On the gradual and articulated emergence of auxiliary *do* in Early Modern English

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Abstract

TODO: put stuff here

0.1 Introduction

This paper addresses the phenomenon of do-support in English, a well-documented and widely-studied change in the system of auxiliaries in that language. In Section 1, an overview of the historical uses of the lexeme *do* in English is presented. Section 1.2 reviews past explanations of the do-support phenomenon. Our novel empirical results are presented in Section 2. Section 3 offers theoretical analysis and concludes.\(^2\)

1 Background

1.1 Distribution of *do*

The lexical item *do* has a use as a main verb which is as old as the English language. Cognates are found in many historical and contemporary Germanic languages (see *Oxford English Dictionary* sv. *do*). It is a light verb, in the descriptive sense of the term – its meaning can vary depending on its complement in expressions such as the following:

(1) do good, do battle, do homage

It also appears in several constructions where it has even weaker lexical semantics than in the above cases.

1.1.1 VP-deletion and Gapping

In the second (and later) of a sequence of conjoined linguistic expressions, material that is identical between the two conjuncts often deletes or appears in reduced form in the second of these. When a verb or verb phrase appears in such a configuration, it is replaced by *do*.

(2) Jean runs as fast as Sam **runs** does.

(3) Jean ate a grilled cheese sandwich, and Sam ate a grilled cheese sandwich **did** too.

\(^1\)This paper is the fruit of a research project carried out with the collaboration of A. Kroch, without whom it could never have been written and to whom I am deeply grateful. I am also grateful to B. Santorini and the annotators of the parsed corpora used herein.

The following examples are from Visser (1963) §183 and serve to illustrate the antiquity of the construction:

(4) reced weardode unrim eorla swa hie oft ær dydon hall guarded countless warriors as they often before did
Many warriors guarded the hall, as they often guarded the hall did before. *Beowulf*

(5) þæt mon lufode bone godan swa swa riht is þæt mon do that one loved the god thus as right is that one does
that people loved God as it is right for them to love God do *Ælfred, Boethius*

Use of *do* is not obligatory in these constructions. Since the general operation of deletion of identical material under conjunction is optional, it can simply fail to apply, leaving identical copies of the verb phrase in both conjuncts.footnote{Compare the following two sentences, which have noun phrases eligible for replacement by *one*:
(1) Terry has a blue house and a red house.
(2) Terry has a blue house and a red one.
If the redundant material is long, it becomes odd but not ungrammatical to neglect to delete it:
(3) ?Terry has a blue house in London and a red house in London.
(4) Terry has a blue house in London and a red one, too.

Speakers of BrE may admit variation between the pattern described above as “British” and that described as “American.” Additionally, it is unclear how the verb “be” behaves for British speakers in VP-deletion constructions. At least the passive, progressive, and copula uses of the verb would need to be tested.}

Use of *do* is not obligatory in these constructions. Since the general operation of deletion of identical material under conjunction is optional, it can simply fail to apply, leaving identical copies of the verb phrase in both conjuncts. Additionally, if the verb phrase to be deleted contains an auxiliary verb (*have*, *be*, or a modal) the auxiliary remains and is not replaced by *do*. In AmE, *do* is blocked from appearing at all in such a sentence. In BrE, however, a modal or *have* can be retained along with a form of *do*, the latter apparently replacing the verb phrase:footnote{Compare the following two sentences, which have noun phrases eligible for replacement by *one*:
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(6) * / / * John won’t go to the ball game, but Peter *will go to the ball game* does.

(7) ✔ / ?✔ John won’t go to the ball game, but Peter may *go to the ball game*.

(8) * / ✔ John won’t go to the ball game, but Peter may *go to the ball game* do.

Modern BrE also allows a second copy of *do* in contrastive or emphatic constructions:

(9) John didn’t go to the ball game, but Peter did do.

### 1.1.2 Do-support

In Modern Standard English, auxiliary *do* appears in all and only the following contexts:

- negative declaratives
- subject-auxiliary inversion constructions (including questions except those in which the subject is the *wh* element)
emphatic declaratives

The word *do* is not inserted if the sentence possesses another auxiliary verb. (MSE auxiliaries consist of the modals, *be*, perfective *have*, and (in some dialects of BrE) possessive *have*.)

