Microvariation in the *Have Yet To* Construction

Matthew Tyler and Jim Wood

2017-12-14

Abstract

The *have yet to* construction, exemplified by sentences such as *John has yet to visit his grandmother*, is widespread across dialects of English. However, recent studies have revealed that behind this apparent unity, there is significant variation in the syntactic properties of the *have yet to* construction. Speakers vary with respect to (i) the status of *have* as an auxiliary or main verb, (ii) the status of negation tests, and (iii) the status of a variety of related *yet to* constructions. The goal of this paper is to sort out the microsyntax of *have yet to* across speakers, in the face of contradictory empirical claims and mutually incompatible proposals in the existing literature. We develop an analysis based in part on several wide-scale surveys we have conducted. With respect to *have*, we show that speakers who can treat it as a main verb can also treat it as an auxiliary, but not necessarily vice-versa. We propose that the variation in this case has to do with where the PERFect features are introduced in the clause. With respect to negation, we find that speakers do not treat all the negation tests the same, forcing us to contend with the question of how these tests work. We propose that for most speakers, only the embedded clause is syntactically negative. Negation tests split according to whether they must target the matrix clause, or whether they can target an embedded clause as well. In some cases, the tests reveal the same sentence to be both affirmative and negative, as we expect: the matrix clause is syntactically affirmative, but the embedded clause, which hosts the lexical content, is syntactically negative.

Keywords: auxiliary, ellipsis, microvariation, syntactic variation, have yet to, perfect aspect, negation, syntax

1 Introduction

Sentences like that in (1a), which exemplifies the "have yet to" (HYT) construction, are widespread across many otherwise distinct dialects of English.

(1)   a.   John **has yet to** visit his grandmother.

        b.   'John has not visited his grandmother yet.'

The HYT construction poses several puzzles for syntax and the syntax-semantics interface. First, it has a negative meaning, but there is no overt sentential negation. As indicated in the translation in (1b), (1a) means that John has *not* visited his grandmother yet.[1] Moreover, the construction contains a Negative Polarity Item (NPI) (*yet*), which means the same thing in HYT as it does in ordinary negative contexts. Second, it has perfect aspect semantics (as indicated by the translation) and even a verb (*have*) that could be a perfect auxiliary, but no visible perfect participle.[2]

What is possibly most interesting about the HYT construction, however, is that closer investigation reveals numerous dimensions of syntactic microvariation. For one thing, speakers seem to differ as to whether they treat the HYT construction as syntactically negative or affirmative—in many cases, different negation tests give different results. For another, speakers seem to differ as to whether *have* must be an auxiliary or whether it can behave as a main verb. All of this variation exists despite the construction having essentially the same meaning across speakers, no matter what those speakers' underlying syntax is.

The goal of this study is to sort out the microsyntax of HYT across speakers, in the face of

---

[1]Note that (1a) and (1b) are mutually entailing, and (1a) does not have or contain the modal meaning of 'John has to visit his grandmother'. The sentence is fully compatible with John having no plan or obligation to visit his grandmother, although the *yet* raises some pragmatic expectation, in (1a) and (1b), that he will in the future.

[2]See Appendix C for a brief discussion of why we do not, except occasionally in passing, discuss the arguably related *be yet to* construction, as in *John is yet to visit his grandmother*.

contradictory empirical claims and mutually incompatible proposals in the existing literature. We develop an analysis of the variation we find, and support that analysis with data from an ongoing survey project studying variation in North American English. We explore two main dimensions of variation: the status of *have* (as an auxiliary or a main verb), and the status of the negation in the construction.

First, regarding the status of *have*, we find that speakers who treat it as a main verb can also treat it as an auxiliary verb, but not vice-versa. This result leads us to propose that the difference between the main verb and auxiliary verb analysis is a relatively minor one, having to do with where in the structure the perfect feature ([iT:PERF], whose technical details are discussed in section (4)) is introduced. Nearly all speakers allow it in its canonical auxiliary position, leading to the acceptability of the auxiliary use. Some speakers, in addition, allow the feature to be introduced in a lower position typically reserved for lexical verbal material, leading to the acceptability of the main verb use.

Second, regarding negation, we propose that a lot of the apparent microvariation can be explained by how the negation tests work. According to our analysis, only the embedded clause, and not the main clause, is syntactically negative for most speakers. Since the matrix clause does not contribute any *lexical* material, the semantic effect is very similar to main clause negation. The consequence of this is that negation tests split according to whether they must target the matrix clause, or whether they can target an embedded clause instead. In some cases, the tests reveal the same sentence to be both affirmative and negative, which is what we expect: the matrix clause is syntactically affirmative, but the embedded clause, which hosts the lexical content, is syntactically negative. Beyond this, however, we also find that there may be subset of speakers for whom the HYT construction involves main clause negation.

The paper is structured as follows. In section 2, we provide a brief discussion of previous work on HYT, and situate our analysis within that work. Section 3 contains a brief discussion of our data source and the way we use it to inform our analysis. In sections 4 and 5, we discuss the support for and details of our proposal. Section 4 focuses on the matrix clause, specifically the status of *have* as an auxiliary or a main verb. Section 5 focuses on the embedded clause, specifically defending the claim that the embedded clause is the locus of syntactic negation. Section 6 concludes.

2 Background

Since Kelly's (2008) snippet on the *have yet to* construction, at least three detailed analyses have been proposed: Kelly (2012), Bybel & Johnson (2014), and Harves & Myler (2014a,b). What is striking is that although they share many theoretical assumptions, they end up with very different analyses based on different judgments of the crucial data points. In this section, we briefly outline the main points of contention.

The primary points of contention concern (i) whether *have* is treated as a main verb or an auxiliary verb, and (ii) whether or not the construction is understood to have syntactic sentential negation. While part of the disagreement comes from differences in underlying theoretical assumptions, some of it comes from differences in the judgments offered by the authors. To give one example, both Harves & Myler (2014b) and Bybel & Johnson (2014) assume (following Klima 1964) that sentences like those in (2) can diagnose the presence or absence of sentential negation, with the grammaticality of (2a) diagnosing the presence of sentential negation, and the grammaticality of (2b), its absence. The pairs of authors provide opposing grammaticality judgments, and accordingly come to opposite conclusions.

(2)   a. John has yet to attend Mary's lecture, and **neither has Jim**.   H&M: *; B&J: ✓
      b. John has yet to attend Mary's lecture, and **so has Jim**.   H&M: ✓; B&J: *

Differences like this are found for numerous tests, relating to both negation and the auxiliary vs. main verb status of *have*.

The three existing proposals for the syntax of HYT have the following properties. Kelly (2012) argues that HYT involves auxiliary-*have* (henceforth aux-*have*) and sentential negation. Harves & Myler (2014b) also argue that HYT involves aux-*have* (for most speakers), but that it involves no sentential negation. Finally, Bybel & Johnson (2014) argue that HYT involves main verb *have* and sentential negation. The fourth logical position, that HYT involves main verb *have* and no sentential negation, is proposed by Harves & Myler as an analysis of a subset of speakers. In our study, we resolve this tension by (i) showing that there is genuine speaker variation regarding the main verb/aux-*have* question, and (ii) arguing that for most speakers, syntactic negation is only present in the embedded clause, which correctly predicts mixed results on negation tests. Our position on other, more minor points of contention will be discussed as we develop the proposal.

3 Some notes on the data presented below

The novel data to be presented below was gathered as part of the *Yale Grammatical Diversity Project* (YGDP), a project which documents and analyzes dialect variation in American English syntax. One of the main sources of data for the YGDP is large-scale surveys to gather acceptability judgments on a variety of sentence types, administered on Amazon Mechanical Turk.[3] As such, the surveys are not designed with one particular construction or theoretical question in mind. Instead, the overall goal is to build a large database on syntactic variation that can be used in current and future studies of syntactic dialect variation while simultaneously developing a finer-grained sense of the geographic distribution of this variation. See Wood et al. (2015), Zanuttini et al. (2017), and

---

[3]See Sprouse (2011), Gibson et al. (2011), and Erlewine & Kotek (2016) (in addition to the references below) for further discussion of Amazon Mechanical Turk as a tool for gathering sentence judgments.

Wood (submitted) for discussion of and initial results from the YGDP.

We will not go into extensive detail about the survey methodology that was used in the data collection, since this has been described in more detail elsewhere—see Zanuttini et al. (2017) for an extensive overview. Instead, we will limit ourselves to a few remarks, so that the reader can interpret the results below. We used Amazon Mechanical Turk as it has been shown to be a productive research tool for linguistics in general and grammaticality judgments in particular (see footnote 3).

Participants were presented with the test sentences and asked to rate each one on a Likert scale of 1–5, with 1 representing a sentence that is unacceptable for the participant, even in informal speech, and 5 representing a sentence that sounds perfectly acceptable. (See Appendix B for the survey's instructions, a sample question, and a complete list of sentences from both of the surveys from which data is drawn for this article.) Given this kind of data, the question then arises of which statistical tests are appropriate. The answer to this question hinges not just on the composition of the data itself, but also on the kinds of questions we want to ask of it, and the kinds of claims we want to base on it.

When applying statistical tests, it is necessary to distinguish four kinds of data: nominal, ordinal, interval, and ratio. Nominal data consists of distinct categories that are not ordered with respect to each other, such as apples and oranges. Ordinal data consists of ordered categories, such as "good", "marginal" and "bad". Likert scale data is at least ordinal, since a judgment of 2 is higher than a judgment of 1, a 3 is higher than a 2, and so on. For data to be considered interval data, it must have an additional property: the difference between values must be meaningful. To claim that Likert data is interval would be to claim that the difference between 1 and 2 is the same as the difference between 2 and 3, and that the difference between 2 and 3 is the same as that

between 3 and 4, and so on. One might think that given the use of numerals like 1, 2, 3, etc., Likert data should qualify as interval data.[4]

However, there is much evidence showing that surveys using Likert scales do not actually yield interval data—they yield ordinal data (Goldstein & Hersen 1984:59; Clason & Dormody 1994; Bard et al. 1996:39; McGee 2004; Sprouse 2007a:67). We could take this to mean that since parametric statistical tests such as t-tests and ANOVAs assume interval data, Likert data should not be submitted to such tests. However, it is overwhelmingly common to treat Likert data as if it were interval data, and submit them to parametric statistical tests when those tests are informative. These tests are sufficiently robust that violating the interval assumption is unlikely to lead to erroneous conclusions (Sprouse 2007a:67; Norman 2010; Schütze & Sprouse 2013:44). Though this may remain controversial—Bard et al. (1996) cite Gaito (1980), Townsend & Ashby (1984) and Michell (1986) for debate on the issue—it is likely that few if any substantive conclusions have been in error simply because parametric statistics were used on inherently ordinal Likert data.

Our purpose here will not be to defend or criticize the use of parametric statistics on Likert scales.[5] We only bring this up because in the discussion below, we will generally be treating our results as ordinal data. That is, while we assume that participants are treating a judgment of 4 as higher than 3, we do not need to assume that the difference between 3 and 4 is the same as the difference between 4 and 5. For many participants, a 3 is an indication of uncertainty— that they are not sure whether a sentence is good or bad. Choosing a 5 is indicating the highest form of "acceptable", whereas choosing a 4 indicates something less than that—but still closer to acceptable than anything else.

---

[4]Ratio data has additional properties, which we do not need to discuss here.

[5]As a matter of fact, we agree that it is unlikely that the use of parametric statistics on Likert data leads to any faulty conclusions, and we ourselves use them on occasion when it is appropriate for the questions we are asking.

For our purposes, showing that many speakers accept a sentence will be sufficient to conclude that a grammar generating that sentence must exist. It is important to emphasize the existential nature of this claim. In theory, even one speaker accepting a sentence might be enough to conclude that a grammar generating that sentence exists. Certainly, much of generative grammar has been built on single speaker judgments, and outside of that, plenty of fieldwork on endangered languages operates in the same way. But as we have seen, HYT judgments are somewhat variable, so it is important to survey a large number of speakers to be confident in the existence of grammars that generate particular sentences. The HYT construction is thus an example where collecting data on a larger scale reveals a theoretically interesting trend in one particular direction—a trend that may not have emerged with a smaller sample size.[6] For example, we will see cases where many speakers accept sentence A and sentence B, many accept A but reject B, while very few accept B but reject A. We will propose that at the very least, the first two patterns exist and should be generated by a grammar, but that the third one may or may not exist, and at least should be the marked option if it is even possible. We turn now to one such case, involving the auxiliary vs. main verb status of *have*.

4 Main vs. Aux-*Have*

As discussed above, we adopt the widespread and standard assumption that syntactic competence is categorical and discrete, but we also assume that gradient acceptability judgments can provide the means to test categorical syntactic hypotheses (Newmeyer 1998; Sprouse 2007b). What we want to determine is the set of possible grammars with respect to the HYT construction. In this section, we will ask whether there are grammars that treat *have* only as a main verb, whether there

---

[6]In addition to our specific empirical contribution, then, we also intend this study to make a methodological contribution, adding to a body of work demonstrating that large-scale acceptability judgment surveys are a useful tool in understanding syntactic variation.

are grammars that treat *have* only as an auxiliary verb, and whether there are grammars that can generate both structures.

