Lo en beh*al*d:

Interactions between φ-features, tense, and negation in Hebrew

Noah Gershenson

Advisors: Jim Wood & Raffaella Zanuttini

Abstract

All languages have the ability to form positive and negative sentences, but of the world's roughly 7000 languages, there is very little cross-linguistic variation of sentential negation. Negative markers can be added to affirmative sentences to change the interpretation of the clause to have negative polarity. Hebrew is particularly interesting, in that it has three negative markers for sentential negation: *lo*, *en*, and *al*. Each of these negative markers has its own distribution, being restricted to use in a particular tense, in a specific location relative to the verb, or alongside a selected maximal projection. Further, agreement with the subject can be observed on the negative marker in some cases. This essay addresses these distributions of Hebrew's negative markers, providing a syntactic explanation of how they interact with other constituents. I argue that each negative marker has a different set of features that form Agree relations with other elements in the sentence. These feature bundles on the Neg heads include specifications for tense, φ-features, mood, as well as selectional requirements in some cases.

1   Introduction

All languages have the ability to form positive and negative sentences. Despite the presence of negation in every world language, there is surprisingly little variation in the syntactic structure of negative sentences. Some languages negate sentences with immediately pre- or post-verbal negative markers, some with fronted negative markers, some with affixal negative marking, and many languages allow for combinations of these[1].

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[1]The abbreviations used in the glosses of this essay are as follows: SG-singular, PL-plural, 3-third person, 2-second person, 1-first person, M-masculine, F-feminine, NEG-negative marker, PAST-past tense, PRES-present tense, FUT-future tense, DAT-dative, NOM-nominative, ACC-accusative, ET-Hebrew definite direct object marker, IMP-imperative, INDIC-indicative, INF-infinitive, SUBJ-subjunctive, EXIST-existential marker.

(1) a. *Er   kam   **nicht**.* (German)

3SG.M come.PAST.3SG NEG

'He didn't come.' (Jäger & Penka 2012:8)

b. *Gianni **non** legge   articoli di sintassi.* (Italian)

Gianni NEG read.PRES.3SG aricles of syntax

'Gianni doesn't read syntax articles.' (Zanuttini 1997:4)

c. *Il   **ne**   marche   **pas**.* (French)

3SG.M NEG walk.PRES.3SG NEG

'He doesn't walk.' (Zanuttini 1997:14)

d. *Ne   anne-m   ne baba-m   ev-e   gel-**me**-di.*   (Turkish)

neither mother-1SG nor father-1SG home-DAT come-NEG-PAST.3SG

'Neither my mother nor my father came home.' (Şener & İşsever 2003:1091)

In (1a) we see that German *nicht* appears in a post-verbal position. Italian shows pre-verbal negation with *non* preceding the verb *legge* 'read' in (1b). French two-part negation—pre- and post-verbal parts—can be seen in (1c) with *ne...pas* surrounding the verb *marche* 'walk'. Affixal negation is used in Turkish sentences (1d) with the negative morpheme *-me-* sitting between the verb stem and the inflectional ending of the verb.

A slightly more restricted phenomenon found crosslinguistically is agreement. Simply put, agreement is the co-variance of features, meaning that two separate elements of a sentence convey the same feature, be it φ-features or some other syntactic feature (e.g. Tense).

(2) a. I am a student. You are a student.

b. *une pomme verte*   (French)

a.F apple   green.F

'a green apple'

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c. *ʃnei   s'farim   ve-ʃtei   mitot* (Hebrew)

    two.M books.M and-two.F beds.F

    'two books and two beds'

In (2a) we see that English has subject-verb agreement, with the verb form changing with the subject to represent different person and number features. Romance (and many other language families) have adjectival agreement, displayed in (2b), where we see the grammatical gender of *pomme* 'apple' displayed on both the article and the adjective. We see that adjectival φ-feature agreement can extend even to numerals through the Hebrew example in (2c) where there are masculine *ʃnei* and feminine *ʃtei* forms for the number 'two'. Agreement between many different types of constituent is possible, however some are more common than others.

The Semitic languages Arabic and Hebrew are both interesting in that they display agreement morphology on their negative markers.

(3) a. ***lan***   *ya-xruʒa*   *Zayd-un*   *ɣad-an*   (Arabic)

    NEG.FUT FUT-go.out.3SG Zayd-NOM tomorrow-ACC

    'Zayd won't go out tomorrow' (Loutfi 2017:40)

   b. *Yoni **en-o**   m'vaʃel.*   (Hebrew)

    John NEG-3SG.M cook.PRES.SG.M

    'John doesn't cook.'

Arabic has Neg-Tense agreement (3a), with the negative marker *lan* carrying a future tense feature unlike other negative markers *laa* and *lam* which carry present and past tense features respectively. It is rare that agreement and negation intersect, but examples from Arabic show us that it is not impossible. Hebrew, as well, is capable of displaying agreement with negation, as seen in (3b). The negative marker *en* bears an inflectional suffix *-o* to show φ-feature agreement with the subject *Yoni*.

These data give rise to two important questions: where is the negative marker located in

the structure, and what accounts for the subject agreement on negative markers?

These questions have been discussed in the syntactic literature, landing on two important points. First, that there is a NegP projection in the structure of negative sentences that yields a negative reading (Pollock 1989; Laka 1990; Zanuttini 1997, 2001). This NegP is not restricted to one specific location, but rather can be either *high* or *low*—whether the NegP projection is found above TP and below CP or below TP and above vP. Each of these locations is proposed to have significant effects on the derivation of negative sentences (Zanuttini 2001). Second, agreement between two elements of the structure is possible, either through Spec-head agreement (Kayne 1994; Chomsky 1995) or the more recent Agree operation (Chomsky 2001). While drawing an empirical distinction between these two models for agreement will not be the purpose of this essay, it is important to note that previous approaches to the topic have made use of both.

Various frameworks, including Minimalism, highlight the use of features in deriving the structure of a sentence (Chomsky 1995). Variation between languages, and even within one language, can be analyzed, in part, through the presence or absence of different features on syntactic terminals. This notion of features provides a way to distinguish between lexical items that occupy the same head, but have different distributions in their language.

In this senior essay, I will address these issues surrounding negation by focusing on sentential negation in Hebrew, both declarative and imperative. I propose that Hebrew utilizes a high NegP projection for sentential negation, similar to previous analyses (Shlonsky 1997). There are several negative markers in Hebrew, two are used to negate declarative, interrogative, and exclamative sentences—and more generally all sentence types except for imperatives. I will at times refer to the type of negation that we find in this broad range of sentences as *declarative negation.* In order to explain their distributions, I suggest that each negative marker has a different set of features which allow for the formation of Agree relations with other lexical items in the structure. If this is on the right track, it will provide a description of the distribution of negative markers in Hebrew, and will also give insight

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into how negative markers within a language can vary.

This essay is structured as follows. Section 2 discusses the distribution of negative markers in Hebrew in greater detail. I begin my analysis of Hebrew declarative negation in section 3, beginning with determining the location of the NegP projection in section 3.1. In section 3.2, I discuss previous analyses of negative markers in Hebrew which utilize Spec-head agreement, and propose an analysis of declarative negation based on the variation of features on syntactic heads. Section 4 turns towards imperative negation, drawing on the use of Jussive projections to introduce inherent person features to imperatives (Zanuttini 2008). This section also discusses Mood features and their interaction with the negative marker *al*. I conclude in section 5.

2 Overview of sentential negation in Hebrew

Hebrew has several negative markers used to negate verbal elements at the sentence level, two for declarative negation—*lo* and *en*—and one for negating imperative sentences—*al*. Shlonsky (1997) observes that *lo* must occur immediately pre-verbally. In the presence of an auxiliary verb, *lo* will occur immediately to the left of the auxiliary. He explains that this adjacency requirement is absolute and that adjuncts or parentheticals cannot intervene between *lo* and the verb. Consider the following examples from Shlonsky (1997:12):

(4) a. *Dani lo   afa   ugot.*

        Dani NEG bake.PAST.3SG.M cakes

        'Dani didn't bake cakes.'

    b. *Dani lo   haya   ofe   ugot.*

        Dani NEG be.PAST.3SG.M bake.PRES.SG.M cakes

        'Dani didn't used to bake cakes.'

