

Chapter 19

Negation

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1 Modes of Expressing Negation

Each language has its own way of expressing negation with grammatical restrictions in its surface realizations. This chapter aims to provide an investigation of morpho-syntactic aspects of negation in natural languages, encompassing both empirical and theoretical issues concerning negation as well as related phenomena in question.

There are four main ways of expressing negation in the languages: morphological negative, auxiliary negative verb, adverbial negative, and clitic-like negative (see Dahl (1979), Payne (1985), and Dryer (2005)). Each of these types is illustrated in the following:



- (1) a. Turkish:
Ali elmalar-i ser-me-di-Ø.
Ali apples-ACC like-NEG-PST-3SG
'Ali didn't like apples.'
- b. Korean:
sensayng-nim-i o-ci anh-usi-ess-ta
teacher-HON-NOM come-CONN NEG-HON-PST-DECL
'The teacher didn't come.'
- c. French:
Dominique (n')écrivait pas de lettre.
Dominique wrote NEG of letter
'Dominique did not write a letter.'
- d. Italian:
Gianni non legge articoli di sintassi.
Gianni NEG reads articles of syntax
'Gianni doesn't read syntax articles.'

As given in (1a), languages like Turkish have typical examples of morphological negatives where negation is expressed by an inflectional category realized on the verb by affixation. Meantime, languages like Korean employ a negative auxiliary verb as in (1b).¹ The negative auxiliary verb here is marked with the basic verbal categories such as agreement, tense, aspect, and mood, while the main verb remains in an invariant, participle form. The third major way of expressing negation is to use an adverb-like particle. This type of negation, forming an independent word, is prevalent in English and French, as given in (1c). In these languages, negative markers behave like adverbs in their ordering with respect to the verb. The fourth type is to introduce a clitic-like element in expressing sentential negation. The negative marker in Italian in (1d), preceding a finite verb like other types of clitics in the language, belongs to this type.

This chapter provides a construction-based HPSG analysis of these four main types of negation we find in natural languages and further answers the following three questions:

- What are the main ways of expressing sentential negation or negating a sentence or clause?

¹Korean is peculiar in that it has two ways to express sentential negation: a negative auxiliary (a long form negation) and a morphological negative (a short form negation) for sentential negation. See Kim (2000; 2016) and references therein for detail.

- What are the distributional possibilities of negative markers in relation to other main constituents of the sentence?
- What do the answers to these two questions imply for the theory of grammar?

This chapter addresses these questions, based on empirical data, theoretical issues, and analyses of negation.

2 Derivational Views

The derivational view has claimed that the positioning of all of the four types of negatives is basically determined by the interaction of movement operations, a rather large set of functional projections including NegP, and their hierarchically fixed organization.

English and French display systematic differences with respect to negation, adverb position, and subject-aux inversion, as illustrated in the following:

Position of Negation:

- (2) a. * Kim likes not Lee.
b. Kim does not like Lee.
- (3) a. Robin n'aime pas Stacey.
Robin (n')likes NEG Stacey
'Robin does not like Stacey.'
b. * Robin ne pas aime Stacey.

Position of Adverbs:

- (4) a. * Kim kisses often Lee.
b. Kim often kisses Lee.
- (5) a. * Robin embrasse souvent Stacey.
b. Robin souvent embrasse Stacey.

Subject-Verb Inversion in Questions:

- (6) a. * Likes he Sandy?
b. Does he like Sandy?

- (7) a. * Likes Lou Sandy?
b. Aime-t-il Sandy?

The examples illustrate that in English, the negator *not* and adverb *often* need to precede a main verb, while in French, the corresponding negator *pas* and adverb *souvent* follow a main verb. In addition, only French allows the main verb inversion. Drawing on the earlier insights of Emonds (1978), Pollock (1989; 1994) and a number of subsequent researchers have interpreted these contrasts as providing critical motivation for the process of head movement and the existence of functional categories such as MoodP, TP, AgrP, and NegP (see Belletti (1990), Zanuttini (1991; 1997; 2001), Chomsky (1991; 1993; 1995), Lasnik (1995), Haegeman (1995; 1997), Vikner (1997), Zeijlstra (2015), inter alia). It has been widely accepted that the variation between French and English illustrated here can be explained only in terms of the respective properties of verb movement and its interaction with a view of clause structure organized around functional projections.

For example, in Pollock (1989)'s proposal, all verbs in French move to a higher structural position, whereas this is possible in English only for the auxiliaries *have* and *be*, as shown in (8):

- (8) a. French: Let's do the tree!
b. English: Let's do the tree!

Why does V-movement happen when it does? This question has been answered in diverse (and sometimes inconsistent) ways in the literature (see Pollock (1989; 1994; 1997b,a), Vikner (1994; 1997)). In Pollock (1989), it is the strength of the Agr feature that determines V-movement: unlike French, English non-auxiliary verbs cannot undergo V-movement because Agr in French is 'transparent' (or 'strong') whereas Agr in English is 'opaque' (or 'weak'). The richness of French verbal morphology is assumed to provide the motivation for the strength of French Agr, in consequence of which the raised verb in French can transmit theta roles to its arguments through AGR, thus avoiding any violation of the theta criterion. But the weakness of English Agr (assumed to follow from the paucity of English verbal morphology) is what blocks lexical verbs from assigning theta roles once they have moved to Tns. Hence movement of a theta-assigning verb in English would result in a violation of the theta criterion.

The basic spirit of Pollock's analysis—that 'morphology determines syntactic movement'—has remained essentially unchanged for the last decades though what triggers V-movement has varied considerably in subsequent work (see, among others, Zanuttini (2001), Bošković (2014), Zeijlstra (2015)). As far as we are aware,

there is no agreed upon movement-based analysis of either the English or French systems. In fact, as Lasnik (2000)) stresses, the Minimalist Program as articulated in Chomsky (1993; 1995; 2000) not only fails to deal with the ungrammaticality of simple examples like **John left not* or **John not left*, it also provides no basis for explaining the French/English contrasts in adverb position discussed by Pollock (1989) and Cinque (1999) (e.g., *embrasse souvent* vs. *often kisses*).

The derivational view summarized here has focused on adverbial negatives in English and French. This view with movement operations in the hierarchy of functional projections has been extended to account for the other types of negation as well, which we will note in due course.

