Do-doubling in varieties of English[1]

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◻ ABSTRACT

This paper explores the syntax of two constructions found in certain varieties of English in which a structural gap, whether created by ellipsis or the movement of a pronominalised VP, is introduced by two instances of *do*s even though only one might be expected to occur. Its central claim is that, despite initial appearances to the contrary, both uses of *do* are in fact the same form with the same function, each appearing in order to satisfy the affixal requirements of a functional head when there is no other suitable candidate available to do so. In this sense, the constructions are argued to demonstrate the availability of 'double' *do*-support in English.

1 ◻ INTRODUCTION

Despite the volume of work detailing the extent of the phenomenon in other European languages, syntactic doubling is not a term that has ever had wide currency in the domain of English linguistics, and little attention has therefore been paid to how, or indeed whether, it might usefully be applied there. As part of the search for examples to the analysis of which the term might be relevant, this paper explores the syntax of two related constructions in which missing material is introduced by a 'double' use of *do*. In the first of these, the missing constituent appears to have been elided; in the second it appears to have been moved, the trace it leaves behind bound either by parenthetical-*as* or appositive-*which*:

(1) a. We don't often go out at weekends, but we do do sometimes.
     b. Has anything like that ever happened to you? Yes, it does do regularly.
     c. I don't know if she went to university. I seem to think she did do.

(2) a. The correct solution is to use vector graphics, as Apple did do.
     b. They'll have to share the revenue, which we do do in Tennessee.
     c. The browser must support Java and Javascript, which Netfront does do.

Apart from their structural differences, these two constructions also vary both in terms of their geographical distribution and in terms of the amount of attention they have generated in the literature. Whereas ellipsis variants of the type in (1) have sometimes been acknowledged as a combinatorial possibility, albeit usually with the caveat that they are rare or awkward forms which tend to be avoided except by speakers of (northern) British varieties (Pullum and Wilson (1977: 777); Gazdar, Pullum and Sag (1984: 614); Quirk et al. (1985: 875-876); Denison (1998: 199); Huddleston and Pullum (2002: 1523)), examples of the kind in (2) have, like parentheticals in general, received virtually no attention at all, even though they are

nevertheless quite common, occurring not just in Britain but throughout much of the anglophone world.

What makes them interesting from the point of view of doubling is that each of these constructions involves a semantically superfluous element: if the second *do* expresses anything at all, it simply underscores the polarity of the clause in which it appears, just as the first *do* would if used in isolation (cf. López and Winkler 2000). That it makes no additional semantic contribution is shown by the fact that its omission or insertion has no effect on the overall meaning of the resulting expression:

(3) a. They planned to leave. I don't know if they did (do).
   b. If they want to stay, as/which they do (do), that won't be a problem.

This is not to say, however, that the second *do* is entirely redundant. On the contrary, the central claim of this paper is that it has a very specific purpose which closely parallels that of the first. In particular, it will be argued that just as the first *do* stands in for a semantically contentful auxiliary, satisfying the affixal requirements of T when there is no other suitable candidate to do so, so the second *do* stands in for a main verb, satisfying the affixal requirements of little-*v* when the canonical realisation of the VP has been altered, leaving the main verb unable to raise there. Indeed, the parallels between them are such that the two uses of *do* are in fact argued to be the same form with the same function, but with different points of insertion. In the sense that they involve the iterated application of a process of *do*-support, then, the two constructions in question thus constitute doubling, but only on a very broad understanding of the term.

The plan in the remainder of the paper is first to catalogue the properties of constructions featuring just one *do*, comparing them at each stage with their 'doubled' counterparts. Section 3 then discusses the apparently optional nature of the second *do*, with a view to establishing that it is not really optional at all. Section 4 considers the mechanism by which *do*-support arises in each case, proposing that it results essentially from the application of the elsewhere condition of a pronunciation function which requires that PF-stranded verbal heads be pronounced as *do* (Hallman 2004). Finally, section 5 concludes.

2 ▣ Comparing the two *DO*s

2.1 ▣ Categorial status

2.1.1 ▣ The first *do*

Standard VP ellipsis constructions, which feature a single occurrence of *do* inflected in one of three finite forms, are familiar in all varieties of English:

(4) a. John doesn't enjoy cricket, but Mary does.
   b. The children want to go home; their friends do too.
   c. Mary tried the tripe; John did too.

In a strict lexicalist model of the kind assumed in Chomsky (1995: Chapters 2 and 3), however, it is not clear why this *do* might be required at all. The reason, as Bobaljik (1994) notes, is that on that system finite main verbs emerge from the lexicon fully inflected and are pronounced as such by virtue of their own features, which are checked against the corresponding features of T at LF. But the features of T are not themselves pronounced; if they were, then examples of the type in (5) would be readily available:

(5) a.*John does leaves early on Fridays.
    b.*Mary did played the piano at school.

And crucially there is no reason to expect this situation to change just because ellipsis has taken place: the unpronounced features in T should remain unpronounced irrespective of what might happen to the pronunciation of the VP. As a result, there should be no call for the appearance of *do* in the context of VP ellipsis, and examples such as those in (6) should be possible instead:

(6) a.*John doesn't know Bill, but Mary.
    b.*Mary likes chocolate and John too.