(5) a. * *Dani lo   kanire   afa   ugot.*

    Dani NEG apparently bake.PAST.3SG.M cakes

    'Dani apparently didn't bake cakes.'

   b. * *Dani lo   lada'ati   afa   ugot.*

    Dani NEG in.opinion.1SG bake.PAST.3SG.M cakes

    'Dani, in my opinion, didn't bake cakes.'

(6) a. *Dani kanire   lo   afa   ugot.*

    Dani apparently NEG bake.PAST.3SG.M cakes

    'Dani apparently baked cakes.'

   b. *Dani lada'ati   lo   afa   ugot.*

    Dani in.opinion.1SG NEG bake.PAST.3SG.M cakes

    'Dani, in my opinion, baked cakes.'

In (4a) we see *lo* directly preceding the verb *'afa*, and in (4b) it directly precedes the auxiliary verb *haya*. When adding adverbials in (5) and (6), we find that it is ungrammatical for the phrases *kanire* 'apparently' (5a) or *lada'ati* 'in my opinion' (5b) to intervene between the negative marker and the verb.

The negative marker *en* can occur either after the subject (like *lo*) or before the subject. When *en* occurs after the subject, it will be inflected with the φ-features (person, number, and gender) of the subject. In contrast, when *en* precedes the subject it will not be inflected. Consider the following examples from Shlonsky (1997:58-60):

(7) *Ruti yoda'at   et   ha-tʃuva.*

   Ruti know.PRES.SG.F ET the-answer

   'Ruti knows the answer.'

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(8) a. *Ruti en-a   yoda'at   et ha-tʃuva.*

   Ruti NEG-3SG.F know.PRES.SG.F ET the-answer

   'Ruti doesn't know the answer.'

   b. * *En-a   Ruti yoda'at   et ha-tʃuva.*

   NEG-3SG.F Ruti know.PRES.SG.F ET the-answer

   'Ruti doesn't know the answer.'

   c. *En   Ruti yoda'at   et ha-tʃuva.*

   NEG Ruti know.PRES.SG.F ET the-answer

   'Ruti doesn't know the answer.'

   d. * *Ruti en   yoda'at   et ha-tʃuva.*

   Ruti NEG know.PRES.SG.F ET the-answer

   'Ruti doesn't know the answer.'

The examples in (8) show the usage of *en* as it relates to word order. (8a) shows that
when *en* appears after the subject, it is inflected with the φ-features of the subject. It is
ungrammatical for the negative marker to bear φ-features if it precedes the subject, as in
(8b). In contrast, the uninflected form of *en* is grammatical only when it occurs before the
subject (8c) and is not acceptable if the subject precedes it (8d).

(9) a. * *En   Ruti tafra   smalot.*

   NEG Ruti sew.PAST.3SG.F dresses

   INTENDED: 'Ruti didn't sew dresses.'

   b. * *Ruti en-a   titfor   smalot.*

   Ruti NEG-3SG.F sew.FUT.3SG.F dresses

   INTENDED: 'Ruti didn't sew dresses.'

Unlike *lo, en* is only used in the present tense, regardless of whether it comes before or after
the subject. We see that the past tense verb *tafra* 'sewed' in (9a) and the future tense verb
titfor 'will sew' in (9b) are ungrammatical with *en*.

It is also important to note that the two negative markers *lo* and *en* cannot co-occur, as shown in the following example (Shlonsky 1997:61).

(10) * *Ruti lo   en-a   yoda'at   et ha-tʃuva.*
      Ruti NEG NEG-3SG.F know.PRES.SG.F ET the-answer
      INTENDED: 'Ruti didn't sew dresses.'

Turning to negative marking in imperative sentences, we see that the standard negative marker *lo* is ungrammatical with imperative verbs. While it is unclear at the moment what tense imperative verbs use, it is not present tense and thus *en* will not be compatible. I discuss the uses of *en* in imperative constructions more thoroughly in sections 3.1.2 and 4.

(11) a. *Baʃli   et ha-maraq.*
       cook.IMP.2SG.F ET the-soup
       'Cook the soup!'

    b. * *Lo   baʃli   et ha-maraq.*
       NEG cook.IMP.2SG.F ET the-soup
       INTENDED: 'Don't cook the soup!'

(11b) shows the ungrammaticality of using *lo* with the imperative verb *baʃli* 'cook'. Instead, to negate imperative clauses we use the morpheme *al*.

(12) a. *Al   t'vaʃli   et ha-maraq.*
       NEG cook.FUT.2SG.F ET the-soup
       'Don't cook the soup!'

    b. * *Al   baʃli   et ha-maraq.*
       NEG cook.IMP.2SG.F ET the-soup
       INTENDED: 'Cook the soup!'

Al in conjunction with a future tense verb results in an imperative sentence, as shown in (12a). Note that the future tense verb is necessary to form a grammatical negative imperative

using *al*. (12b) shows that the imperative verb *baʃli* 'cook' cannot be used with *al* to form a negative imperative. [2]

Zanuttini (1997) refers to verbal forms unique to the imperative paradigm as *true imperatives*. When a verb form that is not unique to the imperative paradigm (i.e. the form can be used in declarative, interrogative, exclamative, etc. sentences) is used to form an imperative sentence, she refers to the form as a *suppletive imperative*. She observes that Italian has both true imperatives and suppletive imperatives with the following examples (Zanuttini 1997:106):

(14) a. *Telefona!*   (true imperative)

         call.IMP.2SG

         'Call!'

      b. *Telefonate!*   (suppletive imperative)

         call.INDIC.2PL

         'Call!'

Hebrew has a true imperative, seen in (11a) as *baʃli* 'cook', but it can only be used in affirmative imperative sentences, as we can see from the ungrammaticality of (11b) and (12b). A suppletive imperative must be used in negative imperative constructions. The future tense is the suppletive form used in Hebrew negative imperatives, seen in (12a) with the verb *t'vaʃli* 'cook'.

Now that I have described the contexts in which Hebrew's three sentential negative markers occur, I will begin to describe the factors that lead to their distribution. Hebrew is interesting in that it has several different options for sentential negation, but there is no difference in meaning between them. This leads me to believe that the negative markers in

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[2]While using *lo* with a future tense verb form is a grammatical sentence with a future tense interpretation, it will not result in an imperative reading as seen in the following example.

