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.

[2]Abbreviations used in this paper: AmE – American English; BrE – British English; CRH – Constant Rate Hypothesis (Kroch 1989); *CT – Canterbury Tales*, G. Chaucer, c. 1400; EME – Early Modern English (approx. 1450–1700); MSE – Modern Standard English. Additionally, `monospaced type` denotes references to parsed corpora – one of Taylor *et al.* (2006) or Kroch *et al.* (2005).

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 þone 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.[3] 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:[4] (the first mark indicates judgments for AmE; the second for BrE)

(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)

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[3]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.

[4]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.

- 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 Ostade 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 t$_{VP}$.

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))

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[5]The 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.

[6]Note 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   (c1450, Visser 1963: §1423)

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 monoclausal 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 *do*s 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 coocurrence 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)   **Causative + *do*:**

    a. He leet feste of his nativitee
        Don cryen thurghout Sarray his citee.   *CT* "Squire's Tale"

    b. The fairest children of the blood royal
        Of Israel he leet do gelde anoon.   *CT* "The Monk's Tale"

    c. Lat do him calle, and I wol gladly here,   *CT* "Physician's Tale"

(18)   ***Do* + causative:**

    a. gret plentee of wyn þat the cristene men han don let make   `CMMANDEV,47.1161`

(19)   **Double *do*:**

    a. And thus he dide don sleen hem alle three.   *CT* "Summoner's Tale"

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[7]

(21)　…but god, of his mercy,
　　　And your benigne fader tendrely
　　　Hath doon yow kept …　　　　　　　　　　　　　　　*CT* "The Clerk's Tale"

(22)　but þo was þe body born to Stonehynge wiþ michel honoure, þat he hade done made
　　　　　　　　　　　　　　　　　　　　　　　　`CMBRUT3,65.1934`, 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.[8] 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* coocurring 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) §1419

Figure 3 gives a Distributed Morphology-style syntactic structure for deverbal 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.[9]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

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[7]I am grateful to D. Ringe for bringing this example to my attention.

[8]But see note 22 in Houser *et al.* (2009) for evidence from Norwegian that such morphological doubling may occur with lexical verbs.

[9]I am agnostic as to whether this variation should be implemented at the level of syntax or at the level of Lexical Insertion

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-adjoined 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.[10] This diagnostic shows that modal auxiliaries and perfect *have* consistently move to T, as

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[10]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.[11] 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 woud 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.[13] 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

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[13]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.

References

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

HOUSER, M., L. MIKKELSEN, & M. TOOSARVANDANI. "Defective auxiliaries in Danish and English." (2009). Unpublished ms. 7

KÄLLGREN, G. & E. PRINCE. "Swedish VP-topicalization and Yiddish verb-topicalization." *Nordic Journal of Linguistics*, vol. 12(1), pp. 47–58 (2008). 3

KRATZER, A. "Severing the external argument from its verb." *Phrase structure and the lexicon*, vol. 33, pp. 109–137 (1996). 6

KROCH, A. "Reflexes of grammar in patterns of language change." *Language variation and change*, vol. 1(3), pp. 199–244 (1989). 1, 3, 5, 6, 8, 9

KROCH, A. & B. SANTORINI. "Penn parsed corpus of Modern British English." http://www.ling.upenn.edu/hist-corpora/PPCMBE-RELEASE-1/ (2009). 9

KROCH, A., B. SANTORINI, & L. DELFS. "Penn-Helsinki parsed corpus of Early Modern English." University of Pennsylvania (2005). http://www.ling.upenn.edu/hist-corpora/PPCEME-RELEASE-1/. 1

PULLUM, G. & D. WILSON. "Autonomous syntax and the analysis of auxiliaries." *Language*, pp. 741–788 (1977). 4

SCHÜTZE, C. T. "Synchronic and diachronic microvariation in English do." *Lingua*, vol. 114(4), pp. 495–516 (2004). 5, 12

TAYLOR, A., A. NURMI, A. WARNER, S. PINTZUK, & T. NEVALAINEN. "Parsed corpus of early English correspondence, parsed version." Compiled by the CEEC Project Team. York: University of York and Helsinki: University of Helsinki. Distributed through the Oxford Text Archive. (2006). http://www-users.york.ac.uk/~lang22/PCEEC-manual/index.htm. 1