Following previous authors, we use sentences with *do*-support as diagnostics of main verb status, and corresponding sentences with auxiliary *have* (aux-*have*) as diagnostic of auxiliary status. However, because we are entertaining the possibility that a grammar could generate both types of sentence, it is not enough to simply compare the means of *do*-support sentences and aux-*have* sentences across a population of speakers. Instead, we compare the actual judgments of minimal pairs of *do*-support and aux-*have* sentences, and cross-tabulate speakers' judgments on each variant. We find that speakers tend to either judge the *do*-support and aux-*have* sentences the same, or else give higher judgments to aux-*have* sentences than to *do*-support sentences. At least this much is robustly attested. There are some speakers who give higher judgments to *do*-support sentences than to aux-*have* sentences, but they are significantly fewer, and as discussed below, they do not provide evidence for grammars that generate the *do*-support sentences but not the aux-*have* sentences; the majority of these speakers actually find both sentences quite bad.

We want to emphasize the theoretical points that we think these data support. Our results suggest the following conclusions:

(3) a. Both aux-*have* and *do*-support structures of HYT sentences exist.
     b. There are individual speakers who have both structures in their grammars.
     c. There are individual speakers who have only the aux-*have*, but not the *do*-support structure of HYT in their grammars.

While (3a) only forces the conclusion that there are two ways of deriving HYT sentences (something already argued for by Harves & Myler 2014b), (3b) suggests that this difference must be relatively minor, and (3c) suggests that the *do*-support variant must, in some sense, be the more marked variant of the two. It is possible that there are individual speakers who have only the *do*-

9

support structure of HYT in their grammars; but we do not feel that our data allow us to safely conclude this.

In section 4.1 we present the data that support the conclusions in (3), and in section 4.2 we show how these conclusions are captured by our analysis. In section 4.3 we provide further support for the analysis by considering two constructions related to HYT, and in section 4.4 we flesh out the technical details of our analysis.

4.1 Asymmetry in HYT Judgments

The minimal pairs that we included in our surveys are shown in (4). (4a) is a tag question,[7] (4b) a wh-question, (4c) an affirmative yes-no question, and (4d) a negative yes-no question.[8]

(4) a. i.   Oh, she has yet to finish, has she?
         ii. Oh, she has yet to finish, does she?
      b. i.   What have you yet to eat?
         ii. What do you have yet to eat?
      c. i.   Has John yet to win the hearts of his classmates?
         ii. Does John have yet to win the hearts of his classmates?
      d. i.   Hasn't John yet to win the hearts of his classmates?
         ii. Doesn't John have yet to win the hearts of his classmates?

As mentioned above, acceptance of the *do*-support variant implies that a speaker treats *have* as a main verb; acceptance of the *have*-raising variant implies that a speaker treats *have* as an auxiliary. From a syntactic perspective, then, the four contexts tested in (4)—tags, wh-questions, yes-no

---

[7]Note that we used a positive tag in (4a) so that a speaker's judgment of it would be unaffected by whether the speaker treated HYT as syntactically negative or syntactically affirmative. For the former speakers, the tag would simply be an ordinary tag with the opposite polarity from the polarity of the clause it is attached to. For the latter speakers, the tag would be a so-called "reduplicative tag" (McCawley 1998:501), used when the speaker does not want to take responsibility for the proposition expressed in the clause (Cattell 1973:615). Since reduplicative tags are generally not possible with negative sentences (Cattell 1973:615; McCawley 1998:501), a negative tag would not have had the advantage of being possible in principle—on at least some reading—across all speakers.

[8]Our survey also included ellipsis sentences with aux-*have* and *do*-support; see (1083) and (1084) in Appendix A. We do not discuss the results of these sentences here. This is purely for space issues, since we feel that ultimately, they do not add any conclusions that are not independently reached with the other sentences. The results, however, were entirely consistent with the rest of the proposal.

questions, and negative yes-no questions—are all different ways of testing for the same thing. Just as in much experimental syntax, it is standard practice to test multiple lexicalizations of the same syntactic condition, these contexts should be considered different 'syntacticizations' of the same condition.[9]

If a speaker accepts any of the *do*-support sentences, it indicates that s/he is able to treat *have* as a main verb. If a speaker accepts any of the aux-*have* sentences, it indicates that s/he is able to treat *have* as an auxiliary. For this reason, we will look at each speaker's max—the highest judgment across the four sentences.

First, consider the tabulation in (5).

(5) **Max Rating**

Do-support	**Aux Have**										Total
	Bad				Marginal		Good				
	1	%	2	%	3	%	4	%	5	%	
1	4	1%	4	1%	11	2%	12	2%	27	5%	58
2	0	0%	10	2%	25	5%	19	4%	26	5%	80
3	2	0%	8	2%	25	5%	35	7%	44	8%	114
4	0	0%	3	1%	11	2%	38	7%	41	8%	93
5	0	0%	2	0%	12	2%	36	7%	121	23%	171
Total	6	1%	27	5%	84	16%	140	27%	259	50%	516

The correlation was significant, $r(516) = .31$, $p < .001$[10]

Here, we can see the asymmetry between aux-*have* and *do*-support in a number of ways. First consider the extremes of the table—the participants whose max for both sentence types was either a 1 or a 5.

---

[9]Since it was not our aim to ask whether yes-no questions, affirmative tags, wh-questions, etc., behave differently with respect to auxiliary tests, we did not consider it necessary to treat each sentence pair as its own condition. We also had no theoretical reason to suppose that they would behave differently. It turns out that speakers do treat one of the constructions somewhat differently (namely the *wh*-question); we discuss this in more detail in Appendix B, where we see that the main, substantive conclusions drawn here are unaffected.

[10]The correlation of the average was higher, and also significant, $r(516) = .47$, $p < .001$.

(6)

Do-support	Aux Have		Total
	1	5	
1	4	27	31
5	0	121	121
Total	4	148	152

4 participants fully rejected—gave the lowest possible score to—all four *do*-support sentences and all four aux-*have* sentences. 121 participants gave a 5—the highest possible score—to at least one *do*-support sentence and one aux-*have* sentence. The asymmetry is visible when we look at people who treated them differently. 27 participants gave a 5 to at least one aux-*have* sentence while giving no higher than a 1 to all four *do*-support sentences. Not one participant had the reverse pattern, which would involve giving a 5 to at least one *do*-support sentence while giving no higher than a 1 to all four aux-*have* sentences.

This illustrates the general pattern we find comparing participants' judgments of *do*-support and aux-*have* sentences: participants generally either find aux-*have* better, or they find both sentence types equally acceptable (or unacceptable). We can show this quantitatively if we subtract, for each speaker, their max judgment for aux-*have* from their max judgment for *do*-support. We find that out of 516 participants, 244 have a negative value, indicating that they judge aux-*have* higher. 198 have a zero value, indicating that their max score for both sentence types is the same. The remaining 74 have a positive score, indicating that their max score for *do*-support is higher than their max score for aux-*have*. A sign test shows this result to be statistically significant ($Z = -9.477$, $p < .001$, n = 516).[11]

---

[11]We thank a reviewer for suggesting the sign test as the most appropriate way to test for the significance of the one-way correlation we find in our data. The result goes in the same direction, and leads to the same conclusion, if we use the average of all four sentences, rather than the max. Doing so, we find 324 negative differences (indicating aux-*have* is better), 57 zeroes (indicating the same average judgment), and 135 positive differences (indicating that *do*-support is better). Once again, a sign test shows that this difference is significant ($Z = -8.775$, $p < .001$, n = 516).

It should be kept in mind that our results are based on a single minimal pair within each syntactic construction (see discussion above on our 'syntacticizations' of the same configuration). When we examined each construction individually, we found significant preferences for aux-*have* with all constructions except for wh-questions (which had no preference either way). The absence of a result for wh-questions could be due to an unforeseen interaction between

We might then ask about the 74 speakers who judge *do*-support as better than aux-*have*. Do they provide evidence for a grammar that generates *do*-support only? It is possible, but we are skeptical. Of those 74, 59 judged aux-*have* as at least marginal (3 or higher). They are plausibly understood as speakers whose grammars generate both sentence types, but found our particular sentences marked for some reason. Only 2 of these 74 participants judged aux-*have* as a 1, and even these two judged *do*-support as only a 3. Given this picture, we do not feel there is a strong case for the existence of a grammar that *only* generates *do*-support sentences. Nevertheless, we will make it clear below that what is crucial for our analysis is that *do*-support is the marked option, not that a *do*-support-only grammar is ruled out in principle.

When we return to the main questions we asked earlier, we feel that we have enough information to answer them. Are there speakers who accept both aux-*have* and *do*-support? Such speakers clearly exist. Are there speakers who accept one and not the other? There are definitely speakers who accept aux-*have* and reject *do*-support. This much is clear. It is an open question what we want to say about speakers who accept *do*-support but reject aux-*have*; we do not have clear evidence for them, but we might not want to rule out their existence entirely.[12]
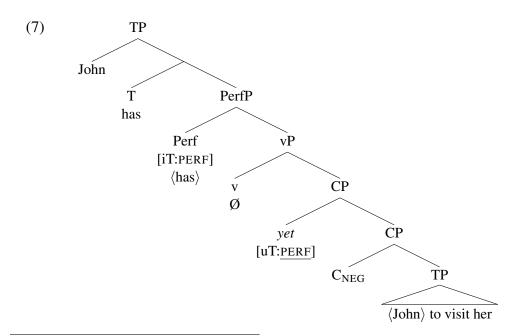
4.2   Analysis of the Main Clause

In this section we spell out our analysis and show how it accounts for the results presented in the previous subsection. We follow Harves & Myler (2014b) and Bybel & Johnson (2014) in proposing a biclausal structure for HYT sentences. In the matrix clause, the main verb, shown as

HYT and the properties of the wh-question itself, or to some other idiosyncratic property of the individual item we tested. See Appendix B for quantitative details.

[12]Since we study I-language, even one speaker's grammar is relevant to syntactic theory. However, there is a certain amount of noise in the data collection—the fact that 5 people (out of 516) accepted *do*-support (with a 4 or 5) and rejected aux-*have* (with a 1 or 2) does not mean that these people really have a "*do*-support only" grammar. They may; but it could also just be noise in the data. Conversely, it seems highly unlikely that we should attribute the 84 people (16% of the data set) who accepted aux-*have* (with a 4 or 5) and rejected *do*-support (with a 1 or 2) to noise in the data. The more likely conclusion is this is a real, synchronic property encoded in a subset of English speakers' I-language.
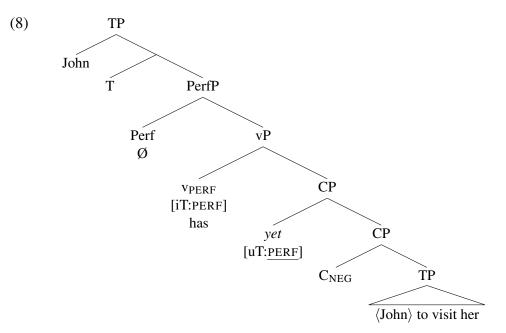
v, selects for a negative complementizer (cf. Landau 2002). This negative complementizer licenses the NPI *yet*, which adjoins to the CP layer of the embedded clause. In addition to being an NPI, *yet* has an unvalued temporal feature [uT:__], which must be valued by a higher c-commanding interpretable Tense feature [iT:VAL] (assuming Wurmbrand's (2012) *Reverse Agree* framework). In HYT sentences, this valuing feature is a [iT:PERF] feature. We argue that the [iT:PERF] feature that licenses *yet* is (a) always spelled out as 'have', and (b) can be introduced in one of two places: either it is introduced in the canonical position for introducing PERF features—the Perf(ect) head in the auxiliary field—or it is introduced as a feature on the main verb *v* (the head that selects for negative C).

Accordingly, *have* should behave in one of two ways. First, consider what happens if the [iT:PERF] feature is introduced on the Perfect head in the matrix clause, as in (7). The Perfect head is spelled out as *have* and the main verb *v* goes unpronounced, and so in HYT sentences constructed in this way, *have* behaves like a typical auxiliary.[13]

(7)

----

[13]See section 4.4 for further discussion of the spellout of *v*. See section 5.3.4 below for discussion of the raising syntax of the matrix subject in HYT sentences.

14

Next, consider what happens if the [iT:PERF] feature is introduced on the main verb *v* head itself, as in (8). The *v* is spelled out as *have* and the Perf head is null (or perhaps left out entirely).[14] Consequently in *have yet to* sentences constructed in this way, *have* behaves like a main verb.

(8)

```
              TP
         ┌─────┴─────┐
       John          │
              ┌───────┴───────┐
              T             PerfP
                       ┌───────┴───────┐
                     Perf             vP
                      Ø         ┌──────┴──────┐
                              vPERF          CP
                            [iT:PERF]    ┌────┴────┐
                               has      yet       CP
                                      [uT:PERF] ┌──┴──┐
                                              CNEG    TP
                                                    ┌──┴──┐
                                                 ⟨John⟩ to visit her
```

Ultimately, the core intution guiding our proposal is that the grammar that gives rise to *do*-support with HYT is minimally different from the grammar that gives rise to aux-*have*. Both structures involve merging the same sets of features, but in different regions of the clause. All speakers have a little v that selects for a negative CP with *yet* adjoined to it. All speakers also have a Perf head in a dedicated position in the clausal spine, and this head can value [uT:__] features in its c-command domain, in this case valuing the [uT:__] feature of *yet*. Together, this little v and this Perf head are merged into the same clause, to create a HYT sentence with aux-*have*, as in (7). However, some speakers have an additional option: the same v head that selects for the *yet*-clause may directly value the [uT:__] feature on *yet*, by virtue of containing its own [iT:PERF] feature. Merging this v head with the *yet*-clause creates a HYT sentence with *do*-support, as in (8). This

---

[14]We remain agnostic here about whether functional heads are present when they are not being used, as argued by Cinque (1999, 2006), or whether they are just not merged at all. We present the Perf head for consistency across structures.

option is in some sense more economical (since all the work is done by one head), but it is also more marked (since English does not generally allow a low, "lexical" v to assign [iT:PERF]).

