsis, and the following examples testing object>subject scope, which Baltin (2007) and Haddican (2007) took to show to show that QR out of *do*-ellipsis was impossible.

(13) a. Some man will read every book, and some woman will too. $[\forall > \exists]$
b. Some man will read every book, and some woman will do too. $*[\forall > \exists]$

[5]Passives (with BE) are the exception, as these are ruled out in *do*-ellipsis (e.g. **Mary was praised, and John was done too*). However, we note that *do*-ellipsis is compatible with both GET and NEED passives:

(i) The cookies definitely won't get eaten, but the cakes might do.
(ii) The car doesn't need washed now, but it will do by Tuesday.

We take this to indicate that it is something about the syntax of BE passives specifically, and not A-movement generally, that is problematic with *do*-ellipsis.

The contrast between Baltin's data and (10) makes sense in light of the fact (observed by Hornstein 1995 and Johnson & Tomioka 1998) that object>subject scope requires A-reconstruction of the subject as well as object QR.[6] If subject reconstruction is impossible with *do*-ellipsis, then the absence of object>subject scope is expected, and there is no conflict with the evidence indicating that QR can escape *do*-ellipsis.

Now, we could simply state all of this as a kind of principle:

(14) **Anti-reconstruction constraint for British English *do*-ellipsis** (to be derived)
Reconstruction is prohibited into the *do*-ellipsis site.

Although it has broad empirical coverage, this constraint is rather bizarre. Why would *do*-ellipsis care about reconstruction, given that regular VPE does not?

3. Proposal: copies of moved XPs in [Spec, *v*P] block *do*-cliticization

We propose that reconstruction interacts with *do*-ellipsis because it requires full copies of the moved element in successive-cyclic landing sites to interpret, and copies of movement can interact with processes such as encliticization of *do*. For this to be tenable, we must (i) explain why copies of XP-movement left in [Spec, *v*P] would interfere with *do*-ellipsis at all, and (ii) establish that the dependencies that are compatible with *do*-ellipsis do not involve such copies. We take up these tasks below, relying heavily on the prior literature.

3.1 The enclitic little-*v* status of *do*

Setting aside movement for a moment, there is another, much more obvious, difference between *do*-ellipsis and regular VPE: the former necessarily involves an instance of *do* that the latter lacks.[7] This superficial-looking difference, we claim, is in fact the source of the differential movement behaviour between the two ellipsis types: *do* interacts negatively with copies of XP-movement left in [Spec, *v*P].

Following Haddican (2007), we assume that the *do* that characterizes *do*-ellipsis is an exponent of little-*v*, and that it is an enclitic—it requires a verbal host to its left to dock onto. Haddican's (2007) arguments for this are reproduced below. First, this *do* cannot bear stress, as in (15), suggesting it is a phonologically weak or deficient element. Second, it cannot be separated from the preceding verbal head by intervening material, as in (16), which is consistent with the behaviour of an enclitic requiring a verbal host. Third, and relatedly, this *do* cannot be stranded by moving its verbal host away, as in (17). Finally, it cannot take another clitic as a host, for example when the verbal element to its left is itself contracted onto some other element, as in (18).

[6] Johnson & Tomioka (1998) took this to indicate that objects can only QR so far, and that the relevant adjunction position is above negation but below the surface position of the subject. However, see Elliott & Thoms (2016) for an alternative proposal.

[7] The properties described below distinguish this *do* from various others, e.g. the *do* found in canonical *do*-support environments (to support tense, negation, or verum focus, for instance).

(15) A: Do you think you'll arrive on time?
B: *I might DO. (cf. I MIGHT do.)

(16) a. *I don't know if she'll come, but she should obviously do.
b. *I don't know if she'll come, but she should, it seems, do.

(17) *I know Maria will come, but will your brother do?

(18) a. *Sarah will arrive on time, and Tom'll do too.
b. Sarah will arrive on time, and Tom will do too.

These facts are all consistent with the claim that the *do* arising in *do*-ellipsis is an enclitic requiring a verbal host, and its low position in the inflectional array is consistent with the position of little-*v* (see also Thoms 2011).

We can now see why the contents of [Spec, *v*P] are relevant to *do*-ellipsis: if XP-movement takes place through the edge of *v*P and leaves a copy there, this copy might interfere with encliticization of *do*. Specifically, since a copy of a moved XP cannot serve as a suitable verbal host for *do*, a configuration similar to those seen above will arise: namely, *do* will be left stranded without a verbal element to cliticize onto. This is roughly schematized below for a case of wh-movement: the copy of *what* left in [Spec,*v*P] interferes with encliticization of *do* onto *will*.