(13) # *Lo*   *t'vaʃli*   *et*   *ha-maraq.*
         NEG cook.FUT.2SG.F ET the-soup
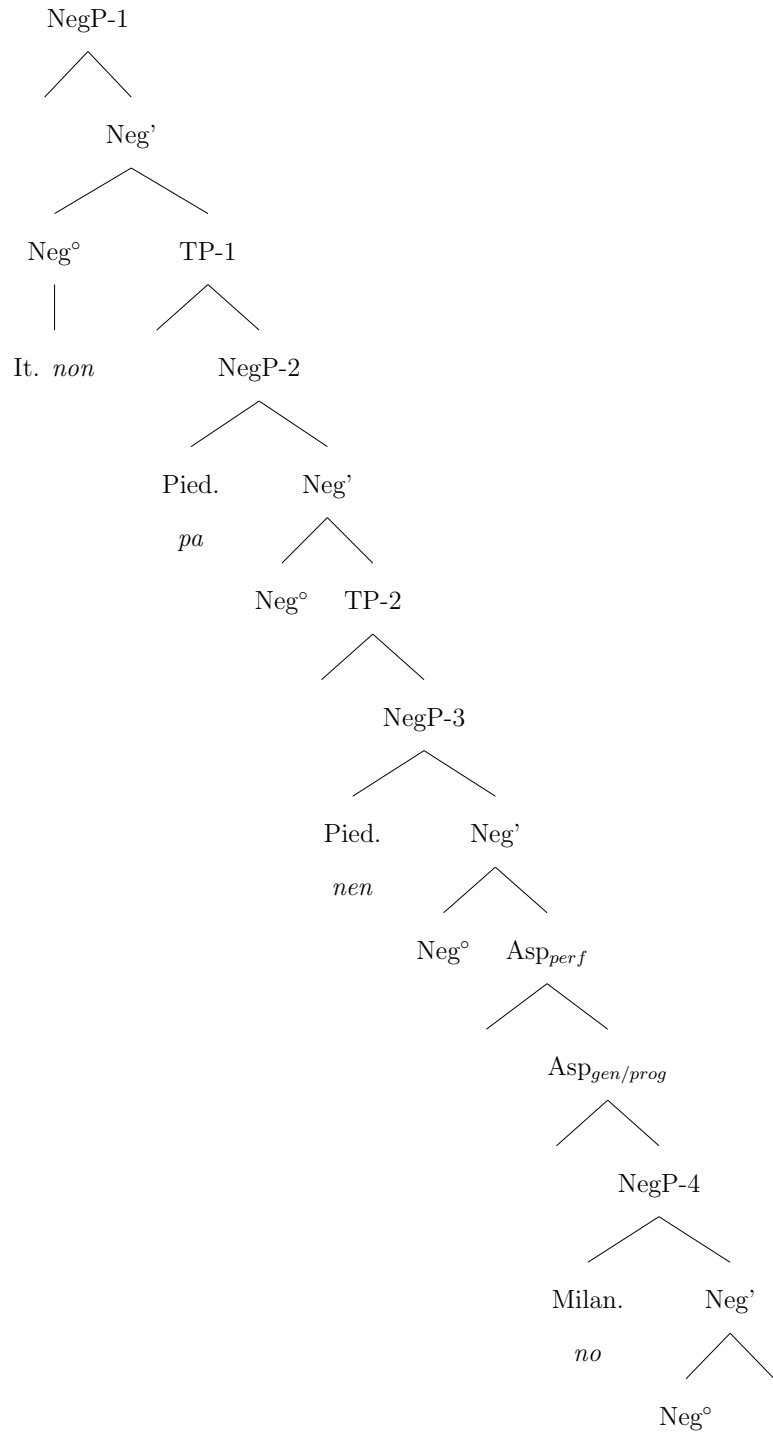   INTENDED: 'Don't cook the soup!'

Hebrew vary on a syntactic level (rather than a semantic one), which will be explored in the following sections.

3 Declarative Negation

3.1 Location of the negative marker

In order to begin the analysis of negative markers in declarative sentences, we must determine where the negative marker is merged in the structure. Following the syntax literature (Pollock 1989; Laka 1990), I will use a NegP projection to do this. This projection does not have a fixed postition in the structure, and several possible locations for NegP have been described; notably Zanuttini (1997) lists four sites for the NegP projection, the highest of which (her NegP-1) I will refer to as High-Neg. The following structure diagrams the available positions of NegP that Zanuttini posits for Romance (Zanuttini 2001:532).

(15)

NegP-1
 Neg'
  Neg°   TP-1
   It. *non*   NegP-2
          Pied.   Neg'
          pa   Neg°   TP-2
                       NegP-3
                   Pied.   Neg'
                   nen   Neg° Asp_{perf}
                                $\text{Asp}_{gen/prog}$
                                     NegP-4
                                 Milan.   Neg'
                                 no   Neg°

Shlonsky (1997) states that word order alone in Hebrew suggests that NegP will be high in the structure, above TP but below AgrP. Zanuttini (1997, 2001) proposes that for Romance languages, a High-Neg such as Shlonsky posits bears certain characteristics: namely that pre-verbal negative markers which negate a sentence on their own will precede clitics, show

negative concord, and be incompatible with true imperatives. As Hebrew does not have clitics similar to those seen in Romance languages, I will look at the latter two of these characteristics.

Before I delve into these two tests, I will also note that I will analyze negative markers in Hebrew as syntactic heads, rather than maximal projections in the specifier of NegP akin to English *not* or French *pas*. This follows the work of Shlonsky, who states that a straightforward way to account for the "inviolability of the cluster formed by the negative particle and the verb" (Shlonsky 1997:13), is to place *lo* in the head position of NegP. He indicates that *lo* must raise with the verb in instances of subject-verb inversion, similar to the behaviour bound morphemes, or affixal heads. The negative marker *en* is analyzed as a head in Shlonsky's work due to its ability to "manifest an agreement affix, patterning like an X° and not like an XP, since the capacity to bear agreement affixes is a property of heads and not of maximal projections" (Shlonsky 1997:60).

3.1.1 Negative Concord in Hebrew

As I described in section 2, sentential negation in Hebrew is strictly pre-verbal. Zanuttini explains Negative Concord (NC) as "the co-occurrence of more than one negative element in the same clause with the interpretation of a single instance of negation" (Zanuttini 1997:9). This can be either the co-occurrence of a negative marker and negative constituents, or the co-occurrence of negative constituents. We can make use of the fragment test for negative constituents to determine which elements we expect to see in Hebrew sentences that display NC. A negative constituent will retain a negative interpretation when it is a sentence fragment, as seen in the following examples.

(16) a. *Ma ra'ita ba-parq?* **ʃum-dvar**.

       what see.PAST.2SG.M in.the-park nothing

       'What did you see in the park? Nothing.'

b. *Matai atem oxlim   basar?* **Af-pa'am.**

    when 2.PL eat.PRES.PL meat   never

    'When do you eat meat? Never.'

c. *Mi   ohev   livnot   batim?* **Af-exad.**

    who like.PRES.SG build.INF house.PL no.one

    'Who likes to build houses? No one.'

(17) a. # *Ma   ra'ita   ba-parq?* **Maʃehu.**

        what see.PAST.2SG.M in.the-park something

        INTENDED: 'What did you see in the park? Nothing.'

    b. # *Mi   ohev   livnot   batim?* **Miʃehu.**

        who like.PRES.SG build.INF house.PL someone

        INTENDED: 'Who likes to build houses? No one.'

The bolded words in (16) all retain an inherent negative interpretation when used as sentence fragments. This indicates that they are negative constituents. The words in bold in (17), however, do not yield a negative interpretation when they appear as fragments, suggesting that they are not negative constituents. When these negative constituents are used in sentences (as opposed to fragments), as seen in the following examples, they must co-occur with a pre-verbal negative marker.

(18) a. *(Ani) lo   ra'iti   ʃum-davar ba-ʃuk.*

      (I)   NEG see.PAST.1SG nothing   in.the-store

      'I didn't see anything in the store.'

    b. * *(Ani) ra'iti   ʃum-davar ba-ʃuk.*

      (I)   see.PAST.1SG nothing   in.the-store

    c. * *(Ani) lo   ra'iti   maʃehu   ba-ʃuk.*

      (I)   NEG see.PAST.1SG something in.the-store

(19) a. *At* **af-pa'am** *lo* *ba'a* *la-ʃuk* *iti.*

2SG.F never NEG come.PRES.2SG.F to.the-store with.1SG

'You never come to the store with me.'

b. * *At* **af-pa'am** *ba'a* *la-ʃuk* *iti.*

2SG.F never come.PRES.2SG.F to.the-store with.1SG

(20) a. **Af-exad** *lo* *ohev* *lirot* *la-ʃemeʃ.*

no.one NEG like.PRES.3SG.M see.INF to.the-sun

'No one likes to look at the sun.'

b. * **Af-exad** *ohev* *lirot* *la-ʃemeʃ.*

no.one like.PRES.3SG.M see.INF to.the-sun

c. * **Miʃehu** *lo* *ohev* *lirot* *la-ʃemeʃ.*

someone NEG like.PRES.3SG.M see.INF to.the-sun

In (18a), (19a), and (20a) we see that the negative constituents *ʃum-davar* 'nothing', *af-paam* 'never', and *af-exad* 'no one' co-occur with the negative marker *lo*. Sentences (18b) and (20b) show that negative constituents are ungrammatical when they do not co-occur with a negative marker. Further, we see that the words that are not negative constituents (*maʃehu 'something'*, *miʃehu*, 'someone') in (18c) and (20c) are ungrammatical in sentences with negative markers. NC is also required in sentences using *en*, as shown by the following examples.