(10)  a. Sam didn’t eat a sandwich for lunch.
    b. What did he eat for lunch?
    c. Nothing did he manage to make for himself.
    d. But he DID eat lunch – at a restaurant.

This use of *do* first emerged in the 1300s and during the interval from approximately 1500–1700 underwent expansion and became the sole syntactic form of the above sentence types. The development of the construction has been extensively studied. (Consult Ellegård (1953) and Visser (1963) for philological treatment, and Kroch (1989) for a quantitative analysis.) During the period of this expansion, *do*-support was also used in affirmative declaratives, apparently in free variation with the simple inflected verb.5

It has been claimed (NOTE: cite Klemola 1998 in Tieken-Boon van Oostade 1998 et al. eds, once I get it from ILL) that this option still exists in southwestern English dialects in the present day. Insofar as this is the case, the null hypothesis would seem to be that the modern construction conserves the otherwise extinct historical affirmative declarative *do*-support.

1.1.3 Verb (phrase) topicalization

When a verb phrase is topicalized in English, *do* appears in the original site of the VP, whereas the VP itself is shifted to the left periphery of the sentence:

(11)  We told Jean he ought to visit New York, and [VP visit New York ] he did tVP.

Though this construction involves movement to the left periphery, it does not trigger subject-verb inversion; the latter is indeed ungrammatical with a fronted VP:

(12)  *We told Jean he ought to visit New York, and visit New York did he.

It is therefore not the same as the construction in (10c) above, which has mandatory inversion. This construction is also found in modern Swedish:6

(13)  Läser boken     gör    han nu
     reads book+DEF does he   now
     Reading the book he is now.          Källgren & Prince (2008: (2a))

5The interchangability of *do* forms and the simple verb is empirically supported by the appearance of the former in contexts where the matrix predicate has no contrastive function. Consult also Visser (1963: §1420), where contemporary grammarians are quoted expressing the proposition that the two forms are synonymous.

6Note that Modern Swedish is a V2 language, and therefore the inversion of subject and verb in (13) is of a different significance than in English.
Unlike in the English construction, in Swedish both the leftward-shifted VP and the lower auxiliary verb are finite. Some early examples of the construction in English also followed this pattern:

(14) And touchede þe chest þo he dude with his honde  

Visser says that this construction was “occasionally used.” (ibid.) Additionally, the Swedish verb used in this construction is not cognate with do, though it is synonymous with it. It is instead cognate with gar, a causative verb which was a Northern synonym of causative do in Middle English and subsequently went extinct.

1.2 Theoretical accounts

1.2.1 Synchrony

Pullum & Wilson (1977) The cited paper (hereinafter P&W) attempts to give an account of do-support which gives a uniform treatment to all modern constructions in which the auxiliary appears. In their framework, all verbal elements – have, be, do, and modals – are base-generated in the category V. Main verbs (i.e. excluding modals etc.) select a (phonologically null) complementizer as the head or head-like element (P&W’s phrase structure doesn’t obey endocentricity) of their S’. Since this complementizer is incompatible with being the complementizer of a matrix clause, a main verb must be the complement of a modal, have, be, or do. There is a rule (P&W (63)) applying late in the syntactic derivation that deletes any instance of do which continues to immediately precede an S’. Feeding this rule are various transformations which give rise to the familiar distribution of do. For example, if VP deletion (actually S’ deletion for P&W) applies, do will no longer precede S’, and the rule deleting it will not apply. In this system subject- auxiliary inversion rules apply to the leftmost V, which if not another auxiliary must be do. They too disrupt the adjacency required for deletion.

