

# ***do*-support in Korean: Evidence for an Interpretive Morphology\***

Paul Hagstrom  
Massachusetts Institute of Technology

The purpose of this paper is to argue that morphology is an interpretive system, rather than one which filters ill-formed syntactic derivations. To make the argument, I will discuss two morphological phenomena in Korean and argue that in each we see a lack of interaction with the syntax. The conclusion I will draw is that these phenomena are reflexes of purely morphological operations, independent from the syntax. At the outset, however, I note that this is a difficult conclusion to argue for, because the empirical consequences of the difference between an inactive node in the syntax and a node inserted only in the morphology are even in principle very small. What I aim to show is that by viewing morphology as an interpretive system, we may significantly simplify our explanations of syntax.

## **1 *do*-support in Korean**

We begin by looking at the phenomenon of “*do*-support” in Korean. Where inflectional elements are separated from the verb in a sentence, languages including English and Korean exhibit *do*-support, whereby the inflectional affixes are realized on a “dummy verb.” An example of *do*-support in Korean is given in (2), which is to be compared to the simple affirmative clause in (1). In (2), notice that the tense morphology is attached to the verb *ha-* ‘do’.<sup>1</sup>

- (1) Chelswu-ka chayk-ul ilk-ess-ta  
Chelswu-NOM book-ACC read-PAST-DECL  
‘Chelswu read the book.’
- (2) Chelswu-ka chayk-ul ilk-ci ani ha-ess-ta  
Chelswu-NOM book-ACC read-CI NEG do-PAST-DECL  
‘Chelswu did not read the book.’

The negation construction in (2) will be the focus of much of the following discussion, although *do*-support also occurs in other contexts.<sup>2</sup>

In the next few sections, I will motivate a view of this “supportive” *ha-* in Korean which takes it to be part of the “pronunciation” of a stranded verbal affix. In particular, the claim is that *ha-* is not present in the syntax, but is inserted only as part of the morphological interpretation of the structure.

## **2 *do*-support in Korean negation**

I begin the discussion of *do*-support in negation by outlining the analysis I assume for negation. In Korean, there are two distinct ways to negate a sentence. The first I

---

\* I would like to thank Judy Yoo-Kyung Baek, Young-Sik Choi, Yoonjung Kang, Alec Marantz, Martha McGinnis, David Pesetsky, Ken Wexler, and Dong-Whee Yang for useful discussions on the topics discussed herein, although of course all errors are my own. This research was supported in part by the NSF Research Training Grant (DIR 9113607).

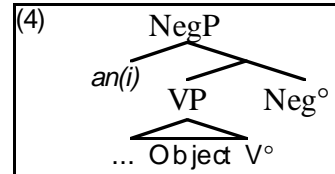
<sup>1</sup> The verb *ha-* in Korean (like *do* in English) appears both as a “heavy” verb and as a “light” verb. We will be restricting our attention here to light or “supportive” *ha-* of the sort shown in (2). For discussion of the two types of *ha-*, see Ahn (1991), Park (1992).

<sup>2</sup> See discussions in Kang (1988) and Park (1992) for other *do*-support constructions.

will refer to as Short-Negation (“S-neg”), shown in (3a), and the second I will refer to as Long-Negation (“L-neg”), shown in (3b).

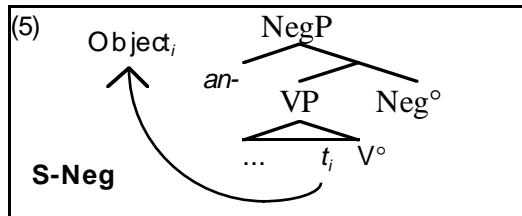
- (3) a. Chelswu-ka ppang-ul an mek-ess-ta [S-neg]  
 Chelswu-NOM bread-ACC NEG eat-PAST-DECL  
 ‘Chelswu didn’t eat the bread.’
- b. Chelswu-ka ppang-ul mek-ci ani ha-ess-ta [L-neg]  
 Chelswu-NOM bread-ACC eat-<sub>CI</sub> NEG do-PAST-DECL  
 ‘Chelswu didn’t eat the bread.’

In S-neg (3a), the negative morpheme *an-* occurs as a verbal prefix and *ha-* is not involved. In L-neg (3b), the negative morpheme *ani* occurs to the right of the nominalized verb and *ha-* appears, bearing the tense morphology.