On the more conventional view, according to which inflectional material is generated in T and main verbs acquire their inflection only as part of the process by which T seeks a host for its affixes, however, this use of *do* is straightforwardly explained as a specific instantiation of the more general strategy of *do*-support.

The fundamental insight on which most accounts of *do*-support are based is the idea that (some component of) T demands lexical realisation. In clauses containing at least one auxiliary, this requirement is easily met since the first in any sequence of auxiliaries will merge directly with T. In the case of clauses containing only main verbs, however, the situation is rather more nuanced, because, while it is clear that the process is not effected by verb raising (Emonds 1978; Lightfoot 1979; Pollock 1989), the fact that tense morphology does nevertheless find its way on to the main verb indicates that the two must somehow combine. Since the verb cannot raise, the assumption has been that the tense features lower in an operation traditionally known as Affix Hopping (Chomsky 1957; see also Embick and Noyer 2001). As long as this process goes on unimpeded, *do*-support need never occur:

(7) a. John [$_{TP}$ t_i [$_{vP}$ play-ed$_i$ his drums all night]].
    b.*John did play his drums all night.   (Non-emphatic *do*)
    c.*John did played his drums all night.

But Affix Hopping is a strictly local operation which lowers unattached affixes onto main verbs only if the two are suitably adjacent. If the configuration necessary for its application is disrupted and T-to-V lowering cannot take place, then *do*-support applies instead to ensure that the features of T are not left without phonological expression (e.g. Chomsky 1957; Lasnik 2000; Bobaljik 2002; Freidin 2004). There are various factors that might make this rescue strategy necessary, including the presence of sentential negation, (8a), the appearance of an intervening DP subject, (8b), or the fact that the VP has been fronted, (8c), but in the case of VP ellipsis, (8d), the requirement for *do*-support is triggered by the fact that the verb has gone missing altogether, leaving the inflectional material with nothing to attach to:

(8) a. John did not leave early.
    b. Did John leave early?
    c. John said he would leave early and leave early he did.
    d. John didn't leave early, but Mary did.

At first sight, it might seem as though an identical analysis will deal straightforwardly with clauses headed by *as* and *which*, since these too involve a structural gap. But there is reason to think that the two gaps are not of the same type. For one thing, the material missing from parenthetical constructions is subject to stricter locality conditions: whereas elided material can be interpreted either locally or non-locally, in parentheticals the constituent that supplies the

interpretation for the gap must be the most local phrase of the appropriate type. The following examples, modified from Potts (2002: 627), illustrate:

(9) a. The fact that John read the map carefully probably means that he kept to the trails. But we aren't sure whether Mary did.
   [ellipsis site = keep to the trails]
   [ellipsis site = read the map carefully]

   b. The fact that John read the map carefully probably means that he kept to the trails, as/which Mary did.
   [*as/which*-clause gap = stay on the trails]
   [*as/which*-clause gap ≠ read the map carefully]

Given the assumption that traces, but not ellipsis sites, obey very strict identity conditions, such that a moved phrase can only be understood as exactly the phrase that the trace constitutes, this difference suggests that *as* and *which* parentheticals are derived not by ellipsis, but rather by movement.

Observations relating to syntactic islands suggest the same conclusion. Whereas VP ellipsis is (generally) island insensitive, clauses introduced by *as* and *which* always respect island constraints. The difference is illustrated by contrasting the following examples highlighted by Johnson (2001: 444) and Potts (2002: 631-2) respectively:

(10) a. John didn't hit a home run, but I know a woman who did.
    b. That Betsy won the batting crown is not surprising but that Peter didn't know she did is indeed surprising.

(11) a.*Nina quickly bought two durians, just as we met a chef who did.
    b.*Chuck rides a unicycle, just as Sue asked me whether I did.

Taken together, then, all this motivates an analysis on which the gap in parenthetical constructions is derived by extraction, not by ellipsis. And since the gap is interpreted as a variable bound by an operator, this in turn suggests an analysis on which *as* and *which* are VP pro-forms, which pronominalise the VP before moving on to Spec-CP, from where they act as binders for the gap (Hardt (1993: 110); Stroik (2001: 364)). But despite this difference, there is an important underlying similarity: in both cases, *do*-support is triggered because the usual spell-out of the VP has been manipulated, whether by ellipsis or pronominalisation, in a process that interferes with the phonology of the main verb and leaves affix hopping unable to apply.

2.1.2 ▣ The second *do*

The availability of a second *do* in the context of VP ellipsis is an often overlooked expansion of a pattern found quite widely in British English whereby a non-finite form of *do*, sometimes known as propredicate *do*, appears there licensed by the same range of elements that would also license VP ellipsis itself (e.g. Joos 1964; Halliday and Hasan 1976; Trudgill 1984). These include the modals, (12a), perfective *have*, (12b), progressive *be*, (12c) and infinitival *to*, (12d). The appearance of a second *do* following auxiliary *do*, as in (12e), thus does no more than round the paradigm:

(12) a. I don't know if I'm still going. I might do.
    b. She said she wanted to join. She might already have done.
    c. I'm not working today, but I will be doing tomorrow.
    d. John wouldn't help Mary, but she wanted him to do.
    e. They often go mountaineering, or at least I think they do do.