Modern syntactic theory and the split-INFL hypothesis allow P&W’s exuberantly multi-clausal structure (cf. their Figure 15) to be accommodated in a monoclusal phrase marker with concomitant suppression of the null-complementizer deletion rule. Objections might also be raised to their posit that do is base-generated in every sentence and deleted by rule everywhere that it does not appear on the surface. Bracketing this difficulty, however, P&W’s approach is similar to what will be suggested below – that (some kinds of) do are generated in the lowest functional head above V, here taken to be v. That is not to say that their approach is without drawbacks, however. They are aware of sentences of the general form of (9) above – their example of such a sentence appears on p. 777. According to them, such examples are a result of the fact that varying numbers of iterated tokens of do may be generated. The sentence they cite on p. 777 is simply a sentence which carries two tokens of such iteration. However, this approach has empirical problems. Their rule (63) deletes any do with an S’ complement – that is, every one except the leftmost in a sequence of iterated do. They state that a relaxed version of this rule may allow sequences of two or more dos to surface in some dialects. If this rule is allowed to weaken, however, several questions present
themselves. First of all, though P&W admit that sentences with two iterated tokens of do are interpretable, sentences with three are hash.

**Schütze (2004)** The cited paper defends a non-standard account of the INFL system, and gives a unified account of do-support and the affirmative declarative do found in Southwest English, Dutch, and (diverse non-standard dialects of) German. The account posits the articulated clause structure in Figure 1 for English. Modals and do are base-generated in M, and verbs move to T except when blocked by a head in Σ. This account, however, makes incorrect predictions. Consider the following data:

(15) a. When she dies, Sam never will have seen the Louvre.
    b. When she dies, Sam will never have seen the Louvre.
    c. When she dies, Sam will have never seen the Louvre.

(16) a. Poor Sam, she never saw the Louvre.
    b. *Poor Sam, she saw never the Louvre.

The sentences in (15) show that never can occur in at least three positions in English. One position is before the modal (Schütze’s M). The rate of use of this position is diachronically stable, as demonstrated by Kroch (1989: 26). For Schütze, have is located above Σ in this sentence (presumably in T). So the remaining two positions for never are between M and T, and below T. However, as sentence (16b) shows, a finite verb cannot raise across never. This is inconsistent with Schütze’s claim that English main verbs raise as far as T.

The hypotheses about the English verb system presented in Schütze (2004) also fail to capture an important diachronic generalization. As demonstrated by Kroch (1989), the emergence of do-support and the loss of the “V Adv Obj” word order have a single slope on the logistic time scale (i.e. they obey the CRH). It is therefore desirable, in the absence of countervailing evidence, to treat these two phenomena as instances of a single underlying syntactic shift. However, they receive disparate treatments under the present hypotheses. The different possibilities for the placement of weak adverbs in Middle English and Modern French (on the one hand) and Modern English (on the other) are explained as a difference in the height of the final landing site of the verb. (504) On the other hand, do developed all its modern properties in late Middle English, when the auxiliary modals of English emerged. (509) The obligatory character it came to possess in certain classes of Modern English sentences is attributable to disparate changes in the grammar – the clitic status of not in negatives and the target of subject-Aux inversion in questions. There is no principle which relates these changes to each other; the CRH effects observed are reduced to happenstance.

1.2.2 Diachrony

2 Results

This paper’s chief empirical claim is that do passed through a stage wherein it was neither a lexical verb nor a member of the auxiliary system. Specifically, it was merged in a low
functional projection, which I will call \( v \) (but which has some similarities to the Voice head of Kratzer (1996)). For reference, Figure 2 presents a partial recreation of the graph of Ellegård (1953: 162) with data from the EME corpora. In contexts where \( do \)-support is mandatory in MSE, the construction gains ground steadily throughout the EME period. There is also another pattern represented in the data – the use of \( do \) in affirmative declarative (non-emphatic) sentences. This use is ungrammatical in MSE; during the EME period it comes to be used at a maximum rate of about 10% before beginning to disappear. The point of inflection of the trajectory of affirmative declarative \( do \) corresponds with a dip in the rate of use of \( do \) in other contexts, a coincidence remarked upon by Kroch (1989) and Warner (2005), among others.

This grammar which merges \( do \) in \( v \) was temporally and grammatically intermediate between Middle English verb-raising and Modern English \( do \)-support. This grammatical system was entirely responsible for the occurrence of \( do \) in affirmative declaratives; the decline of the latter reflects the decline of the former as a productive grammatical option. Three pieces of evidence from EME support this observation. The first is the cooccurrence of \( do \) with other auxiliaries without any discernible causative semantics. The second is a certain anomaly in the placement of \( do \) relative to adverbs. The third is the interaction of \( do \) with lexical semantic features located low in the functional domain.