3 A Construction-based HPSG Analysis

Departing from the derivational view, we herein offer an alternative construction-based view in which the distributional possibilities of negatives are drawn from the interplay among the lexical properties of each negative marker and from the interaction of elementary, independently motivated morphosyntactic and valence properties of syntactic heads, and constructional properties (see Kim (2000), Kim & Sag (2002), Crowgey (2012)).

3.1 Morphological Negation

As noted earlier, languages like Turkish and Japanese employ morphological negation in which the negative marker behaves like a suffix. Consider Turkish and Japanese examples:

- (9) a. Git-me-yeceğ-Ø-im
 go-NEG-FUT-COP-1SG
 ‘(I) will not come.’
 b. kare-wa kinoo kuruma-de ko-na-katta.
 he-TPC yesterday car-INST come-NEG-PST
 ‘He did not come by car yesterday.’

As the examples illustrate, the sentential negation of Turkish and Japanese employ morphological suffixes *-me* and *-na*, respectively. It is possible to state the ordering of these morphological negative markers in derivational or syntactic terms. But it is too strong a claim to take the negative suffix *-me* or *-na* to be an independent syntactic element, and to attribute its positional possibilities to

syntactic constraints such as verb movement and other configurational notions (see Kelepir (2001) for Turkish and Kato (1997; 2000) for Japanese). In these languages, the negative morpheme acts just like other verbal inflections in numerous respects. The morphological status of these negative markers comes from their morphophonemic alternation. For example, the vowel of the Turkish negative suffix *-me* shifts from open to closed when followed by the future suffix, as in *gel-mi-yecek* ‘come-NEG-FUT’. Their strictly fixed position also indicates their morphological constituenthood. Though these languages allow rather a free permutation of syntactic elements (scrambling), there exist strict ordering restrictions among verbal suffixes including the negative suffix, as can be seen from the following examples:

- (10) a. *tabe-sase-na-i*/**tabe-na-sase-i*
eat-CAUS-NEG-NPST
b. *tabe-rare-na-katta*/**tabe-na-rare-katta*
eat-PASS-NEG-PST
c. *tabe-sase-rare-na-katta*/**tabe-sase-na-rare-katta*
eat-CAUS-PASS-NEG-PST

The ordering of the negative morpheme is a matter of morphology. If it were a syntactic concern, then the question would arise as to why there is an obvious contrast in the ordering principles of morphological and syntactic constituents, i.e., why the ordering rules of morphology are distinct from the ordering rules of syntax. The simplest explanation for this contrast is to accept the view that morphological constituents including the negative marker are formed in the lexical component and hence have no syntactic status (see Kim (2000) for detailed discussion).

This being noted, it is more reasonable to assume that the placement of a negative morpheme is regulated by morphological principles, i.e. by the properties of the morphological negative morpheme itself. In the construction-based HPSG, we could take this as an inflectional construction. The negative marker, as we have seen in Turkish and Japanese, is realized as a suffix attached to the verb root. The resulting combination is not a word-level entity but a verb stem to which an aspectual or tense marker can be attached. We could thus take such a morphological process as an inflectional one. For instance, the following could be a morphological construction in Turkish:²

²See Sag (2012) and Hilpert (2016) for a construction-based approach to inflectional as well as derivational processes.

- (11) Negative-Infl Construction ($\uparrow infl\text{-}cxt$)
Let's do the tree!

This inflectional construction ($\uparrow infl\text{-}cxt$) allows us to generate a Turkish inflection construct like *ser-me* 'like-NEG' (in (1a)) from the v-lexeme *ser-* with the change in the root's meaning into a sentential negation. The morphological function F_{NEG} could ensure that the vowel of the negative morpheme *me* is subject to phonological changes depending on its environment. If it is followed by a consonant-initial morpheme, it undergoes vowel harmony with the vowel in the preceding syllable (e.g., *yika-n-ma-di* 'wash-REFL-NEG-PST'). If it is followed by a vowel-initial morpheme, its vowel drops (*gel-m-iyor* 'come-NEG-PROG') (see Kelepir (2001)).³

The construction-based analysis sketched here has been built upon the thesis that autonomous (i.e. non-syntactic) principles govern the distribution of morphological elements Bresnan & Mchombo (1991). The position of the morphological negation is simply defined in relation to the verb stem it attaches to. There are no syntactic operations such as head-movement or multiple functional projections in forming a verb with the negative marker.

3.2 Negative Auxiliary Verb

Another way of expressing sentential negation, as noted earlier, is to employ a negative auxiliary verb. Head-final languages like Korean and Hindi employ negative auxiliary verbs. Consider a Korean example:

- (12) John-un ku chayk-ul ilk-ci anh-ass-ta.
John-TPC that book-ACC read-CONN NEG-PST-DECL
'John did not read the book.'

The negative auxiliary in head-final languages typically appears clause-finally, following the invariant form of the main verb. In head-initial SVO languages, however, the negative auxiliary almost invariably occurs immediately before the lexical verb (see Payne (1985)). Finnish exhibits this property (Mitchell 1991):

- (13) Minä e-n puhu-isi.
I-NOM NEG-1SG speak-COND
'I would not speak.'

³As for a way of capturing the ordering of suffixes within this kind of system, see Kim (2016).

These negative auxiliaries have syntactic status: they can be inflected, above all. Like other verbs, they can be marked with verbal inflections such as agreement, tense, and mood.

In dealing with auxiliary negative constructions, most of the derivational approaches have followed Pollock's and Chomsky's analyses in factoring out functional information carried by lexical items into various different phrase-structure nodes (see, among others, Hagstrom (1997; 2002), Han et al. (2007) for Korean and Vasisht (2000) for Hindi). This derivational view has been appealing, in that one identical structure could explain different types of negation. However, problems have arisen from the fact that it misses the basic properties of this type of negation which, for example, differentiate it from morphological negation (i.e., double negation, lexical idiosyncrasies, phonological restriction, etc).⁴

In the construction-based HPSG analysis, the negative auxiliary is taken to be an independent lexical verb whose functional information is not distributed over different phrase structure nodes, but incorporated into its precise and enriched lexical entry and an independently motivated construction for other types of auxiliary verbs. The Korean negative auxiliary displays all the key properties of auxiliary verbs in the language. For instance, the typical auxiliary verbs as well as the negative auxiliary all require the preceding main verb to be marked with a specific verb form (VFORM), as illustrated in the following:

- (14) a. *ilk-ko/*ci siph-ta.*
read-CONN would.like-DECL
'(I) would like to read.'
- b. *ilk-ci anh-ass-ta.*
read-CONN not-PST-DECL
'(I) did not read.'