The way that the asymmetry is encoded in this analysis is superior to how it might be encoded in a straightforward head-movement analysis, in which *have* always starts out as a main verb, and is forced to move to T for some speakers, but only optionally moves for other speakers. Such an analysis would make V-to-T movement the unmarked option, available to all speakers, and its absence would be the marked option. However, this is at odds with the rest of English: it is V-to-T movement that is marked in English, not its absence. It would be exceedingly strange to say that only the *have* that selects for *yet* is forced to be able to move for all speakers, but allowed to stay in place for a subset of them. It is not even clear how one would operationalize this while excluding the same set of derivations for other uses of *have*:

(9)   a.   He had his class walk out on him again.
         b.   Did he have his class walk out on him again?
         c. * Had he his class walk out on him again?

(10)   a.   He had it on good authority that Jessie was gone.
         b.   Did he have it on good authority that Jessie was gone?
         c. * Had he it good authority that Jessie was gone?

It is true that raising of main verb *have* to T is possible in some uses in British English. However, it is in fact generally limited to more formal, or older, forms of British English, and is totally absent from contemporary American English (Hughes et al. 2012:22). Since we are focusing in this study on American English, we can be reasonably confident that the speakers in the study are not making use of a "main-verb–*have* raising" grammar.

In contrast, our analysis ties the main vs. auxiliary status of *have* in HYT directly to the positioning of perfect features. Therefore, we do not expect it to extend to other uses of *have*. More-

over, we fully expect the markedness to go in the direction that it does: the aux-*have* structure is built using only formatives that all speakers of English generally have at their disposal—all speakers have a Perf head that values the [uT:__] features in its c-command domain. It is introducing [iT:PERF] on a lower, lexical head that is exceptional, or marked.

4.3 Further Support

Further support for the analysis of HYT presented here comes from two other constructions which build off of the basic HYT syntax.

First, a small extension of the analysis provides a natural account for the behavior of the—until now undocumented—group of speakers who allow *have got yet to*, as in (11). (11b–d) provide attested examples of this construction, which is accepted by the first author of this paper.[15]

(11)   a.   We've got yet to visit our grandmother.
       b.   γ She blocked her eyes and drew the curtains with knots I've got yet to untie.
            (Michael Penn ?- No Myth).
       c.   γ That's what I've got yet to see.
            Everybody's Magazine, Volume 47, page 143[16]
       d.   γ And I've got yet to see a Plex developer acknowledge any kind of problem with
            Sync on iOS.[17]

This construction has exactly the same meaning as the basic HYT construction. Our analysis offers a relatively simple account of this structure. Essentially, we propose that the v head, which is otherwise null in the aux-*have* derviation, may be spelled out as *got* for a subset of speakers.[18] Note that this explanation is not possible in accounts that posit V-to-T raising for aux-*have* sentences (Bybel & Johnson 2014), in monoclausal accounts like Kelly (2012), or in Harves & Myler

---

[15]To indicate attested example found on Google, we mark them with the "Google gamma" (see Horn 2011, 2013; Horn & Abbott 2012).

[16]https://goo.gl/EQGO9t

[17]https://goo.gl/bZpYBJ

[18]See the next subsection below for more discussion of why *v* is usually silent in that derivation.

(2014b), which, like ours, proposes that there is a silent verb in the aux-*have* derivation, but unlike ours, proposes that it is a silent version of the verb *fail*.

Secondly, the account predicts that speakers will be able to introduce the [iT:PERF] feature on both the main verb and in Perf, simultaneously. Such constructions are indeed possible, as shown in (12). (12b–d) provide attested examples.[19]

(12) a. He has had yet to pay me for 29 years now.
  b. γ Although the UFC has had yet to make a public announcement as of the time of publication...[20]
  c. γ Financial Services in Britain account for a full 10% of the economy even though the industry has had yet to fully recover from the 2008 financial crises.[21]
  d. γ As I have gotten further along, my unborn child has had yet to go head down.[22]

The existence of the construction provides strong support for the availability of [iT:PERF] (i.e., *have*) in the main verb position. Notice that ordinary periphrastic perfect constructions do not allow this.

(13) a. * He has had been aware of that rule for 29 years now.
  b. * The UFC has had made a public announcement...
  c. * The industry has had fully recovered...
  d. * My unborn child has had gone head down...

It is the biclausal nature of the HYT construction, and the availability of [iT:PERF] in the main verb position (in addition to the same feature on the canonical Perf head), that allows such "double perfects" in the HYT construction, but not in ordinary periphrastic perfect constructions.

---

[19]Our analysis is similar to the analysis of southern Dutch perfect doubling discussed in Koeneman et al. (2011), which looks superficially like grammatical versions of sentences like (13). Koeneman et al. (2011) argue that this construction involve a lexical 'have' taking an adjectival participle complement (which contains the verbal substructure), with an auxiliary 'have' on top of that. It is a non-trivial matter to determine the extent to which they are semantically similar (see the appendix in Koeneman et al. (2011)), so for now we set this intriguing connection aside.

[20]http://goo.gl/MSNqsK
[21]http://goo.gl/ZTO3B5
[22]http://goo.gl/h372ij

4.4   The silence of the verb

Finally, we turn to one outstanding issue in the aux-*have* derivation: why is the main verb position silent when the Perf head introduces the interpretable [iT:PERF] features?

In a late insertion theory such as the one adopted here, we might expect the *v* head in aux-*have* derivations to be spelled out as a light verb such as 'be' (cf. Myler 2014). This is because it is generally assumed that there is always an elsewhere realization of formatives, and for little *v*, that elsewhere realization—when there is no lexical root—very often corresponds to some light verb, the choice of light verb being determined by the local linguistic context (Wood 2011; Folli & Harley 2013; Myler 2014, 2016; Wood & Sigurðsson 2014).

One possible strategy would be to stipulate it. Essentially, this would involve no more than stating that the *v* head that selects for the *yet*-CP is spelled out as Ø, unless it has an [iT:PERF] feature. However, there is a more principled approach which fits in more naturally with the other components of the analysis. What we want to capture is the intuition that the main verb is silent *because* the [iT:PERF] feature is present elsewhere in the clause. That is, it is not a coincidence that the spellout we need is Ø (rather than *be* or *blick* or whatever else one might stipulate), nor that the Ø spellout occurs in the context of a higher [iT:PERF] feature.

Essentially, the idea is that the lower *v* is a "defective goal" for the higher Perf head, and for this reason, it is realized as null. The basic idea comes from work by Roberts (2010), Holmberg (2010), and Livitz (2014). These authors propose that when two objects enter into an Agree relation, their feature bundles become formally identical to movement copies.[23] If the lower of the two feature bundles has a subset of the features of the higher feature bundle, then the lower one is not

---

[23]They built this claim on the Agree system of Pesetsky & Torrego (2007), but it could easily be adapted to the Reverse Agree framework adopted here.

pronounced. This is because the PF interface sees the two feature bundles in the same way that it sees movement copies, and triggers Chain Reduction (cf. Nunes 2004) on them in the same way.

In order to invoke this process to account for the silence of the main verb, we need to defend two claims. First, we need to claim that Perf enters into an Agree relation with *v* (in addition to the Agree relation it enters into with *yet*). Second, we need to claim that *v* has a subset of features of Perf.

Taking the latter point first, it seems immediately plausible to assume that the Perf head is itself a kind of *v* head. After all, it assigns verbal morphological features, and receives them as well. It is spelled out as *have*, which is morphologically identical in all forms (past, present, participle, etc.) to main verb *have*. Moreover, in addition to its interpretable [iT:PERF] feature, it also has an unvalued [uT:__] feature (which is valued as [uT:PAST] in past-tense contexts, for example). The lower v, on the other hand, would only have a [uT:__] feature. If there are no other relevant features involved in the calculation, then the lower *v* head might well have a subset of Perf's features.[24,25]

Turning to the first point, there is every reason to suppose that Perf would enter into an Agree relation with little v in addition to *yet*. Firstly, as a verbal head, the system adopted here (from Wurmbrand's work) generally assumes verbal heads to have unvalued [uT:__] features that must be valued by higher heads. Secondly, this Agree relation wouldn't interfere with the other Agree relation established between Perf and *yet*, as shown clearly by work on "parasitic participles" (see Wurmbrand 2010, 2012; Wood 2013) where one Perf head can value several verbal heads, if the configuration is right. Thirdly, as mentioned above, some speakers allow the lower v-head to be

---

[24]Note that not all features "count" in the same way—the ones that do count tend to be the ones that are involved in the Agree relation, and in addition, the details of one's theory of features makes a difference. See, for example, Livitz (2014) for a discussion of why Case features do not count in the evaluation of a defective goal.

[25]The reason that possessive *have* is not a defective goal for Perf is that it has to license an object, so it inherits φ-features from its external-argument–introducing Voice head (Chomsky 2008; Myler 2014); such features mean that it is not a defective goal.

pronounced as *got*, yielding the *have got yet to* construction discussed in Section 4.3. The fact that what is pronounced in such cases is a participial verb form (*got*) supports the claim that the v head undergoes an Agree relation with a Perf head.[26]

These considerations support the idea that v is null in aux-*have* HYT sentences because it is a defective goal. This is in line with the basic intuition guiding our analysis: the difference between aux-*have* and main-*have* sentences involves introducing the same features in slightly different places in the clause. In particular, if the interpretable perfect feature is introduced low, then there is no need to introduce it high, so the Perf head will gets its default, zero realization. If it is introduced high, then the lower *v* gets a zero realization. The latter option is available to all HYT speakers, while the former is available only to a subset of them.[27]

5 Negation and the structure of the complement clause

As discussed in Section 2, previous analyses differ over whether HYT involves sentential negation. In this section, we argue that for most speakers, the embedded clause in a HYT sentence carries constituent negation, which does not scope over the matrix clause. Specifically, the complement clause in a HYT sentence is always headed by a complementizer with a [NEG] feature. This explains why different tests for sentential negation yield different results, both in the literature and in our surveys. *Yet*, an NPI, is licensed by this negative complementizer and adjoins to it. A subset of speakers, however, may have a fully negative HYT construction, which we suggest arises from an Agree relation between a matrix Neg head and the embedded [NEG] feature.
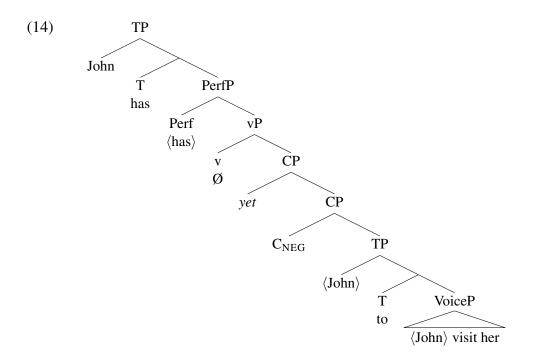
---

[26]The fact that it is pronounced could mean that for such speakers, there is an extra feature on the lower v, which prevents it from being a defective goal. We leave for future research the question of what that feature might be.

[27]A reviewer suggests an interesting alternative. In both structures, *have* is generated both in v and in Perf, such that the two structures are completely identical in syntax (hence at LF). The difference between aux-*have* and main verb *have* would then be that at PF, *v* is deleted in the former (generating aux-*have*) and Perf is deleted in the latter (generating *do*-support). We in fact considered exactly this idea in the earliest stages of this work, but ran into many technical problems in executing it. We ultimately found the present analysis more straightforward, but we invite the interested reader to consider a deletion-based alternative and what it would entail.

In Section 5.1, we present an outline of our syntactic analysis of the lower clause, in order to frame our discussion of the negation tests. In Section 5.2, we present the results of the negation tests from the survey data, showing that they support the analysis. In Section 5.3, we flesh out our syntactic analysis in more detail.

5.1 Analysis

The structure of a HYT sentence with an aux-*have* derivation is shown in (14), repeated from (7). In this section, we focus on the syntax of the lower clause (which should be unaffected by the choice of an aux-*have* vs. *do*-support derivation in the upper clause).

(14)

We explore this structure in detail in section 5.3. For now, what is important is the claim that HYT does indeed involve negation, but not *sentential* negation. Instead, negation is introduced in the lower clause by a complementizer bearing a negative feature, as proposed for other constructions in Landau (2002). With the HYT construction, however, all the lexical material except the subject is in the embedded clause, so negating the embedded clause creates an effect very similar to sentential

negation. In the next subsection, we see how this constituent negation leads to non-uniform results on a variety of negation tests.

5.2 Tests for sentential negation

Previous analyses of HYT differ over whether or not the construction involves sentential negation. Harves & Myler (2014b) claim that HYT lacks sentential negation, with the apparent negative meaning (and NPI licensing) coming from a (silent) verb *fail* in the matrix clause. Both Kelly (2012) and Bybel & Johnson (2014), on the other hand, argue that HYT does have sentential negation.

The distinct analyses are developed on the basis of some of the same tests, to which they assign different judgments. For instance, as shown by Klima (1964), if a sentence can be coordinated with a *neither*-phrase, then sentential negation is present, and if it cannot, sentential negation is absent:

(15)   a.   Mary wasn't happy, and neither were her friends.
        b.   * Mary was unhappy, and neither were her friends.
(16)   a.   * Mary wasn't happy, and so were her friends.
        b.   Mary was unhappy, and so were her friends.

