A Simpler Analysis of English Negation (and the Bulgarian Definite Marker)

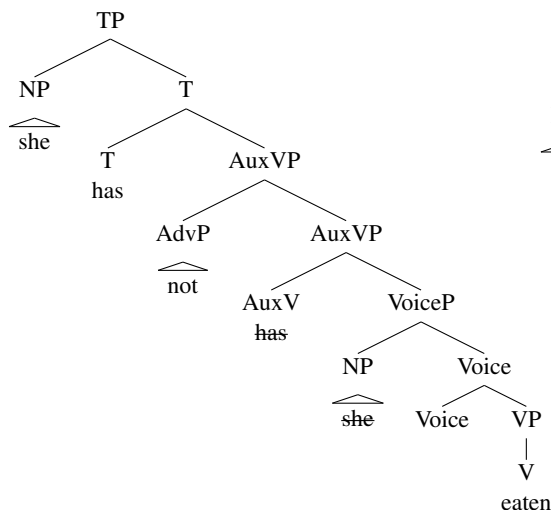Benjamin Bruening (University of Delaware)

Abstract

I propose a maximally simple analysis of English negation in which both *not* and *n't* are adjuncts. *Not* is a phrasal adjunct while *n't* is a head adjunct. Both strictly select the category AuxV. I show that this proposal captures all the facts of English negation, without needing a NegP or even multiple NegPs, as other recent work proposes (e.g., Thoms et al. 2023). I also extend the analysis to the definite marker in Bulgarian, and show that it accounts for the placement of this element without the need for post-syntactic mechanisms (as in, e.g., Adamson 2022). Crucial to the proposal is the idea that the syntax is built top-down or left-to-right rather than bottom-up as in most approaches.

1   Introduction

In this paper, I propose a maximally simple analysis of negation in English. I propose that negation is always an adjunct. It comes in two forms: a phrasal adjunct *not*, and a head adjunct *n't*. The phrasal adjunct attaches to a phrase (always headed by an auxiliary verb), while the head adjunct attaches to a head (always an auxiliary verb). The following diagrams illustrate the proposal:

(1)   a. *syntax of English* not: b. *syntax of English* n't
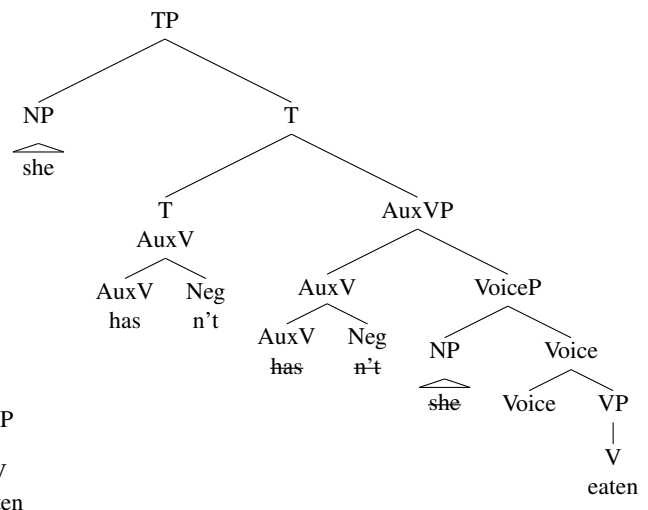
I assume a fairly standard clause structure, with the subject originating in Spec-VoiceP (Kratzer 1996) and moving to Spec-TP, and the highest auxiliary moving to T, but nothing hinges on this particular structure. I spell out all aspects of the proposal in more detail in section 2.

This proposal is to be contrasted with those current in the literature, which postulate multiple NegPs that have both a head position and a specifier position for negation. Proposals differ, but they all have in common

that there is a Neg head that heads a NegP and NegP has a specifier. In many proposals, there is more than one NegP. For instance, Thoms et al. (2023) propose that there is a low NegP and a high NegP in English. The low NegP occurs below T, while the high NegP occurs above TP. The actual pronounced negative elements (*not*, *n't*, and dialectal items) are "Neg-OPs" occurring in the specifiers of these projections. The Neg heads of these projections are null.

The chief advantage of the proposal I make here is its simplicity. Semantically, negation is a single operator, ¬. In the semantics literature, that is all it is. Proposing a NegP with two potential positions for negative elements—head and specifier—is already postulating much more than is necessary. Proposing two NegPs only compounds this redundancy. As I will show, the claim in Thoms et al. (2023) that there is semantic motivation for two distinct NegPs is mistaken. Both the low and the high negations in English have to be able to have the same semantics.

In my proposal, both phrasal *not* and head *n't* are semantically ¬. Scope of an element is what it precedes and phase-commands (Bruening 2014). Phase-command is defined in (2). From both positions in (1), negation precedes and phase-commands everything below T. If an auxiliary with *n't* moves to C, its scope domain becomes even larger. As I will show, this plus the possibility of reconstruction suffices to explain all of the facts of English negation. Postulating multiple NegPs is unmotivated.

(2) Phase-Command: X phase-commands Y iff there is no ZP, ZP a phasal node, such that ZP dominates X but does not dominate Y. (Bruening 2014: 343, (2))

(3) Phasal nodes: CP, VoiceP, NP (modified from Bruening 2014: 343, (3))

I also extend the analysis to the Bulgarian definite marker, which has a distribution strikingly similar to that of English *n't*. The Bulgarian definite marker has been very problematic and has previously been analyzed as requiring post-syntactic movement (Embick & Noyer 2001, Harizanov 2018, Adamson 2022). The analysis that I propose requires nothing more than what we need for the syntax anyway. I assume that there is only a single component of grammar for putting complex forms together. This is the syntax. It puts both complex heads together, in what is the traditional domain of morphology, and phrases, which is the traditional domain of syntax. Unlike other syntactic approaches to morphology (e.g., Distributed Morphology, Halle & Marantz 1993), I do not assume the existence of post-syntactic operations that perturb the output of the syntax. I assume that morphemes are put where they appear by the syntax. As I will show, all the facts of English negation and the Bulgarian definite marker are compatible with such a view. We do not need post-syntactic operations of any kind, or any post-syntactic level of grammar.

Section 2 spells out the proposal in detail and shows how it accounts for all the facts of English negation. Section 3 address "high" and "low" negation from the semantics literature and shows that all the facts are compatible with the current proposal. Importantly, they do not motivate two distinct NegPs in the clause, contra Thoms et al. (2023). Section 4 shows how the Scots data presented in Thoms et al. (2023) can be captured in the proposal. The Scots facts also do not motivate two distinct NegPs. The bulk of the paper is about sentential negation, but section 5 shows that the proposal easily captures constituent negation, as well, and an interesting restriction on it noted by Embick & Noyer (2001). Section 6 extends the proposal to the placement of the definite suffix in Bulgarian, which has essentially the same distribution as English *n't*. Section 7 concludes with some implications and further possible extensions.

2   The Proposal

The basic idea of this analysis is that negation in English is an adjunct. This is a very old idea; it is probably the traditional one, since at least Jespersen (1917). It has been revived more recently in the theoretical literature in the work of Zeijlstra (2004) and in the analysis of *do*-support in Baker (1991), Bruening (2010b). I adopt the adjunct view here, and argue that it suffices to explain all of the facts.

The first question for an adjunct analysis is why negation is so fixed in its position. Adjuncts can sometimes be quite flexible. Key to understanding this is the notion of selection. I assume that selection is the driving force behind much of structure building. For instance, C merges with TP and not other categories because C selects TP. Voice merges with VP and not other categories because Voice selects VP. Adjuncts also select, as was proposed by Pollard & Sag (1994), Bruening (2010a, 2013, to appear), Bruening & Al Khalaf (2020). Adjuncts select the category that they modify. For instance, modifying adjectives in English select nominal categories, and may not combine with other categories like V or P. The modifier *right* only modifies PPs. Various adverbs can only attach to particular phrases in the clause, for instance instrumental PPs only adjoin to VoiceP according to Bruening (2013).

English sentential negation is very selective. Both phrasal *not* and head *n't* select one particular category to adjoin to, Aux(iliary verb). This suffices to rule out most possible adjunction sites in the clause. However, when there is more than one Aux, both adjoin to the *highest* one (or, equivalently, the first one). I suggest that this is true of adjuncts generally, despite appearances. For instance, I just mentioned English *right*, which selects PPs to modify. One P can embed another PP. When it does, *right* can only modify the highest/first one:

(4)   a.   right out from under our noses
       b.   * out right from under our noses

I propose that this property follows from a top-down (or left-to-right) approach to structure building. Most approaches to syntax assume that structure is built bottom-to-top. In contrast, Phillips (1996, 2003), Richards (1999), Bruening (2010b, 2014, 2016, to appear), Osborne & Gross (2017), Bruening & Al Khalaf (2019) have proposed that syntactic structure is instead built in a top-down or left-to-right fashion (top-down and left-to-right are not always equivalent, but for the phenomena discussed here, they are, and I will not distinguish them).

Suppose now that elements always merge as soon as they can. If a head selects a particular category, say C selects T, then something of category T must be merged immediately. It is not possible to merge some other category, and then only later merge T. The same goes for adjuncts. If *not* selects an AuxP, then as soon as an AuxP is built in the syntax, *not* will have to merge. It cannot wait and see if another Aux is going to be merged. The result will be that *not* and *n't* always merge with the Aux(P) that is merged into the structure *first*. This will always be the highest one in a top-down/left-to-right syntax.

As for adjuncts that appear to be flexible in where they can appear, I suggest that this follows from one of three things. First, they might be able to undergo syntactic movement. Second, they might be completely fixed in their position, but other elements of the clause can move around them (there is an approach to adverbs that treats them in exactly this way; see Emonds 1976, Pollock 1989, Cinque 1999, among many others). Third, they are less selective than English negation, and select multiple categories that they can adjoin to. I propose that such items, when they are selected from the lexicon, choose one of the categories they select to be active. Suppose some adjunct can select any one of TP, AuxP, VoiceP, or VP. When this adjunct is taken out of the lexicon, one of those is chosen to be active. Suppose VoiceP is. Then as soon as VoiceP is merged into the structure being built, the adjunct will have to adjoin to it. What gives the appearance of flexibility is that there are multiple categories that an adjunct can choose to select. (In section 5, I will also suggest that constituent negation has no selectional restrictions, and so can merge freely.)

These two ideas—merge as soon as you can, and top-down/left-to-right structure building—when combined have the result that English negation is always adjoined to the highest AuxV(P) in the clause.

The second question for an adjunct analysis is why there can only be one instance of sentential negation. Some adjuncts are able to iterate, for instance locations (*meet <u>in the hotel</u> <u>in the lobby</u>*). I do not have a good answer to this question at this point. Something has to ensure that only one instance of sentential negation can be merged per clause (more than one negation can be merged, but all but one are constituent negation).

Not having an answer to this question does not weaken the proposal, however. While some adjuncts can iterate, others are limited to only one per clause, like instrumentals (*write with a pen with a fountain pen*) and *right* (*right right over the hill*). So sentential negation is not the only adjunct that cannot iterate. Moreover, competitor proposals with multiple NegPs face the same issue. In the analysis of Thoms et al. (2023), for instance, there is a high NegP and a low NegP. Something has to stop them from co-occurring. Thoms et al. (2023) do not say what that might be. So the two proposals are on an equal footing in this regard (and the problem is compounded for analyses with even more NegPs (e.g., Zanuttini 1997, Poletto 2008).