Two lines of thought have emerged as to what the status of this second *do* might be. One holds that it is the non-finite analogue of the first (see e.g. Pullum and Wilson 1977; Baker 1984; Miller 2002); the other that it is an entirely distinct but homophonous main verb (Gazdar, Pullum and Sag 1982; Quirk et al. 1985). Its morphological shape is certainly that of a main verb. Always non-finite, it shows up either as a participle or as a bare infinitive, just as any main verb would when used in the same position. For illustration, compare (12) with (13):

(13) a. John spoke at the meeting. Mary might speak-ø there too.
      b. John spoke at the meeting. Mary has spok-en there too.
      c. John is speaking at the meeting. Mary is speak-ing there too.
      d. For John to speak- ø at the meeting, he'll have to get there by seven.
      e. John said she hadn't, but apparently Mary did speak- ø at the meeting.

It is also main verb-like in its ability to appear under adverbs and negation, as well as in its failure to commute with auxiliaries:

(14) a. John said he would help, but he doesn't usually do.
      b.*John said he would help, but he doesn't usually will.
      c.* John said he might help, but he doesn't usually might.

Standard VP ellipsis, on the other hand, has a *do* that can appear to the left of adverbs and negation, and is possible with auxiliaries besides *do*:

(15) a. John said he would feed the cat, but he doesn't normally.
      b. John didn't want to feed the cat, but Mary will.
      c. John didn't want to feed the cat, but Mary might.

Similar arguments apply in the case of *as* and *which* clauses. As Kato and Butters (1987: 214-215) point out, propredicate *do* occurs in these contexts too, even in American English, where examples of the type in (12) are not generally available. By way of illustration, they cite examples such as the following, the first two of which are taken from *The New York Times*:

(16) a. Mrs Thatcher went off on her own and made good her threat to withdraw from UNESCO, as the United States had done.
      b. To refuse to support the rebels in such circumstances, as the Democrats have done in the case of the "contras", does not necessarily mean endorsement for existing regimes.
      c. He didn't take his medicine, which he should have done.

Again, the pattern has also been extended, with *do* licensing the appearance of a second *do*. Interestingly, however, this is not just a British phenomenon, as the following examples attest:

(17) a. We were told not to cry or call for our mothers and to work quietly, which we did do [ABC (Australia), *The World Today* 1/2/05].
      b. The court will take into account the offender's means, which the infringement fee does not do [*Review of Monetary Penalties New Zealand;* New Zealand Ministry of Justice 06/00].
      c. We would like to see a higher proportion […] of lay benchers, as we did do with the RHPA [*Hansard* report of debates in the Legislative Assembly of Ontario (Canada) 7/10/98].
      d. As a president of Seefsa, it's difficult to do anything other than encourage training, which we do do [Submission to the *Truth and Reconciliation Commission; Business sector hearing* (South Africa), 13/9/97].

e. Williams was convicted on four charges of trying to "cover up" the crime, which he did do [Fox Sports, (USA), *SoCalSportsFan's Blog* 22/4/06].

As before, these cases seem to offer little scope for suggesting that the two *do*s are of the same type, structural and morphological considerations apparently suggesting that they are two different forms which just happen to have the same phonological shape, and therefore that their co-occurrence represents a case of syntactic homonymy rather than one of doubling. But there is another way of interpreting the facts: if both uses of *do* could be shown to be the same last resort default which spells out inherently verbal positions in the absence of a suitable alternative, then there would be a sense in which they could both be considered 'the same'. The fact that one occurrence looks like an auxiliary and the other a main verb would then have nothing to do with the status of *do* itself, but would rather result from the nature of the category that *do* is being required to rescue. The aim in the remainder of this paper is to pursue this intuition further.

2.2 ▢ Semantic restrictions

2.2.1 ▢ The first *do*

Because the *do* of *do*-support is a pleonastic form which fulfils purely formal requirements in the absence of a contentful alternative, its referential potential stems not from any inherent meaning of its own, but rather from the position in which it appears. In other words, since the first *do* serves as an overt realisation of T, it expresses nothing beyond tense. As a result, it imposes no restrictions on the semantics of its antecedent, freely co-occurring with both stative and eventive predicates, as in (18)-(19), as well as with both agentive and non-agentive subjects, (20)-(21):

(18)   a. John loves spaghetti. Mary does too.
       b. John couldn't finish on time, but Mary did.

(19)   a. If John knew the answer, as/which Mary did, he'd have felt happier.
       b. If John had bought a ticket, as/which Mary did, he too might have won the lottery.

(20)   a. John wanted to write a novel, but Mary actually did.
       b. It'll probably rain; it always does when we go to the beach.
       c. Mary felt sick. John did too.

(21)   a. John plays tennis in the summer, as/which Mary does all year round.
       b. They've said it will rain this afternoon, as/which it always does when Mary wants to put her washing out.
       c. If the cup shatters, as/which the plate did, there'll be no crockery left.