In (15b), despite the negation present in *unhappy* and its semantic similarity to (15a), *neither*-inversion is impossible. Conversely, *so*-inversion in impossible in (16a) and perfectly fine in (16b).

When we apply the *so/neither* test to HYT, as in (2) (repeated in (17)), the results of the test are not clear: Bybel & Johnson (2014) judge sentences like (17a) as grammatical and (17b) as ungrammatical, diagnosing the *presence* of sentential negation, while Harves & Myler (2014b) come to the opposite judgments, diagnosing the *absence* of sentential negation.

(17)   a. John has yet to attend Mary's lecture, and **neither has Jim**.   H&M: *; B&J: ✓

23

    b. John has yet to attend Mary's lecture, and **so has Jim**.   H&M: ✓; B&J: *

We will return to the *so/neither* test below, where we will suggest that both are generally grammatical, although both have properties that make them marked, in ways that make sense given the structure in (14). First, however, we will support the structure in (14) by discussing two other tests: the *not even* test, shown in (18a), and negative slifting, shown in (18b).

(18)   a. Jordan has yet to visit Grandpa, not even once.
          b. John has yet to eat dinner, I don't think.

We will show that most speakers accept (18a) and reject (18b), and that this is explainable in terms of the structure in (14).

5.2.1   *Not even* **and Negative Slifting**

The *not even* test, discussed by Klima (1964), concerns the ability to follow a sentence with *not even* phrases. As shown in (19), only a truly negative sentence—and not just a sentence that contains relevant negative meaning—can be followed by a *not even* phrase. Negative slifting, discussed by Ross (1973), involves slifting with a negative matrix clause. As illustrated in (20) it appears to have a similar distribution to *not even*, in that only a truly negative sentence can be followed by negative slifting.

(19)   *Not even*
        a.   Jordan is not happy, not even with his new promotion.
        b.   * Jordan is unhappy, not even with his new promotion.
(20)   Negative Slifting
        a.   He hasn't been happy, I don't think.
        b.   He has been unhappy, I (*don't) think.

To find out how HYT fared with respect to these tests, we included the sentences in (21) in our surveys.

(21)　　a. Jordan has yet to visit Grandpa, not even once.

　　　　b. John has yet to eat dinner, I don't think.

One might expect a given construction to pattern similarly on both tests, since they both seem to be testing for the same property.

　　We find, however, that the two tests yield quite different results. The *not even* sentence in (21a) was widely accepted, rated as a 4 or 5 by 78.7% of participants, as shown in (22). In contrast, the negative slifting sentence in (21b) was widely rejected, rated as 1 or 2 by 57.3% of participants, as shown in (23).

(22)　　Jordan has yet to visit Grandpa, not even once.

Judgment	N	%	Combined	N	%
1	14	3.9%	} Reject	40	11.1%
2	26	7.2%			
3	37	10.2%			
4	67	18.6%	} Accept	284	78.7%
5	217	60.1%			
Total	361				

(23)　　John has yet to eat dinner, I don't think.

Judgment	N	%	Combined	N	%
1	154	29.8%	} Reject	296	57.3%
2	142	27.5%			
3	105	20.3%			
4	72	14.0%	} Accept	115	22.3%
5	43	8.3%			
Total	516				

　　This contrast calls for an explanation.[28] We propose that the contrast stems from the fact that the *not even* test can target negation present on an embedded clause, while negative slifting

---

[28] As before, the results should be interpreted with caution, since we only included one sentence of each type in our survey.

generally requires full sentential negation. Since according to our structure, HYT sentences contain negation in the embedded clause—but for most speakers *only* in the embedded clause—most speakers accept *not even* but reject negative slifting. We will return to the exceptions to this, and possible microvariation accounting for it, in section 5.3.5, after we have returned to the *so/neither* test.

We argue that the very low rejection rate of (22) stems from the fact that the *not even* test is not in fact a test for sentential negation, but a test for *clausal* negation, and so most respondents are able to analyze *not even* as attaching to the negated lower clause. The example in (24) shows that *not even* only requires a negated embedded clause, and is acceptable in the absence of sentential negation.

(24)   Paddy was certain [that Mary wouldn't quit, not even after she sprained her ankle.]

Since negation on an embedded clause is all that is required, and it is present in the embedded CP of HYT, most speakers accept *not even* with HYT sentences. However, some speakers may find that *not even* becomes somewhat degraded in the absence of an *overt* negative marker. Consider the sentences in (25). Each of these structures contains some kind of negation, as shown by the fact that they license the NPI *any*. However, some speakers find that the *not even* continuation is somewhat degraded.

(25)   a.   ? Fat chance I'd open an attachment on any of these emails, not even if they were cleared by my anti-virus software.[29]
        b.   ? As if Barry would accept any of your help, not even after he loses 5 straight matches.
        c.   ? The bouncer was stopping anyone from coming in, not even if they had a ticket.

This aspect of the *not even* test could be influencing speakers in their judgment of (22), which

---

[29]This sentence is based on an example in Horn (2009).

similarly lacks an overt marker of negation, leading some speakers to judge it as a 1 or 2. Still, we contend that the fact that a majority of speakers accept it supports the view that there is clausal negation, even if it is only present in the embedded clause.[30]

Assuming, as usual, a distinction between grammaticality (applying to a speaker's mental grammar) and acceptability (applying to a speaker's performance of the judgment task), our claim is that the *not even* test should in principle be grammatical for basically all speakers, even if some do not find such sentences fully acceptable. While we do not rule out the possibility in principle that there is some small subset of speakers who really do have a fully affirmative HYT construction, our claim is that this does not hold for most speakers. Instead, at least a sizeable subset of speakers judged (22) as a 1 or 2 for other reasons. Along similar lines, we suggest that negative slifting has such a low acceptance rate because it has the opposite property: it is a test of sentential, rather than clausal negation. Unlike a *not even* clause, *I don't think* needs to attach a negative *matrix* clause, rather than just any negative clause. This claim is supported by the unacceptability of the examples in (26).

(26)   a.   * Paddy was certain that Mary wouldn't quit, I don't think.
       b.   * Mary seemed not to be happy, I don't think.
       c.   * The bouncer was stopping anyone from coming in, I don't think.

Since according to our structure, the HYT construction is only negative in the embedded clause, negative slifting is generally rejected.[31]

The *not even* and negative slifting tests provide strong support for the hypothesis that HYT has clausal, but not sentential negation. If HYT were fully negative (at the highest structural

---

[30]These results are, of course, compatible with sentential negation being present in the matrix clause, but the discussion of negative slifting and the *so/neither* test will militate against explaining the high acceptability of the *not even* test in that way.

[31]In section 5.3.5, we return to the 22% of participants who accepted negative slifting.

level) or fully affirmative, the differences between *not even* and negative slifting would be entirely unexpected, and difficult to account for. Having established this much, we return now to the *so/neither* test. We will argue that these tests in fact support our analysis as well, but the facts must be given careful analysis and consideration. We will see that when the facts are considered in detail, they support the view that HYT sentences are simultaneously affirmative (in the matrix clause) and negative (in the embedded clause). Thus, depending on how a sentence is parsed, a HYT sentence can pass as either affirmative or negative with such tests. Crucial support for this view will come from the interaction of *so/neither* sentences with *do*-support, which has not previously been considered in the literature.

5.2.2 *So/neither*

The four sentences used in the *so/neither* test are shown in (27)–(28). Going by the analysis in the previous section, we should assume that if HYT carries sentential negation, one or both of (27a) and (28a) should be acceptable (depending on whether or not the speaker accepts HYT with *do*-support), and both (27b) and (28b) should be rejected. Likewise, if *have yet to* lacks sentential negation, we might expect both (27a) and (28a) to be rejected, and at least one of (27b) or (28b) to be accepted. If, however, we are correct that HYT is simultaneously affirmative (in the matrix clause) and negative (in the embedded clause), then we might expect—depending on how the tests work—that both *so*-inversion and *neither*-inversion may be acceptable.

(27) a. Jordan has yet to read it, and neither has Pat.
      b. Jordan has yet to read it, and so has Pat.
(28) a. Jordan has yet to read it, and neither does Pat.
      b. Jordan has yet to read it, and so does Pat.

Note that despite the fact that Bybel & Johnson (2014) and Harves & Myler (2014b) both recognize

that many speakers treat *have* as a main verb, they only tested *so/neither*-inversion with auxiliary *have*. We will see below, however, that the difference between *have* and *do* is important to understanding how the test is really working. That is, the fact that some speakers accept *do*-support with HYT helps to clarify why we find variable results with the aux-*have* sentences in (27).[32]

We turn first to the aux-*have* sentences, of the type considered by Bybel & Johnson (2014) and Harves & Myler (2014b), shown in (27). The cross-tabulation of the two aux-*have* variants in (27) is shown in (29).[33]

(29) *So has* vs. *neither has*

So-Inversion	*Neither*-Inversion						
	Reject	%	Marginal		Accept		Total
Reject	37	10.2%	31	8.6%	96	26.6%	164	45.4%
Marginal	11	3.0%	18	5.0%	44	12.2%	73	20.2%
Accept	19	5.3%	17	4.7%	88	24.4%	124	34.3%
Total	67	18.6%	66	18.3%	228	63.2%	361	

The first thing to note is that there is no support, from these judgments, for the view that HYT is either fully affirmative or fully negative: not only do 34.3% accept *so*-inversion and 63.2% accept *neither*-inversion, but 24.4% accept both. So we must admit grammars that allow both *so*-inversion and *neither*-inversion with HYT. As we will see below, this is consistent with our structure, which has an affirmative matrix clause and a negative embedded clause.

Secondly, we see that *neither*-inversion is more widely accepted than *so*-inversion. Its raw acceptance is higher (63.2% vs. 34.3%), and moreover there is an asymmetry in that 26.6% of participants accepted *neither* but rejected *so*, while only 5.3% of participants accepted *so* but rejected

---

[32]As can be seen by inspecting the sentence list for the surveys in Appendix A, the sentences in (27) were included in both surveys. However, in this paper, we only discuss the results of the sentences on one survey, Survey 6. The reason is simply that due to a technical error, not all participants judged both of these sentences; this made the reporting of the results clumsy at best. Since the results did not add anything to the discussion (and were entirely along the lines of the Survey 6 results), we let the Survey 6 results for these sentences suffice.

[33]For ease of exposition, and to make the data more reader-friendly, we combine in the tables of this section judgments of 1 and 2 as 'Reject', and judgments of 4 and 5 as 'Accept', listing judgments of 3 as 'Marginal'. See Appendix B for the full cross-tabulation of judgments.

neither. This is consistent with the hypothesis discussed below in section 5.3.5, dovetailing with the results of negative slifting, that a subset of speakers have a fully negative structure for HYT. Thus, *neither*-inversion is expected to be widely available, and the relevant subset of speakers will reject *so*-inversion.[34]

We now turn to the details of how the tests work, and we show that the results we see when the tests are applied to HYT are consistent with our analysis. The results for the *so/neither* test with aux-*have* can be accounted for under our proposal that there is clausal negation in a *have yet to* sentence, but that it is located in the lower clause. We argue that what causes the variation among speakers is their licensing conditions on *neither* and *so*. Concentrating first on *neither*, we know that some speakers can license *neither* in the presence of non-canonical sentential negation and some constituent negation, but acceptability judgments vary. For instance, in (30a) we see *neither* licensed by a negative quantifier in object position, in (30b) we see it licensed in the presence of a 'sarcasm-marking' expression (on which see Horn 2009), and in (30c) we see it marginally licensed in the complement of a raising verb.

(30) a. Steve did nothing to help, and neither did you <DO ANYTHING TO HELP>.
      b. Fat chance I'd open an attachment on any of those emails, and neither would you <OPEN AN ATTACHMENT ON ANY OF THOSE EMAILS>.
      c. (?) John seems not to be happy, and neither is Mary <HAPPY>.

Crucial to the *neither*-inversion test, then, is the question of the identity of the ellipsis site and the availability of a suitable antecedent to condition such ellipsis (cf. van Craenenbroeck & Temmerman 2017). In each case, the elided constituent must be negated by *neither*, which is the scope-bearing negative element in that clause. The elided constituent must be understood to have an appropriately negated antecedent in order to license the focus semantics of *neither* (likely con-

---

[34]We discuss below why no sentence is fully accepted by an overwhelming majority.

tained in the morpheme *either*; cf. Wood 2014).

Returning to the HYT sentences, there are in principle at least two parses available for each case of *neither/so*-inversion: one in which the ellipsis site is parsed as containing only material from the antecedent *embedded* clause, as in (31a) and (32a), and another where the ellipsis site is parsed as containing the antecedent matrix clause, as in (31b) and (32b).

(31) a. Jordan has yet to read it, and neither has Pat <READ IT>.
   b. # Jordan has yet to read it, and neither has Pat <YET TO READ IT>.
(32) a. # Jordan has yet to read it, and so has Pat <READ IT>.
   b. Jordan has yet to read it, and so has Pat <YET TO READ IT>.

For *neither*-inversion, (31a) is the only natural parse. (31b) has a double negation effect, entailing that the antecedent would be something closer to "It is not the case either that Jordan has yet to read it." But this reading is quite impossible, as the double negation meaning is not present in the antecedent clause. The fact that *neither* carries its own negation with sentential scope, then, limits the possible antecedents on *neither*-inversion.

The opposite holds for *so*-inversion. The parse in (32a) is highly unnatural, because there is no appropriate affirmative antecedent. The elided portion, the verb phrase *read it*, corresponds to the negative verb phrase in the antecedent clause. The only possible parse is (32b), in which the affirmative requirement on *so* is satisfied by only the higher clause. However, this is itself somewhat unnatural, because there is no lexical content in the matrix clause, other than within the CP complement of v. The most natural ellipsis would target the lexical content, since that is what is at issue.