(21) *Af-pa'am en* *Ruti yoda'at* *et* *ha-tʃuva.*

never NEG Ruti know.PRES.SG.F ET the-answer

'Ruti never knows the answer.' (Shlonsky 1997:61)

(22) a. *En* *Ruti yoda'at* *ʃum-davar.*

NEG Ruti know.PRES.SG.F nothing

'Ruti doesn't know anything.'

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b. * *En   Ruti yoda'at   maʃehu.*

    NEG Ruti know.PRES.SG.F anything

    'Ruti doesn't know anything.'

Zanuttini (1997, 2001) states that in Romance, a pre-verbal negative marker that sits high in the structure—in her NegP-1—will show negative concord. We have seen that Hebrew negative markers *lo* and *en* co-occur with negative constituents, indicating that they may be located in Zanuttini's NegP-1 position (High-Neg).

3.1.2 Incompatibility of Hebrew True Imperatives with *lo* and *en*

The other indication from Zanuttini (1997) that a negative marker can be found in NegP-1 is whether or not the negative marker can co-occur with imperative verb forms, or True Imperatives. She states that in Romance, a "pre-verbal negative marker that can negate a clause by [itself is] incompatible with lexical verbs in the imperative form" (Zanuttini 1997:105). As I discussed in section 2, the negative marker *lo* is always ungrammatical with imperative sentences, which favor the negative marker *al* discussed more in-depth in section 4. *En* can be used in imperative sentences (Shlonsky 1997), however the following examples show that it is not grammatical with True Imperatives.

(23) a. *Bashli   et ha-maraq.*

    cook.IMP.2SG.F ET the-soup

    'Cook the soup!'

   b. * *Lo   bashli   et ha-maraq.*

    NEG cook.IMP.2SG.F ET the-soup

(24) a. *En   l'vashel   et ha-maraq.*

    NEG cook.INF ET the-soup

    'Cook the soup!'

b. * *En-ex*   *bashli*   *et*   *ha-maraq.*

      NEG-2SG.F cook.IMP.2SG.F ET the-soup

c. * *En*   *at*   *bashli*   *et*   *ha-maraq.*

      NEG 2SG.F cook.IMP.2SG.F ET the-soup

The affirmative imperative seen in (23a) shows a grammatical usage of a True Imperative which does not co-occur with a negative marker. (23b) shows that the negative marker *lo* is ungrammatical with True Imperatives, and thus patterns with Romance negative markers in NegP-1. The examples in (24b) and (24c) show ungrammatical uses of *en* with True Imperatives, despite its grammaticality with the infinitive form of the verb seen in (24a).

It is now clear that in addition to easily predicting proper word order as discussed in Shlonsky (1997), merging *lo* and *en* in High-Neg is consistent with Romance negative markers located in NegP-1 (Zanuttini 1997). On this basis, I will assume a High-Neg in my analysis of declarative negative markers in Hebrew.

3.2   Structure of negative declaratives

If all of Hebrew's negative markers for declarative sentences are located in a high NegP projection, what accounts for the different distributions of *lo* and *en*? *Lo* always occurs in an immediately pre-verbal position, whereas *en* has the option to come before or after the subject. *En* also has the ability to be inflected with subject agreement morphology, unlike *lo* which can never be inflected. Further, *lo* may be used to negate a sentence of any tense— past, future, or present—while *en* can only be used with present tense predicates. Given that subject agreement and tense are differentiating factors between *lo* and *en*, I posit that the negative marker can be merged into the derivation with syntactic features relating to φ-features and tense. In this essay, I will be using the Probe-Goal Agree relation put forth in Chomsky (2000, 2001).

Previous analysis of the structure of negative declarative sentences in Shlonsky (1997)

posit that there is V-to-T movement (and incorporation) in both sentences that use *lo* and sentences that use *en*. Shlonsky suggests that in sentences with *lo*, the verb will raise again from T to combine with the negative marker in Neg, forming a complex head $[lo + \text{T}]$[3]. From here, the $[lo + \text{T}]$ head raises to AgrS° in Shlonsky's analysis in order to participate in spec-head agreement with the subject which raises to the specifier of AgrSP which sits above NegP.
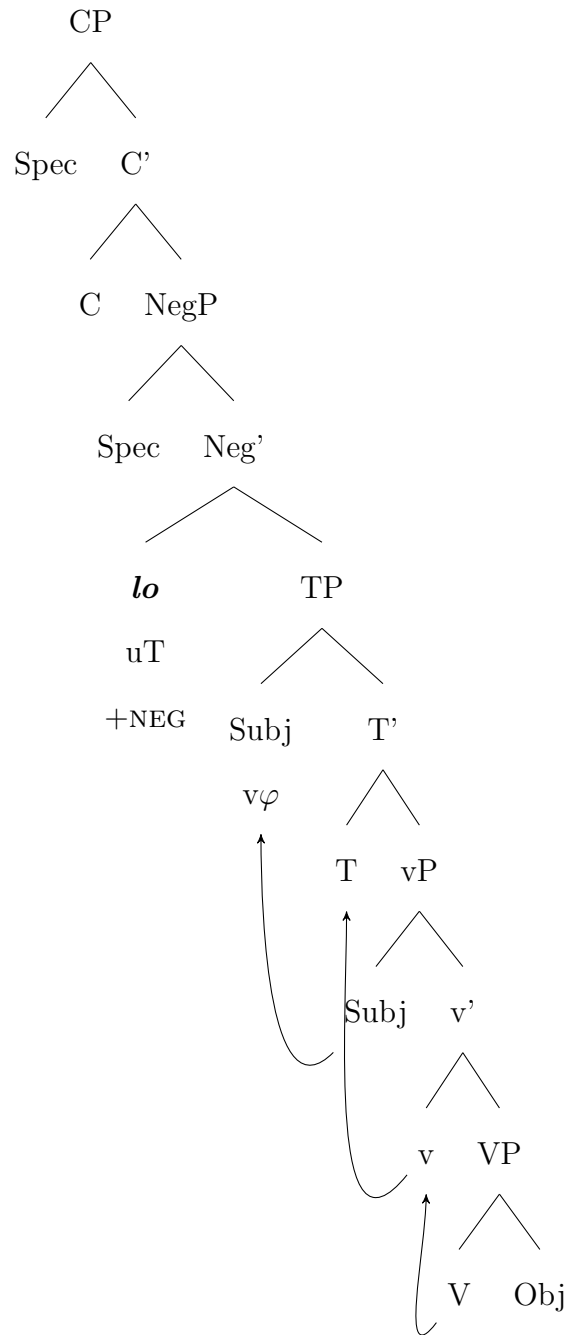
When it comes to sentences with *en* as a negative marker, Shlonsky (1997) argues that we still see V-to-T movement of the verb, however the verb in T will not combine with Neg. Rather, he suggests that *en* alone will raise to AgrS°, leaving the verb in T°. When the subject raises to the specifier position of AgrSP, they will agree with each other and yield subject agreement morphology on *en*. In cases where *en* is bare (does not agree with the subject), movement from Neg to AgrS does not occur because AgrSP is not present in the structure.