The auxiliary verb *siph-* in (14a) requires the *-ko* marked main verb while the negative auxiliary verb *anh-* in (14b) asks for the *-ci* marked main verb.

In terms of syntactic structure, there are two possible analyses. One is to assume that the negative auxiliary takes a VP complement and the other is to claim that it forms a verb complex with the preceding main verb, as represented in (15a) and (15b), respectively ((Kim 2016)).

- (15) a. Let's do the tree!

⁴See Niño (1994) for arguments against a derivational analysis for Finnish negative auxiliary such as that of Mitchell (1991).

- b. Let's do the tree!

The distributional properties of the negative auxiliary in the language, however, support the complex predicate structure (15b) in which the negative auxiliary verb forms a syntactic/semantic unit with the preceding main verb. For instance, no adverbial expression, including a parenthetical adverb, can intervene between the main and auxiliary verb, as illustrated by the following Korean example:

- (16) Mimi-nun (yehathun) tosi-lul (yehathun) ttena-ci (*yehathun)
 Mimi-TPC anyway city-ACC anyway leave-CONN anyway
 anh-ass-ta.
 NEG-PST-DECL
 'Anyway, Mimi didn't leave the city.'

Further, in an elliptical construction, a verb complex always occurs together:

- (17) a. Kim-i hakkyo-eyse pelse tolawa-ss-ni? 'Did Kim return from
 Kim-NOM school-SRC already return-PST-QUE
 school already?'
 b. ka-ci-to anh-ass-e '(He) didn't even go.'
 go-CONN-DEL NOTP-PST-DECL
 c. *ka-ci-to. 'go-CONN-DEL'
 d. *anh-ass-e 'NEG-PST-DECL'

Neither the main verb nor the auxiliary verb alone can serve as the fragment answer to the polar question. The two verbs must occur together.

These constituent tests indicate that the negative auxiliary forms a syntactic unit with a preceding main verb in Korean. Following Bratt (1996), Chung (1998), and Kim (2016), we then could assume that an auxiliary verb forms a complex predicate, licensed by the following construction:

- (18) HEAD-LEX CONSTRUCTION:

$$\left[\begin{array}{c} HD-LEX-CXT \\ COMPS L \end{array} \right] \Rightarrow \left[\begin{array}{c} LEX + \\ \left[\begin{array}{c} 1 \\ COMPS L \end{array} \right] \end{array} \right], H[COMPS \langle 1 \rangle]$$

This construction rule means that a lexical head expression combines with its lexical (LEX) complement. When this combination happens, there is a kind of argument composition: the COMPS value (*L*) of this lexical complement is passed up to the resulting mother. The constructional constraint thus induces the effect of argument composition at syntax, as illustrated by the following example:⁵

⁵The *V'* is just a notational variant to indicate that it is a syntactic complex predicate.

(19) Let's do the tree!

The auxiliary verb *anh-ass-ta* 'NEG-PST-DECL' combines with the matrix verb *ilk-ci* 'read-CONN,' forming a well-formed head-lex construct.⁶ Note that the resulting construction inherits the COMPS value from that of the lexical complement *ilk-ci* 'read-CONN,' through the operation of argument composition. It is the HEAD-LEX CONSTRUCTION that licenses the combination of an auxiliary verb with its main verb, while inheriting the main verb's complement value as argument composition. The present system thus allows the argument composition at the syntax level, rather than in the lexicon.

One important property of the auxiliary construction is that there is no limit for auxiliary verbs to occur in sequence as long as each combination observes the morphosyntactic constraint on the preceding expression. Consider the following:

- (20) a. sakwa-lul mek-ci anh-ta.
apple-ACC eat-CONN NEG-DECL
b. sakwa-lul mek-ko siph-ci anh-ta.
apple-ACC eat-CONN wish-CONN NEG-DECL
c. sakwa-lul mek-ko siph-e ha-ci anh-ta.
apple-ACC eat-CONN wish-CONN do-CONN NEG-DECL
d. sakwa-lul mek-ko siph-e ha-key toy-ci anh-ta.
apple-ACC eat-CONN wish-CONN do-CONN become-CONN NEG-DECL

As seen from each of these examples, we can add one more auxiliary verb to the existing construction, with an appropriate connective marker on the preceding one. Theoretically, there is no upper limit to the possible number of auxiliary verbs we can add.

Within the present complex-predicate analysis with the supposition of HEAD-LEX CONSTRUCTION in the language, we could license all these examples. The following is a simplified structure for (20c):

(21) Let's do the tree!

The bottom structure indicates that the auxiliary verb *siph-e* 'wish-CONN' forms a HEAD-LEX CONSTRUCTION through the combination with the main verb *mek-ko*

⁶The negative auxiliary verb selects two arguments, a subject and a main verb. See Kim (2016) for a detailed analysis.

‘eat-CONN’. This resulting complex predicate, which is still a LEX expression, inherits the main verb’s COMPS value as well as the *ae* VFORM head feature from the auxiliary.⁷ Meanwhile, the auxiliary verb *ha-ci* also requires a LEX level expression with the VFORM value *ae*, combining with the preceding complex predicate in a legitimate way. This combination, forming a HEAD-LEX CONSTRUCTION, again inherits the COMPS value. The final negative auxiliary then combines this resulting complex predicate, yielding a final complex predicate that can combine with the object. Each combination thus forms a well-formed complex predicate, licensed by the lexical projection of each auxiliary verb and the HEAD-LEX CONSTRUCTION.

The present analysis has taken the negative auxiliary *ahn-ta* ‘NEG-DECL’ to select the main verb and form a verb complex with it. This verb complex treatment has been supported from constituent tests including adverb intervention and elliptical constructions. Further, the analysis, exploiting the mechanism of argument composition, allows us to capture the properties of this negative auxiliary. The conclusion we can draw from here is that the distribution of a negative auxiliary verb is determined by independent constructional constraints that regulate the placement of other similar verbs.