According to our analysis, speakers' grammars should generally be assumed to generate (31a) and (32b). What, then, explains the fact that 45.4% (164/361) of participants rejected (32b)? First

of all, many participants rejected both *so*-inversion and *neither*-inversion. There could be several reasons for this. On the one hand, continuations with *neither* may be slightly degraded for some speakers in the absence of an overt marker of negation in the antecedent clause (cf. (30)), as is the case for *not even* continuations, shown in (25). On the other hand, at least some participants reject aux-*have* in some of its uses. Second of all, we will see in section 5.3.5 that there is evidence suggesting that some speakers really do treat HYT sentences as fully negative. Such speakers will comprise a second subset of the population rejecting *so*-inversion. Third of all, accepting *so*-inversion implies that the participant has settled on the parse in (32b). It is likely that many participants, however, immediately landed on the parse (32a), since that is the parse that focuses on the lexical content. If so, such participants would reject the sentence, which is indeed unacceptable on the parse they have selected.

This general picture is independently supported by the results from *so/neither*-inversion with *do*-support. With *do*-support, the auxiliary *have* parses in (31a) and (32a) are unavailable. All that is left is the matrix parse which elides all of the *have yet to* clause. Consider the following possibilities.

(33)　a.　* Jordan has yet to read it, and neither does Pat <HAVE READ IT>.
　　　b.　* Jordan has yet to read it, and neither does Pat <READ$_{\text{PTCP}}$ IT>.
　　　c.　# Jordan has yet to read it, and neither does Pat <READ$_{\text{INF}}$ IT>.
　　　d.　# Jordan has yet to read it, and neither does Pat <HAVE YET TO READ IT>.

(33a) is ungrammatical because auxiliary *have* does not allow *do*-support. (33b) is ungrammatical because without auxiliary *have*, the participle *read* is not possible. (33c) is marked because the semantics of generic present tense in the elided clause clash sharply with the semantics of the antecedent clause.[35] (33d) is marked for the same reason that (31b) is marked: it implies a double

---

[35]Put plainly, the antecedent clause does not say that Jordan "doesn't read it"—just that s/he hasn't read it yet. But

negation reading that is not present in the antecedent clause. Therefore, there is no acceptable parse of *neither*-inversion with *do*-support.

Once again, we find a different situation with *so*-inversion. Consider the following possibilities.

(34)   a.   * Jordan has yet to read it, and so does Pat <HAVE READ IT>.
       b.   * Jordan has yet to read it, and so does Pat <READ$_{PTCP}$ IT>.
       c.   # Jordan has yet to read it, and so does Pat <READ$_{INF}$ IT>.
       d.   Jordan has yet to read it, and so does Pat <HAVE YET TO READ IT>.

(34a) is still ungrammatical because auxiliary *have* does not allow do-support, and (34b) is still ungrammatical because without auxiliary *have*, the participle *read* is not possible. (34c) is marked for the same reason as (33c) is. Each of these has the additional problem that *so* forces an affirmative antecedent, but *read* is negated in the antecedent clause. (34d) is the only possible parse, and should be grammatical for speakers who accept *do*-support, modulo the general markedness already discussed for (32b).

Given these considerations, consider the results from the sentences with *so/neither*-inversion and *do*-support.

(35)   *So does* vs. *neither does*

| | *Neither-Inversion* | | | | | | |
So-Inversion	Bad		Marginal		Good		Total	
Bad	322	62.4%	18	3.5%	9	1.7%	349	67.6%
Marginal	45	8.7%	24	4.7%	6	1.2%	75	14.5%
Good	56	10.9%	20	3.9%	16	3.1%	92	17.8%
Total	423	82.0%	62	12.0%	31	6.0%	516	

We find that almost no one—only 6% of participants—accepts *neither*-inversion with *do*-support. In contrast, 17.8% (92/516) accept *so*-inversion. This is almost exactly the number we expect. We saw earlier that approximately half (51.2%; 264/516) of participants accept *do*-support

the *neither* clause asserts that Pat "doesn't read it *either*."

(see the lower righthand shaded cells in the table in (5)), and 38% of participants accepted *so*-inversion in general (with *have*). The fact that around 18% of the participants—just under half of 38%—accepted *so*-inversion with *do*-support fits exactly with our expectations.

We take these results to support our contention that the division of labor is generally between an affirmative matrix clause and a negative embedded clause. Moreover, the effects of *do*-support reveal finer grained details of how the *neither/so*-inversion tests are working. The reason that *neither*-inversion is so highly accepted with aux-*have* is that the embedded clause is what is negated, not necessarily the whole clause, and the embedded clause has all the lexical material needed to license the ellipsis of *neither*-inversion. The reason it is overwhelmingly rejected with *do*-support is that there is no available parse of the ellipsis site that matches the antecedent and gives the right reading. The general acceptability of *so*-inversion supports the view that there is an affirmative superstructure containing the negated lexical content in the HYT construction. The fact that a sizeable subset of speakers reject it is consistent with the hypothesis, already put forth in the discussion of negative slifting that a subset of the population has a fully negative structure for the HYT construction (see section 5.3.5).

5.2.3 Summary

We have seen that the results from different negation tests support the hypothesis that negation is present in the lower clause in a HYT sentence, but for most speakers is absent from the matrix clause. We saw that HYT generally passes the *not even* test, because that test only diagnoses the presence of clausal rather than sentential negation, and we also saw that for most speakers, HYT *fails* the negative slifting test, because that test truly diagnoses full sentential negation. We also saw that speakers show a complex pattern of judgments on the *so/neither*-inversion test. The pattern can be explained if we allow that both *so*-inversion and *neither*-inversion sentences can be generated

by the grammars of (most) speakers, because the affirmative continuation can be based on the affirmative higher clause and the negative continuation on the lower clause. But the judgments are influenced by the (un)availability of parses for the ellipsis site, and a subset of speakers may have a fully negative HYT structure, creating an overall somewhat complex picture. In the following subsection, we discuss in more detail the syntax of the lower clause in a HYT sentence.

5.3 The structure of the embedded clause

5.3.1 The position of *yet*

Harves & Myler (2014b) and Kelly (2012) propose that *yet* is high in the structure, above the main verb in the matrix clause. For Harves & Myler (2014b), *yet* is located in the specifier of the (silent) main verb, and for Kelly (2012), it is in the Perfect head above the VP. Under our analysis, however, *yet* must be lower: even in HYT sentences with *do*-support such as (36), which we have argued involve a main verb *have*, *yet* follows the matrix verb.

(36)   Do you {*yet} have {yet} to visit your grandmother?

It also appears to the right of the verb in the *have got yet to* construction illustrated in (11) and the "double perfect" constructions illustrated in (12). We therefore assume that *yet* is adjoined to the complement clause, rather than to the matrix clause.[36] In this respect, we follow Bybel & Johnson (2014). Further evidence that *yet* belongs in the complement clause rather than the matrix clause comes from *with*-constructions, where a subject and an XP are put in a small clause predication relation (Beukema & Hoekstra 1983, 1984). As shown in (37), 'yet to X' remains a constituent in

---

[36]An anonymous reviewer points out that the placement of *yet* to the right of the verb does not show that it is part of the complement clause, since certain adverbs in English may also occur between the verb and its complement, and still be interpreted as part of the matrix clause (e.g. *John said yesterday that he would be leaving tomorrow*). However, we assume that such structures are derived by extraposition of the CP. That means that in order to assimilate HYT sentences to these structures, we would need to argue that every HYT clause involves extraposition of the complement of *v*. This does not seem plausible, given that HYT sentences show no other indications that they involve extraposition, and so we set the possibility aside.

a *with*-construction.

(37)   With the bride yet to arrive, the wedding was falling apart.

This would be difficult to account for if *yet* were attached to some phrase in the higher clause in a canonical HYT construction, but follows directly from our structure (and Bybel & Johnson's 2014 structure), where *yet* is adjoined to the highest level of the embedded clause.

5.3.2   Adjunction to CP

Now that we have established that *yet* is contained inside the lower clause, we have to ask where exactly it is attached. Bybel & Johnson (2014) propose that the main verb selects a non-finite TP complement, to which *yet* is adjoined. This makes sense, given that *yet* precedes the non-finite T head *to*. However, we argue that the clause selected by the main verb is in fact a CP, and that *yet* is adjoined to that CP. Our evidence comes from sentences such as (38), in which there is an overt complementizer *for*. In (39), we provide attested examples found online.[37]

(38)   a.   John has yet for anyone to openly oppose him.
       b.   I have yet for this battery to last longer than a couple of hours.

(39)   a.   γ I have yet for Teen Wolf to tweet me telling me they love me, I've been follow-ing/watching since day 1.[38]
       b.   γ I have yet for the tv to be delivered but what size tv stand would be good for this tv?[39]
       c.   γ I still have yet for it to disappear after one try like it is suppose to.[40]

---

[37]*Have yet for* constructions all share a common semantic property: the subject of the matrix clause must be interpreted as an *experiencer* argument of the embedded predicate. This is one of several possible interpretations discussed by Myler (2016) for the subjects of *have*, where *have* embedds a non-finite clause as in (i).

(i)   John had several people openly oppose him.

Intriguingly, while (i) has an additional reading, in which John intentionally sets up several candidates to oppose him (Myler refers to this as the *engineer* reading), this interpretation is unavailable for its *have yet for* equivalent in (38a). Further investigation of the connection between *have yet for* and sentences like (i) is a topic for future research.

[38]https://goo.gl/zEzf1h
[39]http://goo.gl/jmRlwZ
[40]http://goo.gl/MKPrhx

d. γ While Catland has yet for its last disturbing prediction about a Bushwick apocalypse in 2015 to come true, the latest prophecy to come out of the local Wiccan-friendly store has caused an equal amount of alarm.[41]

e. γ David Tennant still has yet for many people in the USA to discover him.[42]

In these sentences, *yet* follows *have* but precedes *for*, leading us to assume that *yet* is adjoined at the CP layer. Not all speakers accept such examples, but many do, and the interpretation is similar enough to the canonical HYT construction that we should assume that the syntax of sentences like (38) can tell us about the syntax of the canonical HYT construction.

Assuming that a C head is generally present allows us a natural way to encode the negative force of the embedded clause, consistent with Landau (2002). However, we are not committed to the categorial nature of this projection as "C", and it is entirely possible that the negative feature is contained in some other abstract projection, or even a silent NegP. If so, then such a NegP would have to take either a CP complement, resulting in the *have yet for* sentences like (38) and (39), or a TP complement, resulting in the more canonical HYT sentences that the majority of this article focuses on. We would then assume that this NegP would be the host for *yet*. However, since we have no evidence for this, more complex proposal, we maintain what we see as the simpler hypothesis, namely that HYT constructions generally contain a CP headed by a negative C head; the pronunciation of this C head as *for* or Ø follows the ordinary rules of English syntax, where *for* is overt whenever there is an overt subject the following SpecTP; see McFadden (2004:279–294) for extensive discussion of the distribution of overt *for*.

5.3.3 Why does *yet* adjoin to CP?

Before moving on to discuss the nature of negation in HYT, it is worth discussing the relationship between *yet* and the CP that it adjoins to. The first thing to note is that the complementizer,

---

[41]http://goo.gl/oXisj4
[42]https://goo.gl/Czi7zU

which we argue has a [NEG] feature, licenses *yet* as an NPI. Harves & Myler (2014b) argue that this NPI-licensing relation is what causes *yet* to end up in its spellout position. However, we argue instead that *yet* must be located in the CP layer in order to have its [uT:__] feature valued by the T feature of the c-commanding *v* or Perf head in the higher clause, via Reverse Agree. It can only do this if located in the edge of its phase, as these Agree relations must be established phase-locally. If *yet* was at some lower point in the clause, it would be unable to establish these relations, its [uT:__] feature would remain unvalued, and the derivation would crash. Under our account, *yet* is indeed NPI-licensed by the negative complementizer, but it does not adjoin there in order to form a spec-head relation with its licensor. Our reasoning is as follows.

Harves & Myler claim that *yet*, an NPI, raises to the specifier of its licenser, a phonologically-null light verb semantically equivalent to the verb *fail*, which is located in the main clause. However, the claim that movement is driven by the NPI status of *yet* runs into a problem when we consider a well-attested, semantically-equivalent variant of HYT: *have still to*, as in (40).[43]

(40) a. γ We have still to work out what is a good size for government.[44]

      b. γ The American has still to grasp the truth that the great adventure of life is something more than work—and money.[45]

Note firstly that *have still to* is idiomatic, natural English to many speakers, including the first

---

[43]*Have still to* (or *be still to*) is interesting in a number of ways that we are unable to explore in this article. Impressionistically, it appears that these forms are more widespread in British than American English. Furthermore, a Google N-grams search reveals that *be still to* is more widely-used than *have still to*, even though *have yet to* is more common than *be yet to* (on which see Appendix C). It also appears that speakers who ordinarily would not accept *have still to* or *be still to* find it completely grammatical in *with*-absolute, reduced relative and headlinese contexts – i.e. any context where the higher predicate is unpronounced or absent entirely:

(i) a. γ Clinton leads Bernie Sanders by 1,531 votes, with some absentee votes still to be counted... (https://goo.gl/fRoLp8)

     b. γ ...news organizations will get a second chance to rethink how they approach the race still to come... (https://goo.gl/v34EQq)

     c. γ As the waters recede, much work still to be done in Bosnia and Herzegovina (https://goo.gl/jGLh6c)

[44]https://goo.gl/4IPXYQ

[45]https://goo.gl/pDsgpi

author, and is not archaic. More importantly, note that the availability of *have still to* poses a problem for the generality of Harves & Myler's analysis: if the NPI *yet* moves to its spellout position in order to enter a spec-head relation with its licenser, we have no explanation for why *still*, which is not an NPI, apparently undergoes the same movement and surfaces in the same position. For this reason, we assume that *yet* is adjoined at CP for reasons independent of its NPI status.[46]

As for whether *yet* is base-generated as an adjunct to the embedded CP, or whether it moves there from a lower position in the embedded clause, we remain broadly agnostic, as nothing in the analysis hinges on it. If, for instance, *yet* is necessarily base-generated at a particular location in the cartographic hierarchy of the lower clause (for instance, the 'terminative' aspectual position $Asp_{term}P$ in the analysis of Cinque 1999), then a movement account becomes unavoidable. In the absence of convincing evidence either way, we leave this issue open.