In the rest of this section, I flesh out the proposal in more detail for each of the two negative items, *not* and *n't*. The only difference between them is that *not* is a phrasal adjunct, whereas *n't* is a head adjunct. This assumes a fundamental distinction between heads and phrases. Heads can combine with other heads to create complex heads. Whenever two things are merged and they do not form a complex head, the resulting structure is necessarily phrasal. Within phrases, it is not necessary to make a distinction between maximal projections and intermediate ones. I will label anything that is a phrase headed by H "HP," to distinguish it from the head, "H."

2.1   English *Not*

In top-down/left-to-right structure building, the syntax will start with the phase head. I assume that declaratives have a null C head. Cs are phase heads. So in *She has not been practicing*, the syntax starts with the null C. However, in top-down/left-to-right structure building, some material may have to be merged before the head of a phrase, for instance specifiers or (left-adjoined) adjuncts. I propose that the way this works is that the syntax selects the phase head but does not yet merge it into the syntax.[1] Instead it creates something consisting solely of the category of the phase head:

(5)   C

Then, the syntax asks whether there is anything to be merged either as a specifier or as an adjunct. Whether the head requires a specifier is specified in the featural content of the selected head. A [+wh] C head, for instance, would require a specifier. However, our null declarative C head does not require a specifier. The syntax also asks whether anything is to be merged that selects CP as an adjunct. In this case, no such thing is selected. So the syntax then merges the C head as a daughter of the previously built node:

(6)   CP
      ⌒
      C
      Ø

I now label the higher node CP, since it is phrasal.

C selects category T, so the syntax then selects a T head. As with C, the head is not yet merged, but only the bare category:

(7)   CP
      ⌒
      C   T
      Ø

The syntax now asks what T requires, and whether there are any adjuncts that select TP. Suppose that no such adjuncts are selected. T does require a specifier in English. So the syntax will have to build one. NPs

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[1]This system can work either with a set of items pre-selected from the lexicon to form a *numeration* for the phase (Chomsky 1993), or it can select items directly from the lexicon. Either way, something has to ensure that only one instance of sentential negation can be selected per clause (and one instance of each AuxV, and Voice, and . . .).

constitute their own phases; I assume that one is built but do not go into the details of how that would occur. The end result is that the syntax merges an NP with T by expanding T into two daughters, one the NP on the left and the other a copy of the bare category T:

(8)
```
        CP
       /  \
      C    TP
      Ø   /  \
        NP    T
        ⁀
       she
```
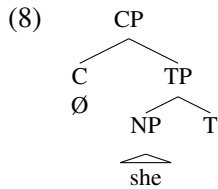
I now label the higher node TP, because it is phrasal.

The actual head T can now be merged. In an English negative clause, the highest AuxV moves to T. So AuxV is merged into T. I show it as occupying the T node, but one could also have it adjoined to a (null) T head if one wished.

(9)
```
            CP
          /    \
         C      TP
         Ø     /  \
             NP     TP
             ⁀     /  \
            she   T
              AuxV_perf
               have
```
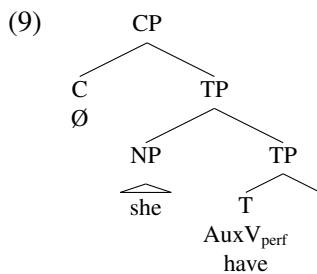
All English verbs have to have an inflectional suffix. I assume that everything of category V selects an Infl head. AuxVs are a subcategory of V, so they also select an Infl head. Because of this selection, an Infl head must be immediately merged with AuxV:

(10)
```
              CP
            /    \
           C      TP
           Ø     /   \
               NP      TP
               ⁀      /  \
              she    T
                 AuxV_perf
                 /      \
           AuxV_perf    Infl
            ha(ve)       -s
```
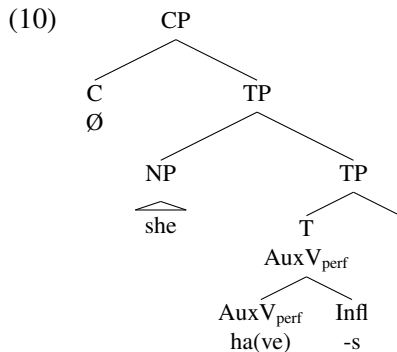
The features of Infl must match those of T. In this case, they are present tense, third person singular (T agrees with the NP in its specifier; any theory of agreement will do).

T now selects something of category V. The syntax has already selected the perfect auxiliary *have* and merged it into T. So the same category is merged as the complement of T:

(11)

```
              CP
         ┌────┴────┐
         C         TP
         Ø      ┌───┴────┐
               NP        TP
               ‾‾       ┌─┴──────┐
               she      T      AuxV_perf
                    AuxV_perf
                     ┌──┴──┐
                  AuxV_perf  Infl
                  ha(ve)     -s
```
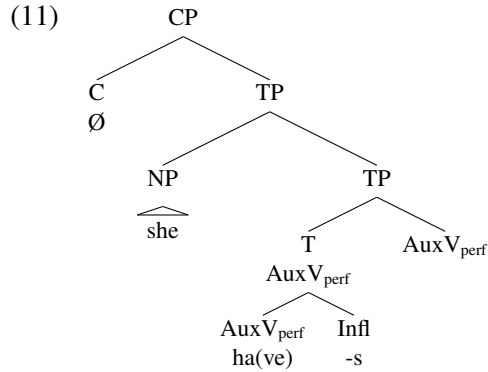
At this point the syntax asks whether there are any adjuncts that select AuxVP. The syntax is building a negative clause, so there is, the adverb *not*. It is merged and adjoined to the AuxVP that is being built:

(12)

```
              CP
         ┌────┴────┐
         C         TP
         Ø      ┌───┴──────┐
               NP          TP
               ‾‾       ┌───┴──────┐
               she      T       AuxVP_perf
                    AuxV_perf   ┌───┴────┐
                     ┌──┴──┐   AdvP   AuxV_perf
                  AuxV_perf  Infl  ‾‾
                  ha(ve)     -s    not
```
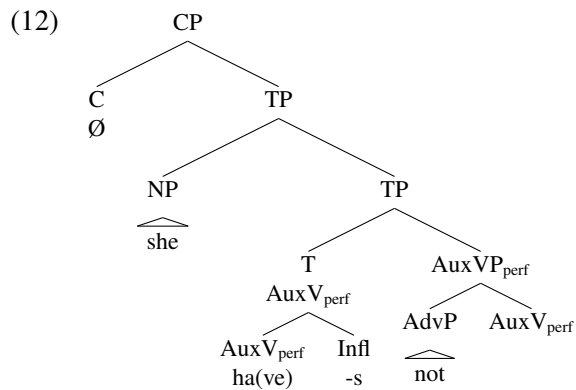
The perfect AuxV can now be copied as the head of this AuvVP:

(13)

```
              CP
         ┌────┴────┐
         C         TP
         Ø      ┌───┴──────┐
               NP          TP
               ‾‾       ┌───┴─────────┐
               she      T          AuxVP_perf
                    AuxV_perf   ┌────┴──────┐
                     ┌──┴──┐   AdvP      AuxVP_perf
                  AuxV_perf  Infl  ‾‾    ┌──┴─────┐
                  ha(ve)     -s   not  AuxV_perf
                                        ┌──┴──┐
                                     AuxV_perf  Infl
                                     ha(ve)     -s
```
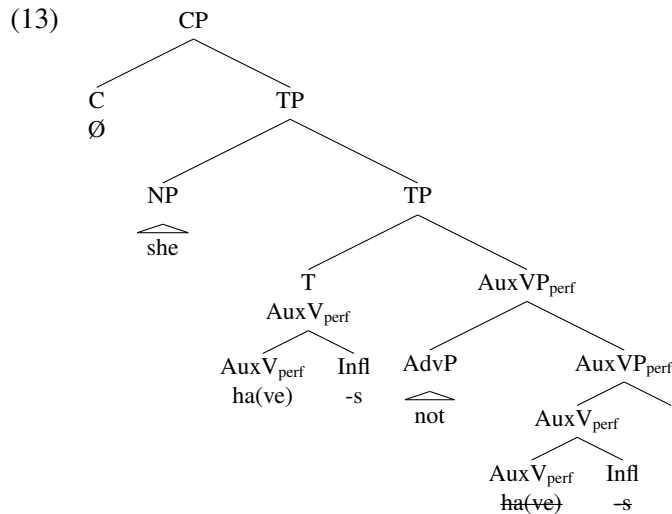
Lower copies are typically not pronounced, in English, which I indicate with strikethrough.

This AuxV also selects something of category V. In this case, we choose the progressive AuxV:[2]

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[2]I will not attempt to explain why the order of the auxiliaries is fixed in English; this is orthogonal to our concerns.

(14)

```
                    CP
            ┌────────┴────────┐
            C                 TP
            Ø          ┌──────┴──────┐
                      NP             TP
                      ⌒        ┌──────┴──────┐
                     she       T          AuxVP_perf
                          AuxV_perf    ┌──────┴──────┐
                          ┌───┴───┐   AdvP      AuxVP_perf
                       AuxV_perf Infl  ⌒      ┌─────┴─────┐
                        ha(ve)   -s   not  AuxV_perf  AuxV_prog
                                          ┌───┴───┐
                                       AuxV_perf Infl
                                        ha(ve)   -s
```
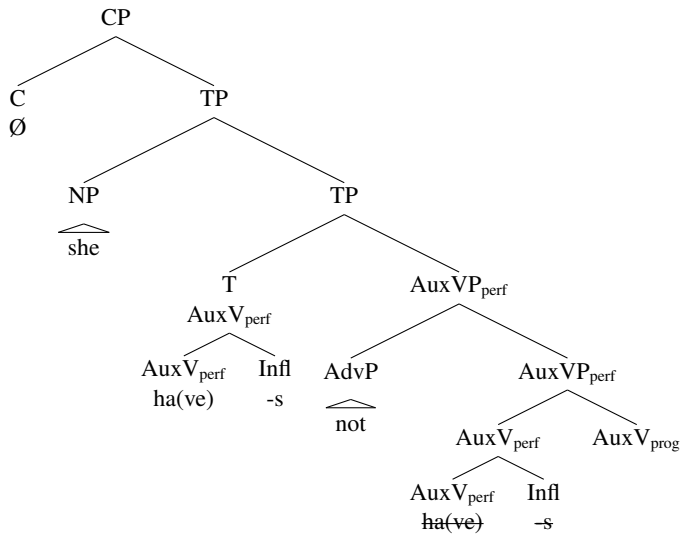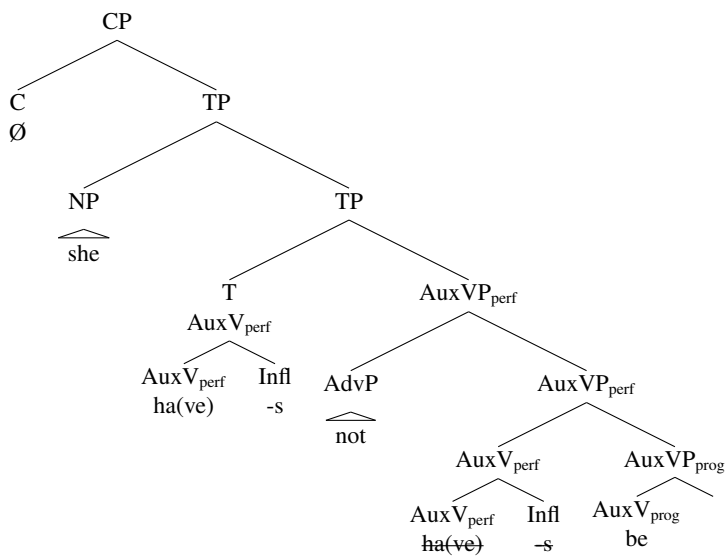
The syntax now asks whether there are any adjuncts that select AuxVP again. Since sentential negation is limited to one occurrence in English, there is not. *Not* has already been merged. So the head AuxV_prog can now be merged:

(15)

```
                    CP
            ┌────────┴────────┐
            C                 TP
            Ø          ┌──────┴──────┐
                      NP             TP
                      ⌒        ┌──────┴──────┐
                     she       T          AuxVP_perf
                          AuxV_perf    ┌──────┴──────┐
                          ┌───┴───┐   AdvP      AuxVP_perf
                       AuxV_perf Infl  ⌒      ┌─────┴─────┐
                        ha(ve)   -s   not  AuxV_perf  AuxVP_prog
                                          ┌───┴───┐  AuxV_prog
                                       AuxV_perf Infl   be
                                        ha(ve)   -s
```

All items of category V select an Infl head, so one is merged. It agrees with the selecting head, AuxV_perf, and so has the form *-en*:

(16)

CP
- C: Ø
- TP
  - NP: she
  - TP
    - T: AuxV$_{perf}$
      - AuxV$_{perf}$: ha(ve)
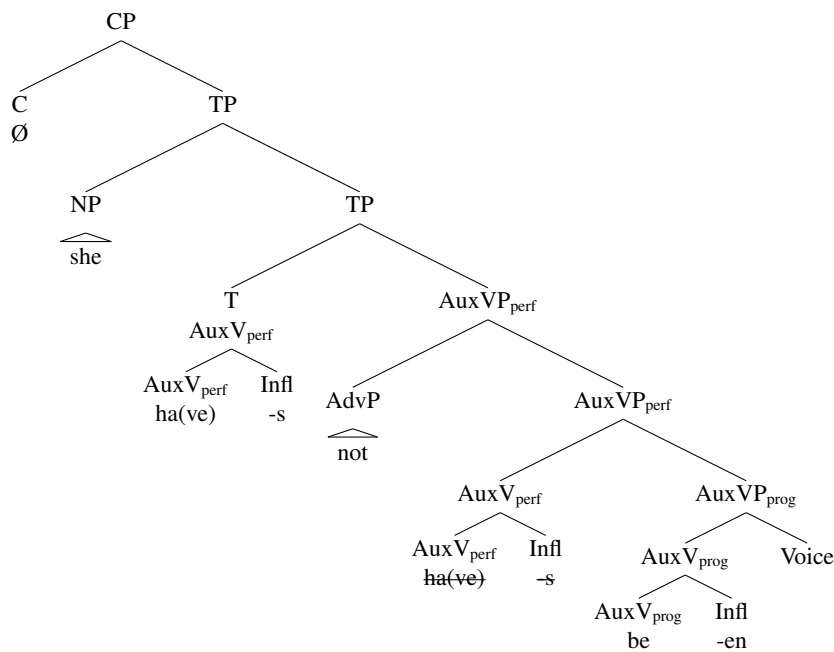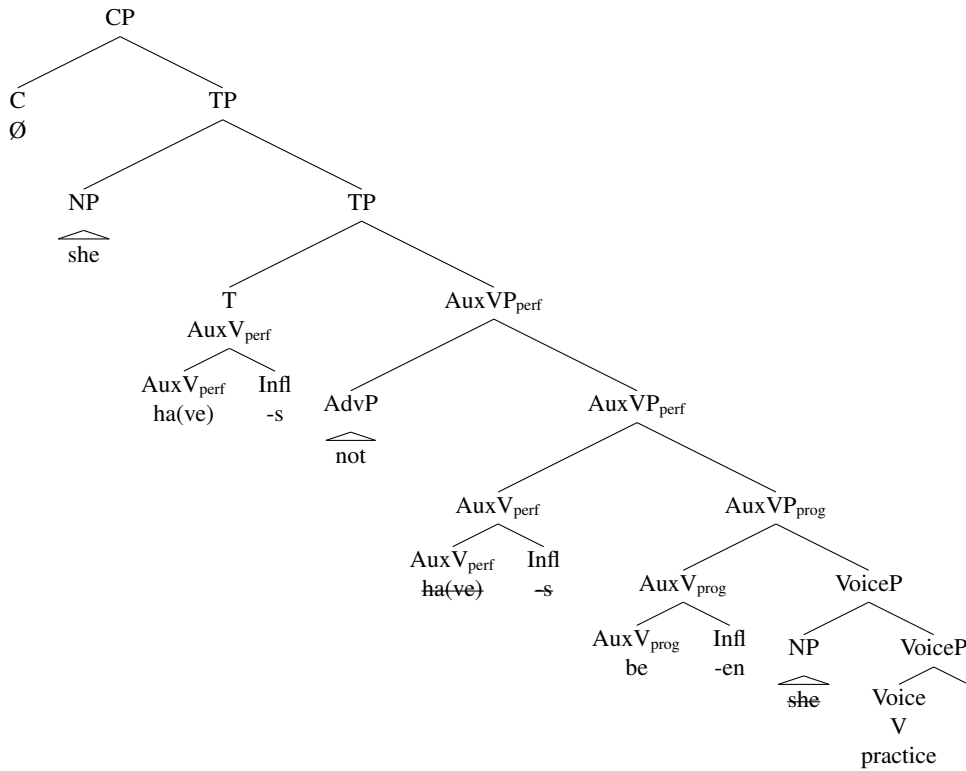   - Infl: -s
    - AuxVP$_{perf}$
      - AdvP: not
      - AuxVP$_{perf}$
        - AuxV$_{perf}$
          - AuxV$_{perf}$: ~~ha(ve)~~
          - Infl: ~~-s~~
        - AuxVP$_{prog}$
          - AuxV$_{prog}$
            - AuxV$_{prog}$: be
            - Infl: -en
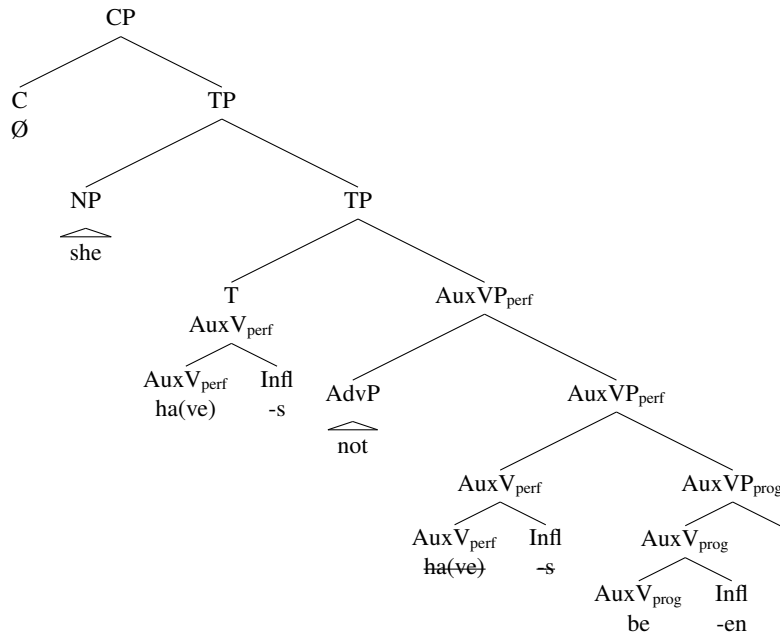
AuxV$_{prog}$ also selects something of category V. In this case, Voice is chosen (which I assume is also a subcategory of V):

(17)

CP
- C: Ø
- TP
  - NP: she
  - TP
    - T: AuxV$_{perf}$
      - AuxV$_{perf}$: ha(ve)
      - Infl: -s
    - AuxVP$_{perf}$
      - AdvP: not
      - AuxVP$_{perf}$
        - AuxV$_{perf}$
          - AuxV$_{perf}$: ~~ha(ve)~~
          - Infl: ~~-s~~
        - AuxVP$_{prog}$
          - AuxV$_{prog}$
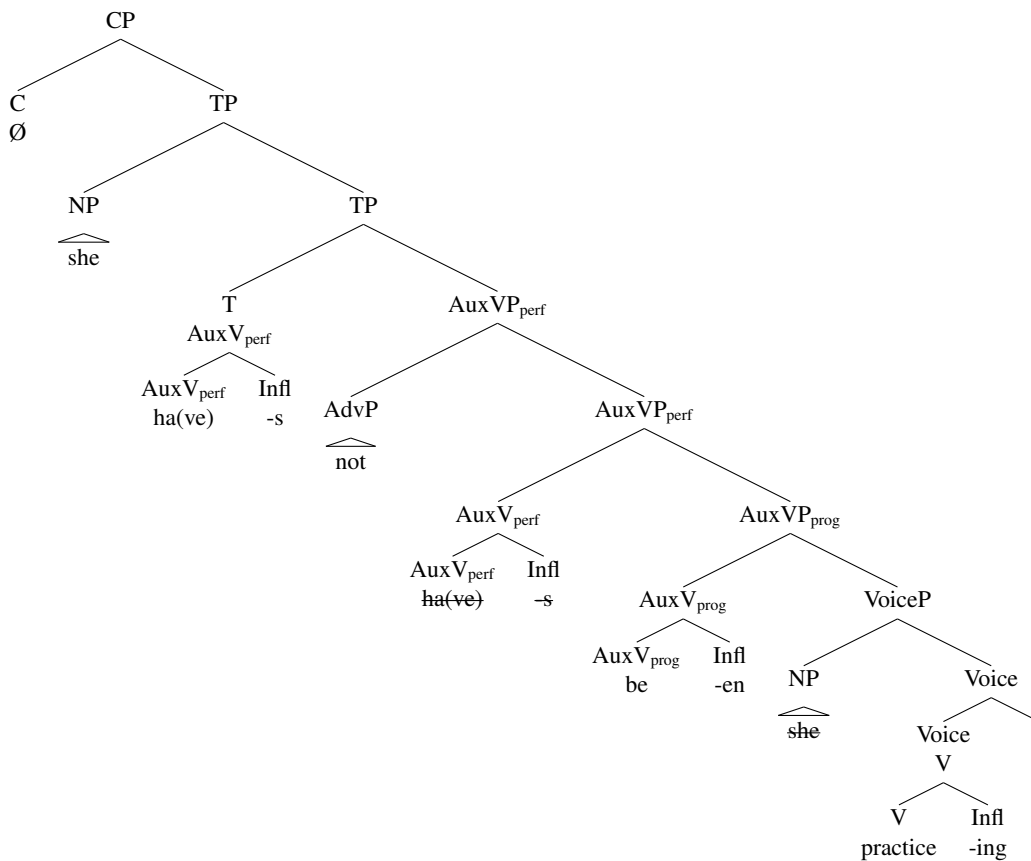   - AuxV$_{prog}$: be
            - Infl: -en
          - Voice