Main verb *do*, on the other hand, imposes a couple of very particular requirements. When used in non-anaphoric contexts, it represents an eventive predicate by the traditional progressive diagnostic (Vendler 1957), and obligatorily assigns an agent theta-role to its subject (Ross 1972):

(22)   Move the car!
       a. I'm doing it now.
       b.*I do it now.

(23)   a. John did the shopping for his sister.
       b.*This article does a report on the distribution of *do* in English.

Significantly, these properties carry over to its anaphoric uses, where it appears in collocation with a pronominal object to form an overt VP anaphor. In these cases, the range of possible antecedents for *do* is limited to non-stative predicates with agentive subjects. The pattern is illustrated here with *do it*, though a similar logic applies to variants such as *do this*, *do that*, *do likewise* and *do the same* (see e.g. Hankamer and Sag 1976; Quirk et al. 1985):

(24) a.*Mary knows Bill. John does it too.
      [does it ≠ knows Bill]
    b. John promised to mow the lawn because Mary didn't want to do it.
      [do it = mow the lawn]

(25) a. John tried the Spam, but Mary couldn't bring herself to do it.
      [do it = try the Spam]
    b.*I wonder whether it'll snow today; it was doing it yesterday.
      [doing it ≠ snowing]
    c.*Mary felt faint after running up the hill. John did it too.
      [did it ≠ felt faint]

If propredicate *do* were a main verb, then, it too might be expected to be subject to similar semantic restrictions. But as the following examples indicate, it suffers no such limitations. Like the first *do*, propredicate *do* is indifferent both to the stativity of its antecedent, as in (26)-(27), and to the agentivity or otherwise of its subject, (28)-(29):

(26) a. John didn't call her today, but he did do yesterday.
    b. Does he like her? Yes, I think he does do.

(27) a. John should check his facts, as Mary did do, before casting blame.
    b. John probably hates Bill, just as Mary does do.

(28) a. John shouted at the TV. He always does do when the news comes on.
    b. I don't know whether it'll rain today, it did do yesterday.
    c. John doesn't suffer from migraines, but I think Mary does do.

(29) a. John said he would go and meet up with his friends, which he does do whenever he's at home.
    b. John sat there hoping it would rain, which it did do.
    c. John's car broke down again today, which it usually does do when he's already late for work.

These facts support an understanding of propredicate *do* as an element whose presence is forced by purely formal requirements and which makes no semantic contribution beyond the inherent meaning of the category it represents. In this sense, they strengthen the parallel with the *do* of standard *do*-support.

2.3 ▣ STRUCTURAL RICHNESS

The fact that the first and second *do*s may both co-occur with unaccusative predicates (and the fact that overt pronominal anaphors cannot) has often been taken as reflective of an important structural difference, the claim being that only ellipsis sites have internal structure that is sufficiently well articulated to allow for the extraction of subjects that originate inside the VP. Indeed, ever since Hankamer and Sag's (1976) original typology, VP ellipsis constructions have been widely assumed to consist of fully-fledged syntactic structure, which is built in the usual way but which goes unpronounced under identity with a like antecedent. *Do*

it anaphora and its congeners, by contrast, have always been taken to involve base generated pro-forms which have no syntactic structure beyond the lexical items they constitute (see Johnson 2001 for an overview; though see also Chao 1987; Hardt 1993; and Lobeck 1995 for an alternative view of the nature of ellipsis):

(30) a. John visited Mary and Bill did [$_{VP}$ [$_V$ ~~visit~~] [$_{DP}$ ~~Mary~~]] too.
b. John will visit Mary and Bill will [$_{VP}$ [$_V$ do] [$_{DP}$ it]] too.

Apart from determining whether the extraction of subjects is possible, the relative richness of their internal structure also has a number of further effects. It explains, for example, why VP ellipsis can host the traces of *wh*-movement when overt types of VP anaphora cannot. Thus, whereas examples such as (31a) are grammatical because the unpronounced VP has all the structure of its overt counterpart and can therefore host both the *wh*-phrase and the trace left behind when it moves, the likes of (31b) are ungrammatical because the *wh*-phrase is not licensed – it could not have been generated in its surface position, but at the same time, the fact that pronouns like *it* cannot be the pronunciation of a constituent containing a trace means it could not have been generated elsewhere either:

(31) a. I know which essay John wrote and which one Mary didn't.
b. *I know which essay John didn't write and which one Mary did it for him.

The same logic applies in cases of Antecedent Contained Deletion, which are widely analysed as involving the LF movement of a quantified DP out of the VP (e.g. May 1985: 12-13). This movement is possible in cases of VP ellipsis, where there is a fully articulated VP in which the quantified DP can be generated, but it is not possible with overt pronominals like *do it*, where the potential source position for the DP has been covered up, leaving the null relative operator with no trace to bind:

(32) a. John accused everyone that Mary did.
b. *John accused everyone that Mary did it.