3.3 Adverbial Negation

3.3.1 Two Key Factors

The third main type of negation is the adverbial negative marker which most of the Indo-European languages employ. There are two main factors that determine the position of an adverbial negative: finiteness of the verb and its intrinsic properties, namely, whether it is an auxiliary or main verb (see Kim (2000), Kim & Sag (2002)).⁸

The first crucial factor that affects the position of adverbial negatives in English and French concerns the finiteness of the main verb. French shows us how the finiteness of a verb influences the surface position of the negative marker *pas*.

- (22) a. Robin n’aime pas Stacey.
 Robin (n’)likes NEG Stacey
 ‘Robin does not like Stacey.’

⁷Instead, we can adopt the feature LIGHT to a lexical expression, as suggested for the French Auxiliary Construction by Abeillé & Godard (1997).

⁸German also employs an adverbial negative *nicht*, which behaves quite differently from the negative in English and French. See Müller (2016) for a detailed review of the previous, theoretical analyses of German negation.

- b. * Robin ne pas aime Stacey.
- (23) a. Ne pas parler Français est un grand désavantage en ce cas.
ne NEG to.speak French is a great disadvantage in this case
'Not to speak French is a great disadvantage in this case.'
- b. * Ne parler pas Français est un grand désavantage en ce cas.

The negator *pas* cannot precede the finite verb but must follow it. But its placement with respect to the nonfinite verb is the reverse image. The negator *pas* should precede the infinitive verb. English is not exceptional in this respect (Baker (1989; 1991), Ernst (1992)). The negation *not* precedes an infinitive verb, but cannot follow a finite main verb.⁹

- (24) a. Jon skjønte aldri dette spørsmålet.
Jon understood never this question
'John never understood this question.'
- b. Han hadde foresatt seg aldri å slå hunden.
He had decided himself never to beat the.dog
'He had decided himself never to beat the dog.'
- (25) a. Kim does not like Lee.
b. * Kim not likes Lee.
c. * Kim likes not Lee.
- (26) a. Kim is believed [not [to like Mary]].
b. * Kim is believed to [like not Mary].

The second important factor that determines the position of adverbial negatives concerns the presence of an auxiliary or main verb. Modern English displays a clear example where this intrinsic property of the verb influences the position of the English negator *not*: the negator cannot follow a finite main verb but when the finite verb is an auxiliary verb, this ordering is possible.

- (27) a. * Kim left not the town.
b. Kim has not left the town.
c. Kim is not leaving the town.

⁹A similar contrast between finiteness and nonfiniteness can be observed in the Scandinavian language like Norwegian (see Platzack (1986), Holmberg & Christer (1988), and Vikner (1994; 1997)).

The placement of *pas* in French infinitival clauses also illustrates that the intrinsic property of the verb affects the position of the adverbial negative *pas*:

- (28) a. Ne pas avoir de voiture dans cette ville rend la vie difficile.
'Not to have a car in this city makes life difficult.'
- b. N'avoir pas de voiture dans cette ville rend la vie difficile.
- (29) a. Ne pas être triste est une condition pour chanter des chansons.
'Not to be sad is a prerequisite condition for singing songs.'
- b. N'être pas triste est une condition pour chanter des chansons.

The negator *pas* can either follow or precede the infinitive auxiliary verb in French, though the acceptability of the ordering in (28b) and (29b) is restricted to certain conservative varieties.

In capturing the distributional behavior of such negatives in English and French as we have noted earlier, the derivational view (exemplified by Pollock (1989) and Chomsky (1991)) has relied on the notion of verb movement and functional projections. The most appealing aspect of this view (initially at least) is that it can provide an analysis of the systematic variation between English and French. By simply assuming that the two languages have different scopes of verb movement – in English only auxiliary verbs move to a higher functional projection whereas all French verbs undergo the same process, the derivational view could explain why the French negator *pas* follows a finite verb, unlike the English negator. In order for this system to succeed, nontrivial complications are required in the basic components of the grammar, e.g. rather questionable subtheories. For example, the introduction of Pollock's theta and quantification theories has been necessary to account for the obligatory verb movement.¹⁰ However, when these subtheories interact with each other, they bring about a 'desperate' situation, as Pollock (1989: 398) himself concedes: his quantification theory forces all main verbs in English to undergo verb movement, but his theory blocks this. This contradictory outcome has forced him to adopt an otherwise unmotivated mechanism, a dummy nonlexical counterpart of *do* in English (which Chomsky (1989) tries to avoid by adopting the notion of LF re-raising). Leaving the plausibility of this mechanism aside, as discussed by Kim (2000) and Kim & Sag (2002), a derivational analysis such as that of Pollock (1989) fails to allow for all the distributional possibilities of English and French negators as well as adverb positioning in various environments

¹⁰His theta theory says only nonthematic verbs move up to the higher functional position, whereas his quantification theory says [+fin] is an operator that must bind a variable.

3.3.2 Constituent Negation in English and French

The construction-based, lexicalist analysis we offer here also recognizes the fact that finiteness plays a crucial role in determining the distributional possibilities of negative adverbs. Its main explanatory resource has basically come from the proper lexical specification of these negative adverbs. The lexical specification that *pas* and *not* both modify nonfinite VPs has sufficed to predict their occurrences in nonfinite clauses.

When English *not* negates an embedded constituent, it behaves much like the negative adverb *never*. The similarity between *not* and *never* is particularly clear in nonfinite verbal constructions (participle, infinitival and bare verb phrases), as illustrated in (30) and (31) (Klima (1964), Baker (1989; 1991)).

- (30) a. Kim regrets [never [having read the book]].
b. We asked him [never [to try to read the book]].
c. Duty made them [never [miss the weekly meeting]].
- (31) a. Kim regrets [not [having read the book]].
b. We asked him [not [to try to read the book]].
c. Duty made them [not [miss the weekly meeting]].