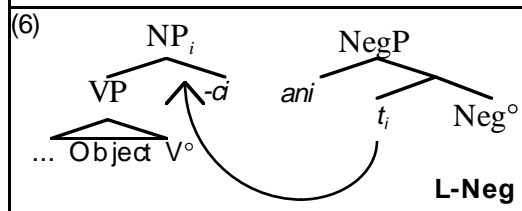


The analysis I adopt here starts from the assumption that the two forms of negation above come from minimally different underlying structures.<sup>3</sup> In particular, I am supposing that the crucial difference between the two forms lies in the nominalization of the verb.

I analyze the overt negative morpheme as the specifier of a negation phrase (NegP), whose head lacks phonological content,<sup>4</sup> and which appears hierarchically above the phrase headed by the lexical verb; see (4).



To derive the word order, I propose that in S-neg, the object moves leftward to some position beyond the negative morpheme.<sup>5</sup> The surface form for S-neg is diagrammed in (5).



As for L-neg, assuming that the morpheme *-ci* nominalizes the VP, the word order follows straightforwardly if this entire phrase moves by whatever mechanism drives the movement of the object in S-neg.<sup>6</sup> As shown in (6), the nominalized VP moves to the left of *ani*, separating the verb stem from the tense morphology, thereby providing the context for *do*-support.<sup>7</sup>

<sup>3</sup> This is as opposed to proposals (e.g., Yoon 1990, Cho 1994) that S-neg is “lexical” and is a prefix adjoined to the verbal head before entering the syntax, while L-neg is a syntactic operation involving a negation morpheme somewhere structurally higher in the tree. However, to the extent that the view put forth in the text is successful in deriving the two forms from a common underlying form, it is the simpler and thus preferable proposal.

<sup>4</sup> Ouhalla (1990) suggests German, Swedish, and colloquial French as other languages in which the specifier of NegP is realized while the head of NegP is phonologically zero. For Korean, Jung (1990) also proposes that the negative morpheme is in the specifier of NegP.

<sup>5</sup> For similar movement based analyses of Korean negation, see Baek (1995), Whitman (1995). See Hagstrom (1995) for more motivation and discussion of the present analysis.

<sup>6</sup> What exactly drives this movement is left open for further research. It is probably not movement for Case, however, since we would then expect to see non-NP complements of the verb remaining to the right of *an-* in S-neg; cf. negation in German (Santelmann 1994, Hauptmann 1994), where *nicht* follows definite objects, but precedes PP and CP complements. Thanks to both Alec Marantz and David Pesetsky for bringing this to my attention.

<sup>7</sup> The analysis outlined here differs from the view that the S-neg construction involves verb-movement up to a higher head (Cho 1994, Yoon 1990). L-neg is then explained by



appearances, the L-neg construction does not exhibit characteristics of a biclausal structure. Rather, we see that unlike other verbs, the properties of *ha-* are crucially dependent on the properties of its complement.

### 3.1 Negative Polarity Item licensing

The first argument is made using the licensing properties of Negative Polarity Items (NPIs). As discussed by Choe (1988) and as demonstrated in (8), NPIs in Korean obey a “Clausemate Condition” such that any well-formed NPI must be within the same clause as a licensing negative element. In (8a), the NPI *amwukesto* ‘anything’ is in the same clause as the negation, and the sentence is grammatical. In (8b), however, the NPI is in the embedded clause but the negation is in the matrix clause. This violates the Clausemate Condition and so (8b) is ungrammatical.

- (8) a. John-i        [Mary-ka    **amwukesto**    an-ilk-ess-ta-ko]        malha-ess-ta  
       John-NOM    [Mary-NOM    **anything**        NEG-read-PAST-DECL-KO]    say-PAST-DECL  
       ‘John said that Mary didn’t read anything.’
- b. \*John-i        [Mary-ka    **amwukesto**    ilk-ess-ta-ko]        an-malha-ess-ta  
       John-NOM    [Mary-NOM    **anything**        read-PAST-DECL-KO]    NEG-say-PAST-DECL  
       (‘John didn’t say that Mary read anything.’)

With this in mind, we observe that both the S-neg and L-neg constructions in (9) are equally grammatical, and thus are both presumed to satisfy the Clausemate Condition. The conclusion here is that with respect to the Clausemate Condition on NPIs, L-neg acts as a single clause.

- (9) a. Mary-ka        **amwukesto**        an-ilk-ess-ta  
       Mary-NOM    **anything**        NEG-read-PAST-DECL  
       ‘Mary didn’t read anything.’
- b. Mary-ka        **amwukesto**        ilk-ci        ani        ha-ess-ta  
       Mary-NOM    **anything**        read-Cl    NEG        do-PAST-DECL  
       ‘Mary didn’t read anything.’