Now the subject NP is copied to Spec-VoiceP, and then the head Voice is merged. I assume V moves to Voice, so V is what is merged in Voice:
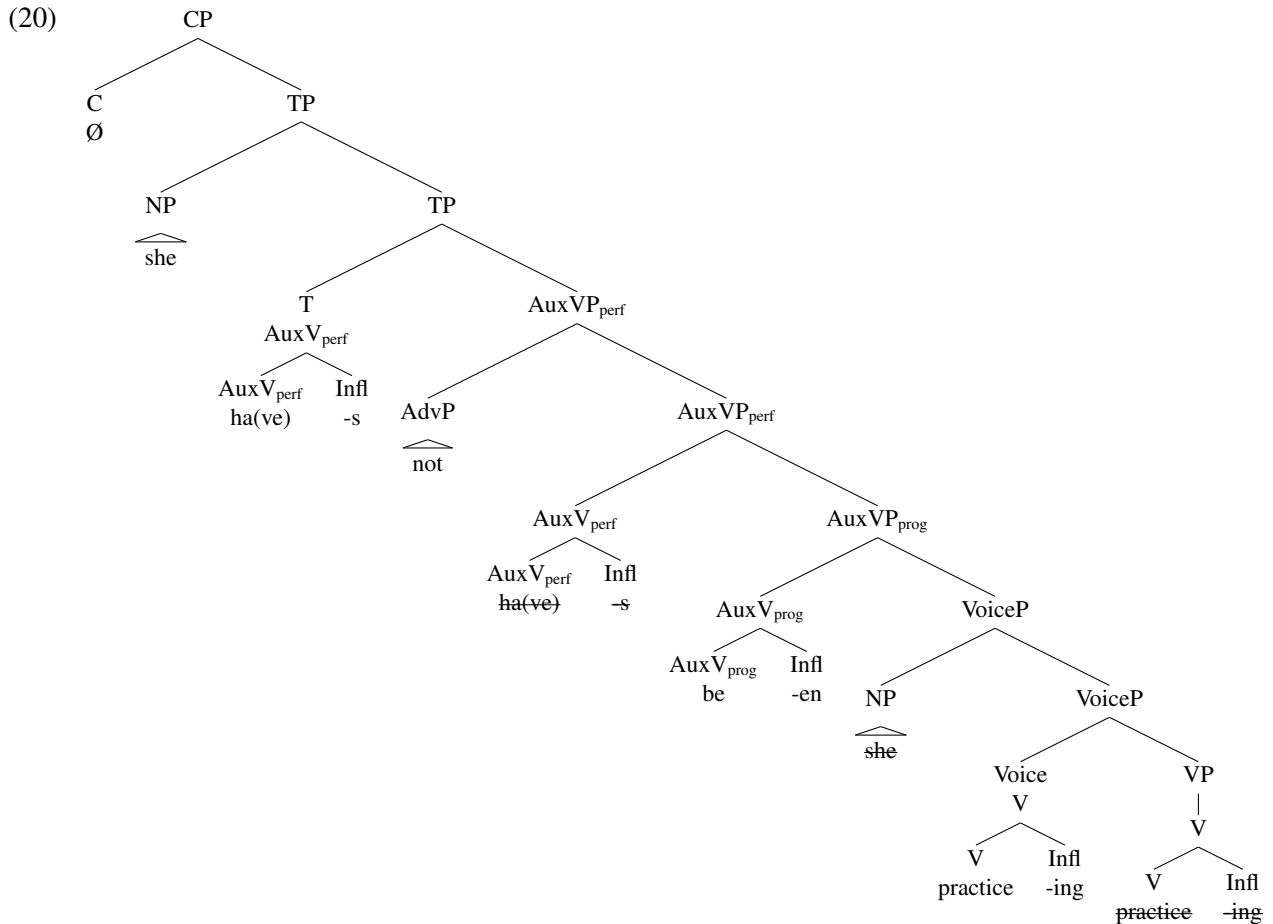
(18)

CP
- C
  - Ø
- TP
  - NP
    - she
  - TP
    - T
      - AuxV_perf
        - AuxV_perf
          - ha(ve)
        - Infl
          - -s
    - AuxVP_perf
      - AdvP
        - not
      - AuxVP_perf
        - AuxV_perf
          - AuxV_perf
            - ~~ha(ve)~~
          - Infl
            - ~~-s~~
        - AuxVP_prog
          - AuxV_prog
            - AuxV_prog
              - be
            - Infl
              - -en
          - VoiceP
            - NP
              - ~~she~~
            - VoiceP
              - Voice
                - V
                  - practice

V also selects Infl, so an Infl is merged. It agrees with AuxV_prog and so takes the form *-ing*:

(19)

CP
- C
  - Ø
- TP
  - NP
    - she
  - TP
    - T
      - AuxV_perf
        - AuxV_perf
          - ha(ve)
        - Infl
          - -s
    - AuxVP_perf
      - AdvP
        - not
      - AuxVP_perf
        - AuxV_perf
          - AuxV_perf
            - ~~ha(ve)~~
          - Infl
            - ~~-s~~
        - AuxVP_prog
          - AuxV_prog
            - AuxV_prog
              - be
            - Infl
              - -en
          - VoiceP
            - NP
              - ~~she~~
            - Voice
              - Voice
                - V
                  - V
                    - practice
                  - Infl
                    - -ing

9

Finally, Voice selects V, so V is merged and a copy of the verb in Voice is merged as its head:

(20)

```
                              CP
                  _____/  _____
                 C                           TP
                 Ø               _____/  _____
                               NP                           TP
                              /\               _____/  _____
                             she             T                           AuxVP_perf
                                       AuxV_perf              _____/  _____
                                    ___/      \___          AdvP                      AuxVP_perf
                              AuxV_perf        Infl         /\            _____/  _____
                              ha(ve)           -s          not         AuxV_perf                  AuxVP_prog
                                                                    ___/      \___        _____/  _____
                                                              AuxV_perf      Infl      AuxV_prog                VoiceP
                                                              ha(ve)         -s      ___/      \___     _____/  _____
                                                                                AuxV_prog    Infl     NP              VoiceP
                                                                                be           -en      /\        _____/  \_____
                                                                                                     she      Voice          VP
                                                                                                               V             |
                                                                                                           __/  \__          V
                                                                                                          V      Infl     __/  \__
                                                                                                       practice  -ing     V      Infl
                                                                                                                       practice  -ing
```

This builds *She has not been practicing*. Sentential negation *not* is correctly merged with the highest AuxVP. The highest AuxV always moves across *not* to finite T in English, so *not* always follows the highest AuxV.

As for *do*-support, I adopt the approach in Bruening (2010b), which builds on Baker (1991). In this approach, *do*-support is not a last resort response to something going wrong in the syntax. Rather, all contexts for *do*-support have a feature on T, [SP]. A T with an [SP] feature obligatorily selects an AuxV as its complement. If no semantically contentful AuxV is desired, then the contentless *do* must be used. Sentential negation is one of the contexts for *do*-support. In Bruening (2010b), a negative TP has the feature [SP]. T must then select an AuxV. See Bruening (2010b) for details and for arguments in favor of this approach and against last resort approaches.

Note also that the verbal inflection is merged directly with each V head. Every V head in English selects an Infl head that it must merge with to form a complex head. The form of this Infl head is determined by the immediately higher head, through agreement (which we can model as the Agree operation of Chomsky 2000, but other analyses of agreement are also possible). There is no need for head movement, affix hopping, or any form of post-syntactic movement to assemble the complex heads. There is no need for any post-syntactic level of grammar at all. The syntax suffices to build the correct structure, using only mechanisms the syntax needs anyway: Merge, copying (which is just Merge), and agreement.

2.2 English *n't*

Affixal negation (*n't*) will work in an analogous fashion, except that *n't* is a head rather than a phrasal adjunct. I will label it Neg, but its label does not matter in any way.

It is important that English *n't* is a head adjoined to a head and is not simple phonological contraction of *not*, comparable to contraction of auxiliaries. When auxiliaries contract, they contract onto whatever is to their left, whether that is a subject NP or another auxiliary:

(21)   a.   These things've been put away.

         b.   These things should've been put away by now.

If what is to the left of the auxiliary moves away, the auxiliary contracts onto whatever is now to its left, for instance the complementizer in a relative clause:

(22)   the things that've already been put away

In contrast, English affixal negation is very selective: it only attaches to an auxiliary verb. We can see that affixal negation is not just a reduced version of *not* from contrasts like the following:

(23)   a.   These things have probably not been put away.

         b.   * These things have probablyn't been put away.

To use affixal negation, the word order has to change:

(24)   These things probably haven't been put away.

If the auxiliary verb that affixal negation would attach to moves away, affixal negation has to go with it (Zwicky & Pullum 1983):

(25)   a.   Shouldn't you have given me that?

         b.   * Should youn't have given me that?

Affixal negation also shows arbitrary gaps (there is no **amn't*) and morphophonological idiosyncrasies (*won't* rather than **willn't*; Zwicky & Pullum 1983). It therefore behaves like a canonical affix rather than like phonological contraction (which I assume is a purely phonological process). I assume that *n't* is a head that combines with an auxiliary verb as a complex head:

(26)
```
                    AuxV_perf
                   /        \
             AuxV_perf       Neg
            /       \        n't
       AuxV_perf   Infl
       ha(ve)-      -s
```
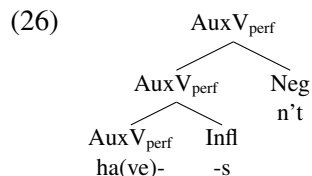
Since the AuxV still has the distribution of an AuxV (appearing between the subject and the verb in a declarative but in C in an interrogative, and in its relative position among the AuxVs), the AuxV must be the label of the complex head. However, the AuxV does not seem to select affixal negation in the same way that it selects an Infl head. Infl is required, but affixal negation is not; and the same AuxV may or may not have affixal negation, depending on the context (whether it is preceded by another AuxV or not):

(27)   a.   She **hasn't** been practicing for long.

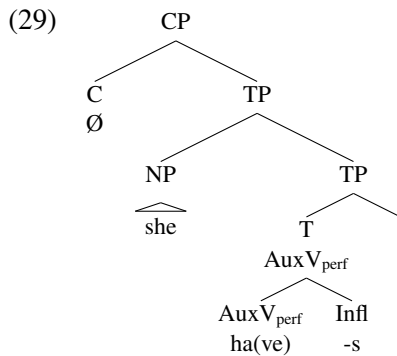   b.   She couldn't **have** been practicing for long.

I suggest that this behavior is just that of an adjunct. Affixal negation is very selective in what it attaches to, so it is what is selecting; but it does not project, what it attaches to does. This makes it an adjunct. Since it is a head and combines with its host to create a complex head, it is a head adjunct.

Note additionally that affixal negation, as an adjunct, comes outside of any heads selected by its host. In this case, the AuxV head-selects an Infl element, and this head combines with AuxV first. This is also the behavior of an adjunct.