French *ne-pas* is no different in this regard. *Ne-pas* and certain other adverbs precede an infinitival VP:

- (32) a. [Ne pas [repeindre sa maison]] est une négligence.
ne not paint one's house is a negligence
'Not to paint one's house is negligent.'
- b. [Régulièrement [repeindre sa maison]] est une nécessité.
regularly to.paint one's house is a necessity

To account for these properties, we regard *not* and *ne-pas* not as heads of their own functional projection, but rather as adverbs that modify nonfinite VPs. The lexical entries for *ne-pas* and *not* include the information shown in (33).¹¹

¹¹Here we assume that both languages distinguish between *fin(ite)* and *nonfin(ite)* verb forms, but that certain differences exist regarding lower levels of organization. For example, *prp* (*present participle*) is a subtype of *fin* in French, whereas it is a subtype of *nonfin* in English.

For ease of exposition, we will not treat cases where the negation modifies something other than VP, e.g. adverbs (*not surprisingly*), NPs (*not many students*), or PPs (*not in a million years*). Our analysis can accommodate such cases by generalizing the MOD specification in the lexical entry for *not*.

$$(33) \left[\begin{array}{l} \text{FORM } \langle \text{NOT/NE-PAS} \rangle \\ \text{SYN} | \text{HEAD} \left[\begin{array}{l} \text{POS } \text{ADV} \\ \text{MOD } \langle \text{VP}[\text{NONFIN}]:[2] \rangle \end{array} \right] \\ \text{SEM} \left[\text{FRAMES} \left(\left[\begin{array}{l} \text{NEG-FR} \\ \text{ARG } [2] \end{array} \right] \right) \right] \end{array} \right]$$

The lexical entry in (33) specifies that *not* and *ne-pas* modifies a nonfinite VP and that this modified VP serves as the semantic argument of the negation. This simple lexical specification correctly describes the distributional similarities between English *not* and French *ne-pas*: neither element can separate an infinitival verb from its complements.¹² And both *ne-pas* and *not*, like other adverbs of this type, precede the VPs that they modify:

- (34) a. [Ne pas_{VP[inf]} [parler français]] est un grand désavantage en
 ne not to.speak French is a great disadvantage in
 ce cas.
 this case
 b. * Ne parler pas français est un grand désavantage en ce cas.
- (35) a. [Not [speaking English]] is a disadvantage.
 b. * [Speaking not English] is a disadvantage.

Independent principles guarantee that modifiers of this kind precede the elements they modify, thus ensuring the grammaticality of (34a) and (35a), where *ne-pas* and *not* are used as VP[*nonfin*] modifiers. (34b) and (35b) are ungrammatical, since the modifier fails to appear in the required position—i.e. before all elements of the nonfinite VP.

The lexical properties of *not* thus ensures that it cannot modify a finite VP, as shown in (36), but it can modify any nonfinite VP:

- (36) a. * Pat [not_{VP[fin]} [left]].
 b. * Pat certainly [not_{VP[fin]} [talked to me]].
 c. * Pat [not_{VP[fin]} [always agreed with me]].

And much the same is true for French, as the following contrast illustrates:

- (37) a. * Robin [(ne) pas_{VP[fin]} [aime Stacey]].
 Robin [(ne) not likes Stacey]

¹²The exception to this generalization, namely cases where *pas* follows an auxiliary infinitive (*n'avoir pas d'argent*), is discussed in section 5.2 below.

- b. Il veut [ne pas publier dans ce journal].
'He wants not to publish in this journal.'

Note that head-movement transformational analyses stipulate: (1) that negation is generated freely, even in preverbal position in finite clauses and (2) that a post-negation verb must move leftward because otherwise some need would be unfulfilled—the need to bind a tense variable, the need to overcome some morphological deficiency with respect to theta assignment, etc. On our account, no such semantic or morphosyntactic requirements are stipulated; instead, what is specified is a lexical selection property. There is no *a priori* reason, as far as we are aware, to prefer one kind of stipulation over the other. It should be noted, however, that our proposal only makes reference to selectional properties that are utilized elsewhere in the grammar.

3.3.3 Sentential Negation in English

As just illustrated, the analysis of *not* and *ne-pas* as nonfinite VP modifiers provides a straightforward explanation for much of their distribution. We may simply assume that French and English have essentially the same modifier-head construction and that *not* and *ne-pas* have near-identical lexical entries. With respect to negation in finite clauses, however, there are important difference between English and French.

It is a general fact of French that *pas* must follow the finite verb, in which case the verb optionally bears negative morphology (*ne*-marking):

- (38) a. Dominique (n')aime pas Alex.
b. *Dominique pas aime Alex.

In English, *not* must follow the finite verb, which must in addition be an auxiliary verb:

- (39) a. Dominique does not like Alex.
b. *Dominique not does like Alex.
c. *Dominique likes not Alex.

In contrast to the distribution of *not* in nonfinite clauses as constituent negation, its distribution in finite clauses concerns sentential negation. The need to distinguish the two types of negation comes from scope possibilities in an example like (40) (Klima 1964),(Baker 1989), and (Warner 2000).

- (40) The president could not approve the bill.

Negation here could have the two different scope readings paraphrased in (41).

- (41) a. It would be possible for the president not to approve the bill.
b. It would not be possible for the president to approve the bill.

The first interpretation is constituent negation; the second is sentential negation. As noted, sentential *not* may not modify a finite VP, different from the adverb *never*:

- (42) a. Lee never/*not left. (cf. Lee did not leave.)
b. Lee will never/not leave.

The contrast in these two sentences shows one clear difference between *never* and *not*. The negator *not* cannot precede a finite VP though it can freely occur as a nonfinite VP modifier.

Another distributional difference between *never* and *not* is found in the VP ellipsis construction. Observe the following contrast:

- (43) a. Mary sang a song, but Lee never did __.
b. * Mary sang a song, but Lee did never __.
c. Mary sang a song, but Lee did not __.

The data here indicate that *not* behaves differently from adverbs like *never* in finite contexts, even though the two behave alike in nonfinite contexts. The adverb *never* is a true diagnostic of a VP-modifier, and we use contrasts between *never* and *not* to reason about what the properties of the negator *not* must be.