### 2.1 Philology

There exist two types of sentence that illustrate the use of \( do \) as a low-merged pleonastic element in Early Modern English. Sentences where \( do \) is juxtaposed with another causative verb demonstrate that the former undergoes a process of semantic bleaching:

\[(17) \text{Causative + do:} \]
\[\begin{align*}
\text{a. He leet feste of his nativitee} \\
& \text{Don cryen thurghout Sarray his citatee.} \quad CT \text{“Squire’s Tale”}
\end{align*} \]
\[\begin{align*}
\text{b. The fairest children of the blood royal} \\
& \text{Of Israel he leet do gelde anoon.} \quad CT \text{“The Monk’s Tale”}
\end{align*} \]
\[\begin{align*}
\text{c. Lat do him calle, and I wol gladly here,} \\
& \quad CT \text{“Physician’s Tale”}
\end{align*} \]

\[(18) \text{Do + causative:} \]
\[\begin{align*}
\text{a. gret plente of wyn bat the cristene men han don let make} \quad \text{CMMANDEV, 47.1161}
\end{align*} \]

\[(19) \text{Double do:} \]
\[\begin{align*}
\text{a. And thus he dide don slean hem alle three.} \quad CT \text{“Summoner’s Tale”}
\end{align*} \]

The sentences in (17) have both the causative verb \( let \) and \( do \), in that order. The sentence in (18) has the same combination of verbs, but in the opposite order. The context of these sentences does not support a double-causative reading – that is, the two verbs together express only one causative semantics. Examples of this type were known to Ellegård, and led him to posit that it was semantic bleaching of causative \( do \) which led to the auxiliary use of that verb.
Instances of *do* which follow a higher auxiliary (and cannot be interpreted as causative) constitute a second type of evidence:

(20) He [death personified – AE] hes done petuously devour  
the noble Chaucer of makaris flour  
Wm. Dunbar, “Lament for the Makars” c. 1505

(21) ...but god, of his mercy,  
And your benigne fader tenderly  
Hath doon yow kept ...  
*CT “The Clerk’s Tale”*

(22) but þo was þe body born to Stonehynge wip michel honour, þat he hade done made  
OMBRUT3,65.1934, c. 1400

(23) consequently it wyll do make goode drynke  
*(Boorde* *Introduction of Knowledge* a. 1542)*

These sentences verify that *do* was completely semantically bleached – for in none of these sentences are there causative semantic features of the sort found in examples (17)–(19). They also demonstrate that *do* was merged below *T* in these constructions. *T* is the site of merger of modal verbs and the landing site for *have; do* appears to the right of this position in all the above sentences. Of note are sentences (21) and (22). In both of these, *do* and the following lexical verb both bear past participial morphology. This may be related to the fact that a focused tensed VP may have its tense information doubled by (a cognate of) *do* in the VP’s base position in Scandinavian and perhaps earlier English (see Section 1.1.3). It also may indicate that *do* in these sentences is not a lexical (causative) verb – lexical *do* in English selects for an infinitive complement. Though most of the examples of *do* appearing below another auxiliary are with perfect *have*, sentence (23) illustrates that modals may also participate in this construction.

Sentence (24) is an exceptional example. It comes from the work of a poet among whose writings we can find examples of *do* cooccurring with another auxiliary (cf. (20) above).

(24) Fro the stok ryell rysing fresche and ying  
But ony spot or macull doing spring  
“From the royal stock rising fresh and young / without any spot or blemish springing”  
Wm. Dunbar, *The Thrissill and the Rois*, 1503; in *Visser (1963)* §1.419

Figure 3 gives a Distributed Morphology-style syntactic structure for deverbial nominalizations of the *-ing* type. The nominalizing head ING attaches to a syntactic verb phrase composed of a verbalizing head and a root (as well as the arguments of the root and possibly an agent introduced by *v*). One plausible way of implementing the syntax of low-merged *do* in a Distributed Morphology-esque framework is to posit variation in the *v* position. It would appear, then, that in sentence (24) the variant of *v* pronounced *do* has been selected, and subsequently combined with the nominalizing morphology. This example is the only
sentence bearing such a construction of which the author is aware. Coming as it does from a poem, it is perhaps to be regarded with the suspicion that it does not represent the idiomatic spoken language contemporary to its writing. Nonetheless, the existence of one token of such a construction is suggestive. We know from Ellegård and others that poetry was innovative in its use of pleonastic do; it may be that a diligent search of prose sources will uncover other such examples.