Finally, although we analyze it as an adjunct, we could equally propose that it is in the specifier, and in some theories (cf. Kayne 1994) there is no real distinction between the two. Consequently, we do not see our analysis as committing one way or the other. One reason that lead us to analyze it as an adjunct has to do with the possibility of A′-extraction, as in the examples in (41).

(41) a. γ What have you yet to achieve?[47]
      b.   What have you yet to eat? (Kelly 2012:118)

As pointed out by a reviewer, if *yet* were in SpecCP, we might expect it to block A′-movement, which it clearly does not. Analyzing it as an adjunct frees up SpecCP to allow A′-movement.

---

[46]Note also that, given our assumption that the negative C is the NPI-licenser for *yet*, *yet* cannot be adjoined at any position *higher* than CP (i.e. it cannot be adjoined at the matrix clause). If it was, it would not be dominated by the maximal projection of its NPI-licenser (see Aoun & Sportiche 1982; Ernst 1994; Matsui 2007 for arguments that the syntactic licensing of NPIs requires domination by the maximal projection of the licenser, rather than c-command by the licenser itself).

[47]https://goo.gl/PKobxZ

Still, it is not clear that this needs to be decisive. As mentioned earlier, we have drawn a connection between the negative complementizer in HYT and the negative complementizer *from* in sentences like (42).

(42)   a.   What have you prevented [CP them [C′ from achieving]]?
        b.   What have you prevented [CP anyone [C′ from eating]]?

However, acccording to Landau (2002), SpecCP is filled in these cases (with *them* and *anyone*, the latter an NPI licensed by *from*), and A′-extraction is possible. If an analysis putting *yet* in SpecCP were unavoidable, we would contend that whatever allows A′-extraction in cases like (42) must be at work in cases like (41). But since we see no reason to force the issue, we analyze *yet* as an adjunct to CP.

5.3.4   Raising in the HYT Construction

The proposal that HYT sentences contain a CP seems hard to reconcile with the proposal that HYT sentences involve raising—A-movement of the subject from the embedded clause into the matrix clause. That HYT sentences involve raising is supported by tests from Harves & Myler (2014b), who show that HYT passes several tests for raising. (43a) shows that HYT allows expletive subjects, and (43b) shows that HYT allows the subject of an idiom to be displaced, while maintaining its idiomatic reading.

(43)   a. It has yet to snow all weekend.   (Harves & Myler 2014b:227)
        b. The shit has yet to hit the fan.   (Harves & Myler 2014b:227)

While A-movement out of a phase is not a problem *per se* (under the assumption that unaccusative vPs are also phases), it is often assumed that raising out of CP is impossible. However, this is not a universal position. Henry (1995:99–101) provides evidence from Belfast English raising complements are CPs, and proposes that the CP layer is deleted after A-movement has taken

place. Moreover, a close analogue to our construction is the *prevent from* construction with negative complementizer *from* (Landau 2002). Despite the analysis of *from* as a C head—which we see as the main inspiration for our own proposal—the construction allows raising.

(44)   a. It was prevented from snowing.
       b. The shit was prevented from hitting the fan.

We would contend that whatever kind of CP is involved in those constructions is involved in HYT. For now, though, we must leave the resolution of this issue to further research.[48]

5.3.5   *Have yet to* with sentential negation?

Recall from Section 5.2.1 that 22.3% of participants accepted the sentence *John has yet to eat dinner, I don't think*, despite our claim that negative slifting requires sentential negation (and not just clausal negation). Moreover, recall from section 5.2.2 that 26.6% of participants who accepted *neither*-inversion rejected *so*-inversion. It would be against the spirit of this work to ignore such a large percentage of speakers who seem unable to access the affirmative superstructure we propose for the majority of HYT speakers. In light of these results, we propose that there is a non-negligible minority of speakers who treat HYT as fully negative. Here, we briefly consider how this might work.

Standardly, it is assumed that for a negative constituent to trigger sentential negation, it has to get into a relationship with the head of a clausal NegP. Haegeman & Zanuttini (1991) proposed that this would be a spec-head relation, possibly under covert movement (though see Kayne 1998 for a proposal relying only on overt movement). Another, related view is that the relationship between Neg and the negative constituent is based on an Agree relation (Zeijlstra 2004; Biberauer

---

[48]One difference between HYT and *prevent from* is that the former but not the latter allows raising of existential *there* into the matrix subject position (Postal 2004:44). This seems to be a restriction on existential *there*, and not on raising per se; for our purposes it suffices that *prevent from* does allow raising.

& Zeijlstra 2012). Either way, the microvariation amounts to whether the negative embedded CP can come into such a relationship with the matrix Neg head.

Typically, a negative C head does not trigger clausal negation on the superordinate clause. Sentences like (45), with a negative C, do not involve negation of the event of denial, failing, or preventing.

(45)   a.   John denied that anyone was coming.
       b.   John failed to convince anyone to come.
       c.   John prevented Jessie from convincing anyone.

However, there are two distinct features of HYT that might make such negation possible. First, unlike most negative C heads, the C head of HYT enters has an obligatorily local relation with the NPI *yet*, with the latter adjoined to the CP projected by the former. If (at least some) NPIs have negative formal features (Postal 2005; Szabolcsi 2004; van Craenenbroeck & Temmerman 2017; Biberauer & Zeijlstra 2012), it seems plausible that *yet*, at the CP phase edge, can serve as a goal for a matrix Neg head. Second, and perhaps even more importantly, there is no lexical content in the matrix clause of HYT sentences. Allowing embedded negation to scope over the matrix clause in (45) would change the meaning of the sentences drastically, in a way that is arguably at odds with the lexical meaning of the matrix verb in the first place. Doing so with HYT would not.

So we tentatively propose that a subset of speakers allow an Agree relation (or other appropriate relation) between the matrix Neg and the negative CP (or the *yet* adjoined to it), resulting in full, sentential negation of even the matrix clause. This will allow them to accept even a very strict negation test such as negative slifting, and will make them much more likely to reject affirmative tests like *so*-inversion. Notice, however, that nothing would force this Agree relation to obtain in every instance. All speakers allow some instances of constituent negation, in which the negative

constituents do not get sentential scope. So there is no strong prediction that all speakers allowing a fully negative HYT sentence will always reject affirmative instances, even if we expect there to be a bias in that direction.

6   Conclusion

Behind the apparent unity of the *have yet to* construction—in the sense that it is widespread across many otherwise distinct dialects of English—there is a lot more microvariation than has previously been appreciated. We find this microvariation not only in the arena of related constructions, such as *have got yet to*, *have still to*, *have had yet to*, *have yet for DP to*, and the like, but also in the underlying syntax of the *have yet to* construction itself. The goal of this study has been to resolve the contradictory empirical claims and mutually incompatible proposals in the existing literature, and develop an analysis that adequately reflects the range of judgments we find across speakers.

We found that speakers overwhelmingly treat *have* as an auxiliary, but that many speakers can treat it as either an auxiliary or a main verb. We proposed that this stems from the way that the construction is built, in that there are two places where perfect features can be introduced. Introducing perfect features in the canonical location in the auxiliary field leads to the aux-*have* derivation. Introducing perfect features on the *v* head—a marked location—leads to the main verb (i.e. *do*-support) derivation. We also found that different negation tests patterned differently. Based on a closer examination of the tests themselves, we argued that for most speakers, only the embedded clause is negative. The variation in the tests has to do with whether they are able to target an embedded clause, a matrix clause, or both. For a subset of speakers, however, negation scopes of the matrix clause too, which we suggest stems from an Agree relation between a matrix

43

Neg head and the negative features of the embedded clause.

A broader point to be taken from the results of this study is that in the face of variation, it is not enough to know simply that two or more variants exist. The relationship among them is important. In some cases, judgments can be noisy enough that broader patterns can only be revealed with large-scale judgment studies. Still, an acceptability judgment is a performance task, not a direct window into grammar. Deciding what judgments tell us about the formal grammar that generates them is not always trivial. Many people have told us that they have a hard time judging the crucial test cases for *have yet to* sentences; and yet, when we ask several hundred people, clear patterns do emerge. The implicational relationship between *do*-support and aux-*have* and the nature of the judgment patterns in negation tests tell us a lot about what needs to be encoded in the grammar.

We need grammars that can generate both *do*-support and aux-*have*, within one speaker, and we need aux-*have* to be the more generally available variant—the one that is more closely tied in with the general features of English syntax shared by all speakers. We need grammars that can generate either *so*-inversion or *neither*-inversion coordinated with the same *have yet to* sentence; speakers are able to do both. We need to understand exactly why negative slifting and *not even* tests pattern so differently. Our proposal, we hope, provides answers to these questions. And while we do not think we have said the final word on the topic—we have outlined in the preceding sections a number of matters that need to be better understood—we feel that the results of this study are a significant step forward in understanding the workings of the *have yet to* construction in particular, and the nature of syntactic variation in American English more generally.

Acknowledgments

References

Aoun, Joseph & Dominique Sportiche. 1982. On the formal theory of government. *The Linguistic Review* 2(3). 211–236.

Bard, Ellen Gurman, Dan Robertson & Antonella Sorace. 1996. Magnitude estimation of linguistic acceptability. *Language* 72(1). 32–68.

Beukema, Frits & Teun Hoekstra. 1983. *Met* met PRO of *met* zonder PRO: een absolute constructie. *De Nieuwe Taalgids* 76. 532–548.

Beukema, Frits & Teun Hoekstra. 1984. Extractions from *with*-constructions. *Linguistic Inquiry* 15(4). 689–698.

Biberauer, Theresa & Hedde Zeijlstra. 2012. Negative Concord in Afrikaans: filling a typological gap. *Journal of Semantics* 29. 345–371.

Bybel, Kali & Greg Johnson. 2014. The syntax of 'have yet to'. Paper presented at the 81st Southeastern Conference on Linguistics, March 27–29. Coastal Carolina University.

Cattell, Ray. 1973. Negative transportation and tag questions. *Language* 49(3). 612–639.

Chomsky, Noam. 2008. On phases. In Robert Freidin, Carlos P. Otero & Maria Luisa Zubizarreta (eds.), *Foundational Issues in Linguistic Theory: Essays in Honor of Jean-Roger Vergnaud*, 133–166. Cambridge, MA: MIT Press.

Cinque, Guglielmo. 1999. *Adverbs and Functional Heads: A Cross-Linguistic Perspective*. Oxford: Oxford University Press.

Cinque, Guglielmo. 2006. *Restructuring and Functional Heads: The Cartography of Syntactic Structures Volume 4*. Oxford: Oxford University Press.

Clason, Dennis L & Thomas J Dormody. 1994. Analyzing data measured by individual Likert-type items. *Journal of Agricultural Education* 35(4). 31–35.

Erlewine, Michael Yoshitaka & Hadas Kotek. 2016. A streamlined approach to online linguistic surveys. *Natural Language & Linguistic Theory* 34(2). 481–495.

Ernst, Thomas. 1994. M-command and precedence. *Linguistic Inquiry* 25(2). 327–335.

Folli, Raffaella & Heidi Harley. 2013. The syntax of argument structure: Evidence from Italian complex predicates. *Journal of Linguistics* 49(1). 93–125.

Gaito, John. 1980. Measurement scales and statistics: Resurgence of an old misconception. *Psychological Bulletin* 87. 564–567.

Gibson, Edward, Steve Piantadosi & Kristina Fedorenko. 2011. Using Mechanical Turk to obtain and analyze English acceptability judgments. *Language and Linguistics Compass* 5(8). 509–524.

Goldstein, G & M Hersen. 1984. *Handbook of psychological assessment*. New York: Pergamon Press.

Haegeman, Liliane & Raffaella Zanuttini. 1991. Negative heads and the neg-criterion. *Linguistic Review* 8. 233–252.

Harves, Stephanie & Neil Myler. 2014a. Licensing NPIs and Licensing Silence: *Have/Be Yet To* in English. *University of Pennsylvania Working Papers in Linguistics* .

Harves, Stephanie & Neil Myler. 2014b. Licensing NPIs and Licensing Silence: *Have/Be Yet To* in English. *Lingua* 148. 213–239.

Henry, Alison. 1995. *Belfast English and Standard English: Dialect Variation and Parameter Setting*. Oxford: Oxford University Press.

Hicks, Glyn. 2009. *Tough*-Constructions and Their Derivation. *Linguistic Inquiry* 40(4). 535–566.

Holmberg, Anders. 2010. Null subject parameters. In Theresa Biberauer, Anders Holmberg, Ian Roberts & Michelle Sheehan (eds.), *Parametric Variation: Null Subjects in Minimalist Theory*, 88–124. Cambridge: Cambridge University Press.