Related to this is Baltin's (2005) observation that VP ellipsis differs from *do it* anaphora in allowing an object quantified within the unpronounced VP to take inverse scope over the subject:

(33) a. Some man read every book and some woman did too.
(Some<every, every<some)
b. Some man read every book and some woman did it too.
(Some<every, *every<some)

Once again, this difference is accounted for by assuming that, while ellipsis sites contain sufficient structure to host quantified objects and the traces they create, the internal structure of pronouns is not sufficiently rich.

In a slightly separate vein, appeals to structural richness also explain why VP ellipsis licenses the Missing Antecedent Effect, allowing a pronoun to co-refer with a referential DP contained within the ellipsis site, while transparent pronominal anaphors like *do it* cannot. The following examples, adapted from Bresnan (1971: 591), illustrate:

(34) a. My uncle didn't buy a present for Christmas, but my aunt did and it was bright red.
b. *My uncle didn't buy a present for Christmas, but my aunt did it for him and it was bright red.

They also account for why *do it* anaphora and its kin resist sloppy identity when VP ellipsis allows for both strict and sloppy readings of pronouns inside the ellipsis site. As Johnson (2001: 450) notes, sloppy readings have long been assumed to evidence internal structure because they result when a pronoun need not be co-referential with a pronoun in the antecedent clause, but may instead pick up a referent in its own clause (see also Williams 1977 for the original observation). This is possible in a VP ellipsis example such as that in (35a), which may be interpreted as meaning that John and Bill lost the same set of keys, but whose more natural reading is the sloppy one on which Bill lost his own keys, not John's. In examples such as that in (35b), however, the only accessible reading is the strict one on which Bill intended to wash John's car:

(35)   a.   John lost his keys and Bill did too.
       b.   John washed his car before Bill could do it.

But the suggestion that ellipsis sites always evidence internal structure, while pro-forms never do, appears to be attenuated by the behaviour of *do so*, an anaphoric construction superficially similar to *do it*, which does nevertheless appear to allow the extraction of unaccusative subjects:

(36)   a.   John coughed throughout the exam. Mary did so too.
       b.   John has arrived early every day, but Mary has never done so.

One way of accounting for this might be to follow Hallman's (2004) suggestion in assuming that, even though they may sometimes originate inside the VP, the subjects of unaccusative verbs must also have the option of being base-generated in their surface position in Spec-TP. The suggestion that various types of 'A-movement' are not really derived by movement at all is of course already widely pursued in various non-transformational frameworks, and has even been suggested in a generative context by Sportiche (1988) in his discussion of the English passive. But the reason that a movement analysis is so often adopted is that it explains why the subjects of these verbs are themes – if, on the other hand, the subjects of (36) were to be merged as the external argument of *do*, the question then would be how they acquire the correct thematic role. And Hallman's solution is in any case not general enough because compatibility with unaccusatives is not the only reason for thinking that *do so* has a measure of internal structure. As Johnson (2001: 466) points out, for example, *do so* behaves like VP ellipsis in invoking the Missing Antecedent Effect, as in (37a), and also permits sloppy identity in examples of the kind in (37b), where the pronoun *his* need not have the same referent in the *do so* clause as it has in the antecedent clause:

(37)   a.   Jerry wouldn't read a book by Babel, but Meryl has done so and it was pretty good.
       b.   John lost his suitcase, and Bill did so too.

So it seems that there are in fact three types of VP anaphora: ellipses, which are generated with fully fledged structure from the outset; pronominal anaphors, such as *do it*, which never have any internal structure in the first place; and pronominalised structures, such as *do so*, which start out with at least some measure of internal structure, but then lose it during in the course of the derivation.

Allowing for an intermediate category explains why *as* and *which* may permit sloppy identity, (38a), invoke missing antecedents, (38b), and even allow A-bar movements, exemplified in (38c) by Antecedent Contained Deletion, whilst at the same time being characterised as pro-forms for the VP:

(38) a. John phoned his parents, which Bill also did.
　　b. John never learnt Greek, which Mary did do, because she said it was really hard.
　　c. John gave Mary every book Bill did, which Fred also did.

But it also raises questions about the status of propredicate *do*; if propredicate *do* is indeed the same form as the first *do* of a 'double *do*' construction (that is, a form that may license an ellipsis site), then we would expect it to behave similarly with respect to the diagnostics for internal structure. But as it turns out, there is also a parallel with *do so*: although all three uses of *do* pattern together in terms of allowing the extraction of unaccusative subjects, (39a), and in permitting sloppy identity, (39b), and missing antecedents, (39c),:

(39) a. The ice cream melted, and the chocolate did (do (so)) too.
　　b. John lost his suitcase, and Bill did (do (so)) too.
　　c. John didn't go to the meeting but Mary did (do (so)) and she said it was a waste of time.

the *do* of *do so* and propredicate *do* are not compatible with *wh*-extraction, (40), Antecedent Contained Deletion, (41), or inverse scope readings, (42), and thus depart from the patterns instantiated by the *do* of standard *do*-support in three important respects:

(40) a. John saw which route Mary took and which one Bill did.
　　b.*John saw which route Mary took and which one Bill did do.
　　c.*John saw which route Mary took and which one Bill did do so.

(41) a. John hit every target Mary did.
　　b.*John hit every target Mary did do.
　　c.*John hit every target Mary did so.