2.2 Adverb placement

The instances of double-auxiliary sentences given above support the hypothesis that do can appear below the position of perfect have and modal verbs in EME. An independent source of evidence for this proposition can be found by attending to the relative position of adverbs and auxiliaries. As demonstrated by Kroch (1989: 27), V to T raising was already in the process of being lost by 1500, a time at which do-support in affirmative declaratives was still rare. Therefore, in some proportion of affirmative declarative sentences with do-support, T may be lowered onto do. This in turn would mean that the latter element does not move (very far) from the position in which it is merged. Certain adverbs in English – never and often, to name two examples – can occur between the subject and the verb (that is to say, left-adjointed to some functional projection). If we assume that the position of these adverbs is not subject to diachronic variation, their position can be used as a diagnostic for the position of heads in the functional domain.

The population of sentences that can give evidence in this way is small; in order to be useful, a sentence must possess all of:

- an auxiliary verb
- an overt (non-trace) subject
- an adverb that appears between the subject and the verb

Such sentences are schematized in Figure 4. If the auxiliary verb in such a sentence appears before the adverb, we assume that it is located in Tense, having been either moved to or base-generated in that position. Conversely, the appearance of the auxiliary after the adverb indicates that the latter has been generated low and has not moved as far as Tense. Figure 5 and Table 1 present data from affirmative declarative sentences of this type.\footnote{Sentences with subject-auxiliary inversion have been excluded because the inversion process obscures irretrievably information about the relative position of the auxiliary and the adverb. Negatives have been excluded for two reasons. First, it is possible that the presence of not in the functional domain introduces a prosodic or phonological effect that disturbs the adverb’s position. Second, the hypothesis proposed here does not predict that negative declaratives will exhibit any evolution in their positioning, but rather that they will always exhibit fully auxiliary behavior. In any event, the number of negative sentences of the relevant type in the corpora is quite small, and including or excluding them has little effect on the data, and none on the conclusions drawn therefrom.}
expected. However, auxiliary *do* appears in the T position appreciably less frequently than the other auxiliaries examined in the time period from 1525 to 1550; thereafter its rate of appearance in that position rises slowly towards the rate of the other auxiliaries.

These data demonstrate that *do* was in fact merged low in some proportion of its uses in the first half of the 16th century. The possibility of low merger disappeared over time, and *do* assimilated its behavior to that of the other auxiliaries. The early phase of the transition from low-merged *do* to auxiliary *do* is not reflected in the data. This is an unavoidable consequence of the twin facts that before about 1525 *do*-support is quite rare and that sentences with the proper configuration of subject and adverb are uncommon generally. The end of the change is also not represented in the data. This may once again be an accident of the alignment of the time period for which data is available – affirmative declarative *do* is once again quite rare after 1700. However, it may also indicate that *do* actually does not behave exactly identically to other auxiliaries with respect to adverbs. More extensive data would be needed to decide between these two alternatives.\(^{12}\)

### 2.3 Effects of agentivity

Ellegård (1953) reported that the transitivity of the lexical verb affects the incidence of *do*-support. Specifically, he found that negative declarative sentences with a transitive main verb consistently show higher incidence of *do*-support than their counterparts with an intransitive verb. It is possible to reproduce and extend this result using data from the corpora. In addition to the class of transitives, the intransitives were divided into two classes. The first contains the verbs *go, come, die, stand, rise*, and *arise*. These verbs were chosen because they exhaust the commonly occurring unaccusative verbs in the corpus. The counts of each of these verbs in potential *do*-support environments is presented in Table 2. The remaining intransitive verbs comprise the second class which for the sake of perspicuity will be referred to as the “unergative” class, though it may contain some verbs that exhibit some degree of unaccusativity. In Figure 6 and Table 3, the rate of *do*-support in each of these lexical classes in affirmative declarative sentences is presented. These data clearly show that *do*-support co-occurs with unergatives and transitives – that is to say, predicates whose subject is base-generated in Spec(\(vP\)) – at roughly the same rate, whereas unaccusatives, whose subject is raised from a lower position, co-occur with *do* at a much lower rate. This observation bolsters the claim that the *do* occurring in affirmative declaratives is merged in *v*, demonstrating a link between the syntactic structure of the projection of *v* and its allomorphic realization.