To go through an example, consider *She hasn't been practicing*. This will proceed exactly as above through merger of C and the subject, and then merger of the highest AuxV in T:

(28)

```
            CP
          /    \
         C      TP
         Ø     /  \
             NP     TP
             /\      \
           she        T
                   AuxV_perf
                     have
```
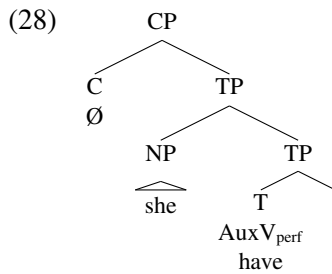
Since all Vs select an Infl head, this will be merged next:

(29)

```
            CP
          /    \
         C      TP
         Ø     /    \
             NP       TP
             /\        \
           she          T
                     AuxV_perf
                      /    \
                 AuxV_perf  Infl
                  ha(ve)    -s
```

Now the syntax looks to see whether there is anything that selects AuxV as an adjunct. There is, *n't*. So this is merged next:

(30)

```
            CP
          /    \
         C      TP
         Ø     /      \
             NP         TP
             /\          \
           she            T
                       AuxV_perf
                        /    \
                   AuxV_perf   Neg
                    /    \      n't
               AuxV_perf  Infl
                ha(ve)    -s
```
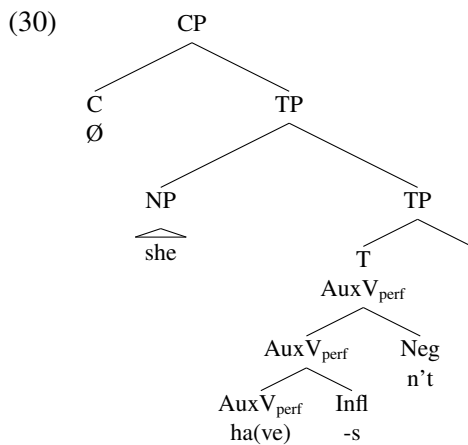
AuxV$_{perf}$ can now be merged as the complement of T:

(31)

```
                    CP
                  /    \
                 C      TP
                 Ø     /   \
                     NP       TP
                     ⌢       /    \
                    she     T       AuxV_perf
                          AuxV_perf
                          /      \
                    AuxV_perf     Neg
                     /    \       n't
               AuxV_perf   Infl
                ha(ve)      -s
```
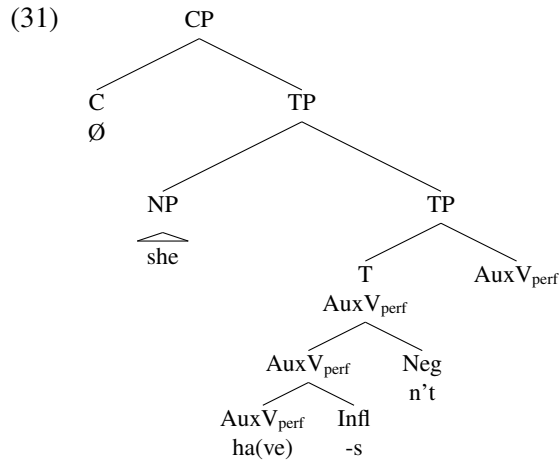
The rest of the derivation will proceed as before: $AuxV_{perf}$ will be copied as the head of the complement of T, $AuxV_{perf}$ will then select $AuxV_{prog}$, and so on. Note that, since the clause is limited to one instance of sentential negation, when we get to the point where $AuxV_{prog}$ has satisfied its need for an Infl head, there will not be any adjunct that selects an AuxV. So we correctly place *n't* on the first auxiliary verb in the clause, and not on any subsequent ones. The same constraint rules out combining *n't* with sentential negation *not* (constituent negation is possible).

2.3 Subject-Auxiliary Inversion

The highest AuxV can also be merged into C, and then copied into T and its complement. We can model this by saying that some instances of C have a feature that calls for a verb. This happens in many types of matrix questions and when a negative phrase is preposed, among other contexts (see Bruening 2017 for an overview):

(32) a. What have you done? (nonsubject wh-question)

b. Have you eaten yet? (yes/no question)

c. Never before have I witnessed such inhumanity. (negative preposing)

When the AuxV is being built in C, if *n't* is desired for the clause, it will be merged at that point, since that is the first point at which its selectional requirements can be satisfied. This will put *n't* on the AuxV in C:

(33) Hasn't she been practicing?

The complex head AuxV including Infl and Neg will then be copied into T and then into the head of the AuxV complement of T.

In contrast, *not* as a phrase selecting a phrase will not be merged until the AuxVP complement of T is begun, because this is the first point there is something of phrasal category AuxVP. This will correctly locate *not* after T:

(34) Has she not been practicing?

Section 3 will address claims of semantic differences between "high" negation and "low" negation.

2.4 Imperatives

Negative imperatives may also involve movement of the auxiliary to C (Potsdam 1997). Unlike all other contexts in English, however, this auxiliary is always *do*, even when there is another auxiliary or main verb *have* or *be*:

(35)   a.   She is not late.

       b.   * She does not be late.

       c.   * Be not late!

       d.   Don't be late!

   The reason for this does not matter much here.[3] Whatever the reason, when *do* is merged as the first AuxV in the clause (either in C, or somewhere else), *n't* will be merged with it (after the Infl head it selects, of course, but this is null in the second person). If *not* is selected instead, then it will be merged adjoined to the highest AuxVP (the one headed by *do*). (There are various restrictions on this, for instance it is difficult to have an overt subject in an imperative when the negative form is *not* rather than *n't*, but these restrictions are not directly relevant to the position or interpretation of negation, as far as I can see.)

2.5 Scope

All the facts of scope can easily be captured in this proposal. As stated above, scope is precede and command. Negation precedes and phase-commands everything to its right, regardless of whether it is *not* or *n't*. So both versions of negation fail to license negative polarity items (NPIs) in the subject position, but do license them elsewhere:

(36)   a.   * Anyone will not come to the party.

       b.   * Anyone won't come to the party.

(37)   a.   Marty will not come to any of our parties.

       b.   Marty won't come to any of our parties.

       c.   Marty has not ever tried *cmoki*.

       d.   Marty hasn't ever tried *cmoki*.

Affixal *n't* preposed to the left of the subject does license an NPI in subject position:

(38)   (McCloskey 1996: 89, (102))

       a.   * Which one of them does anybody like?

       b.   Which one of them doesn't anybody like?

This follows in the proposal: *n't* is now located in C, and precedes and phase-commands the subject position, Spec-TP.

   In English, subjects and objects can both take scope above or below negation. I assume that objects can undergo quantifier raising to a position above the base position of negation; negation can reconstruct to this position, if it has moved to a higher one. As for subjects, they can reconstruct to Spec-VoiceP, below the

---

[3]One possibility is that all negative imperatives involve an auxiliary in C, and C requires that a *finite* auxiliary verb be merged into it. In imperatives, the contentful verbs and auxiliaries are all in a non-finite form. The only option is to merge the contentless auxiliary *do* in its finite form (directly in C, in the current analysis). This accounts straightforwardly for negative imperatives where the subject follows *do*, but the subject can also precede *do*: A: *Don't be late!* B: *YOU don't be late!* To maintain this explanation, such subjects would have to be in a left-dislocated position, not Spec-TP (which might be plausible).

position of negation. Negation does obligatorily scope over the lexical verb (Kim & Sag 2002), as would be expected if lexical verbs in English cannot move any higher than Voice (there is no QR for heads, and the lowest position of negation is higher than the highest position of the V in Voice).

As for the modals, negation scopes above *can, will, may* (deontic) but below *should, ought, must, may* (epistemic). The latter group take scope as would be expected from the surface structure: they precede both *n't* and *not* and therefore take scope over them. The other group, represented here by *can*, requires something at LF. I assume this is reconstruction of the modal to its base position as the head of the complement of T:

(39)   a.

```
                        TP
            ┌───────────┴───────────┐
           NP                       T
           △              ┌─────────┴─────────┐
          you             T              AuxVP_mod
                      AuxV_mod      ┌─────────┴─────────┐
                    ┌────┴────┐    Neg            AuxVP_mod
                 AuxV_mod  Infl   not        ┌────────┴────────┐
                   can      Ø            AuxV_mod           VoiceP
                                     ┌──────┴──────┐         △
                                  AuxV_mod      Infl        pass
                                    can          Ø
```

b.

```
                        TP
            ┌───────────┴───────────┐
           NP                       T
           △              ┌─────────┴─────────┐
          you             T              AuxVP_mod
                      AuxV_mod      ┌─────────┴─────────┐
                  ┌──────┴──────┐  AuxV_mod          VoiceP
               AuxV_mod       Neg ┌────┴────┐         △
             ┌────┴────┐      n't AuxV_mod Neg      pass
          AuxV_mod  Infl      ┌────┴────┐  n't
            can      Ø     AuxV_mod  Infl
                             can      Ø
```
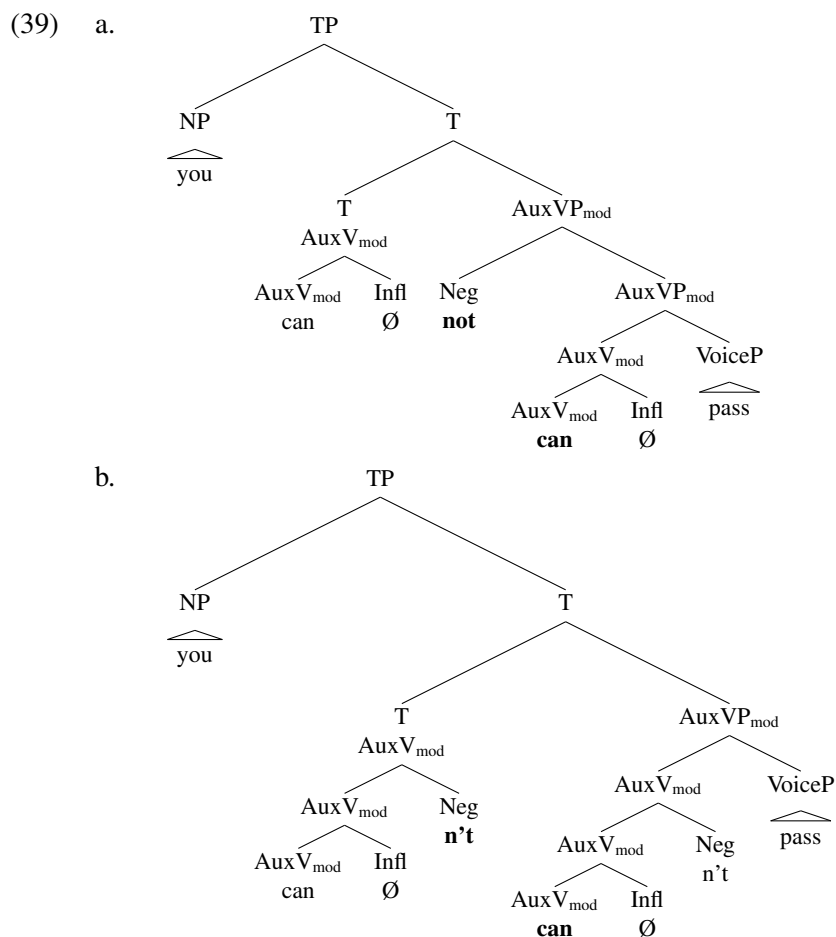
The positions where each of Neg and the modal is interpreted are in boldface. Note that in the case of *n't*, this requires distributed LF interpretation, with one part of the complex head interpreted in one position in the head movement chain, and another part interpreted in a different part of the head movement chain. (For discussion of modals and negation, see Iatridou & Zeijlstra 2013.)

Allowing QR of phrases and reconstruction suffices to account for all of the facts of the scope of negation. (There are also alternative ways to account for scope, all of which should be compatible with the current proposal.) More will be said on scope in section 3.

2.6   Summary

The proposed analysis is maximally simple. Negation in English is always an adjunct. One version, *not*, is a phrasal adjunct. The other, *n't*, is a head adjunct. They both strictly select category AuxV. The principle that things merge as soon as they can, combined with a syntax that builds structure top-down or left-to-right, puts negation on the *first* AuxV(P) to be merged in the structure. All of the facts of English negation

receive a simple account in this analysis. There is no need for a NegP or multiple NegPs, and no need for post-syntactic levels of grammar.

3   High Negation and Low Negation

There is an extensive literature on the semantics of "high" and "low" negation in English and other languages. High negation is affixal negation, on an auxiliary that precedes the subject. Low negation is negation to the right of the subject. Yes/no questions have different properties depending on whether negation is low or high. Low negation is neutral, whereas high negation is biased to the positive answer (Ladd 1981):

(40)   a.   Is Ronald not coming?
            (low negation: no bias)

        b.   Isn't Ronald coming?
            (high negation: speaker believes or at least expects that Ronald is coming)

Additionally, high negation can fail to license negative polarity items (NPIs) like *until* phrases, and can fail to anti-license positive polarity items (PPIs) like *too*:

(41)   NPIs (Thoms et al. 2023: 753, (77a), (76a))

        a.   Did Chris not leave until Sarah arrived?

        b.   * Didn't Chris leave until Sarah arrived?