### 3.2 Incompatibility of “present tense” morphology and adjectives

A separate argument, which I take from Kang 1988, shows that these constructions do not act biclausal. The argument is based on an incompatibility between a certain class of verbs (the “nonagentives”), and the imperfect aspect marker *-n(un)-*.<sup>9</sup> Below, we see that although *-n(un)-* can appear with a verb in (10a), it cannot appear with a nonagentive in (10b).

- (10) a. Yenghi-ka        chayk-ul        ilk-nun-ta  
       Yenghi-NOM    book-ACC        read-IMP-DECL  
       ‘Yenghi reads the book.’
- b. Yenghi-ka        yeppu-(\*n-)ta  
       Yenghi-NOM    pretty-(\*IMP-)DECL  
       ‘Yenghi is pretty.’

---

<sup>9</sup> I use the term “nonagentive” rather than “stative” or “adjective” (both of which are common in the literature) following the discussion in Kim 1990 which concludes that it is the feature [-agentive] that distinguishes this class of verbs.

Next, we consider a sentence which is uncontroversially biclausal, such as that in (11). Here the matrix verb is marked with *-n(un)-* and the embedded verb is nonagentive. We see that (11) is grammatical and conclude that the incompatibility between nonagentives and *-n(un)-* does not extend across clause boundaries.

- (11) John-un                    [Mary-ka                    **yeppu-ess-ta-ko**]                    malha-n-ta  
 John-TOP                    [Mary-NOM                    **pretty-PAST-DECL-KO**]                    say-IMP-DECL  
 'John says that Mary was pretty.'

Finally, observe the two L-neg constructions in (12). The first, (12a), involves an agentive verb and is grammatical with the imperfective morpheme *-n(un)-* on *ha-*. The second, (12b), involves a nonagentive and is ungrammatical with the imperfective morpheme.

- (12) a. Chelswu-ka                    chayk-ul                    **ilk-ci**                    ani                    ha-n-ta  
 Chelswu-NOM                    book-ACC                    **read-CI**                    NEG                    do-IMP-DECL  
 'Chelswu does not read a/the book.'
- b. Yenghi-ka                    **yeppu-ci-nun**                    ani                    ha-(\*n)-ta  
 Yenghi-NOM                    **pretty-CI-TOP**                    NEG                    do-(\*IMP)-DECL  
 'Yenghi is not pretty.'

If L-neg were a biclausal structure like (11), both sentences in (12) should be acceptable; the conclusion is that no clause boundary intervenes between *ha-* and the content predicate in L-neg.

The relevance of this conclusion is this: if, contrary to the claim I make here, *ha-* is an independent verb in the syntax, it does not have constant properties of its own. Instead, it must “inherit” properties somehow from the verb embedded in its complement. For example, whatever feature of nonagentives is responsible for the incompatibility with the imperfective marker *-n(un)-*, this feature must be transferred somehow to *ha-*. Recall the facts in (12), where we saw that *ha-* is compatible with *-n(un)-* only if the main verb is. Although various such transfer mechanisms have been proposed,<sup>10</sup> if the main claim is correct and *ha-* is not present in the syntax, such mechanisms are unnecessary, since these facts simply follow in sentences with *ha-* in the same way they do in sentences without *ha-*.

## 5 Presence of *ha-* does not correlate with case assignment

A second sort of argument which is relevant to the main claim is that overt presence of *ha-* does not correlate with case assignment, as presented in Park 1992 and reviewed here. The structure of the argument is as follows: there are conditions under which morphological Accusative case appears on verbal nouns and on the nominalized VP in L-neg. These conditions are uncorrelated with the presence or absence of the verb *ha-*, but are instead correlated with the agentivity of the main verb. The conclusion we reach is that regardless of whether *ha-* is present in the syntax, the case marking patterns can be explained.<sup>11</sup>

<sup>10</sup> For example, Kang (1988) proposes that the main verb moves at LF to replace *ha-* to satisfy Full Interpretation, at which point relevant properties are checked. Grimshaw and Mester (1988) propose an Argument Transfer mechanism by which theta role and case assignment properties are transferred from a main verb to a light verb. Also see Park (1992) for discussion.

<sup>11</sup> We cannot draw the stronger conclusion that *ha-* is not responsible for assigning/licensing Accusative case (pointed out to me by David Pesetsky (p.c.)). As will be

We begin by considering the examples below, which show accusative case marking appearing on a verbal noun (13a) and on a nominalized VP in L-neg (13b), each of which superficially appear to be a complement of *ha-*.