Figure 7 presents analogous data from negative declarative sentences, which exhibit the same pattern as described immediately previously for affirmative declaratives. The present proposal, under which the association of unergative and transitive predicates is caused by

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\(^{11}\) The reason that the proportions for these sentences are not 1.00 is the availability of a pre-T position for adverbs in English. Kroch (1989) finds a consistent 10–15% rate of use of that position from Middle English to the present day; my figures are different from his because I have excluded sentences wherein the subject is missing due to wh-movement.

\(^{12}\) Note though that the PPCMBE (Kroch & Santorini 2009) contains only 69 tokens of *do* in the relevant construction, indicating that collecting such data may be a quixotic task.
the presence of *do* in *v*, seemingly predicts that this association should occur only in the early stages of the emergence of *do*-support, and that it should disappear in the later stages, as tokens of *do*-support are increasingly generated by the MSE grammar. It is possible that the

These data connect to another of Ellegård’s observations about lexical semantics. He, following earlier authors, identified a class of verbs that are accompanied by *do*-support less often than other verbs. The class includes on Ellegård’s formulation the verbs *boot, trow, care, doubt, mistake, fear, list, and skill* in addition to *know*. There are likely several reasons motivating the behavior of verbs in this class. The verb *wot*, included in the class by earlier authors, belongs to a marked morphological class (preterit-present), and was in the process of being lost during the EME period. In a similar vein, *boot, trow, list,* and *skill* were all moribund or nearly so in EME; their failure to adopt *do*-support could readily be a consequence of this fact. On the other hand, *doubt, fear, know* and (perhaps less straightforwardly) *care* have subjects that are non-agentive. This class of verbs is also represented in Figures 6 and 7; the counts of each member of this class in the relevant environments is in Table 5.\footnote{I have omitted *mistake* from the present analysis; it is not archaic like the remainder of Ellegård’s verbs omitted here, yet it occurs too infrequently in the data to be fruitfully examined.} There is a surprising difference in behavior between the affirmative and negative declarative classes. In the former group, verbs from the *know* class exhibit almost identical levels of *do*-support to unergatives and transitives. In negative declaratives, on the other hand, the *know*-class patterns with the unaccusatives.

3 Discussion
References

Ellegård, A. *The auxiliary do: the establishment and regulation of its use in English.* Almqvist & Wiksell, Stockholm (1953). 3, 6, 9


Figure 1: Schütze (2004)’s clause structure for English (for space reasons, specifiers and intermediate bar levels are omitted)
Figure 2: foo
Figure 3: Syntax of -ing nominalizations (verbal arguments omitted)
Figure 4: Syntactic structure of a sentence with one adverb. For simplicity, traces and intermediate functional projections have been omitted. Note that it is also possible for the auxiliary to be base-generated in T.
Figure 5: Incidence of Aux > Adv word order in sentences containing an adverb, auxiliary verb, and overt subject
Figure 6: Effect of lexical semantics on *do*-support in affirmative declaratives
Figure 7: Effect of lexical semantics on *do*-support in negative declaratives
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<tr>
<th>Date</th>
<th>Do</th>
<th>Modal</th>
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<td>71</td>
<td>666</td>
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<td>393</td>
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Table 1: Tokens of Aux > Adv word order in sentences containing an adverb, auxiliary verb, and overt subject
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<th>die</th>
<th>rise</th>
<th>arise</th>
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Table 2: Counts of unaccusative verbs in potential *do*-support environments
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<th>Unerg N</th>
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Table 3: Tokens of *do*-support in affirmative declaratives grouped by lexical semantic class of main verb
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Table 4: Tokens of do-support in negative declaratives grouped by lexical semantic class of main verb
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Table 5: Counts of *know*-class verbs in potential *do*-support environments