We saw the lexical representation for constituent negation *not* in (33) above. Sentential *not* typically appears linearly in the same position – following a finite auxiliary verb – but shows different syntactic properties (while constituent negation need not follow an auxiliary as in *Not eating gluten is dumb*). As a way to deal with the sentential negation in English, we follow Bresnan (2001) and Kim & Michalies (2018) in assuming that the sentential negation forms a unit with the preceding finite auxiliary verb. This can be supported from the fact that English sentential negation requires the proximity of a finite auxiliary or modal auxiliary on its left and that it can function as synthetic negation as *n't*. That is, the

auxiliary and the negator *not* are fused into a single lexical expression through contraction, as in *won't*, *can't*, and so forth.¹³

With this assumption, the present analysis, in particular, assumes that the combination of a finite auxiliary verb with the sentential negation *not* is licensed by the HEAD-LEX CONSTRUCTION (similar to the one in Korean), which licenses the combination of two lexical expressions such as verb and particle (e.g., *figure out*, *give up*, etc), as well (see Kim & Michalies (2018)). The construction, along with the assumption that the sentential negator *not* bears the LEX feature, projects a structure like the following:

(44) Let's do the tree!

Just as a particle combines with the preceding main verb, forming a head-lex structure, expressions like the negator *not*, *too*, *so* and *indeed* combine with a preceding auxiliary verb:

- (45) a. Kim will not read it.
b. Kim will too/so/indeed read it.

Expressions like *too* and *so* are used to reaffirm the truth of the sentence in question and follow a finite auxiliary verb. We assume that the negator and these reaffirming expressions form a unit with the finite auxiliary, resulting in a lexical-level construction.

Since the sentential negator is not a modifier of the following VP-type expression, we take it to be selected by a finite auxiliary verb, as a main verb selects a particle. This means a finite auxiliary verb (*fin-aux*) can be projected into a corresponding NEG-introducing auxiliary verb (*neg-fin-aux*), as in (46):

- (46) Negative Auxiliary Construction ($\uparrow post-infl-cxt$):
Let's do the tree!

This is a post-inflection construction that allows for words to be derived from other words. We can take this mother-daughter relation as a kind of derivation whose input is a finite auxiliary verb (daughter) and whose output is a neg-finite auxiliary (*fin-aux* \rightarrow *neg-fin-aux*). That is, the finite auxiliary verb selecting just

¹³Zwicky & Pullum (1983) note that the contracted negative *n't* more closely resembles word inflection than it does a 'clitic' or 'weak' word of the kind that often occurs in highly entrenched word sequences (e.g., *Gimme!*). For example, as Zwicky and Pullum observe, *won't* is not the fused form one would predict based on the pronunciation of the word *will*, and such idiosyncrasies are far more characteristic of inflectional endings than clitic words.

a complement XP can be projected into a NEG finite auxiliary that selects the negator as its additional lexical complement that bears the feature NEG as well as the feature LEX. The output construction then licenses the following structure for sentential negation:

(47) Let's do the tree!

As shown here, the negative finite auxiliary verb *could* selects two complements, the negator *not* and the VP *leave town*. The finite auxiliary then first combines with the negator, forming a well-formed head-lex construct. This construct then can combine with a VP complement, forming a Head-Complement construct.

By treating *not* as both a modifier (constituent negation) and a lexical complement (sentential negation), we can account for the scope differences in (40) as well as double negation examples like the following:

- (48) a. You [must not] simply [not work].
 b. He [may not] just [not have been working].

In addition, the analysis can account for various other phenomena including VP ellipsis we discussed in (43). The point was that unlike *never*, the sentential negation can host a VP ellipsis. The VP ellipsis after *not* is possible, given that any VP complement can be unexpressed, leaving the sentential complement intact:

(49) Let's do the tree!

As represented here, the auxiliary verb *could* forms a well-formed head-complement construct with *not* while its VP[*bse*] is unrealized (see Kim (2000), Kim & Sells (2008) for detail).

The sentential negator *not* can 'survive' VPE because it can be licensed in the syntax as the complement of an auxiliary, independent of the following VP. However, an adverb like *never* is only licensed as a modifier of VP. Thus if the VP were elided, we would have the hypothetical structure like the following:

(50) Let's do the tree!

Here, the adverb *never* modifies a VP through the feature MOD, which guarantees that the adverb requires the head VP that it modifies. In an ellipsis structure, the absence of such a VP means that there is no VP for the adverb to modify. In other words, there is no rule licensing such a combination – predicting the ungrammaticality of **has never*, as opposed to *has not*.

3.3.4 Sentential Negation in French

My analysis in which the negator *not* and *pas* are taken to modify a nonfinite VP and select it through the head feature MOD, provides us with a clean and simple way of accounting for their distribution in infinitive clauses. But at stake is their placement in finite clauses:

- (51) a. Lee does not like Kim.
 b. * Lee not likes Kim.
 c. * Lee likes not Kim.
- (52) a. * Robin ne [pas_{VP[fin]} [aime Stacey]].
 Robin ne NEG likes Stacey
 b. Robin (n')aime pas Stacey.
 Robin likes NEG Stacey

Unlike the English negator *not*, *pas* must follow the finite verb. Such a distributional contrast has motivated verb movement analyses (see Pollock (1989), Zanuttini (2001)).

By contrast, the present analysis is cast in terms of a lexical rule that maps a finite verb into a verb with a certain adverb like *pas* as an additional complement, as I did for English *not*. The idea of converting modifiers into complements has been independently proposed by Miller (1992) and Abeillé & Godard (1994) for French adverbs including *pas* also. Building upon this previous work, I also assume that the modifier *pas* can be converted to a syntactic complement of a finite verb for French via the lexical rule given in (53).¹⁴

- (53) Negative Verb Construction in French (↑*post-infl-cxt*):
 Let's do the tree!

The post-inflection construction allows us to build a negative verb from a finite verb in French. That is, a finite verb can give rise to a negative finite verb that selects an Adv_i adverb including *pas* as the second argument. Adv_i includes only a small subset of French negative adverbs such as *pas*, *plus* 'no more', *jamais* 'never', and *point* 'not'. This derivational construction has a semantic effect: the negative verb taking *pas* as an additional argument takes the meaning of the input verb (2) as its argument.

¹⁴Following Miller (1992), I take *ne* to be an inflectional affix which can be optionally realized in the output of the lexical rule in Modern French.

One direct consequence of adopting this construction-based approach is that it systematically expands the set of basic lexical entries. For example, the construction maps lexical entries like *aime* into its negative counterpart *(n')aime*, as shown in:

- (54) Post-Inflection of *(n')aime*:
Let's do the tree!