- (13) a. John-i            se sikan            kongpwu-**lul**    ha-ess-ta  
 John-NOM        3 hours            study-ACC        do-PAST-DECL  
 'John studied for three hours.'
- b. John-i            hakkyo-e            ka-ci-**lul**        ani    ha-ss-ta  
 John-NOM        school-to        go-<sub>CI</sub>-ACC        NEG    do-PAST-DECL  
 'John didn't go to school.'

However, accusative case of this sort can show up on nonarguments in constructions which lack *ha-*, such as on adverbs as in (14).

- (14) John-i            Bill-pota            twu pay-**ul**        te    ca-ss-ta  
 John-NOM        Bill-than        2 times-ACC        more    sleep-PAST-DECL  
 'John slept twice more than Bill.'

Sometimes the case marking which appears in constructions like (13) and (14) is impossible, but in a predictable way. In (13) and (14), the main verb of the sentences was agentive. However, if the main verb is a nonagentive, as in (15), this accusative case marking is not possible. We conclude that some feature of the main verb is crucially involved in the ability to realize accusative case markings in these constructions, independent of whether *ha-* is present.

- (15) a. \*Pang-i            coyong-**ul**            ha-ess-ta  
 room-NOM        quiet-ACC        do-PAST-DECL  
 ('The room was quiet.')
- b. Mary-ka            yeppu-ci-**ka/\*lul**        ani    ha-ess-ta  
 Mary-NOM        pretty-<sub>CI</sub>-NOM/\*ACC        NEG    do-PAST-DECL  
 ('Mary was not pretty.')
- c. i pang-i            ce pang-pota        twu pay-**ka/\*lul**        te    khu-ta  
 this room-NOM    that room-than    2 times-NOM/\*ACC        more    big-DECL  
 ('This room is twice bigger than that one.')

Park (1992) proposes that the case marking realized on the relevant elements in (13) and (14) are instances of "morphological case" which is assigned in the morphology under government by verbal inflection and allomorphically conditioned by the agentivity of the verb. The important point for us is that *ha-* does not correlate with the appearance of accusative case; in (14) we see that morphological accusative case can be assigned when *ha-* is not present, while in (15) we see that the morphological case that ends up being realized, both when *ha-* is present and when it is not, depends entirely on the agentivity of the main verb. The conclusion is that whether *ha-* is present in the syntax or not, we still have available an account for the case marking patterns just discussed.

---

pointed out in the text, thought, if we take *ha-* to be responsible for case marking, we are required to posit mechanisms to transfer case marking properties from the main verb to *ha-*.

<sup>12</sup> My own consultations of native speakers revealed that the version of (15b) with accusative *-lul* is not impossible under some restricted contexts involving, in this example, Mary's being pretty constituting the most important prerequisite for something. I leave for future research the determination of exactly in which contexts this is allowable.

To summarize, we have so far seen that without positing a transfer of features from the main verb to *ha-*, *ha-* cannot be analyzed as an independent head taking a clausal complement. We first noted that L-neg constructions act like one clause with respect to the Clausemate Condition on NPIs, and that they do not act biclausal with respect to the incompatibility between nonagentives and *-n(un)-*. Lastly, we showed that the appearance of accusative case marking can be adequately explained without reference to *ha-*. Given these observations, the simplest analysis is one which assumes that *ha-* is not syntactically present.

Accepting that conclusion, we will now turn to the question of what motivates the appearance of *ha-*, and how it arises in the morphology.

## 6 *ha-* supports stranded verbal affixes

To begin the discussion, consider (16), which is a double L-neg construction. Each of the two instances of L-neg in (16) introduces the nominalizer *-ci* and the negative morpheme *ani*. Of particular interest is the fact that *ha-* appears twice, once attached to the nominalizer *-ci*, and again attached to the past tense morpheme.

- (16) John-i ppang-ul mek-ci ani ha-ci ani ha-ess-ta  
 John-NOM bread-ACC eat-CI NEG do-CI NEG do-PAST-DECL  
 'John didn't not eat the bread.' (=John ate the bread)

Although the head of a NegP cannot take a NegP directly as its complement, a nominalized NegP may appear as a complement to a negation head.<sup>13</sup> Given that, the only motivated syntactic difference between (16) and single L-neg (2) is the addition of a second NegP and a second nominalizer phrase. The head of the phrase responsible for nominalizing the NegP is realized as verbal suffix *-ci*, but it ends up in a position which is not adjacent to a verb. We see in (16) that in this situation, it surfaces attached to *ha-*.