(42)   PPIs

        a.   ?? Is Jane not coming too?

        b.   Isn't Jane coming too? (Romero & Han 2004: 610, (6))

These facts are discussed in Ladd (1981), Büring & Gunlogson (2000), Romero & Han (2004), Repp (2013), Holmberg (2015), Krifka (2015), Romero (2015), Thoms et al. (2023). Theoretical analyses can be divided into scope accounts, and those that have two different semantics for negation. In scope accounts, like that of Romero & Han (2004), negation is just the operator ¬, regardless of its position. The different properties of high and low negation fall out from the presence of another operator, VERUM, that is present when negation is preposed across the subject. This item leads to the bias of questions with preposed negation. If negation takes scope over it, this operator also "protects" PPIs from being anti-licensed by negation, and it also blocks NPIs from being licensed by negation.

In Krifka's (2015) alternative scope proposal, there are various speech-act related projections in the left periphery. High negation corresponds to negation (which is just ¬) being located in "commitment phrase," which gives rise to its bias. It is high not because negation has any particular properties, but because it happens to occur in a high position in the left periphery. (Krifka is silent about PPIs and NPIs.)

Romero (2015) proposes an account where there are two different semantics for negation. One is just the operator ¬. The other is instead an operator FALSUM (modified from Repp 2013). FALSUM's at-issue content is also just ¬, but it has an additional "common ground management" component to its meaning. It ensures that the proposition p is not added to the common ground (which Romero abbreviates "FOR-SURE-NOT-IN-CG(p)"). Romero appears to just stipulate that FALSUM does not anti-license PPIs, but this is not entirely clear (see her p.528).

Thoms et al. (2023) appear to endorse an account like that of Romero (2015), and propose that the semantics of their high NegP is different from the semantics of their low NegP. Presumably, Neg-OP in Spec-HighNegP is Romero's FALSUM (or something like it) while NEG-OP in the specifier of the low NegP would just be ¬. Thoms et al. (2023) do say that in their proposal for two distinct NegPs, it is possible to have distinct semantics associated with each projection.

However, this is actually incompatible with the semantic proposals. Romero (2015) makes negation in declarative denials also be FALSUM in examples like the following, which also fail to anti-license PPIs:

(43)   A: Jane is coming too. B: Jane ISN'T coming too. (Romero 2015: 528, (43))

But negation here is clearly the low negation, as it occurs after the subject. In this semantic account, both low and high negation can be either ¬ or FALSUM. An approach like this therefore does not provide any support for the two NegP proposal, contra Thoms et al. (2023). This FALSUM account could be implemented within the proposal here: Negation would be ambiguous between ¬ and FALSUM, but it would be ambiguous in any position it occurs in. Presumably, constraints would have to rule out one or the other in any given context (something that Romero is silent on).

The scope accounts are also clearly compatible with the proposal here. In those accounts, negation is just ¬, regardless of where it appears. It is capable of moving along with its host auxiliary, which then gives it different scopes. If we wanted to adopt the proposal of Krifka (2015), we could identify the preposed position of Aux-*n't* as the head of commitment phrase (this could replace C, or the Aux could move through C on its way to commitment phrase). If we instead adopted the VERUM account of Romero & Han (2004), we could propose that the C that triggers Aux movement to C also selects a VERUM operator. Since this is null, it could appear in several different places. It could be in C, for instance, adjoined to the verb+*n't*, or it could adjoin to the complement of C. Or it could be the head of a projection between C and T, through which the fronting AuxV passes. Negation could then either be interpreted in C, in which case it takes scope over VERUM, or it could reconstruct lower (to T or AuxV), in which case it would take scope below VERUM. The facts would follow in the same way that they do for Romero & Han (2004).

I will not attempt to decide between these various semantic theories. All of them appear to be compatible with the current proposal concerning the syntax of negation. Since they are, there is no support from semantic differences between high and low negation for distinct NegPs in English.

4   Scots

Thoms et al. (2023) present data from Scots that they argue require a high NegP and a low NegP. The most important fact is that Scots has a negative element *nae* that has all the properties of Standard English *n't*, except that it cannot appear before the subject. *Nae* can appear after the subject but not before it:

(44)   a.   Jo hasnae left. (Thoms et al. 2023: 727, (2))
        b.   * Hasnae Jo left? (Thoms et al. 2023: 727, (3))

The one exception is imperatives:

(45)   Dinnae everybody leave just yet! (Thoms et al. 2023: 730, (11b))

At the same time, *nae* seems to be an affix on the finite auxiliary, just like *n't*. It cannot be separated from the finite auxiliary, for instance, unlike *not*:

(46)   (Thoms et al. 2023: 728, (6))
        a.   * She has really nae left yet.
        b.   * She has really n't left yet.
        c.   She has really not left yet.

Thoms et al. (2023) propose that there are two NegPs, a low one below T, and a high one above T. Standard English *n't* can appear in the specifier of either. In contrast, Scots *nae* can only be the specifier of the low NegP, except with imperatives. They give a set of realization rules for "Neg-Op," the negative operator that appears in Spec-NegP, as follows:

(47) (Thoms et al. 2023: 747, (62))

    a.   Neg-Op → [n̩t] or [ne] / #T[fin]__#

    b.   Neg-Op → [n̩t] or [ne] / #C[imp]__#

    c.   Neg-Op → [n̩t] / #C[int]__#

    d.   Neg-Op → [no] / elsewhere

Note that these rules make no reference whatsoever to low NegP and high NegP. Instead, they make reference to different values of T and C. Note in particular that [ne] (the pronunciation of *nae*) is stipulated not to be allowed with an interrogative C, while [n̩t] (the pronunciation of *n't*) is allowed with an interrogative C (47c). This stipulation is sufficient to capture the different distributions of *n't* and *nae*. Having distinct high NegPs and low NegPs is redundant and plays no role in the account. The exact same realization rules could be imported into the current analysis, or any analysis with AuxV movement to C, with the same effect: *nae* would be banned in interrogative C, but would be allowed in finite T and in imperative C (47a–b). The restriction also does not need to be stated in the form of a realization rule. The lexical item *nae* can state in its lexical entry that it is incompatible with interrogative C. There is absolutely no need for two NegPs, and there is no argument from Scots *nae* against movement of Aux+*n't* to C (or Aux+*nae* in imperatives).

Thoms et al. (2023) note another form in Shetland Scots, *'n*, which only occurs on a presubject auxiliary but only in tag questions, exclamatives, or rhetorical questions, and (for older speakers) polar questions where speakers indicate a bias toward the truth of the positive proposition (which is all inverted polar questions; see section 3). This distribution also does not require any reference to high versus low NegPs, and presumably would not, in the analysis of Thoms et al. (2023); I presume that their analysis would refer to different values of C, as in their realization rules in (47). Once again, distinguishing high from low NegPs is unnecessary.

I conclude that the current account is compatible with the Scots data in Thoms et al. (2023), and that the Scots data in no way motivate two distinct NegPs in English. A theory with two NegPs also has to explain why they cannot co-occur, and why both of their heads are null. In principle, two NegPs would allow up to four negative markers at once (two heads and two specifiers). English never has more than one.

5   Constituent Negation

The proposal so far has only been about sentential negation. This section briefly mentions constituent negation. Constituent negation is always the phrasal form, *not*. In the current analysis, there are two differences between sentential negation and constituent negation. First, sentential negation requires particular features on C and T; in particular, T has the [SP] feature described above when sentential negation is present and the clause is negated. This does not happen with constituent negation. Second, sentential negation is very selective and only selects Aux(P)s to attach to. Constituent negation is not selective and can merge with any phrase. It can combine with PPs, APs, AdvPs, VoicePs, CPs, and other categories:

(48)   a.   not in the drawer

       b.   not red

       c.   not completely

       d.   They can't simply [**not** [do their homework]].

       e.   not that she would do that even if I told her to

Being non-selective, constituent negation can adjoin to a phrase of pretty much any category. Note that constituent negation is unlike the modifier *right* in being able to attach to a PP embedded under another P:

(49)   out not from under our noses, but ...

I assume that constituent negation has no selectional features whatsoever. It is therefore not forced to merge when something of the appropriate type is merged into the syntax, because there is no such thing. Rather, constituent negation can freely be chosen and adjoined to anything (so long as it is phrasal). It can even iterate ad infinitum, although this becomes hard for humans to interpret.

I believe that this is all that needs to be said to account for constituent negation. It is the same negative operator, ¬. It can license NPIs, like sentential negation (Klima 1964, De Clercq 2013). The only difference between it and sentential negation is its lack of selectivity, and the fact that it does not trigger special features on T (and/or C).

Embick & Noyer (2001) observe that constituent negation is, surprisingly, ungrammatical without an auxiliary:

(50)   a.   John can always not agree.

    b.   * John always not agrees. (Embick & Noyer 2001: 585, (71a))

Contrary to Embick & Noyer (2001), however, I find *do* with constituent negation acceptable, preferentially following an adverb if one is present:

(51)   John always does not agree.

Embick & Noyer (2001) do not present such a sentence, but they claim that *John does always not agree* is ungrammatical. I do not agree with this, and find it relatively acceptable, although the order in (51) is much better (probably because of stress on the auxiliary). In any event, if any speakers do find constituent negation with *do* degraded, this would just follow from the relative unacceptability of *do* in a simple declarative. A TP with constituent negation within it does not have the feature [SP] on the current account, and so it is not one of the environments for *do*-support. Emphatic stress or verum focus *is* one of the environments for *do*-support, so we expect that sentences like (51) will be acceptable with stress on the auxiliary. This seems to be correct.

As for why (50b) is not acceptable, I suggest that it violates a constraint in English of the following form:[4]

(52)   * *not* V[Fin], where *not* precedes and c-commands V[Fin] and every CP node that dominates V[Fin] also dominates *not*

Movement of the finite verb to T in a negative clause is a response to this constraint. Note that movement across negation is obligatory, but movement across adverbs is not (see Baker 1991, Bruening 2010b and references there):

(53)   a.   The students will not be told what the answer is.

    b.   * The students not will be told what the answer is.

(54)   a.   The students will probably be told what the answer is.

    b.   The students probably will be told what the answer is.

Additionally, movement of non-finite *to* across *not* is optional for many speakers (see Pullum 1982 on *to* being an AuxV):

(55)   a.   It's difficult to not be anxious.

---

[4]Note that phrases like that in (48e) do not violate this constraint, as there is a CP node that dominates V[Fin] but does not dominate *not* (the sister of *not*).

b. It's difficult not to be anxious.

If there is such a constraint as that in (52) that is the driving force for movement of the highest AuxV to T, then the sentence in (50b) will also be ruled out. It violates the constraint in (52), since it has *not* preceding and c-commanding the finite verb, and both are dominated by all the same CP nodes. Adding an auxiliary remedies the violation (but adding *do* requires an [SP] feature, for instance with verum focus).[5]

Thus, the current analysis of English negation enables us to explain a curious restriction on constituent negation.

6 Extension to the Bulgarian Definite Marker

The analysis proposed here for English *n't* can also be extended straightforwardly to account for the problematic placement of the definite marker in Bulgarian (Halpern 1995, Franks 2001, Embick & Noyer 2001, Dost & Gribanova 2006, Koev 2011, Harizanov & Gribanova 2015, Harizanov 2018, Rudin 2018, Adamson 2022). Recall that English *n't* is a head adjunct. Head adjuncts, like all adjuncts, merge at the first point that they can. This will be when an item of the type they select has been added to the syntactic structure being built. In a top-down/left-to-right syntax, this will always be the first element of the appropriate type.