Horn, Laurence R. 2009. Hypernegation, hyponegation: Gluts, gaps, and parole violations. In Iksoo Kwon, Hannah Pritchett & Justin Spence (eds.), *Proceedings of the 35th Annual Meeting of the Berkeley Linguistics Society*, 403–423. Berkeley LInguistics Society.

Horn, Laurence R. 2011. Etymology and taboo. Manuscript, Yale University.

Horn, Laurence R. 2013. *I love me some datives*: Expressive meaning, free datives, and F-implicature. In D. Gutzmann & Hans-Martin Gärtner (eds.), *Beyond Expressives: Explorations in Use-Conditional Meaning*, 153–201. Leiden: Brill.

Horn, Laurence R. & Barbara Abbott. 2012. *<the, a>*: (In)definiteness and Implicature. In William P. Kabasenche, Michael O'Rourke & Matthew H. Slater (eds.), *Reference and Referring*, 325–355. MIT Press.

Hughes, Arthur, Peter Trudgill & Dominic Watt. 2012. *English accents and dialects: an introduction to social and regional varieties of English in the British Isles*. London: Routledge 5th edn.

Kayne, Richard S. 1994. *The Antisymmetry of Syntax*. Malden, MA: MIT Press.

Kayne, Richard S. 1998. Overt vs. covert movement. *Syntax* 1(2). 128–191.

Kelly, Justin. 2008. *Yet* as a negative perfect marker in English. *Snippets* 18. 8–9.

Kelly, Justin. 2012. The syntax and semantics of infinitival *yet* constructions. *Cahiers Chronos* 25. 115–139.

Klima, Edward. 1964. Negation in English. In Jerry Fodor & Jerrold Katz (eds.), *The Structure of Language*, 246–323. Englewood Cliffs, NJ: Prentice-Hall.

Koeneman, Olaf, Marika Lekakou & Sjef Barbiers. 2011. Perfect doubling. *Linguistic Variation* 11(1). 35–75.

Kuno, Susumu & Ken-ichi Takami. 1997. Remarks on negative islands. *Linguistic inquiry* 553–576.

Landau, Idan. 2002. (Un)interpretable Neg in Comp. *Linguistic Inquiry* 33(3). 465–492.

Livitz, Inna. 2014. *Deriving Silence through Dependent Reference: Focus on Pronouns*: New York

University Doctoral Dissertation.

Matsui, Haruko. 2007. NPI Licensing and Head Movement. *University of Pennsylvania Working Papers in Linguistics* 13(1). 211–224.

McCawley, James D. 1998. *The Syntactic Phenomena of English*. Chicago: University Of Chicago Press 2nd edn.

McFadden, Thomas. 2004. *The Position of Morphological Case in the Derivation: A Study on the Syntax-Morphology Interface*: University of Pennsylvania Doctoral Dissertation.

McGee, Mick. 2004. Master usability scaling: magnitude estimation and master scaling applied to usability measurement. In *Proceedings of the SIGCHI conference on Human factors in computing systems*, vol. 6 1, 335–342. ACM.

Michell, Joel. 1986. Measurement scales and statistics: A clash of paradigms. *Psychological Bulletin* 100(3). 398–407.

Myler, Neil. 2014. *Building and Interpreting Possession Sentences*: New York University Doctoral Dissertation.

Myler, Neil. 2016. *Building and interpreting possession sentences*. Cambridge, MA: MIT Press.

Newmeyer, Frederick J. 1998. *Language Form and Language Function*. Cambridge, MA: MIT Press.

Norman, Geoff. 2010. Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education* 15(5). 625–632.

Nunes, Jairo. 2004. *Linearization of Chains and Sideward Movement*. Cambridge, MA: MIT Press.

Pesetsky, David & Esther Torrego. 2007. The syntax of valuation and the interpretability of features. In Simin Karimi, Vida Samiian & Wendy K. Wilkins (eds.), *Phrasal and Clausal Architecture: Syntactic Derivation and Interpretation. In Honor of Joseph E. Emonds*, 262–294. Amsterdam: John Benjamins.

Postal, Paul. 2004. *Skeptical Linguistic Essays*. Oxford: Oxford University Press.

Postal, Paul M. 2005. Suppose (if only for an hour) that negative polarity items are negation-containing phrases. Manuscript.

Roberts, Ian G. 2010. *Agreement and Head Movement: Clitics, Incorporation, and Defective Goals*. Cambridge, MA: MIT Press.

Ross, John R. 1973. Slifting. In M. Gross, M. Halle & M.P. Schutzenberger (eds.), *The Formal Analysis of Natural Languages*, 131–169. The Hague: Mouton.

Schütze, Carson T & Jon Sprouse. 2013. Judgment data. In Robert J. Podesva & Devyani Sharma (eds.), *Research Methods in Linguistics*, 27–50. New York: Cambridge University Press.

Sprouse, Jon. 2007a. *A program for experimental syntax: Finding the relationship between acceptability and grammatical knowledge*: University of Maryland Doctoral dissertation.

Sprouse, Jon. 2007b. Continuous acceptability, categorical grammaticality, and experimental syntax. *Biolinguistics* 1. 118–129.

Sprouse, Jon. 2011. A validation of Amazon Mechanical Turk for the collection of acceptability judgments in linguistic theory. *Behavior Research Methods* 43(1). 155–167.

Szabolcsi, Anna. 2004. Positive Polarity - Negative Polarity. *Natural Language and Linguistic Theory* 22. 409–452.

Townsend, James T & F Gregory Ashby. 1984. Measurement scales and statistics: The misconception misconceived. *Psychological Bulletin* 96. 394–401.

van Craenenbroeck, Jeroen & Tanja Temmerman. 2017. How (not) to elide negation. *Syntax* 20(1).

41–76.

Wood, Jim. 2011. Icelandic *let*-causatives and case. *Working Papers in Scandinavian Syntax* 87. 1–52.

Wood, Jim. 2013. Parasitic participles in the syntax of verbal *rather*. *Lingua* 137. 59–87.

Wood, Jim. 2014. Affirmative semantics with negative morphosyntax: Negative exclamatives and the New England *So AUXn't NP/DP* construction. In Raffaella Zanuttini & Laurence R. Horn (eds.), *Micro-Syntactic Variation in North American English*, 71–114. Oxford: Oxford University Press.

Wood, Jim. submitted. Quantifying Acceptability Judgments in Regional American English Dialect Syntax. Manuscript, Yale University.

Wood, Jim, Laurence R. Horn, Raffaella Zanuttini & Luke Lindemann. 2015. The Southern Dative Presentative meets Mechanical Turk. *American Speech* 90(3). 291–320.

Wood, Jim & Einar Freyr Sigurðsson. 2014. 'Get'-passives and case alternations: the view from Icelandic. In Robert E Santana-LaBarge (ed.), *Proceedings of the 31st West Coast Conference on Formal Linguistics*, 493–503. Somerville, MA: Cascadilla Proceedings Project.

Wurmbrand, Susi. 2010. Parasitic morphology in Germanic: Consequences for the theory of feature checking. Manuscript, University of Connecticut.

Wurmbrand, Susi. 2012. Parasitic participles: Evidence for the theory of verb clusters. *Taal en Tongval* 64. 129–156.

Zanuttini, Raffaella, Jim Wood, Jason Zentz & Laurence R. Horn. 2017. The Yale Grammatical Diversity Project: Morphosyntactic variation in North American English. *Linguistics Vanguard* .

Zeijlstra, Hedde. 2004. *Sentential negation and Negative Concord*. Utrecht, The Netherlands: LOT Publications.

Appendix A: Survey Instructions, Sample Question, and Tested Sentences

Informal, casual language can be different in different places. The goal of this survey is to find out about your language, and the language spoken where you live and where you grew up.

We are <u>not</u> interested in what is correct or proper English.

We are instead interested in what you consider to be an acceptable sentence in informal contexts. You will be presented with a sentence, or with a context plus a sentence. You will then judge the acceptability of that sentence on a scale of 1-5, with 1 being unacceptable and 5 being acceptable.

It may help to read each sentence aloud before giving your judgment.

John has yet to eat dinner, I don't think.

○ 1 - totally unacceptable sentence, even in informal settings

○ 2

○ 3

○ 4

○ 5 - totally acceptable

(A)   <u>**Test Sentences, Survey 6 (361 Respondents)**</u>

Sentence Type	Perm. #	Sentence
Control – Grammatical	1018.1	John is hoping to get a lot of mosquito bites.
Control – Grammatical	1021.1	Fred seems to be very dishonest.
Control – Grammatical	1023	John likes hot peppers, but so do I–in fact, I love them!
Control – Grammatical	1024.1	Several new articles were given to Sarah by her teacher.
Control – Grammatical	1025.1	Where's a bike for us?
Control – Grammatical	1026.1	Should Pam have known what to do?
Control – Grammatical	1080	When will we fix the bikes here?
Control – Grammatical	1081	I am finished with most of the laundry.
Control – Grammatical	1082	He wants to rob me of the cupcake I deserve!
Control – Ungrammatical	1019.1	My sister scares me of ghosts.
Control – Ungrammatical	1020.1	Fred seems that is a dishonest person.
Control – Ungrammatical	1027.1	Who did Jordan wonder whether had broken the rules?
Control – Ungrammatical	1060.1	Chris decided would eat nachos.
Control – Ungrammatical	1078	Jordan put every single one of those books.
Control – Ungrammatical	1079	Alex whispered me that we should leave.
Pilot	1043	I'm done my homework.
Pilot	1045	John might like oranges, but so don't I – in fact, I like them a lot!
Pilot	1086	Jessie likes that band a wicked lot.
Pilot	1087	I wicked want to go to that concert.
Pilot	1088	Jamie said that he's been wicked tired lately.
Pilot	1089	This coffee is wicked.
Pilot	1090	Jordan wants to go there wicked bad.
Pilot	1091	This seat reclines hella!

Pilot	1092	I spoke Spanish today for the first time in hella days.
Pilot	1093	That girl is hella smart.
Pilot	1094	Sure I could help you, but so couldn't my brother, and he's free right now.
Pilot	1115	He won't go, and can't nobody make him.
Pilot	1049	Most babies like cuddled.
Pilot	1113	They are leaving on a great adventure; you should go with.
Pilot	1114	Alls Alice brought to the party was bread.
Primary	1065	**Jordan has yet to read it, and neither has Pat.**
Primary	1066	**Jordan has yet to read it, and so has Pat.**
Primary	1083	John has yet to win the hearts of his classmates, and Bill has too.
Primary	1084	John has yet to win the hearts of his classmates, and Bill does too.
Primary	1085	**Jordan has yet to visit Grandpa, not even once.**
Primary	1002	Here's you a piece of pizza.
Primary	1095	I need me some black jeans.
Primary	1096	She has her a new boyfriend.
Primary	1097	He needs him that big truck over there.
Primary	1098	Here's him a nice cup of coffee.
Primary	1099	Here's John a glass of iced-tea.
Primary	1100	I hunted the hills over for you a squirrel.
Primary	1101	We are looking for him a new home.
Primary	1102	I have him a new book.
Primary	1103	He wants him chocolate.

(A) **Test Sentences, Survey 8 (520 Respondents)**

Sentence Type	*Perm. #*	*Sentence*
Control – Grammatical	1018.1	John is hoping to get a lot of mosquito bites.
Control – Grammatical	1021.1	Fred seems to be very dishonest.
Control – Grammatical	1023	John likes hot peppers, but so do I–in fact, I love them!
Control – Grammatical	1024.1	Several new articles were given to Sarah by her teacher.
Control – Grammatical	1025.1	Where's a bike for us?
Control – Grammatical	1026.1	Should Pam have known what to do?
Control – Grammatical	1080	When will we fix the bikes here?
Control – Grammatical	1081	I am finished with most of the laundry.
Control – Grammatical	1082	He wants to rob me of the cupcake I deserve!
Control – Ungrammatical	1019.1	My sister scares me of ghosts.
Control – Ungrammatical	1020.1	Fred seems that is a dishonest person.
Control – Ungrammatical	1027.1	Who did Jordan wonder whether had broken the rules?

Control – Ungrammatical	1060.1	Chris decided would eat nachos.
Control – Ungrammatical	1078	Jordan put every single one of those books.
Control – Ungrammatical	1079	Alex whispered me that we should leave.
Pilot	1029	I would've rathered him go to a small school.
Pilot	1030	I would've rather him gone to a small school.
Pilot	1033	Shouldn't have Pam remembered her name?
Pilot	1040	John threatened me to come to my house.
Pilot	1047	I would've rathered gone to a small school.
Pilot	1048	I would've rathered go to a small school.
Pilot	1049	Most babies like cuddled.
Pilot	1054	Should have the kids left?
Pilot	1094	Sure I could help you, but so couldn't my brother, and he's free right now.
Pilot	1157	Are you done your homework?
Pilot	1158	Are you started your homework?
Pilot	1159	Are you finished your homework?
Primary	1007	Where's us some ripe blueberries?
Primary	1009	Where are me some country boys?!
Primary	1067	Where's me a screwdriver?
Primary	1070	Here's me a good pair of jeans.
Primary	1071	Here's us a gas station – pull over!
Primary	1065	Jordan has yet to read it, and neither has Pat.
Primary	1066	Jordan has yet to read it, and so has Pat.
Primary	1146	**Jordan has yet to read it, and so does Pat**.
Primary	1147	**Jordan has yet to read it, and neither does Pat.**
Primary	1148	**Oh, she has yet to finish, does she?**
Primary	1149	**Oh, she has yet to finish, has she?**
Primary	1150	**John has yet to eat dinner, I don't think.**
Primary	1151	**Does John have yet to win the hearts of his classmates?**
Primary	1152	**Has John yet to win the hearts of his classmates?**
Primary	1153	**Doesn't John have yet to win the hearts of his classmates?**
Primary	1154	**Hasn't John yet to win the hearts of his classmates?**
Primary	1155	**What do you have yet to eat?**
Primary	1156	**What have you yet to eat?**

N.B. On the distinction between control and pilot sentences, see Wood et al. (2015); Zanuttini et al. (2017); Wood (submitted).