The conclusion we may draw from this is that a verbal affix, like the nominalizer *-ci* or past tense above, will be interpreted in the morphology by inserting *ha-* if the syntax fails to provide an appropriate verbal host.

This is most easily expressed within the framework of Distributed Morphology, as set forth in Halle & Marantz 1993. They propose that structures produced in the syntax are submitted for morphological interpretation at a point in the derivation I will call "Spellout." After Spellout, morphological operations take place which may alter the structure. The last step in this process is Vocabulary Insertion, whereby each terminal node in the structure receives its phonological form. Which phonological form becomes associated to a given terminal node is determined by competition among forms, where the most highly specified Vocabulary item compatible with the features of the terminal node is chosen.

The account of *do*-support in English proposed in Halle & Marantz 1993 attributes a morphological property to Tense in English which requires that its sister in the structure is a V node. In an affirmative sentence in English, the Tense and V nodes remain adjacent up to Spellout, at which point they can combine by morphological Merger, and thereby satisfy the morphological requirement of Tense.

<sup>13</sup> Evidence for this prohibition of a NegP complement to Neg<sup>o</sup> comes from the fact that unlike L-neg, S-neg cannot iterate, as in (i).

(i) \*John-i ppang-ul an-an-mek-ess-ta  
 John-NOM bread-ACC NEG-NEG-eat-PAST-DECL  
 ('John didn't not eat the bread.')

In a negative English sentence, however, *not* intervenes between Tense and V and morphological Merger is unable to apply. In this situation, as part of the morphological interpretation, a V node is inserted into the structure as a sister to Tense. This morphological operation constitutes the minimal disruption of the structure still capable of satisfying the morphological requirement of Tense. Finally, at Vocabulary Insertion, *do* is the phonological form which becomes associated to the newly-inserted V node, since the Vocabulary item *do* in English is specified for no features other than its category—that is, it is the unmarked verb.

Here, I am proposing the same account for *do*-support in Korean. Specifically, I propose that both Tense and the nominalizer have in common the morphological property of being verbal affixes. To be a verbal affix is to have the requirement of being sister to a V in a morphologically well-formed word. If this requirement cannot be met in the structure provided at Spellout by morphological Merger, a V node will be inserted into the structure. At Vocabulary Insertion, this newly-inserted V node will receive *ha-* as its phonological shape.

## 7 *-ko* support

Having motivated viewing *ha-* in Korean as pure morphological support, I will now turn to another phenomenon in Korean which can be analyzed in a similar way.

Kang 1988 proposes that all verbs are bound roots in Korean and that a principle of “Morphological Closure” requires that all bound roots be “closed off” by an appropriate suffix. He suggests that there is a class of suffixes which are capable of closing a bound root, the most unspecified member of which is *-ko*.

This suffix *-ko* appears in several diverse environments, examples of which are given in (17) through (19). In (17) *-ko* appears as part of a sentential complementizer, in (18) *-ko* appears internal to the progressive morphology, and in (20), *-ko* appears as a marker of the first “conjunct” in what have been called verbal “coordination” structures. The different examples in (19) show that *-ko* can attach at any level in the verbal inflectional system. The fact that *-ko* appears in these diverse environments is taken as support for the view that it represents some form of default.

- (17) John-i [Bill-i ppang-ul mek-ess-ta-**ko**] malha-ess-ta  
 J-NOM [B-NOM bread-ACC eat-PAST-DECL-**ko**] say-PAST-DECL  
 ‘John said that Bill ate the bread.’
- (18) John-i ppang-ul mek-**ko** iss-ta  
 J-NOM bread-ACC eat-**ko** exist-DECL  
 ‘John is eating the bread.’
- (19) a. [Chelswu-ka chayk-ul sa-ess-kess]-**ko**  
 [Chelswu-NOM book-ACC buy-PAST-MAY]-**ko**  
 [Yenghi-ka kongchayk-ul sa-ess-kess]-ta  
 [Yenghi-NOM notebook-ACC buy-PAST-MAY]-DECL  
 ‘Chelswu might have bought a book and Yenghi might have bought a notebook.’
- b. [Chelswu-ka chayk-ul sa-ess]-**ko**  
 [Chelswu-NOM book-ACC buy-PAST]-**ko**  
 [Yenghi-ka kongchayk-ul sa-ess]-kess-ta  
 [Yenghi-NOM notebook-ACC buy-PAST]-MAY-DECL  
 ‘Chelswu might have bought a book and Yenghi might have bought a notebook.’
- c. John-i pap-ul mek-**ko** chiu-ess-ta  
 John-NOM meal-ACC eat-**ko** clean-PAST-DECL  
 ‘John ate and cleaned the meal.’