The placement of the Bulgarian definite marker meets this description exactly. It is a suffix that always appears on the *first* element in the NP that is capable of bearing nominal inflection (gender and number). These elements include the head noun itself, adjectives, numerals, and (non-clitic) possessive pronouns. If there is only a head noun, the definite marker attaches to that (56a); if there is a prenominal modifier, the definite marker attaches to that instead (56b); if there are two prenominal modifiers, the definite marker appears on the first one (56c):

(56) (Franks 2001: 54, (3))

    a. kniga-**ta**
       book-Def
       'the book'

    b. interesna-**ta**   kniga
       interesting-Def book
       'the interesting book'

    c. goljama-**ta** interesna   kniga
       big-Def   interesting book
       'the big, interesting book'

If a prenominal modifier is itself modified with an adverb that is not capable of bearing nominal inflection, the definite marker skips over the adverb:

(57)   dosta glupava-**ta** zabeležka
      quite stupid-Def remark
      'the quite stupid remark' (Franks 2001: 55, (5b))

If there are coordinated adjectives, the definite marker appears only on the first one (Harizanov & Gribanova 2015):

---

[5]Note that I have included movement of the highest AuxV to T in clauses with affixal negation *n't* in the analysis in this paper, but there is no empirical reason for this; it might not take place at all, unless there is further movement to C. Additionally, to account for adverb placement possibilities, we may need another head position in between T and the highest AuxVP. Movement across *not* to this intermediate position would be obligatory, but movement to T across an adverb would not be.

(58) prohladna-**ta** i   sveža večer
      cool-Def   and fresh evening
      'the cool and fresh evening'

If two nouns are coordinated intersectively, the definite marker also appears only on the first one:[6]

(59) prijatel-**jat** i   kolega
      friend-Def and colleague
      'the friend and colleague' (Adamson 2022: (12))

   As stated above, the elements that the definite marker can attach to in Bulgarian are those that bear nominal inflection. Nominal inflection is a suffix that expresses gender and number. It was not segmented in the examples above, but I do segment it in (60) to show its relative position:

(60) (Franks 2001: 56, (8))

   a. nov-a-ta   knig-a
       new-FemSg-Def book-FemSg
       'the new book'
   b. interesn-i-te   knig-i
       interesting-FemPl-Def book-FemPl
       'the interesting books'
   c. interesn-o-to   sel-o
       interesting-NeutSg-Def village-NeutSg
       'the interesting village'
   d. interesn-i-te   gradov-e
       interesting-MascPl-Def city-MascPl
       'the interesting cities'

From (60) it can be seen that the definite marker attaches outside of the nominal inflection. This is just like English *n't*, which attaches outside of the verbal inflection. (It will also be relevant below that the form of Def also varies by number and gender.)

   I propose that the Bulgarian definite marker is a head adjunct, just like English *n't*. It adjoins to certain elements, all of which select an Infl head. As an adjunct, it comes outside of things selected by the head that it selects, but it forms a complex head with its host and any heads that that host selects:

(61)

---
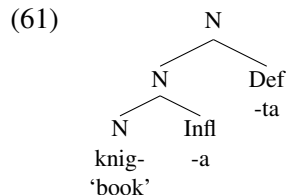
[6]If two nouns are instead coordinated collectively, then both nouns are marked with the definite marker:

(i) bašta-**ta** i   sin*(-at)
     father-Def and son-Def
   'the father and the son' (Adamson 2019: 86, note 19, (ii))

It seems likely that this is coordination of two full NPs, rather than just coordination of Ns. If that is the case, then it should not be possible to modify them both with a single adjective, for instance, 'the tall father and son' (possible in English). Data like this are currently lacking.

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What Def selects is a category of elements that are capable of bearing nominal inflection, as already noted. I assume that these all have something in common, call it a feature [+ϕ] to indicate that it has ϕ-features that need to be realized (following roughly Adamson 2022). Def then selects something with the feature [+ϕ]. As described above, it will be merged as soon as there is something present in the structure being built that has this feature. In the top-down/left-to-right system assumed here, this will always put it on the leftmost element with the selected feature.

To go through an example, consider the case of coordinated adjectives from above (58):

(62) prohladna-**ta** i   sveža večer
       cool-Def   and fresh evening
       'the cool and fresh evening' (Harizanov & Gribanova 2015)

The structure of coordination is not particularly important here (although it could be, in deciding between top-down and left-to-right structure building, but I will not do that here). I will assume that coordination is asymmetric, but what the labels are does not matter. The two conjuncts could be specifier and complement of the head & (e.g., Munn 1987, Johannessen 1998, Zhang 2010, Murphy & Puškar 2018), or the structure could be an adjunction structure with the labels of the conjuncts projecting (e.g., Moltmann 1992, Munn 1993, Bruening & Al Khalaf 2020). I will be uncommitted and leave the nodes unlabeled:

(63)
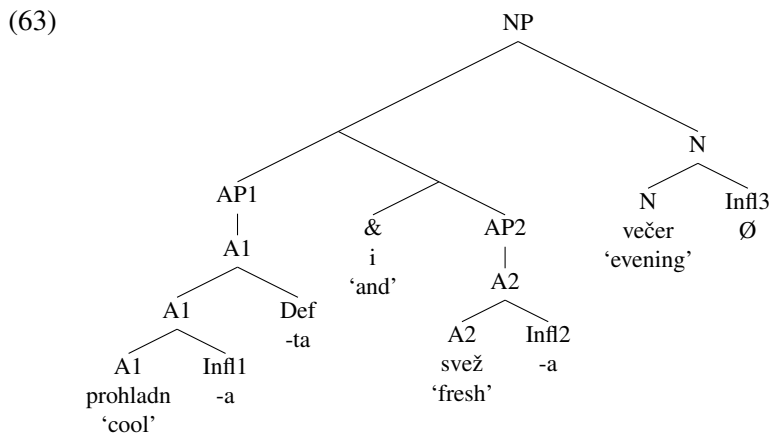
As described above, the syntax starts building the phase by selecting the head of the phase, which in this case is N. As before, it does not actually merge the head N, instead it creates something of the bare category N:

(64) N

Then the syntax asks whether N requires a specifier (it does not), and whether there are any adjuncts that select NP. In this case, the syntax does want to merge an adjunct, an adjective. So it selects an adjective, but does not merge it yet; instead it merges something of category A as a daughter of the previously created node:
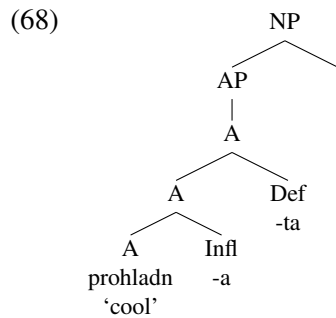
(65) NP
      ⌒
     A

The syntax now asks whether A requires a specifier or whether merging any adjuncts that select APs is desired. The answer to both questions is no, so the syntax merges the A head:
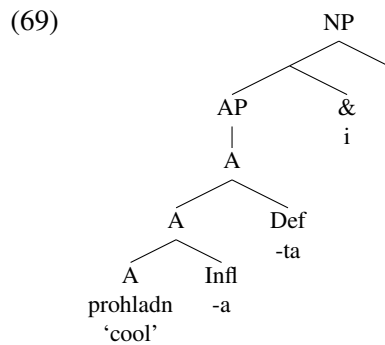
(66)

```
        NP
       /\
   AP
   |
   A
prohladn
 'cool'
```
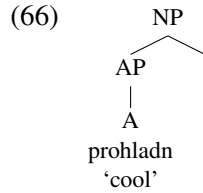
A heads select an Infl, so an Infl head has to be merged with A:

(67)

```
            NP
           /\
      AP
      |
      A
     /\
   A     Infl
prohladn  -a
 'cool'
```
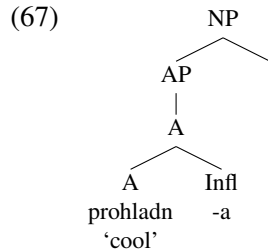
A heads are also [+φ], and the syntax wants to merge an adjunct that selects [+φ], namely Def, so Def is merged with the A:

(68)

```
                NP
               /\
         AP
         |
         A
        /\
      A     Def
     /\     -ta
   A    Infl
prohladn  -a
 'cool'
```
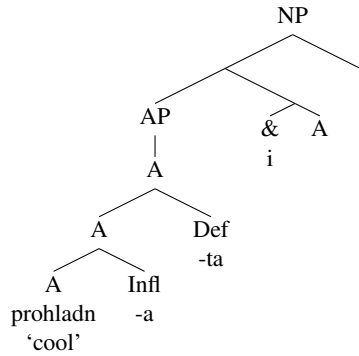
The syntax now decides that it wants to coordinate the AP with another AP, so it selects the coordinator and merges it with the AP:

(69)

```
                  NP
                 /\
           AP      &
           |       i
           A
          /\
        A     Def
       /\     -ta
     A    Infl
prohladn  -a
 'cool'
```
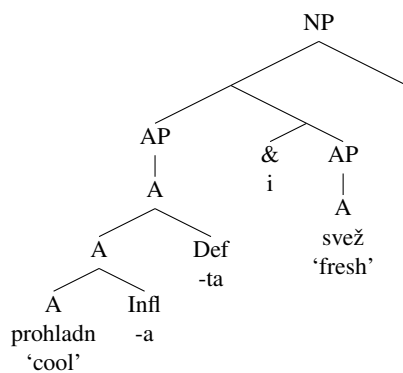
Coordinators require another instance of the same category (or at least a compatible category), so the second A is selected but not yet merged, instead only the bare category is:
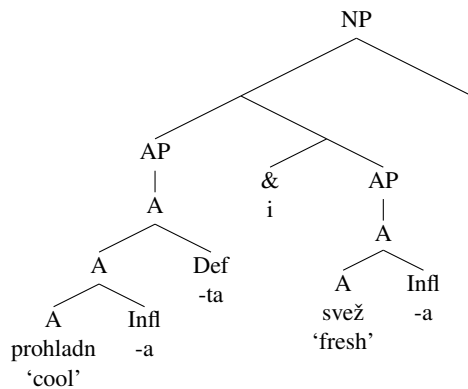
(70)

```
                              NP
                  ┌────────────┴────────┐
                AP              ┌───────┴───┐
                │               &           A
                A               i
           ┌────┴────┐
           A         Def
       ┌───┴───┐     -ta
       A      Infl
    prohladn   -a
     'cool'
```

This A does not require a specifier and the syntax does not decide to merge an adjunct that selects AP, so the head A is merged:
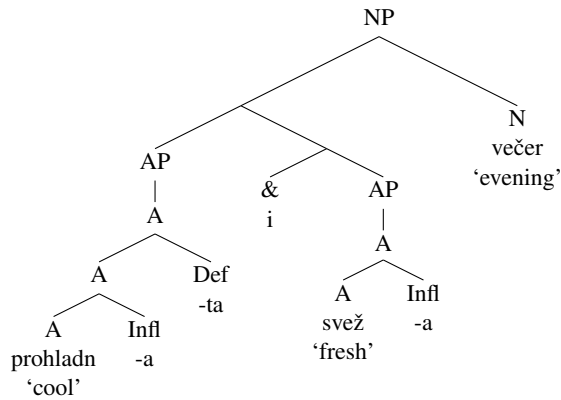
(71)

```
                              NP
                  ┌────────────┴────────┐
                AP              ┌───────┴───────┐
                │               &              AP
                A               i               │
           ┌────┴────┐                          A
           A         Def                       svež
       ┌───┴───┐     -ta                      'fresh'
       A      Infl
    prohladn   -a
     'cool'
```

A again selects an Infl, so one is merged:

(72)

```
                              NP
                  ┌────────────┴──────────────┐
                AP                  ┌──────────┴───────┐
                │                   &                 AP
                A                   i                  │
           ┌────┴────┐                                 A
           A         Def                          ┌────┴────┐
       ┌───┴───┐     -ta                          A       Infl
       A      Infl                              svež       -a
    prohladn   -a                              'fresh'
     'cool'
```
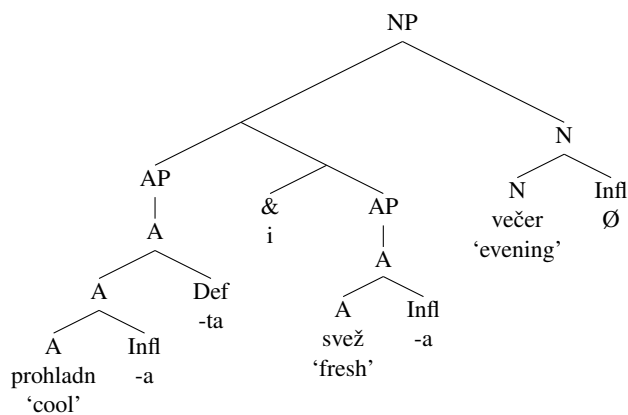
At this point, the syntax asks if there are any head adjuncts that select A. A is [+ϕ], but Def has already been merged into the NP phase, and the NP phase is limited to one instance of Def. So Def cannot be merged here. The syntax therefore moves on. No other adjuncts to N are desired, so N is merged:

(73)

```
                                    NP
                     _____
                    /                           \
               ____/____                          N
              /    \    \                      večer
            AP      \    \                    'evening'
            |        &    AP
            A        i    |
         ___/___          A
        /       \      ___/___
       A        Def   /       \
    ___/___     -ta  A        Infl
   /       \        svež       -a
  A        Infl    'fresh'
prohladn   -a
 'cool'
```

Ns also require an Infl head in Bulgarian, so one must be merged (this one is null):

(74)

```
                                    NP
                     _____
                    /                           \
               ____/____                          N
              /    \    \                      ___/___
            AP      \    \                    /       \
            |        &    AP                 N        Infl
            A        i    |               večer        Ø
         ___/___          A             'evening'
        /       \      ___/___
       A        Def   /       \
    ___/___     -ta  A        Infl
   /       \        svež       -a
  A        Infl    'fresh'
prohladn   -a
 'cool'
```

N is also [+ϕ], but again, Def has already been merged in this NP phase, and NP phases are limited to one instance of Def. So Def cannot be merged with the head N in this case.

This completes the derivation of the phase. Def has been placed correctly on the first element that is capable of bearing nominal inflection (the first [+ϕ] element in the NP).

As for its semantics, I propose that Def triggers a type-shifting rule that applies to the NP it is part of. This rule shifts the type of NP from a property f of type $\langle$e,t$\rangle$ to an individual of type e, and it adds the presupposition that there is a unique, identifiable individual with property f. One way of spelling this out formally is to propose that Def has an interpretable [+Def] feature, which percolates to the highest NP node. At the highest NP node, it is this feature that is interpreted as a type-shifting rule.

It should be clear from the example just gone through how the definite suffix is located on the first/highest element of the NP that bears nominal inflection. In all cases, the system will correctly place the definite suffix on the first head that is merged into the NP phase that is [+ϕ]. If there is only a head noun, as in (56a), Def will be merged with that (outside of its selected Infl head). If there is a prenominal modifier, as in (56b), Def will go on that instead. If there are two, it will go on the first one, as in (56c), exactly as in the case of coordinated adjectives gone through in detail above. Def will not attach to any heads that are not [+ϕ], so it will skip over adverbs as in (57). If two head nouns are coordinated, Def will attach to the first one (59); this will work in exactly the same way as coordinated adjectives.

This captures the basic facts of the distribution of the definite suffix in Bulgarian. There are of course several complications, but they can be fit into the system easily. For instance, there are different placement possibilities with complex numerals; see Adamson (2022). Adamson (2022) outlines an approach to these that can be adapted to the current analysis. Adamson (2022) also shows that there are certain borrowed adjectives that are exceptional in not permitting nominal inflection. An example follows.

(75) % erbap   žena-ta
      skillful woman-Def
      'the skillful woman' (Adamson 2022: 4, (27))

For some speakers, these elements are transparent to the definite marker: it just skips over them. In the current proposal, for those speakers these items would just not be [+φ]. They are then ignored for the placement of Def, and Def will be merged with the first [+φ] element that is merged into the NP (the N in (75)). For other speakers, however, having the definite article with one of these modifiers is ungrammatical. For these speakers, such modifiers must be [+φ], so that Def merges with them (if they are the first [+φ] element in the NP). But then this must violate the grammar in some way. I suggest that the violation concerns agreement. In (60), it should be clear that the form of Def varies according to the number and gender of the head noun. It is not just the Infl node whose form varies according to these features. Franks (2001) describes how the form of Def is determined as follows:

(76) If the stem ends in an -a, then the article is always *ta*, otherwise it depends on morphological properties of the stem. (Franks 2001: 57, (12))

If this description is accurate, then the form of Def is determined by the form of the Infl node immediately to its left. That is, Def does not itself agree with the head noun; it takes its form based on the Infl node it is adjacent to. Then Def cannot have its form determined with non-inflecting modifiers like *erbap*, since they do not have an Infl node. In the current proposal, they are [+φ] for the relevant speakers but do not select an Infl node. Then the form of Def cannot be determined, and the derivation crashes. Def also cannot be merged somewhere else, because it always has to merge as soon as its selectional requirements can be satisfied.

An additional complication is that Bulgarian also has clitic forms of possessive pronouns that have the same distribution as the definite marker. They also attach to the first [+φ] element in the NP, outside of Def:

(77) (Franks 2001: 59, (23e–f))

   a.   mnogo-to **ti**   novi knigi
        many-the your new books
        'your many new books'

   b.   večno   mlada-ta **ni** stolica
        perpetually young-Def our capital
        'our perpetually young capital'

One issue that has been discussed heavily in the literature on this topic in Bulgarian is that Def has all the properties of a canonical affix, like idiosyncratic phonology and arbitrary gaps, but the clitic pronouns do not, they behave like clitics (see, e.g., Franks 2001, Embick & Noyer 2001). Embick & Noyer (2001) correctly point out that this is not a problem if the same mechanism puts them in their position. In the current proposal, the clitic pronouns would also be head adjuncts that select a head with the feature [+φ]. The only difference between them and Def is in the nature of the phonological boundary between them and their host. For instance, there might be a Prosodic Word boundary between Def and the clitic pronouns; the clitic pronouns would be adjoined to the Prosodic Word, while Def is part of the Prosodic Word of its host (see Franks 2001 on final devoicing, which is blocked by vowel-initial Def but not a vowel-initial clitic pronoun).

Assuming all of the complications can be assimilated into the system (and I do not see any problems),[7] the current proposal correctly captures the distribution of the definite suffix in Bulgarian. In its empirical

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[7]One issue is the possibility of multiple determination, but Rudin (2018) concludes that this is a different phenomenon (see especially her footnote 16). From the description in Rudin (2018), it appears that multiple determination in the colloquial language is an agreement phenomenon contingent on the presence of a demonstrative.

coverage, it is essentially equivalent to several other proposals in the literature. For instance, Adamson (2022) and Koev (2011) both locate Def on the $[+\phi]$ element in the NP that is not c-commanded by any other such element; this is the *highest* one (see Adamson 2022 for the structure he assumes for coordination, which is different from the one here). Harizanov (2018) locates Def on the *leftmost* agreeing head. Since "leftmost" (or "first") and "highest" are equivalent in Bulgarian NPs (depending on one's assumptions regarding coordination), these are equivalent descriptions. Since I have not committed to "leftmost" versus "highest," both are equivalent to the system developed here (note that coordination does seem to favor a linear description, on the simplest assumptions).

Distinguishing between these theories and the current one therefore comes down to conceptual issues. Koev (2011) (and Franks 2001) treat Def as an agreement affix, agreeing with an abstract D. Adamson (2022) criticizes this approach on the following grounds: (i) The agreement approach must stipulate that the D head is null; (ii) The possessive clitic pronouns should presumably be treated in the same way, as agreement, but they do not behave the same when a floating quantifier agrees with an NP. A floating quantifier agrees in definiteness with the NP it modifies, but it does not show agreement for a possessive pronoun (see Adamson 2022: 6, (40)). The current approach is to be preferred to the agreement approach for the same reasons: It has only a single instance of Def, the one that is spelled out, and it would not lead to the expectation that a clitic possessive pronoun would be copied on a floating quantifier (it is not clear to me how strong this latter argument is, as it is not clear that the agreement approach would lead to this expectation, either).

Adamson's (2022) own approach is a variant of that in Embick & Noyer (2001), where the head D lowers onto its host at a post-syntactic level of grammar (this is also the analysis in Harizanov 2018). The current proposal is clearly superior to this, as it does not need post-syntactic levels of grammar and it does not need operations like lowering. The Def affix is placed where it goes by Merge, the operation that places all elements in syntax. Merge of Def is driven by selection, which is what drives Merge generally. The current proposal is maximally simple, and therefore to be preferred. It also relates the Bulgarian definite marker to English affixal negation *n't*, something that no other analysis does, but which is desirable given the striking parallels between them.[8]

7   Conclusion

In this paper, I have proposed an analysis of English negation that treats both *not* and *n't* as adjuncts. *Not* is a phrasal adjunct and *n't* is a head adjunct. I have shown that there is no motivation for NegP projections, and in particular no motivation for multiple NegP projections ("high" and "low"). Viewing syntax as being built in a top-down or left-to-right fashion rather than bottom-up correctly locates both *not* and *n't* on the *first* element of the appropriate type, given a principle that merges things as soon as they can be. I have also shown that the definite marker in Bulgarian can be analyzed in the same way, without the need for post-syntactic operations.

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[8]English affixal negation does not behave like the Bulgarian definite marker in coordination. In Bulgarian, a single definite marker can be shared across conjuncts (conjoined nouns or conjoined adjectives). This is not possible for English affixal negation. If there is only one instance of negation, the other conjunct is interpreted as positive (ia–ib):

(i)   a.   She won't but could reset the machine.
       b.   She can but won't reset the machine.
       c.   She can't and won't reset the machine.

Note that the coordinator *and* is much less felicitous than *but*, for exactly this reason: The two conjuncts contrast in their polarity. In (ic), we can see that *both* conjuncts can have negation. It is clear that affixal negation cannot be shared across conjuncts and must be contentful in each conjunct. It seems likely that coordination here involves coordination of larger categories plus ellipsis. Note that adverbs can also appear: *She can but probably won't reset the machine*, or *She won't but probably could reset the machine*. I take this to show that coordination here has to include much more than just two heads (cf. Bruening 2018b,a).

This approach requires that we recognize the existence of adjuncts that are heads. We should actually expect such things; there is no reason there should not be heads that are adjuncts. In addition to English *n't* and the Bulgarian definite marker, candidates might include the Amharic definite marker (Kramer 2010) and the person prefix that appears on Independent Order verbs in Algonquian languages (work by the author in preparation).

The current proposal also has implications for the typology of negation. Zeijlstra (2004) proposes that negation can either be an adverb, or a head heading a NegP projection. In the current proposal, negation can also be a head that does not head a NegP projection, but behaves like an adjunct. It is not clear how this would fit into Zeijlstra's typology. On the one hand, it could be viewed as a type of adverb. On the other hand, it could behave like a head. If it is viewed as an adverb, then there cannot be any necessary connection between head status and negative concord, as Zeijlstra proposes, since many non-standard varieties of English have negative concord. If it is viewed as a head, then just being a head must be sufficient to license negative concord, without needing to head a NegP in the clause. The current proposal should also invite us to rethink the analysis of negation in other languages where NegPs have been proposed.

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