VISSER, F. T. *An historical syntax of the English language.* E. J. Brill (1963). 2, 3, 4, 7

WARNER, A. "Why do dove: Evidence for register variation in Early Modern English negatives." *Language Variation and Change*, vol. 17(03), pp. 257–280 (2005). 6
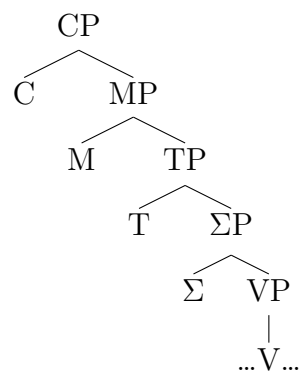
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              CP
             /  \
           C     MP
                /  \
              M     TP
                   /  \
                  T    ΣP
                      /  \
                    Σ     VP
                          |
                        …V…
```

Figure 1: Schütze (2004)'s clause structure for English (for space reasons, specifiers and intermediate bar levels are omitted)

Do−support by context

Figure 2: foo

```
                    nP
               ┌─────┴─────┐
               n           vP
               │      ┌─────┴─────┐
              ING     v         RootP
                      │           │
                  {∅/ DO }      VERB
```
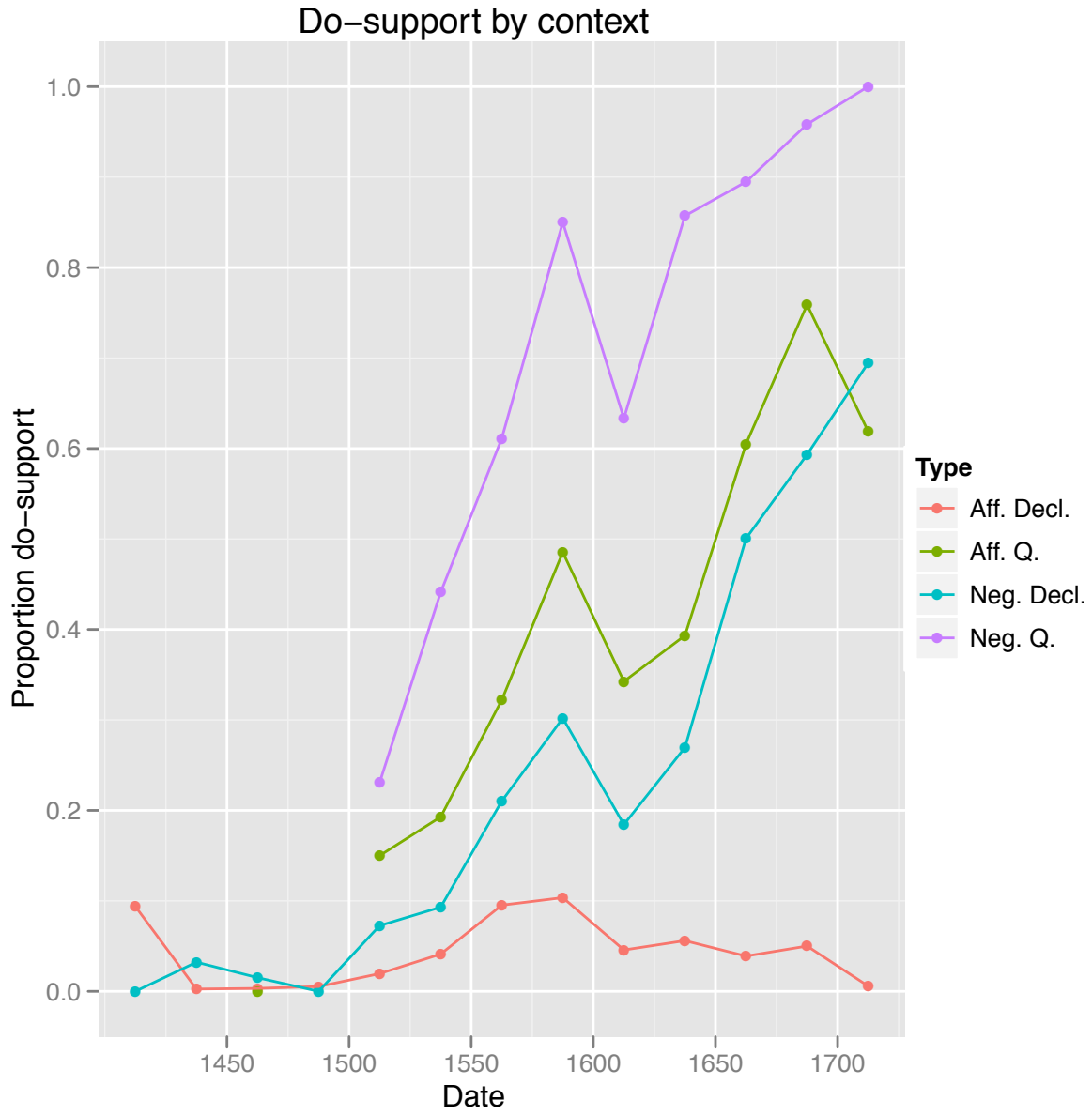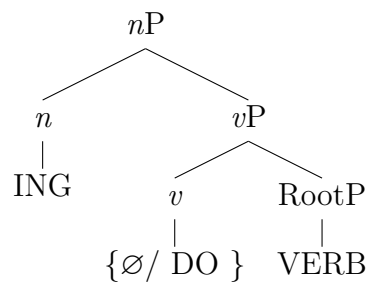
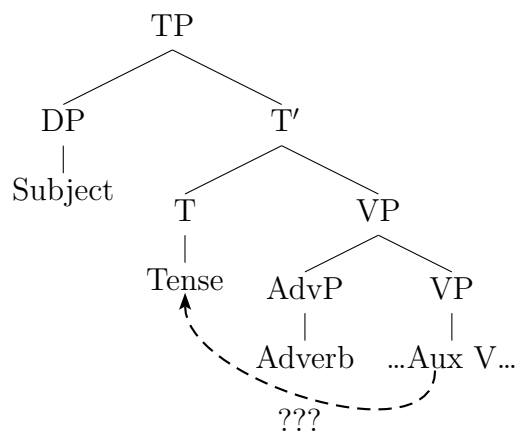Figure 3: Syntax of *-ing* nominalizations (verbal arguments omitted)

Figure 4: Syntactic structure of a sentence with one adverb. For simplicity, traces and intermediate functional projections have been omitted. Note that it also possible for the auxiliary to be base-generated in T.
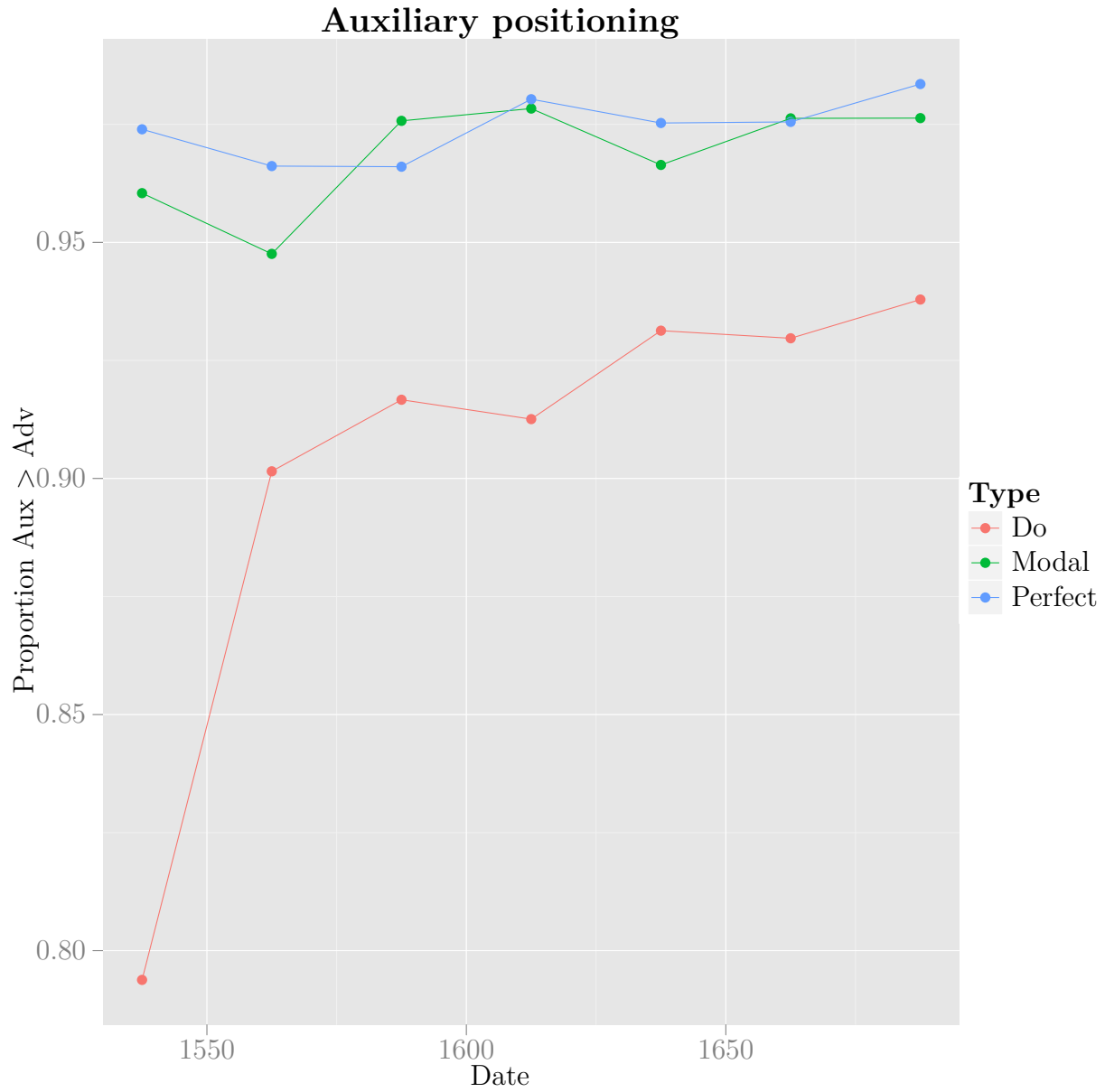
Figure 5: Incidence of Aux > Adv word order in sentences containing an adverb, auxiliary verb, and overt subject