First, let us consider the examples in (19). I will refer to these as adjunction constructions, following Yi (1994), who argues that these constructions are not coordinations, but instead are adjunction structures.<sup>14</sup> Accepting that the *-ko* clause is simply an adjunct, there is no reason to expect a syntactically realized coordination element, yet all of these adjoined clauses are marked with *-ko*.

Interestingly, when two verbal nouns are combined this way, as in (20), no *-ko* morpheme appears.<sup>15</sup>

- (20) Kyengchal-ka kipun cohkey cosa poto ha-ess-ta  
 police-NOM pleasantly investigate report do-PAST-DECL  
 'The police pleasantly investigated and reported (the case).'

This is in fact what we would expect if *-ko* in (19) appears solely to satisfy Morphological Closure. Because the verbal nouns in (20) are not bound roots but are morphologically well-formed on their own, they do not need *-ko*.

What I suggest is that the principle of Morphological Closure is indeed a condition of morphological well-formedness in Korean. As before, we suppose that the morphology makes a minimal structural modification to remedy any morphological ill-formedness in the structure it receives at Spellout. I therefore propose that in (19) a structural node is inserted in the morphology to satisfy Morphological Closure, and that Vocabulary Insertion will then associate to it the phonological form of the default suffix *-ko*.

The *-ko* appearing in (19) looks like pure morphological support in the interest of satisfying Morphological Closure. However, this is not the only way in which *-ko* can come to be realized on the surface. Backing up to the sentential complement example in (17), notice first that before the *-ko* morpheme appears the *-ta* morpheme, which marks the clause as declarative. This *-ta* morpheme seems to entirely carry the function of “clause typing” which is characteristic of complementizers (Cheng 1991). Based on this, I propose that *-ta* is the realization of the complementizer head  $C^{\circ}$ . This, however, obliges us to seek some explanation for the appearance of *-ko*.

First of all, it is clear that the *-ta* morpheme in (17) is capable of closing a morphologically well-formed word, since it appears clause-finally in (17) and in fact all of the examples in this paper. The motivation for the insertion of *-ko* in (17) cannot therefore be attributed solely to the need to satisfy Morphological Closure, as also observed by Kang (1988). Because the function of *-ko* in these contexts is specifically to mark embedding, the suggestion I make is that there is just a rule in the morphology which inserts a structural node in the context of the features of a complementizer which mark embeddedness. This inserted node ends up being realized as *-ko* via Vocabulary Insertion of the default suffix. What I am suggesting is that the source of *-ko* in both of the constructions we have discussed is the same:

<sup>14</sup> Yi (1994) argues for an adjunction analysis of examples like (19) based on several arguments. Among them are the lack of Coordinate Structure Constraint effects on scrambling objects and *wh*-words, the ability to scramble and right-dislocate an entire *-ko* clause, the inability of negation to license an object NPI in the *-ko* clause, and facts from scope of negation.

<sup>15</sup> *kipun cohkey* ‘pleasantly’ is included in (20) for the purposes of ensuring that the verbal nouns are functioning as verbs and not as nominal arguments of heavy *ha-*. See Park 1992 for discussion. It is perhaps worth noting that if these verbal nouns are used nominally, as is forced by the adjectival *kipun cohun* ‘pleasant’ in (i), the nominal coordination suffix must appear:

(i) Kyengchal-ka kipun cohun cosa-kwa poto-lul ha-ess-ta  
 police-NOM pleasant investigation-and report-ACC do-PAST-DECL  
 ‘The police did the pleasant investigation and report.’

morphological insertion of a node which Vocabulary Insertion spells out as *-ko*. However, the initial motivation for the insertion of the node differs. Recall that in the adjunction constructions, the motivation was satisfaction of Morphological Closure, whereas in the sentential embedding construction, the motivation is simply a morphological rule.

The last example of the *-ko* suffix we will discuss is the progressive construction in (18). Here, *-ko* is not marking embedding, but we cannot say that it is purely motivated by Morphological Closure either, given the sentence in (21). In (21), we see that the contrastive focus morpheme *-nun* appears, attached to *-ko*, which indicates both that *-nun* is capable of morphologically closing a well-formed word, and that *-ko* was therefore not required solely for that purpose.

- (21) John-i ppang-ul mek-**ko-nun** iss-ta  
 John-NOM bread-ACC eat-**KO-FOC** exist-DECL  
 'John is eating the bread, but...'