My analysis of negation in Hebrew declarative sentences will adopt a similar approach to Shlonsky (1997), making use of Agree and feature sharing (Chomsky 2000, 2001; Pesetsky & Torrego 2007) for agreement rather than using the AgrSP projection. This will be crucial for the patterns I discuss in the remainder of this essay, which focuses on the specific bundles of features present on Hebrew's negative markers.
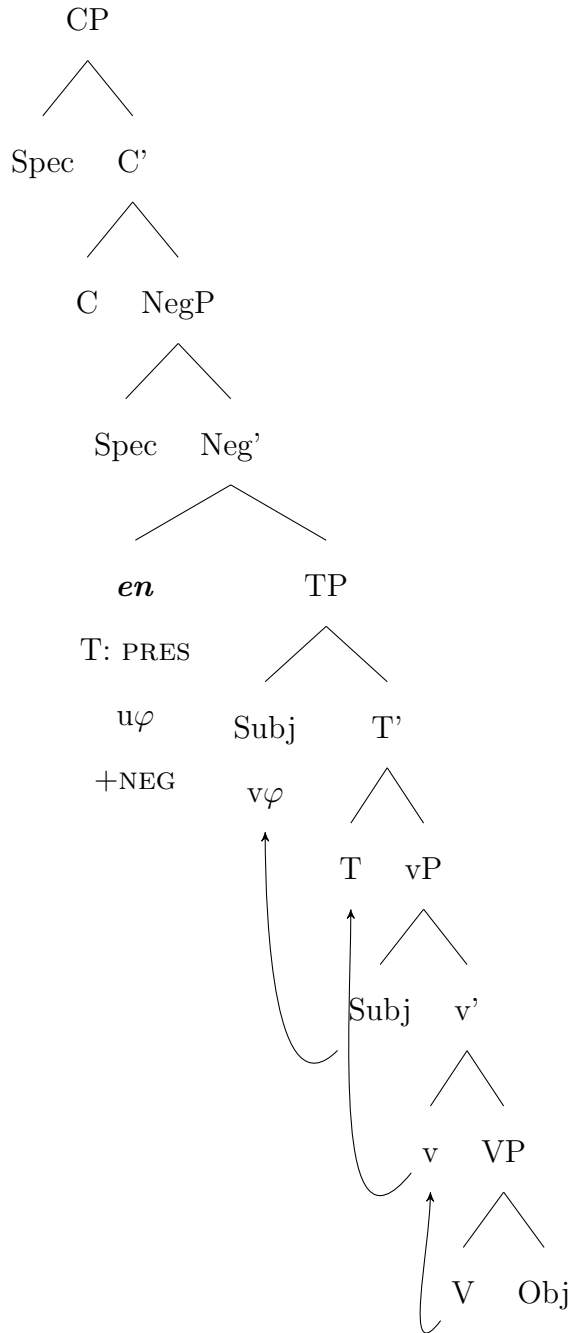
Assuming NegP occurs directly between CP and TP for Hebrew declaratives, and allowing for verb movement up to T, similar to the analysis in (Shlonsky 1997), I posit a spine with the following structure. The tree in (25a) depicts the features for a sentence using *lo* and (25b) diagrams sentences with *en*.

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[3]This is the notation used in Shlonsky (1997), but it does not represent that the verb has incorporated into the T head before the T-to-Neg movement. A more accurate structure for the complex head under Shlonsky's analysis would be $[lo + \text{T} + \text{V}]$.

(25) a.

CP
- Spec
- C'
  - C
  - NegP
    - Spec
    - Neg'
      - **lo**
        uT
        +NEG
      - TP
        - Subj
          vφ
        - T'
          - T
          - vP
            - Subj
            - v'
              - v
              - VP
                - V
                - Obj

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b.