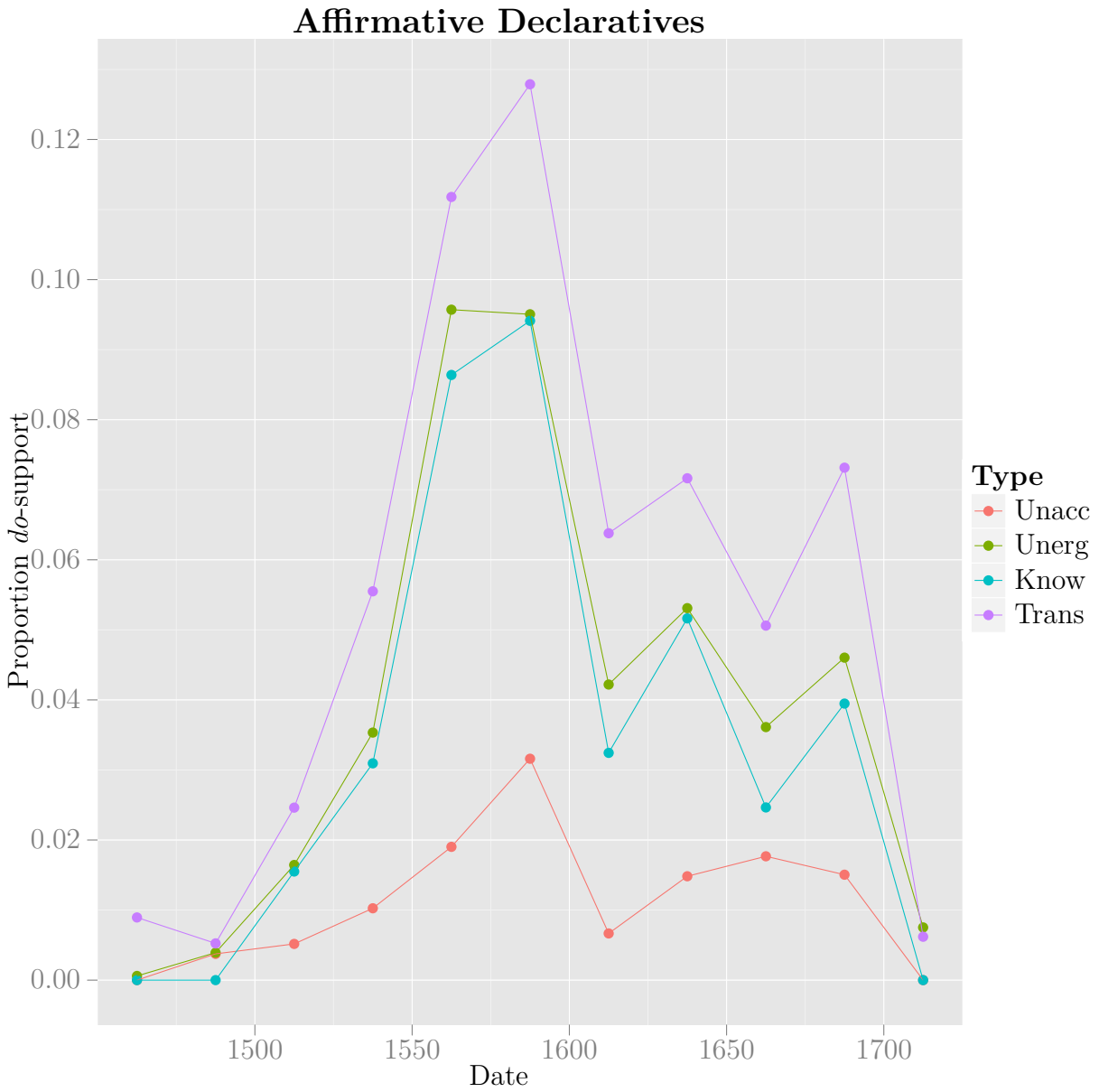
Figure 6: Effect of lexical semantics on *do*-support in affirmative declaratives
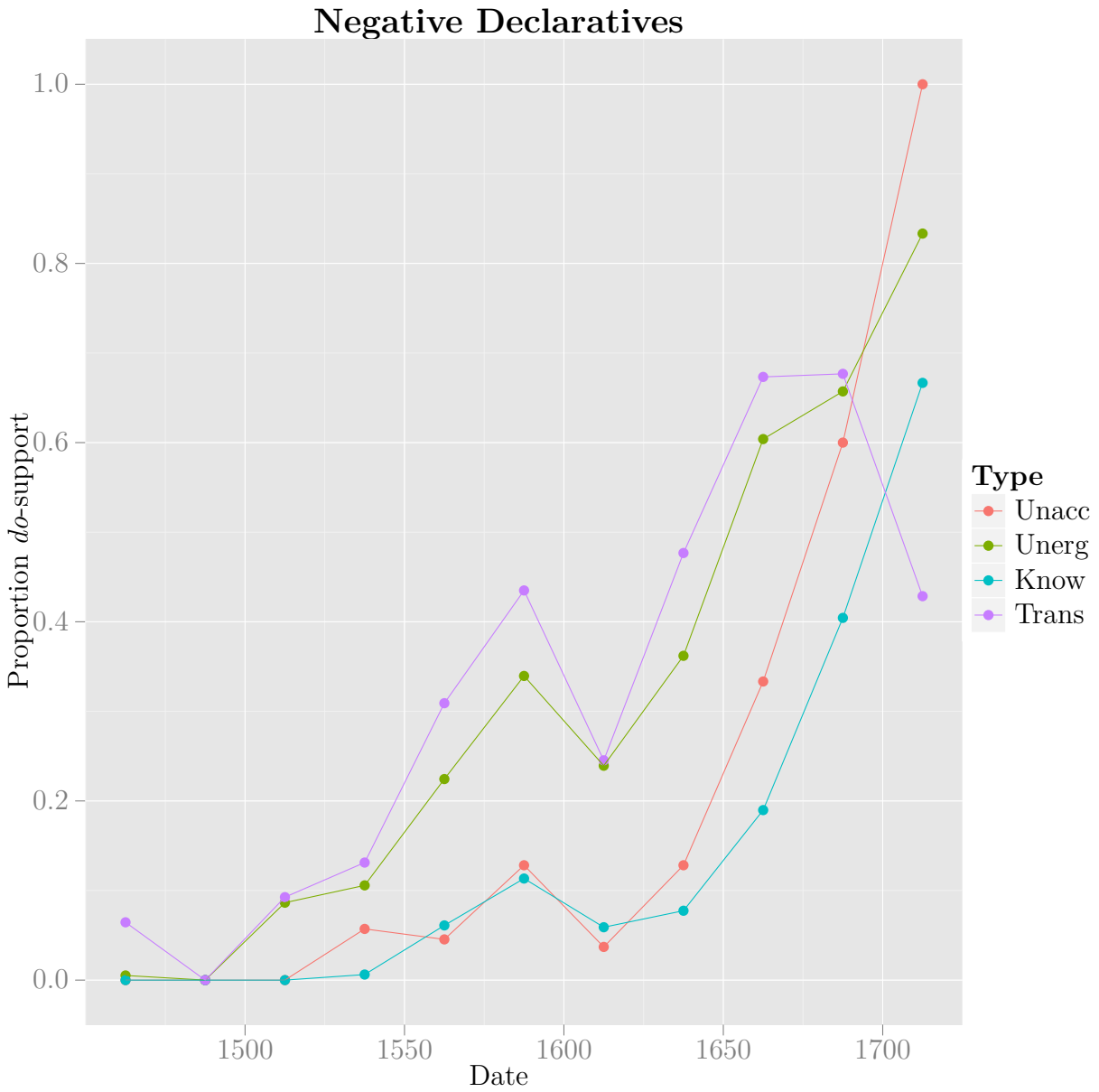
Figure 7: Effect of lexical semantics on *do*-support in negative declaratives

| | **Do** | | **Modal** | | **Perfect** | |
Date	Tok	N	Tok	N	Tok	N
1525–1550	71	91	666	693	275	283
1550–1575	108	121	465	492	290	301
1575–1600	86	203	697	715	366	380
1600–1625	48	163	829	847	442	451
1625–1650	107	116	764	790	324	333
1650–1675	96	103	897	920	429	441
1675–1700	28	138	707	722	393	400

Table 1: Tokens of Aux > Adv word order in sentences containing an adverb, auxiliary verb, and overt subject

	come	*go*	*die*	*rise*	*arise*	**Total**