Given that, I propose that *-ko* in the progressive is appearing in its true structural role, spelling out a terminal node which is present throughout the syntactic derivation, perhaps corresponding to *-ing* in the English progressive.

To summarize the proposed source of *-ko* in these three constructions discussed so far, I have suggested that *-ko* in both (17) and (19) is spelling out a terminal node which is inserted by the morphology only after Spellout, while *-ko* in (18) is spelling out a terminal node which was present throughout the entire derivation. The difference between the two morphologically motivated *-ko* morphemes surfacing in (17) and (19) is that in (19), the node is inserted in order to create a morphologically well-formed structure that obeys the principle of Morphological Closure, whereas in (17), the node is inserted by a morphological rule sensitive to features of an embedding complementizer.

As one last point, let us consider the example in (22), which involves both L-neg and an adjunction structure like in (19).

- (22) [Chelswu-ka chayk-ul sa-ci ani **ha]-ko**  
 [Chelswu-NOM book-ACC buy-CI NEG **do]-ko**  
 [Yenghi-ka kongchayk-ul sa-ci ani ha]-ess-ta  
 [Yenghi-NOM notebook-ACC buy-CI NEG do]-PAST-DECL  
 'Chelswu did not buy a book and Yenghi did not buy a notebook.'

The analysis of both *ha-* and *-ko* proposed so far leads us to suppose that in (22), the function of both morphemes is one of pure morphological support. Recall that in L-neg, a V node is inserted in the morphology in order to support verbal affixes, which is spelled out as *ha-* by Vocabulary Insertion. Also recall that in the adjunction examples, a node is inserted in the morphology in order to satisfy Morphological Closure, which is spelled out as *-ko* by Vocabulary Insertion. In (22), the adjoined constituent is structurally at least a NegP, as indicated by the presence of the negative morpheme *ani*. The question is: what motivates the morphological insertion of both *ha-* and *-ko*?

I take the example in (22) as evidence in support of my earlier view of the structure of NegP. Recall that I suppose that *ani* occupies the specifier position, while the head of NegP is phonologically zero. If we assume that the head of NegP is a zero verbal suffix which is incapable of satisfying Morphological Closure, the

surface form in (22) is predicted.<sup>16</sup> Because the head of NegP is a verbal suffix, the addition of a V node is motivated in the morphology. Because it is not in the class of suffixes which satisfy Morphological Closure, the addition of a closing node is also motivated. At Vocabulary Insertion, the V node is spelled out as *ha-*, the head of NegP receives no phonological realization, and the closing node is spelled out as *-ko*.<sup>17</sup>

## 8 Implications for the structure of morphology

The discussion so far suggests a view of morphology which allows for morphological elements that are present on the surface (like *ha-* and *-ko*) to nevertheless be entirely absent in the syntax. This is significant in that it allows for simpler syntactic analyses in some instances, such as for the Korean constructions discussed here. For example, if *ha-* can appear on the surface while not being visible in the syntax, we avoid having to postulate mechanisms allowing it to act invisible, such as mechanisms transferring features from a true verb to *ha-*. Similarly, if *-ko* is not necessarily spelling out an independent syntactic node, we are not forced to assume that *-ko* exclusively signals a complementizer, forcing us to hypothesize a separate projection for *-ta*. In short, the assumption that some of the surfacing morphology can be motivated by morphological operations alone allows for a simpler view of syntax.

With respect to morphology itself, if *ha-* and *-ko* can be inserted in the morphology in order to satisfy language-particular morphological requirements, then the morphology can “repair” structures which arrive from the syntax in a form which does not meet requirements of morphological well-formedness.

The further implication of this is that the morphology does not filter the syntax in the way proposed in Chomsky 1995. In particular, it is not the case that a syntactic derivation which results in a morphologically ill-formed structure is itself ill-formed, since the morphology is capable of performing repairs on the structure.

The view of morphology most consistent with the discussion here is therefore one in which morphology is a result of interpreting the structures provided by the syntax, such as that endorsed by Halle & Marantz 1993 and subsequent work within the framework of Distributed Morphology.

### References

- Ahn, H.-D. (1991). *Light Verbs, VP-Movement, Negation and Clausal Architecture in Korean and English*, Ph.D. dissertation, University of Wisconsin at Madison.
- Baek, J. (1995). “Negation and Object Shift in Early Child Korean,” MIT ms.
- Berwick, R. (1982). *Locality Principles and the Acquisition of Syntactic Knowledge*, Ph.D. dissertation, MIT.
- Borer, H. and K. Wexler (1987). “The Maturation of Syntax,” in Roeper, T. and E. Williams, eds., *Parameter Setting*, Dordrecht: Reichel.