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                              CP
                            /    \
                         Spec    C'
                               /    \
                              C    NegP
                                  /    \
                               Spec    Neg'
                                      /    \
                                    en      TP
                                 T: PRES   /    \
                                   uφ   Subj    T'
                                  +NEG   vφ    /    \
                                            T     vP
                                                /    \
                                             Subj    v'
                                                    /    \
                                                   v     VP
                                                        /    \
                                                       V     Obj
```

Both *lo* and *en* will start out in the bolded position in the structure, Neg°. For *lo*, the negative marker is initially merged with an unvalued tense feature [uT] as seen in (25a). This causes it to Probe for a valued tense feature in its domain, which it finds in T, triggering movement of the verb from T to Neg. The value of the [T] feature on T° can be [PAST], [PRES], or [FUT], as suggested by the fact that *lo* can occur in Hebrew sentences of any

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tense. I posit that *en*, however, is endowed with a valued present tense feature [PRES] that does not trigger movement. Rather, in the case of *en*, the Neg° selects for a T valued with present tense, as *en* is only ever used in the present tense. Other uses for *en* do exist, with the most salient being its use as the negative existential marker.

(26) a. *yeiʃ   li   ʃnei s'farim.*
          EXIST to.1sg two books
          'I have two books.'

    b. *yeiʃ   po   ʃnei s'farim.*
          EXIST here two books
          'There are two books here.'

(27) a. *en   li   ʃum s'farim.*
          EXIST.NEG to.1sg any books
          'I don't have any books.'

    b. *en   s'farim ba-sifriyah.*
          EXIST.NEG books   in.the-library
          'There are no books in the library.'

When these existential constructions are used in any tense other than the present, the existential markers *yeiʃ* and *en* cannot be used any longer. Instead, they are replaced with a form of *lihiyot* 'be' (conjugated for tense and inflected for subject agreement) and the negative marker *lo*. This points to the possibility that *en* simultaneously provides a negative reading (the head carries a [+NEG] feature) and also acts as present tense marker, as no other overt morphology in (27) appears to carry a tense feature.

The differences between *lo* and *en* we have seen so far are due to the tense features I posit on the negative markers. These are not the only features present on the markers, as they not only must be be endowed with [+NEG], but they can also bear other features. The so-called feature bundles are the main point of variation I draw between the various negative

markers in Hebrew. Such distinctions between similar syntactic heads is not uncommon; Rizzi (1997) outlines the differences between Force° and Fin° as depending on the features from the IP that are replicated in the complementizer system.

Departing from tense features on Neg°, I turn now to the distinction between negative markers that display subject agreement and those that do not. Only *en* displays subject agreement, indicating that it must engage in an Agree relation with the subject at some point in the derivation. The simplest way to accomplish this is to merge *en* with unvalued φ-features, $[u\varphi]$. This is reminiscent of the analysis of Finnish negative markers (Holmberg 2015) where the Pol carries unvalued φ-features that ultimately agree with the subject. This results in a negative marker inflected with the φ-features of the subject, as well as an inflected affirmative marker in Finnish. When this head is merged, it probes for something in its domain that has valued φ-features, and finds the subject. Upon agreement with the subject, I posit that Neg triggers movement of the subject up to the specifier position of NegP as shown here. Solid arrows indicate movement and dashed lines indicate the Agree relation.

(28)
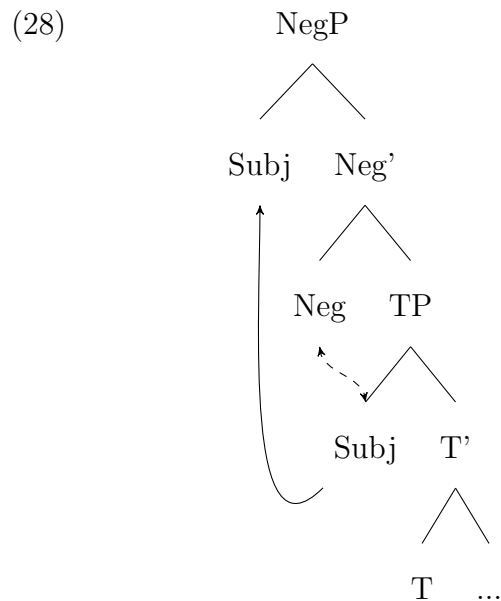
The next step is to understand what occurs in the derivation when we do not see subject agreement on *en* or *lo.* This is a simpler problem, as we can simply take away the φ-features

from Neg° in these cases. A similar analysis can be seen in Adger & Smith (2005) to describe the variation between *was* and *were* in Buckie Scots sentences. They argue that if there is a positive specification for the person feature on T (valued), as opposed to a negative feature specification (unvalued), the interpretable features will be different after all the features have been checked, thereby resulting in a different spell-out of the verb. Without unvalued features to check, there is no Agree relation established between the subject and the negative marker, thus allowing for the uninflected form of *en* to remain higher than the subject in the structure. An issue does arise with *lo*, however, as the subject precedes this negative marker. Several possibilities exist to explain this, the first being that there are, in fact, unvalued φ-features on *lo*, but when they are valued, there is no overt morphology in the spellout, and the marker remains uninflected. Just as with *en*, agreement would trigger movement of the subject to the specifier of NegP. This would provide the expected word order for sentences with *lo*—Subj-Neg-V—but relies on an Agree relation that is not represented by the overt morphology. Another option is that the verb movement to Neg in *lo* sentences triggers movement of the subject to the specifier of NegP. I currently do not have enough evidence to support one of these possibilities over the other, but I find both analyses possible.

To summarize, the variation in negative markers used in Hebrew declarative sentences can be analyzed with the set of features present on the negative markers. If there is subject agreement on the negative marker (inflected *en*), there must be a $[u\varphi]$ feature on the marker. *En* can only occur in present tense sentences because it is carries a valued tense feature $[v\text{T}:$ PRES], whereas *lo* carries an unvalued tense feature $[u\text{T}]$.

4 Imperative Negation

4.1 Interaction between Mood and negation

As I discussed in section 3.1.2, Hebrew's negative markers *lo* and *en* are both incompatible with imperative verbs. Further, I showed that a negative imperative is formed by using the

negative marker *al* with a verbal form of the future tense. (The negative marker *en* can also be used to form an imperative, in co-occurence with a verbal form in the infinitive.) *Al* as a free morpheme[4] is restricted to negative imperatives, and has no other uses in modern Hebrew. Following Zanuttini (1997), the fact that the negative marker *al* is not compatible with true imperatives, as discussed in section 2, and can be used with negative constituents for negative concord suggests that it located in a high NegP.

(29) * *Al*   *baʃli*   *li*   *maraq-of.*

     NEG cook.IMP.2SG.F to.1SG soup-chicken

     INTENDED: 'Don't cook me chicken soup.'

(30) a. *Al*   *t'vaʃli*   *li*   *ʃum*   *dvar.*

     NEG cook.FUT.2SG.F to.1SG nothing thing

     'Don't cook me anything.'

   b. *Af-pa'am al*   *tazuzu*   *b-xol tovani.*

     never   NEG move.FUT.2PL in-quicksand

     'Never move in quicksand.'

Previous work on imperatives has argued that mood has a significant role in imperative sentences (Zanuttini 1997; Zeijlstra 2006). It has been observed in Zanuttini (1997) that Romance true imperatives can contain verbal roots, thematic vowels, and agreement morphology, but that they never contain tense or mood features. Suppletive imperatives, on the other hand, use either a finite verb form (indicative or subjunctive) or a non-finite verb form with an auxiliary (which may be phonetically null) (Kayne 1991). Such finite verbs have the capacity to bear TMA-markers, specifically mood. Zanuttini argues that the negative markers located in NegP-1 in sentences with the illocutionary force of imperatives (directive force) "require the syntactic expression of mood" and that "this requirement can be satisfied either by the presence of the corresponding morphological marking on a main verb, or by