Appendix B: Additional Data

The argumentation in the main body of the paper made use of survey results that were only reported in summary form. In this appendix we take a closer look at the data so that the reader can verify that the conclusions reached there were warranted, and that nothing important was glossed over in the way that the data were summarized. First, we turn to the *do*-support/aux-*have* data.

Recall that in Table 5, we presented the tabulation for each speaker's max rating for the *do*-support and aux-*have* data. We now look at each of the minimal pairs in turn. We will present each pair, one at a time, followed by a table showing the number of people who gave each set of judgments. In order to aid the reader in discerning the patterns on the tables, we have shaded each of the cells so that the higher the number, the darker the cell. We will then report on numbers that are not necessarily readily visible in the tables (but are computable from them, as the reader may verify).

We will begin with ordinary yes-no questions, as presented in (46).

(46)   a.   Has John yet to win the hearts of his classmates?
        b.   Does John have yet to win the hearts of his classmates?

Y/N	Aux-have											
Do-Support	1	%	2	%	3	%	4	%	5	%	Total	
1	35	6.8%	21	4.1%	28	5.4%	24	4.7%	35	6.8%	143	27.7%
2	9	1.7%	32	6.2%	31	6.0%	19	3.7%	19	3.7%	110	21.3%
3	11	2.1%	12	2.3%	33	6.4%	18	3.5%	29	5.6%	103	20.0%
4	3	0.6%	5	1.0%	19	3.7%	34	6.6%	17	3.3%	78	15.1%
5	5	1.0%	5	1.0%	9	1.7%	17	3.3%	46	8.9%	82	15.9%
Total	63	12.2%	75	14.5%	120	23.3%	112	21.7%	146	28.3%	516	

We submitted these judgments to a sign test, subtracting for each speaker the judgment for *do*-support minus the judgment for aux-*have*. For yes/no questions, we find 241 negative differences (indicating preference for aux-*have*), 180 ties (indicating the same judgment for both sentences), and 95 positive differences (indicating preference for *do*-support). This result was significant ($Z = -7.910, p < .001$, n = 516). Only 3% (18/516) accepted (4 or 5) *do*-support while rejecting (1 or 2) aux-*have*. 19% (97/516) accepted (4 or 5) aux-*have* while rejecting (1 or 2) *do*-support.

We now turn to the tag-questions, which are presented in (47).

(47)   a.   Oh, she has yet to finish, has she?
        b.   Oh, she has yet to finish, does she?

Tag	Aux-have											
Do-Support	1	%	2	%	3	%	4	%	5	%	Total	
1	32	6.2%	39	7.6%	41	7.9%	44	8.5%	59	11.4%	215	41.7%
2	3	0.6%	27	5.2%	34	6.6%	20	3.9%	24	4.7%	108	20.9%
3	2	0.4%	7	1.4%	20	3.9%	21	4.1%	11	2.1%	61	11.8%
4	0	0.0%	2	0.4%	14	2.7%	25	4.8%	22	4.3%	63	12.2%
5	2	0.4%	1	0.2%	3	0.6%	18	3.5%	45	8.7%	69	13.4%
Total	39	7.6%	76	14.7%	112	21.7%	128	24.8%	161	31.2%	516	

We submitted these judgments to a sign test, subtracting for each speaker the judgment for *do*-support minus the judgment for aux-*have*. For tag questions, we find 315 negative differences (indicating preference for aux-*have*), 57 ties (indicating the same judgment for both sentences), and 135 positive differences (indicating preference for *do*-support). This result was significant (Z = -13.676, p < .001, n = 516). Only 1% (5/516) accepted (4 or 5) *do*-support while rejecting (1 or 2) aux-*have*. 28% (147/516) accepted (4 or 5) aux-*have* while rejecting (1 or 2) *do*-support.

Next, we turn to the negative yes-no questions, which are presented in (48).

(48)   a.   Hasn't John yet to win the hearts of his classmates?

          b.   Doesn't John have yet to win the hearts of his classmates?

Neg Y/N	Aux-have											
Do-Support	1	%	2	%	3	%	4	%	5	%	Total	
1	84	16.3%	46	8.9%	25	4.8%	20	3.9%	11	2.1%	186	36.0%
2	24	4.7%	50	9.7%	36	7.0%	12	2.3%	7	1.4%	129	25.0%
3	15	2.9%	25	4.8%	33	6.4%	11	2.1%	5	1.0%	89	17.2%
4	4	0.8%	9	1.7%	15	2.9%	22	4.3%	4	0.8%	54	10.5%
5	10	1.9%	10	1.9%	8	1.6%	10	1.9%	20	3.9%	58	11.2%
Total	137	26.6%	140	27.1%	117	22.7%	75	14.5%	47	9.1%	516	

We submitted these judgments to a sign test, subtracting for each speaker the judgment for *do*-support minus the judgment for aux-*have*. For negative yes/no questions, we find 177 negative differences (indicating preference for aux-*have*), 209 ties (indicating the same judgment for both sentences), and 130 positive differences (indicating preference for *do*-support). This result was significant (Z = -2.625, p = .009, n = 516). 6% (33/516) accepted (4 or 5) *do*-support while rejecting (1 or 2) aux-*have*. 10% (50/516) accepted (4 or 5) aux-*have* while rejecting (1 or 2) *do*-support.

Finally, we turn to wh-questions, which are presented in (49).

(49)   a.   What have you yet to eat?
       b.   What do you have yet to eat?

Wh-Q	Aux-have											
Do-support	1	%	2	%	3	%	4	%	5	%	Total	
1	116	22.5%	39	7.6%	18	3.5%	6	1.2%	10	1.9%	189	36.6%
2	24	4.7%	61	11.8%	25	4.8%	12	2.3%	4	0.8%	126	24.4%
3	14	2.7%	31	6.0%	36	7.0%	21	4.1%	3	0.6%	105	20.3%
4	4	0.8%	7	1.4%	23	4.5%	17	3.3%	4	0.8%	55	10.7%
5	10	1.9%	7	1.4%	5	1.0%	9	1.7%	10	1.9%	41	7.9%
Total	168	32.6%	145	28.1%	107	20.7%	65	12.6%	31	6.0%	516	

We submitted these judgments to a sign test, subtracting for each speaker the judgment for *do*-support minus the judgment for aux-*have*. For object wh-questions, we find 142 negative differences (indicating preference for aux-*have*), 240 ties (indicating the same judgment for both sentences), and 134 positive differences (indicating preference for *do*-support). This result was not significant ($Z = -.421$, $p = .673$, n = 516). 5% (28/516) accepted (4 or 5) *do*-support while rejecting (1 or 2) aux-*have*. 6% (32/516) accepted aux-*have* while rejecting *do*-support.

Across these sentences, it is the yes-no question (46) and tag-question (47) that support the asymmetry between *do*-support and aux-*have* most clearly. With negative yes-no questions (48), the asymmetry is much weaker (though statistically significant, by the sign test), and with wh-questions (49) there is no asymmetry at all. Nevertheless, we contend that the overall patterning of judgments supports our claims in the main body of the paper, for two reasons.

The first reason is that the asymmetry never goes the other way. That is, we do not find any pairs where a similar asymmetry is found in the other direction, where accepting aux-*have* implies accepting *do*-support, but not vice-versa. The cases that do not show any strong asymmetry simply show a correlation. Moreover, part of the issue seems to be that these are marked sentence types in the first place.[49] Notice that the proportion of participants who reject (as a 1 or 2) both options for those sentence types is much higher: 45% (232/520) for wh-questions, 40% (206/520) for negative

---

[49] Possibly the negative semantics of HYT make wh-questions and negative yes-no questions degraded in general. Consider the markedness of *??Doesn't John read no books?*, and (from Kuno & Takami 1997:558) **How much money didn't he earn?* See Kuno & Takami (1997) for detailed discussion of the factors involved.

yes-no questions, versus 19% (101/520) for tag questions and 19% (98/520) for ordinary yes-no questions.

The second reason is that our main contention is that *do*-support speakers are generally also aux-*have* speakers. This does not require that there must exist, for every sentence type, a substantial proportion of the population that rejects *do*-support. It only requires that no more than a small minority of speakers accept *do*-support while rejecting aux-*have*. This holds for all four sentence pairs individually. Moreover, what is more important is the pattern of judgments across sentences. This is why we focused in the main body of the paper on the max: it is more syntactically meaningful to know whether a speaker in general accepts *do*-support with HYT than it is to know whether he/she accepts it with one particular sentence that we constructed.

So in general, our claim is that *do*-support speakers and aux-*have* speakers should not be considered separate sets of speakers. The conclusion we reach about the availability of *do*-support must inform our understanding and analysis of the cases with aux-*have*. For example, if the *do*-support cases tell us that *yet* cannot be in the main clause, then the null hypothesis is that this extends to the aux-*have* cases. Moreover, there is a markedness relationship between them that should be captured in a formal analysis: in general, aux-*have* is available to almost all speakers, while *do*-support is available to only a subset of them. Our analysis captures this by assuming (in very similar way to Harves & Myler) that the auxiliary is brought into the structure in the same way, and in the same position, as it always is when deriving periphrastic perfects. While we do not have an explanation for why different sentence types get different results, we do think that the quantitative patterns support the claims for the formal grammar discussed in the main body of the paper, and that the different results for wh-questions and negative yes-no questions should get an independent explanation.

In the final part of this appendix, we will present the full results for the negation test sentence tables as well. Although we do not provide an in-depth discussion of the differences, we will for each table indicate which table in the main text it corresponds to, so that the interested reader may compare them.

(50) a.   Jordan has yet to read it, and neither has Pat.

  b.   Jordan has yet to read it, and so has Pat.

Compare with table in (29)

| | Neither-Inversion | | | | | | | | | | |
So-Inversion	1		2		3		4		5		Total	
1	11	3.0%	7	1.9%	16	4.4%	20	5.5%	27	7.5%	81	22.4%
2	8	2.2%	11	3.0%	15	4.2%	25	6.9%	24	6.6%	83	23.0%
3	2	0.6%	9	2.5%	18	5.0%	12	3.3%	32	8.9%	73	20.2%
4	2	0.6%	5	1.4%	13	3.6%	19	5.3%	25	6.9%	64	17.7%
5	6	1.7%	6	1.7%	4	1.1%	6	1.7%	38	10.5%	60	16.6%
Total	29	8.0%	38	10.5%	66	18.3%	82	22.7%	146	40.4%	361	

(51) a.   Jordan has yet to read it, and neither does Pat.

  b.   Jordan has yet to read it, and so does Pat.

Compare with table in (35)

| | Neither-Inversion | | | | | | | | | | |
So-Inversion	1		2		3		4		5		Total	
1	169	32.8%	31	6.0%	6	1.2%	4	0.8%	0	0.0%	210	40.7%
2	48	9.3%	74	14.3%	12	2.3%	2	0.4%	3	0.6%	139	26.9%
3	21	4.1%	24	4.7%	24	4.7%	3	0.6%	3	0.6%	75	14.5%
4	13	2.5%	15	2.9%	6	1.2%	5	1.0%	4	0.8%	43	8.3%
5	15	2.9%	13	2.5%	14	2.7%	1	0.2%	6	1.2%	49	9.5%
Total	266	51.6%	157	30.4%	62	12.0%	15	2.9%	16	3.1%	516	

Appendix C: The *be yet to* construction

In the main text, we focused on the HYT construction and some related constructions, but only mentioned in passing the existence of an apparently very closely related construction, the *be yet to* (BYT) construction.

(52) John is yet to visit his grandmother.

Since the BYT construction has figured in previous discusions of HYT, we discuss briefly here why we chose not to focus on it in this paper.

The first reason has to do with the complexity of the variation involved. Not all speakers accept BYT, and preliminary investigation has revealed that the range of issues involved is every bit as complex as in the HYT construction. The question of the relationship between the (variants of the) BYT and HYT constructions, within and across speakers, adds another layer of complexity. We

therefore feel that the BYT construction and its relationship to HYT, while important, constitute separate research projects.

The second reason is that it is not clear that BYT is simply a shallow, morphological variant of the HYT that would lend itself to a straightforward treatment. There exists an intriguing syntactic construction that is only possible with BYT. Consider the following contrast:

(53)   a.   γ The most entrancing sight of all {is/*has} yet for me to see ___.

(Rodgers & Hammerstein, *The Sweetest Sounds*)

b.   γ God has purposes and plans for Daniel's life that {are/*have} yet for him to know

___.[50]

c.   γ The best time of our lives [. . .] {is/*has} yet for us to experience ___.[51]

This construction resembles *tough*-movement (see Hicks 2009 and references therein) in that the matrix subject corresponds to the embedded object. As indicated in (53), this is possible only with *be*, and not with *have*.

For these reasons, we set aside the BYT construction and focused on HYT. A more complete investigation of this construction will, however, make an interesting topic future research.

---

[50]http://goo.gl/B9JSzv
[51]http://goo.gl/h2agkw