(19) *...I do know what Fred will do.
[$_{CP}$ what$_i$ [$_{TP}$ Fred will [$_{vP}$ what$_i$ do [VP]]]]
⋮..... ✖ .....⋮

Several questions immediately arise. For one, copies of movement left behind in [Spec, *v*P] are eventually deleted, so we should ask whether this is relevant to the purported blocking effect. We address this later in §3.3. First, though, we must return to the difference between the dependencies that allow *do*-ellipsis and those that do not. Since the contents of [Spec, *v*P] are crucial to determining where *do*-ellipsis is possible and where it is not, we must ask about the status of that position across these different movement dependencies.

3.2 XP-movement vs. OP-movement

Copies of XP movement left behind in [Spec, *v*P] interfere with encliticization of *do*, and such copies are assumed to be left by default whenever XP-movement takes place out of a cyclic domain. As such, the challenge here is to show that the dependencies that are compatible with *do*-ellipsis do not involve leaving copies of the displaced XP in cyclic landing sites. Fortunately, this has already been established in the literature, as most of the phenomena in question have been analysed in terms of movement of a null operator, with the overt XP being base-generated in its high position. To see why this would be relevant, consider the following schematic for a matching relative, which we take to be derived by operator movement (Carlson 1977).

(20) ... the same measure of public reprobation OP_i that he would have done in the past.
[$_{\text{CP}}$ which OP_i [$_{\text{TP}}$ he would have [$_{v\text{P}}$ OP_i done [VP]]]]
⋮..... ✓ .....⋮

The null operator in the intermediate landing site does not block encliticization of *do*, we claim, because it has no phonetic content and projects no prosodic structure: that is, it is "born" silent, being a zero in the lexicon. Therefore, the null operator is invisible for the purposes of all postsyntactic processes which act on phonological representations, such as the prosodic rebracketing rule which groups *do* with its host. Copies of moved (non-null) XPs are different because they are inserted and then deleted, at least on a copy-theoretic approach like the one we adopt, and so we expect copies of moved XPs to interact with postsyntactic operations which occur prior to copy deletion in the postsyntactic component.

On this account, we also expect that other null elements, such as PRO, would also not intervene for *do*-encliticization. This provides us with an explanation of the fact that copies of extracted subjects in [Spec,*v*P] do not intervene generally: if A-dependencies such as subject extraction can be analysed as involving either raising or control (Kroch & Joshi 1985, Lasnik & Saito 1992), then the predicate-internal subject may be a PRO which does not intervene for *do*-encliticization.[8]

(21) Bill might do, too.
[$_{\text{TP}}$ Bill_i might [$_{v\text{P}}$ PRO_i do [VP]]]
⋮..... ✓ .....⋮

If the A-dependency in question requires reconstruction, then the subject raising dependency must be analysed as involving true A-movement, and so the lower copy of the subject in [Spec,*v*P] will intervene for *do*-encliticization.

(22) ... and every girl won't do, either. ??[$\neg > \forall$]
[$_{\text{TP}}$ [every girl]$_i$ won't [$_{v\text{P}}$ [every girl]$_i$ do [VP]]]
⋮..... ✖ .....⋮

In effect, our proposal is broadly in line with Chomsky & Lasnik's (1977) account of *wanna*-extraction, where an A′-trace, but not PRO, intervenes for encliticization (but see Postal & Pullum 1988 for criticisms of that account).

3.3 The timing of copy deletion vs. encliticization

Crucial to our account is the assumption that encliticization of *do* precedes copy deletion in the postsyntactic component: if copy deletion occurred earlier in the derivation, deleted XP copies would not interact with encliticization, and ought to behave just like null operators, contrary to fact. This assumption is supported by other work on the interaction of movement and postsyntactic processes: Korsah & Murphy (2016) argue that tone assign-

[8] An alternative analysis for the fact that subjects do not generally intervene is that A-movement is indeed movement, but it does not need to leave a copy: see Lasnik (1999) and Fox (1999) for such a claim.

ment in Asante Twi is sensitive to the presence of deleted copies left by successive-cyclic movement, and Ahn (2015) argues that stress assignment within the English VP takes into account the presence of deleted copies of movement as well. Since stress and tone assignment are known to interact with articulated prosodic structures (see e.g. Chen 1979), we can conclude that rules which parcel up prosodic structures, such as prosodic incorporation, must be ordered before both stress/tone assignment and copy deletion.

4. Conclusion

We offer a fresh look at British English *do*-ellipsis, arguing that its variable restrictions on extraction should be understood not as following from the syntax of ellipsis, but rather from the phonology of cliticization. Extraction from *do*-ellipsis is impossible whenever it would leave an overt copy in [Spec, *v*P] – even if that copy is later deleted in the postsyntax – because such copies block encliticization of *do*. Our account follows other claims in the literature situating copy deletion as a late operation, and we suggest that it may be fruitful to reconsider whether other extraction restrictions might follow from the opaque interaction of copy deletion and postsyntactic processes.

5. Bibliography

Abels, Klaus. 2012. *Phases: An essay on cyclicity in syntax*. Mouton.

Aelbrecht, Lobke. 2010. *The syntactic licensing of ellipsis*. John Benjamins.