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[4]A bound morpheme *al-* can be combined with nouns similar to the English suffix *-less* (e.g. *xut* 'wire', *al-xut* 'wireless'; *mavet* 'death', *al-mavet* 'immortality'). *Al* can also be used as a noun meaning 'naught'.

the presence of a functional element that is the realization of this grammatical category" (Zanuttini 1997:127). She goes on to explain that in contrast to pre-verbal negative markers, post-verbal markers—analyzed as XP projections—are not incompatible with true imperatives. This is attributed to the fact that pre-verbal negative markers are analyzed as heads, which can have selectional requirements. The post-verbal negative markers are phrasal projections and thus cannot have selectional requirements. The pre-verbal negative markers in Romance languages select for a MoodP projection.

Zeijlstra (2006) presents a typology of languages based on whether they ban or allow true negative imperatives, or true imperatives used in conjunction with a negative marker. He shows that Greek, which is in the same typological class as Hebrew under his analysis, has two negative markers *dhen* and *mi*. *Dhen* is used in indicatives whereas *mi* is used with verbs in the subjunctive (not in the imperative form) to form a negative imperative sentence. Consider these examples from Zeijlstra (2006:409):

(31) a. * *Dhen to diavase!* (Greek)

       NEG   it read.IMP

       INTENDED: 'Don't read it!'

   b. * *Mi   to grapse!*

       NEG it write.IMP

       INTENDED: 'Don't write it!'

   c. *Mi   to grapsis!*

       NEG it write.SUBJ

       'Don't write it!'

As we can see, the distribution of *dhen* and *mi* in Greek is quite similar to that of *lo* and *al* in Hebrew. (31a) shows that like *lo*, *dhen* is not compatible with the imperative verb form. Neither is *mi* in (31b). Instead, *mi* requires a suppletive imperative, namely the subjunctive, whereas Hebrew will use a suppletive imperative in the future tense.

I have shown that *al* occurs with verbs in the future tense in imperatives. Note, though, that *al* does not occur with the morphological future in other sentence types.

(32) a. *Ani e'hiyeh   sham.*

   I   be.FUT.1SG there

   'I will be there'

   b. *Im atah tirtzeh,   az   ani evo.*

   if   you want.FUT.2SG.M, then I   come.FUT.1SG

   'If you want, I will come'

   c. *ani m'qaveh   she-t'vashli   li   maraq.*

   I   hope.PRES.1SG that-cook.FUT.2SG.F for.1SG soup

   'I hope you'll cook me soup'

All of the sentences in (32) use a future tense verb, and I assume that they also carry irrealis mood, even though it is not overt in the morphology. When we add negation to these sentences, we find that all of them are ungrammatical with *al*. Negative declarative sentences with the verb in the future tense require *lo* in preverbal positions as we see in the following examples.[5]

(33) a. *Ani lo/*al e'hiyeh   sham.*

   I   NEG   be.FUT.1SG there

   'I will not be there'

   b. *Im lo/*al tirtzeh,   az   lo/*al evo.*

   if   NEG   want.FUT.2SG.M, then NEG   come.FUT.1SG

   INTENDED: 'If you don't want, I won't come'

---

[5]The negative marker *en* cannot be used to negate these declaratives because, as mentioned above, it only co-occurs with verbs in the present tense.

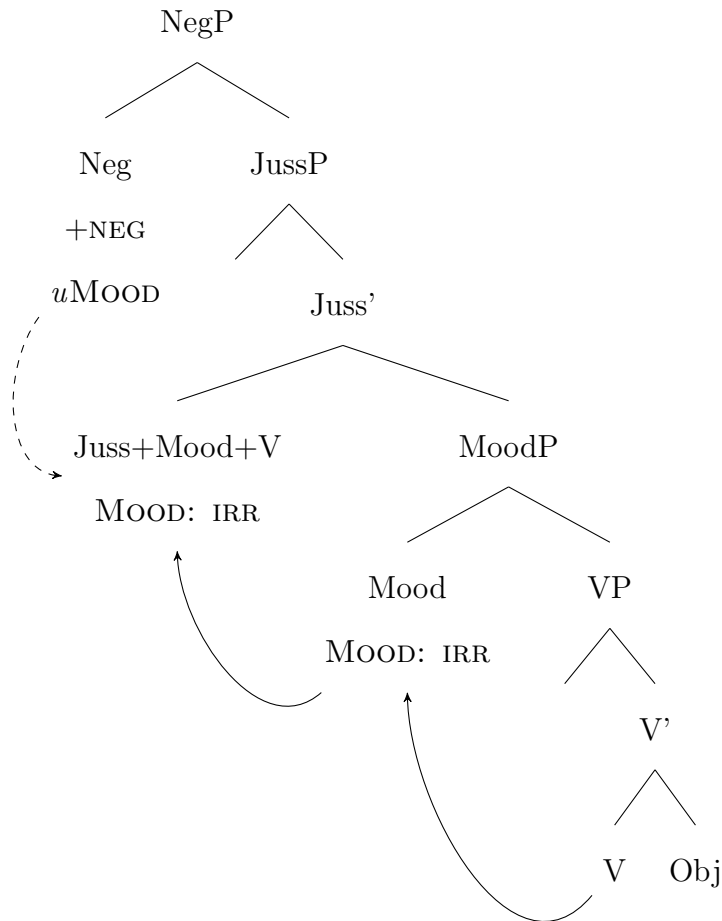c. *ani m'qaveh   she-lo/* al t'vashli   li   maraq.*

    I   hope.PRES.1SG that-NEG   cook.FUT.2SG.F for.1SG soup

    INTENDED: 'I hope you don't cook me soup'

Even though the sentences in (33) bear the same irrealis mood as their affirmative counterparts in (32), they are still ungrammatical with *al*. What prevents *al* from surfacing in these contexts? I argue that the negative marker in sentences with directive force not only has a valued [+NEG] feature, but also has an unvalued mood feature that must be checked through an Agree relation. This unvalued mood feature on Neg° restricts the negative marker to only occur in sentences with a MoodP projection. (In Zanuttini (1997) it is proposed that the negative marker has a selectional requirement for MoodP).

Similar to Zeijlstra (2006), I will assume a MoodP in the TP domain that marks irrealis mood on Hebrew negative imperatives. This projection is immediately dominated by TP in non-imperative sentences (Cinque 1999). The exact features of TP in imperative constructions is contested. Some authors have proposed that there is a special TP projection that contains either a T_{decl} or T_{imp} head which differ in featural composition (Jensen 2003). Others, including Zanuttini (2008), assume that T is present in imperatives, but the features of the T head form a unit with those of another projection, the Jussive Phrase, which is posited to characterize sentences with directive force. I will not take a stand here on whether imperatives have a special type of T (like Jensen (2003) proposed) or a T that forms a unit with Jussive. I will simply assume that JussP immediately dominates the MoodP projection. Consider the following structure:

(34)

NegP
- Neg
  - +NEG
  - uMOOD
- JussP
  - Juss'
    - Juss+Mood+V
      - MOOD: IRR
    - MoodP
      - Mood
        - MOOD: IRR
      - VP
        - V'
          - V
          - Obj

The verb will move from its low starting position up through Mood to Juss, it will form a chain of complex heads with an [IRR] mood feature. Neg° will value its mood feature by forming an Agree with this complex head. Remember that there are two grammatical constructions for negative imperatives—one using *al* with a future tense verb and one using *en* with an infinitive. I posit that Mood° has two possible values for its mood feature, [IRR] and [INF]. In the context of directive force, the following vocabulary items exist for Neg°:

(35) a. Neg[+NEG, +IRR] $\longleftrightarrow$ /al/

b. Neg[+NEG, +INF] $\longleftrightarrow$ /en/[6]

---

[6]Note that this VI does not over-generate, producing *en* in all instances of negation near an infinitive. In those cases, I do not suggest that there is a mood feature present on the negative marker. Further, in this essay I propose that the negative marker used in imperative constructions has a selectional requirement for JussP. This is not a morphosyntactic feature, however, so I do not include it in the vocabulary items seen here.

The mood feature of the clause is also responsible for the spellout of the verb under my analysis. Because I am not projecting a TP layer in this analysis, I argue that the negative markers *lo* and *en* used in declarative negation are not able to appear in imperatives, as there is no T° to agree with to check their tense feature. Nonetheless, we see verbs that are inflected with either future or non-finite morphology in imperatives. Both future tense and non-finite tense could be housed in T° if it were present, but doing so would make the use of Mood° redundant, as it contains either the irrealis feature (which only occurs with present tense verb forms in Hebrew) or infinitive feature. I leave the puzzle of how to account for both T and Mood in Hebrew imperatives for future work.

Before I conclude this section, I return to the variation between the imperative verb form seen in affirmative imperatives and the future tense verb form in negative imperatives. Because I am arguing that the Mood head is responsible for the form of the verb, I assume that it is sensitive to the presence of a negative marker. What this sensitivity is exactly—an unvalued negative feature or a c-command relationship—is unclear.

With an unvalued feature analysis, we might predict that any instance of irrealis mood in affirmative sentences would result in an imperative verb form, even in the absence of *al*. The sentences in (32) which use future tense verbs in affirmative declarative sentences with irrealis mood show that this is not the case however. Perhaps the presence of a TP projection with specified future tense competes with Mood's ability to affect the verbal form, as I suggest it does. If I instead propose that a Mood° that is c-commanded by Neg spells out a future tense verb form without the presence of T, we have a cursory analysis of the puzzle.

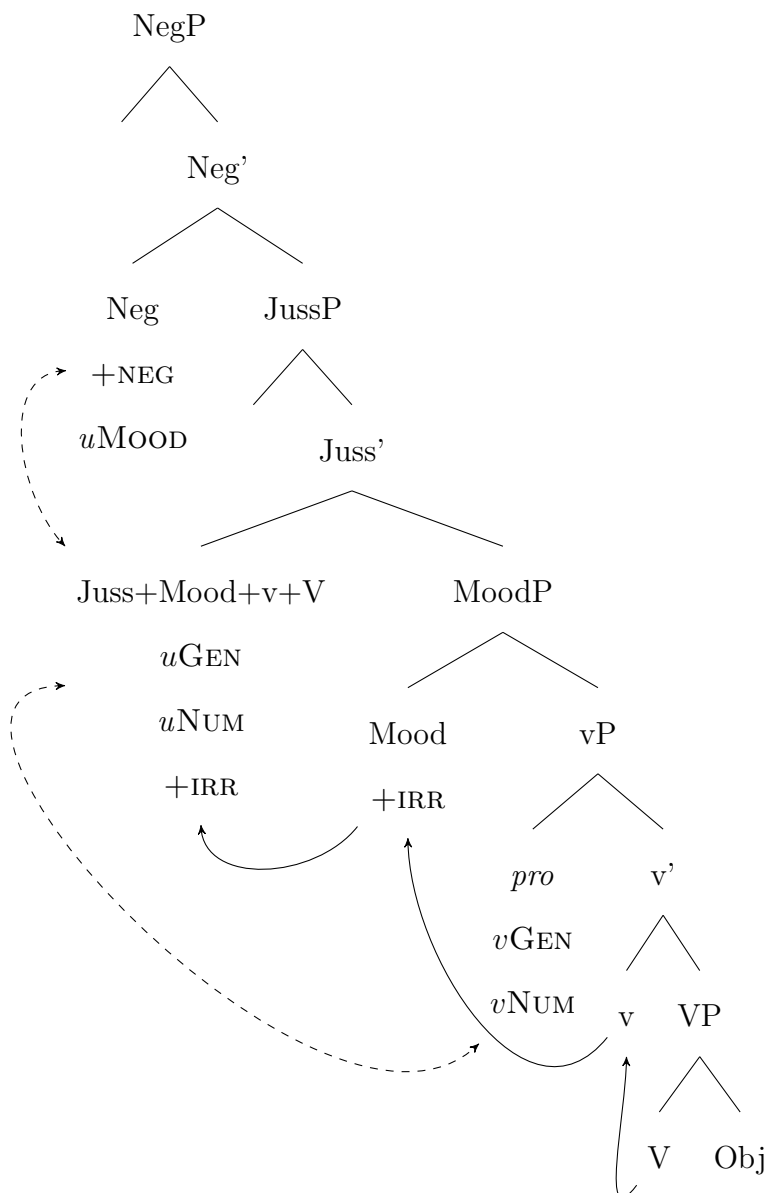## 4.2   Jussive Phrase interactions with φ-features and Mood