2-6 Affirmative Declarative	5496	3586	270	186	92	9630
Negative Declarative	228	77	3	5	1	314

Table 2: Counts of unaccusative verbs in potential *do*-support environments

Date	Unacc		Unerg		*Know*-class		Trans	
	Tok	N	Tok	N	Tok	N	Tok	N
1450–1475	0	425	2	3353	0	193	21	2348
1475–1500	1	267	8	2040	0	122	9	1717
1500–1525	2	387	40	2434	2	129	47	1909
1525–1550	12	1170	278	7867	16	517	297	5351
1550–1575	16	841	546	5705	33	382	469	4195
1575–1600	28	886	680	7154	48	510	692	5411
1600–1625	18	2702	490	11613	23	709	552	8653
1625–1650	13	877	358	6742	30	581	386	5388
1650–1675	19	1075	281	7779	14	568	289	5711
1675–1700	20	1329	345	7494	18	456	376	5140
1700–1725	0	48	3	399	0	32	2	323

Table 3: Tokens of *do*-support in affirmative declaratives grouped by lexical semantic class of main verb

Date	Unacc		Unerg		*Know*-class		Trans	
	Tok	N	Tok	N	Tok	N	Tok	N
1450–1475	0	42	1	193	0	27	4	62
1475–1500	0	10	0	101	0	21	0	23
1500–1525	0	6	7	81	0	32	5	54
1525–1550	2	35	35	331	1	161	29	221
1550–1575	1	22	57	254	8	131	51	165
1575–1600	5	39	128	377	22	194	97	223
1600–1625	2	54	84	351	17	288	78	318
1625–1650	5	39	80	221	22	284	82	172
1650–1675	12	36	215	356	52	274	169	251
1675–1700	18	30	184	280	93	230	134	198
1700–1725	2	2	10	12	10	15	3	7

Table 4: Tokens of *do*-support in negative declaratives grouped by lexical semantic class of main verb

	care	*doubt*	*fear*	*know*	**Total**
Affirmative Declarative	28	217	518	3318	4081
Negative Declarative	93	429	30	1090	1642

Table 5: Counts of *know*-class verbs in potential *do*-support environments