This output verb *neg-fin-v* then allows the negator *pas* to function as the complement of the verb *naime*, as represented in (55).

- (55) Let's do the tree!

The analysis also explains the position of *pas* in finite clauses:

- (56) a. *Jean ne [_{VP[fin]} [_{V[fin]} aime Jan]].
b. Jean [_{VP[fin]} [_{V[fin]} [(n')aime] [_{Adv} [pas] [_{NP} [Jan]]].

The placement of *pas* in (56a) is unacceptable since *pas* here is used not as a nonfinite VP modifier, but as a finite VP modifier. But due to the present analysis which allows *pas*-type negative adverbs to function as the complement of a finite verb, *pas* can function as the sister of the finite verb *aime*.

Given that the conditional, imperative, and subjunctive, and even present participle verb forms in French are finite, the construction analysis also predicts that *pas* cannot precede any of these verb forms:

- (57) a. Si j'avais de l'argent, je ne achèterais pas.
'If I had money, I would not buy a car.'
b. * Si j'avais de l'argent, je ne pas achèterais.
- (58) a. Ne mange pas ta soupe.
'Don't eat your soup!'
b. * Ne pas mange ta soupe.
- (59) a. Il est important que vous ne répondiez pas.
'It is important that you not answer.'
b. * Il est important que vous ne pas répondiez.
- (60) a. Ne parlant pas Français, Stacey avait des difficultés.
'Not speaking French, Stacey had difficulties.'
b. * Ne pas parlant Français, Stacey avait des difficultés.

Another important consequence of the present construction-based analysis is that it allows us to reduce the parametric differences between French and English negation to be a matter of lexical properties. The negators *not* and *pas* are identical in that they both are VP[*nonfin*] modifying adverbs. But they are different with respect to which verbs can select them as complements. A comparison between the French Negative Construction and the English Negative Construction shows that *not* can be the complement of a finite auxiliary verb, whereas *pas* can be the complement of a finite verb. So the only difference is the morphosyntactic value [AUX +] and this induces the difference in positioning the negators.

This surface-oriented approach is in a sense similar to Pollock's viewpoint that the verb's finiteness plays a crucial role in the distribution of adverbs and negation. But there is one fundamental difference. I claim that it is not the interaction of verb movement and his subtheories such as the theta theory and 'quantification theory' but the morphosyntactic value (VFORM value) of the verb and lexical rules that affect the position of adverbs including *pas* and *not*. All surface structures are directly generated by X' theory without movement. The conclusion we can draw from these observations is that the position of adverbial negatives is determined not by the respective properties of verb movement, but by their lexical properties, the morphosyntactic (finiteness) features of the verbal head, and independently motivated Linear Precedence constraints.

3.4 Clitic-like Negative Verb

As we have seen, the negative markers *non* and *no* are the main way of expressing negation in Italian and Spanish. These negative markers always precede the main verb, whether finite or non-finite, as can be observed from the repeated Italian examples:¹⁵

- (61) a. Gianni non legge articoli di sintassi.
Gianni NEG reads articles of syntax
'Gianni doesn't read syntax articles.'
- b. Gianni vuole che io non legga articoli di sintassi.
Gianni wants that I NEG read articles of syntax.
- c. Non leggere articoli di sintassi è un vero peccato.
NEG to.read articles of syntax is a real shame

¹⁵Languages like Welsh also employ a clitic-like negative. See Borsley & Jones (2000) for detailed discussion of Welsh negation.

- d. Non leggendo articoli di sintassi, Gianni trova la linguistica noiosa.
 NEG reading articles of syntax, Gianni finds linguistics boring

Various properties of the negator *non* in Italian and *no* in Spanish are shared with those of pronominal clitics. Like pronominal clitics, the Italian negator *non* must occupy the pre-auxiliary position:

- (62) a. Gianni non ha parlato.
 Gianni NEG has talked
 'Gianni has not talked.'
 b. * Gianni ha non parlato. (Belletti 1990: 12)

However, one key difference from pronominal clitics is that negators *non* in Italian and *no* in Spanish can appear alone, especially in ellipsis-like constructions. Consider Spanish examples from Crowgey (1994).

- (63) a. * Juan no ha comido, pero Susana ha.
 Juan NEG has eaten but Susana has
 'John has not eaten, but Susana has.'
 b. * Juan ha comido, pero Susana no ha.
 Juan has eaten but Susana NEG has
 c. Juan ha comido pero Susana no.
 Juan has eaten but Susana NEG

The derivational view again attributes the distribution of this negative marker to the reflex of verb movement and functional projections (see Belletti (1990), Zanuttini (1991)). This line of analysis also appears to be persuasive in that the different scope of verb movement application could explain the observed variations among typologically and genetically related languages. Such an analysis, however, fails to capture unique properties of clitic-like negators from inflectional negators, negative auxiliaries, or adverb negatives.

The analysis which I defend here is to take *non* to be an independent lexical head element though it is a clitic. This claim follows the spirit of Monachesi (1993; 1998)'s analysis claiming that there are two types of clitics, affix-like clitics and word-like clitics: pronominal clitics belong to the former, whereas the bisyllabic clitic *loro* 'to-them' to the latter. The present analysis thus suggests that *non* also belongs to the latter group.¹⁶ One key difference from pronominal clitics

¹⁶But one main difference between *non* and *loro* is that *non* is a head element, whereas *loro* is a complement XP. See Monachesi (1993; 1998) for further discussion of the behavior of *loro* and its treatment.

is thus that it functions as an independent word. Treating *non* as a word-like element will allow us to capture its word-like properties such as the possibility of stress on the negator and its separation from the first verbal element. But it is not a phrasal modifier, but a clitic, which combines with the following main verb. Adopting the treatment of English expressions like *than*, *as*, *of*, *a/an*, *the* as functor expressions that select a head expression (Van Eynde 2007; Sag 2012), the present analysis takes *non* as a functor, as represented by the following lexical specifications:

(64) Lexical specifications for *non*:

$$\left[\begin{array}{l} \text{FORM } \langle \text{NON} \rangle \\ \text{SYN } \left[\begin{array}{l} \text{HEAD} | \text{POS } \textit{CLITIC} \\ \text{SEL } \left\langle \left[\begin{array}{l} \text{HEAD} | \text{POS } \textit{VERB} \\ \text{FRAMES } \langle \underline{1} \rangle \end{array} \right] \right\rangle \end{array} \right] \\ \text{SEM } \left[\begin{array}{l} \text{FRAMES } \left\langle \left[\begin{array}{l} \textit{NEG-FR} \\ \text{ARG } \underline{1} \end{array} \right] \right\rangle \end{array} \right] \end{array} \right]$$

This lexical entry roughly corresponds to the entry for Italian auxiliary verbs (and restructuring verbs with clitic climbing), in that the negator selects for a verbal complement. The combination of these two expressions is licensed by the HEAD-FUNCTOR CONSTRUCTION:

(65) HEAD-FUNCTOR CONSTRUCTION:

$$\left[\begin{array}{l} \textit{HD-FUNCTOR-CXT} \\ \text{SEM } \underline{2} \end{array} \right] \Rightarrow \left[\begin{array}{l} \text{SEL } \langle \underline{1} \rangle \\ \text{SEM } \underline{2} \end{array} \right], \underline{1}\text{H}[\text{POS } \textit{VERB}]$$

The construction allows a functor expression to combine with a head expression, whose resulting semantics is identical to the functor. This then licenses the combination of the clitic *non* with the following verb. In order to see how this system works, let us consider an example where the negator combines with a transitive verb as in (66).

- (66) Gianni non legge articoli di sintassi.
 Gianni NEG reads articles of syntax
 ‘Gianni doesn’t read syntax articles.’

The negator *non* combines with the finite verb *legge*, whose lexical entry is given in (67):

(67) Lexical specifications for the word *legge*:

$$\left[\begin{array}{l} \text{FORM } \langle \text{LEGGE} \rangle \\ \left[\begin{array}{l} \text{HEAD} | \text{POS } \textit{VERB} \\ \text{SYN} \left[\begin{array}{l} \text{VAL} \left[\begin{array}{l} \text{SUBJ } \langle \text{[1]NP} \rangle \\ \text{COMPS } \langle \text{[2]NP} \rangle \end{array} \right] \end{array} \right] \end{array} \right] \\ \text{ARG-ST } \langle \text{[1]NP}, \text{[2]NP} \rangle \\ \text{SEM } \left[\text{FRAMES } \left\langle \left[\textit{LEGGE-FR} \right] \right\rangle \right] \end{array} \right]$$

This lexical construction will license the following structure, interacting with the HEAD-FUNCTOR CONSTRUCTION:

(68) Let's do the tree!

The HD-FUNCTOR CONSTRUCTION licenses the combination of the functor *non* with the following finite verb. The resulting combination inherits the subcategorization value of the head verb *legge*, but the meaning is identical to that of the functor.

Given that a functor in Italian precedes the head it selects, the functor treatment of *non* can easily account for the fact that the negator *non* precedes an auxiliary verb either in finite or infinitive clauses, but cannot follow it in either clause-type .

- (69) a. Maria non ha sempre pagato le tasse.
 Maria NEG has always paid the taxes
 ‘Maria hasn’t always paid taxes.’
 b. * Maria ha sempre non pagato le tasse. (Zanuttini 1991: 123)
- (70) a. Gianni sostiene di non essere uscito.
 Gianni claims to NEG have gone.out
 ‘Gianni claims not to have gone out.’
 b. * Gianni sostiene di essere non uscito.
 Gianni claims to have NEG gone.out (Belletti 1990: 90)

In the nonderivational, lexicalist analysis just sketched here, the negator is taken to be a functor clitic that combines with a following verb. This analysis not only allows us to capture its dual properties – clitic-like and word-like properties, but also correctly predicts the positioning of *non* in various contexts. The conclusion we can draw from Italian type of sentential negation is that the distribution of a clitic-like negator is determined in relation to the head that this negative selects.

4 Concluding Remarks

The types of negation we have seen are identical in that they negate a sentence or clause in the given language. Does this entail that there is a universal functional category Neg that, interacting with other grammatical constraints such as movement operations, allows all their distributional possibilities? My answer to this question is no.

One of the most attractive consequences of the derivational perspective has been that one uniform category, given other syntactic operations and constraints, explains the derivational properties of all types of negation in natural languages, and further can provide a surprisingly close and parallel structure among languages, whether typologically related or not. However, this line of thinking, first of all, runs the risk of missing the peculiar properties of each type of negation. Each individual language has its own way of expressing negation, and further has its own restrictions in the surface realizations of negation which can hardly be reduced to one uniform category. The supposition of a uniform syntactic category notion abstracts away only the common denominator (presumably a semantic notion), sweeping the particular lexical or syntactic characteristics of each type of negation under the carpet. This uniform NegP analysis has eventually forced nontrivial complications of other grammatical components in order to allow all the surface possibilities of each type of negation. For instance, by placing morphological negation in the realm of syntax, we miss the fundamental generalization that the formation and distribution of word and sentence are subject to different principles and operations and correspond to different modules of the grammar, namely, morphology and syntax.

In the nonderivational analysis, there is no uniform syntactic element, though a certain universal aspect of negation does exist, viz. its semantic contribution. Languages appear to employ various possible ways of negating a clause or sentence. Negation can be realized as different morphological and syntactic categories. By admitting morphological and syntactic categories, we have been able to capture their idiosyncratic properties in a simple and natural manner. Further this theory has been built upon the lexical integrity principle, the thesis that the principles that govern the composition of morphological constituents are fundamentally different from the principles that govern sentence structures. The obvious advantage of this perspective is that it can capture the distinct properties of morphological and syntactic negation, and also of their distribution, in a much more complete and satisfactory way.

One can view the difference between the derivational view and the nonderiva-

tional, lexicalist view as a matter of a different division of labor. In the derivational view the syntactic components of grammars bear almost all the burden of descriptive as well as explanatory resources. But in the nonderivational view, it is both the morphological and syntactic components that carry the burden. It is true that a derivational grammar whose chief explanatory resources are functional projections including NegP and syntactic movement, also has furthered our understanding of negation and relevant phenomena in certain respects. But in so doing it has also brought other complexities into the basic components of the grammar. The present research strongly suggests that a more conservative division of labor between morphology and syntax is far more economical and feasible.

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