(42) Some man read every book and some woman did do (so) too.
　　(Some<every, *every<some)

So now it appears as though propredicate *do* is not exactly like the *do* of *do*-support; rather, it seems to have more in common with *do so* anaphora, which itself seems to be something of a hybrid between a pronominal and a form with internal structure.

But this parallel might actually give a clue as to how propredicate *do* might best be analysed. Although the traditional view of *do so* has been that, just like *do it*, it is a VP pro-form featuring main verb *do* (e.g. Lakoff and Ross [1966] 1976), recent accounts have suggested something slightly different. Stroik (2001) and Hallman (2004), for example, both argue that the *do* of *do so* is in fact the same pleonastic form as that found in standard *do*-support, the only difference being that *do* is in this case required because *so* pronominalises the VP in a process that forestalls the application of V-to-*v* movement. Assuming that the analysis can be extended to cases where the VP is pronominalised by *as* or *which*, these proposals provide a straightforward account of why *do* might be required twice: the first *do* appears in T because there is no auxiliary, and no main verb onto which its affixes could hop; the second is required because there is no main verb that might raise to little-*v*. From there, the analysis can be extended still further, ellipsis also interfering with V-to-*v* movement and necessitating the appearance of a second *do*.
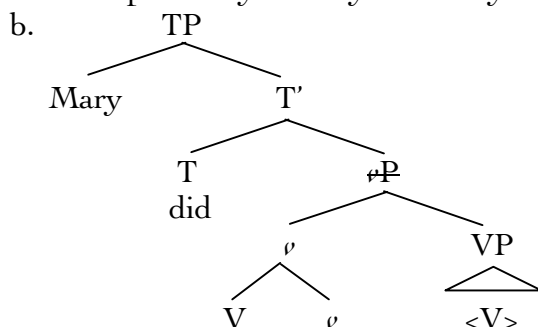
But there is an important difference: the *do* of *do so* is obligatory, as is the *do* of standard *do*-support, but the second *do* of a 'double *do*' construction seems to be completely optional, variants with and without it entirely synonymous. Its apparently freely insertable nature is a prima facie problem for any account that

seeks to identify it as a type of *∂o*-support because the hallmark of *∂o*-support is its last resort character: it always occurs when formal requirements demand its presence, and never occurs when they don't. With this in mind, the aim of the next section is to show that the problem disappears if the target of ellipsis or pronominalisation is actually slightly different in cases where the second *∂o* does not occur.

3 ▣ VP vs. vP

Despite its name, most recent accounts identify the constituent that goes missing in VP ellipsis as vP. In this kind of 'T-stranding' VP ellipsis, it is often assumed that the verb leaves its base position inside the VP, raising and adjoining to little-*v* before ellipsis takes place at PF. Mikkelsen (2006), for example, diagrams what happens in the second conjunct of (43a) as follows:

(43) a. John paid me yesterday and Mary did too.
      b.

```
                TP
          ┌──────┴──────┐
        Mary            T'
                   ┌─────┴─────┐
                   T          v̶P̶
                  did      ┌───┴───┐
                           v       VP
                        ┌──┴──┐   ╱──╲
                        V     v   <V>
```

But the relative timing of these operations has recently become the subject of some controversy, particularly in light of Chomsky's (1995: 386; 2000: 102; 2001: 37-38) prominent suggestion that head movement (including presumably all types of verb movement) might not be a syntactic operation after all. Although the strongest implementation of this idea, whereby head moment is removed entirely from the domain of narrow syntax and is relocated to PF, has not been seriously pursued, the suggestion that some component of it takes place there has now gained wide currency. Zwart (2001), for example, has suggested that, although the chains linking the positions from which and into which heads move are created in narrow syntax, the requirement that their uppermost element have phonetic realisation is only satisfied by copy spell-out at PF. Roberts (2005) suggests a similar scheme on which head movement first involves syntactic movement into a specifier position, and then requires a PF-sensitive affix feature to trigger the incorporation of the specifier and its head. And even Matushansky (2006), who advertises her proposal as purely syntactic, still seeks to derive some aspects of head movement by direct appeal to a PF operation she calls m-merger, which combines the moved and the attracting head to produce a single head containing the features of each initial element.

As Boeckx and Stjepanović (2001: 352) point out, however, if head movement is to be (partially) relegated to PF, making both ellipsis and head movement PF operations, then there is also the possibility that they will become competing operations, and that the architecture of the grammar is such that ellipsis bleeds head movement, with the decision to elide the verb taken and implemented before the decision to move it would have otherwise been made. But if this is the case, then the situation cannot be as Mikkelsen's tree depicts it; rather what must

happen is that the complement of T must be elided before the verb has raised to little-*v*. Because ellipsis consists in part of the deletion of formal features (cf. Chomsky's (1995) PF crash theory of strong features), the fact that the affixal requirements of little-*v* have not yet been satisfied will be immaterial, since the features that would have signalled its affixal status will already have been deleted. But the same cannot be said for the features of T. They will remain and, assuming that Affix Hopping as the flipside of head movement also takes place at PF, will have to be satisfied by *∂o*-support, though crucially the process will apply only once (see e.g. Lasnik (1981) for an early suggestion along these lines, and Embick and Noyer (2001) for an extended discussion). As Houser et al. (2006) point out, entirely analogous analyses can be pursued in cases of pronominalisation: in this case, instead of the *v*P being elided, it is spelled out as *as* or *which* in a process that obliterates the affixal properties of little-*v*, but leaves T without a host.