---

<sup>16</sup> Another candidate for the phonologically null head motivating the insertion of both *ha-* and *-ko* in (23) would be the light verb  $v^\circ$  in a “Split-VP” structure of the type adopted in Chomsky 1995, although the choice between Neg<sup>o</sup> and  $v^\circ$  does not affect the discussion here.

<sup>17</sup> The datum in (23) is evidence for the view that the eventual phonological realization (e.g., that Neg<sup>o</sup> will be phonologically unrealized after Vocabulary Insertion applies) is irrelevant to morphological operations like *do*-support. That is, one might expect that a morpheme which is not phonologically realized would not need to be morphologically supported, but the example in (23), interpreted as I suggest, shows that this is not the case.

- Cheng, L. (1991). *On the Typology of Wh-Questions*. Ph.D. dissertation, MIT. Distributed by MIT Working Papers in Linguistics.
- Cho, D.-I. (1994). "Functional Projections and Verb Movement," in Kim-Renaud, ed., *Theoretical Issues in Korean Linguistics*, CSLI Stanford.
- Cho, Y.-M. and K.-S. Hong (1988). "Evidence for the VP Constituent from Child Korean," *Proceedings of Stanford Child Language Conference*.
- Choe, H.-S. (1988). *Restructuring Parameters and Complex Predicates: A Transformational Approach*, Ph.D. dissertation, MIT. Distributed by MIT Working Papers in Linguistics.
- Chomsky, N. (1995). *The Minimalist Program*, Cambridge, MA: MIT Press.
- Chomsky, N. (1991). "Some Notes on Economy of Derivation and Representation," in Freiden, R., ed., *Principles and Parameters in Comparative Grammar*, Cambridge, MA: MIT Press.
- Grimshaw, J. and A. Mester (1988). "Light Verbs and Theta Marking," *Linguistic Inquiry* 19:205-232.
- Hagstrom, P. (1995). *Negation, Focus, and Do-Support in Korean*, MIT ms.
- Halle, M. and A. Marantz (1993). "Distributed Morphology and the Pieces of Inflection," in Hale, K. and S. Keyser, *The View From Building 20*, Cambridge, MA: MIT Press.
- Hauptmann, R. (1994). "Sentential Negation in German: Evidence for NegP," in Grabois, H., et al., eds., *Cornell Working Papers in Linguistics* 12, 154-182.
- Jung, Y.-J. (1990). "X-bar Theory, SPECs, and Directionality," NELS 21.
- Kang, M.-Y. (1988). *Topics in Korean Syntax: Phrase Structure, Variable Binding, and Movement*, Ph.D. dissertation, MIT. Distributed by MIT Working Papers in Linguistics.
- Kayne, R. (1993). *The Antisymmetry of Syntax*, Cambridge, MA: MIT Press.
- Kim, Y.-J. (1992). "The Acquisition of Korean," to appear in D. Slobin, ed., *The Crosslinguistic Study of Language Acquisition*, vol. 4, Lawrence Erlbaum Associates.
- Kim, Y.-J. (1990). *The Syntax and Semantics of Korean Case: The Interaction Between Lexical and Syntactic Levels of Representation*. Ph.D. dissertation, Harvard University.
- Lee, J. H. (1993). "Postverbal Adverbs and Verb Movement in Korean," in Clancy, P., ed., *Japanese/Korean Linguistics*, vol. 2, CSLI Stanford.
- Ouhalla, J. (1990). "Sentential Negation, Relativised Minimality and the Aspectual Status of Auxiliaries," *The Linguistic Review* 7, 183-221.
- Park, K. (1992). *Light Verb Constructions in Korean and Japanese*, Ph.D. dissertation, U. North Carolina at Chapel Hill.
- Santelmann, L. (1994). "Evidence for NegP and Object Shift in German," in Grabois, H., et al., eds., *Cornell Working Papers in Linguistics* 12, 154-182.
- Whitman, J. (1995). "Apparent Discontinuities in the Acquisition of Verbal Morphology in Korean," Cornell U. ms.
- Yi, E.-Y. (1994). "Adjunction, Coordination and their Theoretical Consequences," Cornell U. ms.
- Yoon, J.-M. (1990). "Verb Movement and Structure of IP in Korean," *Language Research* 26:2, 343-371.

*Department of Linguistics and Philosophy*  
 20D-219 MIT  
 77 Massachusetts Avenue  
 Cambridge, Massachusetts 02139

*hagstrom@mit.edu*