Hebrew is a partial null subject language, and it does not have overt subjects in imperative structures. Nonetheless, imperative verbs are fully inflected for the φ-features of their subjects, and so are future tense verbs used in negative imperatives.

(36) a. *Baʃli   et ha-maraq!*
      cook.IMP.2SG.F ET the-soup

   b. *Baʃel   et ha-maraq!*
      cook.IMP.2SG.M ET the-soup

   c. *Baʃlu   et ha-maraq!*
      cook.IMP.2PL ET the-soup

      'Cook the soup!'

(37) a. *Al   t'vaʃli   et ha-maraq!*
      NEG cook.FUT.2SG.F ET the-soup

   b. *Al   t'vaʃel   et ha-maraq!*
      NEG cook.FUT.2SG.M ET the-soup

   c. *Al   t'vaʃlu   et ha-maraq!*
      NEG cook.FUT.2PL ET the-soup

      'Don't cook the soup!'

Assuming that a null subject is present in the syntactic structure, the question now becomes why we only see second person subjects used in imperative constructions. This problem has also been addressed by Zanuttini (2008), in which she argues that a projection, Jussive Phrase (JussP), endows imperative subjects with an interpretable second person feature. I will add to this list of features on Juss°, postulating that it also contains unvalued gender and number features. I assume that JussP is immediately dominated by NegP and immediately dominates MoodP, allowing for head movement into a complex head Juss-Mood-v-V°. This analysis results in the following structure:

(38)

NegP

Neg'

Neg
+NEG
*u*MOOD

JussP

Juss'

Juss+Mood+v+V
*u*GEN
*u*NUM
+IRR

MoodP

Mood
+IRR

vP

pro
*v*GEN
*v*NUM

v'

v   VP

V   Obj

In (38), the verb will raise cyclically from V°, through v°, and Mood° up to Juss°, taking with it all of the syntactic features of the heads it combines with. The subject will also raise from the specifier position of vP to the specifier of JussP.

Because the mood sensitive negative marker occurs only in imperative sentences, I proposed that it has a selectional feature for a Jussive Phrase projection, requiring its presence in the structure, and further that it has an unvalued mood feature that needs to be checked by a valued feature in Mood°. In that section, I argued that without a c-commanding Neg°

(as a potential analysis), Mood° would not spell out as a future tense verb inflection, but rather as an imperative verb form. This assumes that a structure including JussP (and excluding TP) will be the base of all imperative constructions—affirmative or negative.

Affirmative imperatives in Hebrew (36), however, do not have this Neg° with a selectional requirement for JussP, so why does there need to be a JussP layer in their structure? Without these featural considerations, affirmative imperatives could simply be analyzed with a TP containing a T° specified for imperative tense. This would satisfy an economy based approach which would prefer fewer layers of projection if they are unnecessary. I argue, however, that the co-occurrence of JussP and MoodP are what define imperative constructions. In colloquial Modern Hebrew, it is growing less common to use imperative verb forms in affirmative imperatives as seen in the following examples.

(39) a. *Taqʃiv*   *li!*
           listen.FUT.2SG.M to.1sg
           'Listen to me!'

      b. *Tagidi*   *bai-bai!*
           say.FUT.2SG.F bye-bye
           'Say bye!'

The sentences in (39) show that the future tense verb can also be used in affirmative imperatives. In my view, this indicates that the structure of negative imperatives which spells out Mood° as a future tense verbal ending is present in affirmative imperatives, as well. The sensitivity of Mood° to the negative marker higher in the structure has lessened, and the Juss+Mood construction spells out as a future tense verb in both polarities.

5   Conclusion

In this essay, I have outlined sentential negation in Hebrew, focusing on three negative markers: *lo*, *en*, and *al*. I have argued that all three are located in a High-Neg projection located

above TP and below CP. Syntactic features on these Neg heads are what account for the differences we see between subject agreement, compatibility with various tenses and moods, and word ordering. Declarative negative markers *lo* and *en* differ in that *en* carries with it a valued tense feature which makes the marker only available in present tense constructions— *lo* does not have such restrictions, as its tense feature is unvalued. Further, *en* is able to inflect with subject agreement morphology, because it bears a set of unvalued φ-features which form an Agree relation with the subject. When this happens, it triggers movement of the subject to the specifier position of NegP.

Negative markers in imperative sentences are merged into the structure with an unvalued mood feature and a selectional requirement for JussP. Agreement between Neg° and Mood° accounts for the variation between *al* and *en* seen in negative imperatives. Further in the absence of TP in imperative constructions, I have argued that Mood° is responsible for spelling out the verbal inflections of future or non-finite tense.

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References

Adger, David & Jennifer Smith. 2005. Variation and the minimalist program. In M.E.A. Cornips & Karen P. Corrigan (eds.), *Syntax and Variation: Reconciling the Biological and the Social*, 149–178. Amsterdam: John Benjamins Publishing.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambirdge, MA: MIT Press.

Chomsky, Noam. 2000. Minimalist Inquiries: The Frameword. In Roger Martin, David Michaels & Juan Uriagereka (eds.), *Step by Step*, 89–155. Cambridge, MA: The MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In M Kenstowicz (ed.), *Ken Hale: A life in Language*, 1–52. Cambirdge, MA: MIT Press.

Cinque, Guglielmo. 1999. *Adverbs and Functional Heads: A Cross-linguistic Perspective* Oxford studies in comparative syntax. Oxford: Oxford University Press.

Holmberg, Anders. 2015. The syntax of answers. In *The Syntax of Yes and No*, 52–137. Oxford: Oxford University Press.

Jensen, Britta. 2003. Syntax and semantics of imperative subjects. *Nordlyd* 31. 150–164.

Jäger, Agnes & Doris Penka. 2012. Development of sentential negation in the history of German. In Peter Ackema, Rhona Alcorn, Caroline Heycock, Dany Jaspers, Jeroen Van Craenenbroeck & Guido Vanden Wyngaerd (eds.), *Linguistik Aktuell/Linguistics Today*, vol. 191, 199–222. Amsterdam: John Benjamins Publishing Company.

Kayne, Richard S. 1991. Romance Clitics, Verb Movement, and PRO. *Linguistic Inquiry* 22(4). 647–686. Publisher: The MIT Press.

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

Laka, Itziar. 1990. *Negation in Syntax: On the nature of functional categories and projections*. Boston: Massachusetts Institute of Technology PhD.

Loutfi, Ayoub. 2017. On Tense and Agreement in the Realization of Negation in Standard Arabic. *Journal of Applied Language and Culture* 39–60.

Pesetsky, David & Esther Torrego. 2007. The syntax of valuation and the interpretability of features. In Simin Karimi, Vida Samiian & Wendy K. Wilkins (eds.), *Linguistik Aktuell/Linguistics Today*, vol. 101, 262–294. Amsterdam: John Benjamins Publishing Company.

Pollock, Jean-Yves. 1989. Verb Movement, Universal Grammar, and the Structure of IP. *Linguistic Inquiry* 20(3). 365–424.

Rizzi, Luigi. 1997. The Fine Structure of the Left Periphery. In Liliane Haegeman (ed.), *Elements of Grammar*, 281–337. Dordrecht: Springer Netherlands.

Shlonsky, Ur. 1997. *Clause structure and word order in Hebrew and Arabic: an essay in comparative Semitic syntax* Oxford studies in comparative syntax. New York: Oxford University Press.

Zanuttini, Raffaella. 1997. *Negation and clausal structure: a comparative study of Romance languages* Oxford studies in comparative syntax. New York: Oxford University Press.

Zanuttini, Raffaella. 2001. Sentential Negation. In Mark Baltin & Chris Collins (eds.), *The handbook of Contemporary Syntactic Theory*, 511–535. Oxford: Blackwell.

Zanuttini, Raffaella. 2008. Encoding the addressee in the syntax: evidence from English imperative subjects. *Natural Language & Linguistic Theory* 26(1). 185–218.

Zeijlstra, Hedde. 2006. The Ban on True Negative Imperatives. In Olivier Bonami & Patricia Cabredo Hofherr (eds.), *Empirical Issues in Syntax and Semantics*, vol. 6, 405–424.

Şener, Serkan & Selçuk İşsever. 2003. The interaction of negation with focus: ne...ne... phrases in Turkish. *Lingua* 13. 1089–1117.