With this much in place, it follows that, in cases where *∂o*-support is required twice, ellipsis or pronominalisation takes place from little-*v*. As before, the processes take place before V-to-*v* movement and Affix Hopping have been given the chance to apply, but, unlike in standard VP ellipsis, only the VP will be deleted, leaving both T and little-*v* intact and in need of a host. As Baltin (2005) notes, this is not an ad hoc solution, for there are independent reasons at least for thinking that the size of the constituent being affected in standard VP ellipsis (and VP pronominalisation) is bigger than that that goes missing in constructions involving propredicate *∂o*. These reasons concern their relative tolerance of A-bar movement.

Baltin adopts a view of cyclic spell-out of the kind developed by Chomsky (2000, 2001) under which successively larger constituents are submitted to the phonological and semantic components as the derivation proceeds. Crucially, he follows Chomsky in assuming that the points at which syntactic material is sent to spell-out are vP and CP. When these domains, known as phases, are spelled out, only the complement of the phase head is sent to the interfaces: when *v*P is spelled-out, only VP, the sister of *v*, is computed; similarly when CP is submitted to the interfaces, only TP, the sister of C, is sent there. Importantly, once VP and TP have been spelled-out, they and all they contain are inaccessible to further syntactic operations, though the left edge of the phase may serve as an intermediate landing site for successive cyclic movement. Against this background, he then adopts Legate's (2003) analysis of *wh*-movement to Spec-CP as first involving the movement of the *wh*-phrase to the edge of the *v*P phase. Assuming ellipsis to be a syntactic operation which results when the formal features of lexical items delete, he argues that ellipsis of the VP, as found in constructions involving propredicate *∂o*, will bleed the operation, causing the VP and all it dominates to lose the features necessary for feature checking before the *wh*-phrase has been moved to the edge of *v*P. This explains why propredicate *∂o* cannot host the trace of *wh*-movement, and presumably also accounts for why it eschews other types of A-bar movement as well. If, on the other hand, ellipsis involves ellipsis of *v*P, then the process will not take place until the next phase, giving the *wh*-phrase time to move and offering an explanation of why standard VP ellipsis can host a trace. Once again, if processes affecting the realisation of the *v*P or the VP all take place at the same time, then the same analysis would extend to pronominalised structures too.

On this view, then, what distinguishes the 'double *∂o*' construction from its 'single *∂o*' counterpart is the point at which ellipsis and pronominalisation occur: if they are triggered by T, then the entire *v*P is affected, and with it go the features that mark out little-*v* as an affixal head, meaning that *∂o*-support need apply once

and once only. If, however, the processes are triggered from little-v, then only the VP will be affected and both T and little-v will be left stranded, a situation that necessitates the double introduction of ∂o.

4 ◉ *Do*-support as last resort

As just noted, most accounts of ∂o-support start from the assumption that it is a last resort operation, appearing just in case the formal requirements it fulfils would otherwise be left unsatisfied (though see e.g. Embick and Noyer (2001) and Schütze (2004) for minimalist approaches that avoid the notion of last resort and Grimshaw (1997) and Vikner (2001) for an optimality-theoretic perspective). The logic behind this intuition, at least in those models that determine grammaticality by means of trans-derivational comparison, is that in cases where ∂o-support is not required its presence is excluded by the availability of more economical alternatives that converge without it. It is this last resort property that is assumed to account, for example, for the ungrammaticality of (44b), where ∂o-support applies superfluously given the grammaticality of (44a):

(44) a. John hadn't left early but Mary had [left early].
   b.* John hadn't left early, but Mary did have [left early].

But despite its intuitive elegance, the idea that a derivation can be blocked just because something else is cheaper brings with it the particular problem of having to define the set of derivations to be evaluated for economy in such a way as to ensure that unwanted comparisons do not arise. Within the Minimalist Programme, the standard solution to this problem has been to suggest that the set of competing derivations should be restricted to those that are built from, and then exhaust, the same lexical array. This requirement makes precise the notion of competition, since it prevents comparatively complex, though entirely grammatical, derivations from being disfavoured merely because assembling them involves a greater number of derivational steps than might be required to derive another, possibly quite unrelated candidate. If, on the other hand, the computational component had direct access to the lexicon and if economy were able to evaluate any two convergent derivations, then an example such as that in (45b) would be incorrectly excluded on the grounds that it is more costly than that in (45a), (45b) having used up more lexical material and required more intricate assembly.

(45) a. John left.
   b. John left early last Tuesday.

As Arnold (1995) points out, however, it is not clear how this approach might extend to ∂o-support since defining competition in these terms seems to preclude the pairwise comparison of examples of the type in (44). The essential problem is that if ∂o is a member of the array underlying (44b), but not of that underlying (44a), then the two derivations should not be comparable and both should converge.