Ahn, Byron. 2015. Giving reflexives a voice: twin reflexives in English. Doctoral dissertation, UCLA.

Algeo, John. 2006. *British or American English? A handbook of word and grammar patterns*. Cambridge University Press.

Baker, C. L. 1984. Two observations on British English *do*. *Linguistic Inquiry* 15:155–157.

Baltin, Mark. 2007. The position of adverbials. In *Phrasal and clausal architecture, syntactic derivation and interpretation*, ed. Vida Samiian, Simin Karimi, & Wendy K. Wilkins. John Benjamins.

Baltin, Mark. 2012. Deletion versus pro-forms: An overly simple dichotomy? *Natural Language and Linguistic Theory* 30:381–423.

Bianchi, Valentina. 2004. Resumptive relatives and LF chains. In *The structure of CP and IP*, ed. Luigi Rizzi, 76–114. Oxford: Oxford University Press.

Bresnan, Joan. 1973. Syntax of the comparative clause construction in English. *Linguistic Inquiry* 4:275–343.

Bruening, Benjamin. To appear. Passive *do so*. To appear in *Natural Language & Linguistic Theory*. Available at: https://link.springer.com/article/10.1007/s11049-018-9408-1.

Carlson, G. 1977. Amount relatives. *Language* 53:520–542.

Chen, Matthew Y. 1979. Metrical structure: evidence from Chinese poetry. *Linguistic Inquiry* 10:371–420.

Chomsky, Noam. 1977. On wh-movement. In *Formal syntax*, ed. Peter William Culicover, Thomas Wasow, & Adrian Akmajian, 71–132. Academic Press.

Chomsky, Noam, & Howard Lasnik. 1977. Filters and control. *Linguistic Inquiry* 8:425–504.

Elliott, Patrick D., & Gary Thoms. 2016. QR out of control. In *Proceedings of WCCFL 33*, ed. Kyeong-min Kim et al., 119–127. Cascadilla Proceedings Project.

Fox, Danny. 1999. Reconstruction, binding theory and the interpretation of chains. *Linguistic Inquiry* 30:157–196.

Haddican, Bill. 2007. The structural deficiency of verbal pro-forms. *Linguistic Inquiry* 38:539–547.

Hankamer, Jorge, & Ivan Sag. 1976. Deep and surface anaphora. *Linguistic Inquiry* 7:391–426.

Hornstein, Norbert. 1995. *Logical Form: from GB to Minimalism*. Blackwell.

Houser, Michael. 2010. The syntax and semantics of *do so* anaphora. Doctoral dissertation, UC Berkeley.

Johnson, Kyle. 2001. What VP ellipsis can do, and what it can't, but not why. In *The handbook of contemporary semantic theory*, ed. Mark Baltin & Chris Collins, 439–479. Blackwell.

Johnson, Kyle, & Satoshi Tomioka. 1998. Lowering and mid-size clauses. In *Proceedings of the 1997 Tübingen Workshop on Reconstruction*, ed. Graham Katz, Shin-Sook Kim, & Winhart Haike, 185–206. Tübingen, Germany.

Kennedy, Christopher, & Jason Merchant. 2000. Attributive comparative deletion. *Natural Language and Linguistic Theory* 18:89–146.

Korsah, Sampson, & Andrew Murphy. 2016. What can tone tell us about successive-cyclic movement? Evidence from Asante Twi. In *Proceedings of NELS 46*, ed. C. Hammerley & B. Prickett, 227–240. Amherst, MA: GLSA Publications.

Kroch, Anthony, & Aravind Joshi. 1985. The linguistic relevance of Tree Adjoining Grammars. Ms., University of Pennsylvania.

Lasnik, Howard. 1999. On feature strength: Three Minimalist approaches to overt movement. *Linguistic Inquiry* 30:197–217.

Lasnik, Howard, & Mamoru Saito. 1992. *Move* α. MIT Press.

Lasnik, Howard, & Tim Stowell. 1991. Weakest crossover. *Linguistic Inquiry* 22:687–720.

Lechner, Winfried. 2004. *Ellipsis in Comparatives*. Berlin/New York: Mouton de Gruyter.

Merchant, Jason. 2013. Diagnosing ellipsis. In *Diagnosing syntax*, ed. Lisa Lai-Shen Cheng & Norbert Corver, 537–542. Oxford University Press.

Postal, Paul, & Geoffrey Pullum. 1988. Expletive noun phrases in subcategorized positions. *Linguistic Inquiry* 19:635–670.

Sauerland, Uli. 2004. The interpretation of traces. *Natural Language Semantics* 12:63–127.

Thoms, Gary. 2011. From economy to locality: *do*-support as head movement. Ms., Strathclyde University. To appear in *Minimalist Approaches to Syntactic Locality*, ed. Balasz Suranyi. Cambridge University Press.

Gary Thoms, Craig Sailor
gary.thoms@gmail.com, cwsailor@gmail.com