The best way out of this dilemma seems to be to assume that ∂o in its pleonastic uses is never selected to form part of the lexical array. But if this is indeed the case, then it follows that in derivations where it will eventually be required, ∂o must arise sometime later, after the initial lexical input has already been decided upon. There are two possibilities as to just when this might be.

A first possibility, which reflects the thinking of some of the earliest generative analyses, assumes that the *do* of *do*-support is a grammatical formative introduced during the course of the computation itself (Chomsky 1957; see also Chomsky (1995: Chapter 2). On the assumption that the use of additional resources beyond those supplied by the lexical array is more costly than working with what was initially provided, this approach has the advantage of ensuring that superfluous *do*-support will be correctly excluded on economy grounds. Its major disadvantage, however, is that it ascribes to the computational component a far greater degree of derivational power than it is usually assumed to possess, allowing it not just to assemble and rearrange the items fed to it from the array, but also to generate novel material in clear violation of the Inclusiveness Condition (Chomsky 1995: 228), which requires that the output of the system contain nothing beyond its input. And the problems do not end there because the suggestion that semantically redundant material like pleonastic *do* may be generated by the syntax and then shipped to the interfaces without causing the derivation to crash is also at variance with the Principle of Full Interpretation (Chomsky 1995: 219-220), which holds that structures which are generated in the syntax must not contain components that make no contribution to determining the form or meaning of the resulting expressions.

Taken together, these difficulties hint at the correctness of a second possibility, *viz.* that *do* arises at PF, where the Inclusiveness Condition is assumed not to apply. With this option there is no need to stipulate that ad hoc, language-specific violations of Inclusiveness are possible, nor is it necessary to send to the semantic interface anything that cannot be assigned an appropriate interpretation. Beyond these advantages, however, the proposal also has a broader context: given that *do*-support is only required because verb movement is unavailable and Affix Hopping is blocked, it follows that *do* simply cannot be introduced until after these alternative strategies have been given the chance to apply; in other words, if verb movement and Affix Hopping are indeed PF phenomena, then *do*-support must be as well.

A typical understanding of how PF works is that it takes syntactic structure and the features associated with it and assigns them a particular pronunciation. But in theories such as Distributed Morphology (Halle and Marantz 1993, Marantz 1997, Embick and Noyer 2001), which assume the 'late insertion' of vocabulary items, PF is responsible for more than just this. In that model, it is not just that vocabulary items are not assigned their pronunciation until PF; rather they are not introduced until PF, having played no role in the syntax proper. And although the process of vocabulary insertion interprets syntactic structure, it does filter it, so there is never any danger of a derivation crashing simply because there is no suitable vocabulary item available to realise the existing structure. On the contrary, in the absence of any other appropriate means, there will always be a default way of spelling any set of features out. In this context, *do*-support can be understood as the product of a mechanism which ensures that, in cases where no lexical content would otherwise attach to them, the features associated with the heads of verbal projections receive *do* as their default phonological value. From this perspective, *do*-support is a process of modification rather than of addition: there is no insertion of extra structural material; all that is required is that a default phonological specification be assigned to features that are already present in the structure. Even if Inclusiveness were to operate at PF, then, this proposal would not fall foul of it.

Hallman (to appear) summarises the conditions under which *do*-support might appear by means of the pronunciation function given in (46), where (46a) specifies what happens when the affixal requirements of verbal heads (represented here by X) are satisfied in canonical fashion, and (46b) is the elsewhere case:

$$(46)\ \text{a.}\quad P \begin{pmatrix} X^0 \\ 2 \\ Y^0 \quad X^0 \end{pmatrix} = P\,(Y^0)$$

$$\text{b.}\quad P\,(X^0) = /\text{du}/$$

In the case of little-*v*, the conditions specified in (46a) are met when V-to-*v* movement is able to apply and little-*v* takes on the pronunciation associated with its big-V adjunct; in the case of T, they are met either because T is already occupied by a (modal) auxiliary and is pronounced as such, or because its tense affixes are being expressed by a main verb. If, however, none of these conditions are met, then both heads are pronounced as *do*. In cases where the elsewhere clause of this pronunciation applies twice, the result is a 'double *do*' construction. From the point of view of doubling, what is significant is the fact that the conditions on their application can be collapsed in this way to give them a single, unified analysis, which in turn suggests that both *do*s of a 'double *do*' construction are in fact the same form with the same general function; all that distinguishes them is their differing structural position and the nature of the category they rescue.

5 ▣ Summary

The aim of this paper has been to explore the status of two related constructions, one dialectally restricted, the other more widespread, which appear at first sight as though they might constitute potentially promising candidates for a doubling analysis. Building on the assumption that there is but one pleonastic *do* in English, which surfaces either in T or little-*v*, its central claim has been that 'double *do*' constructions involve the iteration of this one pleonastic form simultaneously instantiated in each of the positions in which it may occur. The main conclusion has been that, if doubling is to be defined as the appearance of two elements that share a single syntactic function and a similar morphological shape, then these constructions do indeed involve doubling. But it is only on this very wide understanding of the term that they might be argued to do so.

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