An integrated type-based analysis of the Korean verb ha- with verbal nouns and psych verbs

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1 Introduction

The Korean verb *ha-* is found in various constructions. As seen in (1), the verb *ha-* functions basically as a general verb[1] conveying the meaning of 'doing something' (cf. Jeong 2016: 98). In addition, it can serve as an auxiliary verb, particularly in causative constructions. In these cases, the connective marker *–key* should be attached to the embedded verb to form the causative construction, as shown in (2). This is not only the case, but the verb *ha-* also combines with nouns, such as verbal nouns (e.g. *kongpwu* 'study' in (3a)) as well as psych nouns (e.g. *hayngpok* 'happiness' in (3b) and *kekceng* 'worry' in (3c)). In these constructions, the verb *ha-* primarily functions as a verbalizer, converting a noun into a verb. Moreover, the verb *ha-* can combine with psych verbs (e.g. *mwusep-* 'be scary', in (4)).

(1) Hyenwu-ka pap-ul ha-n-ta.
Hyenwu-NOM rice-ACC do-PRS-DECL
'Hyenwu is doing to cook rice.'

(2) Hyenwu-ka namtongsayng-eykey/ul/i pang-ul chiwu-key ha-n-ta.
Hyenwu-NOM younger.brother-DAT/ACC/NOM room-ACC clean-CONN do-PRS-DECL
'Hyenwu has his younger brother clean the room.'

(3) a. haksayng-tul-i yenge-lul kongpwu-ha-n-ta.
student-PL-NOM English-ACC study-do-PRS-DECL
'Students study English.'

b. Hyenwu-ka onul cengmal hayngpok-ha-(*n)-ta.
Hyenwu-NOM today so happiness-do-PRS-DECL
'Hyenwu is really happy today.'

c. Hyenwu-ka namtongsayng-ul kekceng-ha-n-ta.
Hyenwu-NOM younger.brother-ACC worry-do-PRS-DECL
'Hyenwu is worried about his younger brother.'

(4) Hyenwu-ka kangaci-lul mwuse-we ha-n-ta.
Hyenwu-NOM puppy-ACC be.scary-CONN do-PRS-DECL
'Hyenwu is scared of the puppy.'

As illustrated in sentences (1) - (4), the verb *ha-* can function as a general verb, an auxiliary verb in causative constructions, and can be combined with nouns and psych verbs. This raises the question of what syntactic and semantic functions it serves (cf. Chae 1997: 590–598; Jung 2002b: 24–39, 2002a: 61–71; Jung 2016: 103–108, a.o.). This study aims to identify the types of the verb *ha-* in the constructions with verbal nouns (3a) and psych verbs (4), and to address the unresolved question of what underlies its syntactic function and which semantic properties it exhibits. An experiment designed to investigate this issue will also be introduced. Based on the result of the experiment, this paper proposes a classification of the verb *ha-* and offers a new account of constructions involving complex predicates with the verb *ha-* within the framework of Head-driven Phrase Structure Grammar (HPSG; Pollard & Sag 1994, Müller et al. 2021).

[1] When the verb *ha-* is used as a general verb, it can be replaced with another verb (e.g. *cis-* 'cook'), as seen in (i). Through the verb *ha-*, the meaning of 'doing something' can be added. However, when the verb *ha-* functions as a light verb combined with verbal nouns, substitution with other verbs is not observable (cf. Jeong 2016: 97–98).

(i) Hyenwu-ka pap-ul cis-nun-ta.
Hyenwu-NOM rice-ACC cook-PRS-DECL
'Hyenwu cooks rice.'

2 The property of the verb *ha-*

It has been argued that the predicates possess agentive values[2], which are determined by whether their subject is an agent. Regarding auxiliary verb constructions, it has been proposed that auxiliary verbs, being generally transparent in terms of agentive values, inherit the agentive properties of their embedded verbs. However, like main verbs, auxiliary verbs can also be assigned their own agentive values in the lexicon. Specifically, it has been argued that the auxiliary verb *ha-*[3] is restricted to combining with embedded verbs that have the agentive values *ni*+, *ni*− and *i*−, as it never combines with verbs that have the agentive value *i*+. It has been claimed that when combined with verbs that have the agentive values *ni*+ or *ni*−, the auxiliary verb *ha-* shares its agentive property. It is specified in (5a). Additionally, when the auxiliary verb *ha-* combines with a lexically non-agentive psych verb, it imposes its inherent agentive property. As a result, in such constructions, the argument is realized as the accusative NP, aligning with the entry in (5b). To account for the phenomenon in constructions with the verb *ha-*, the dual lexical entry of the verb *ha-* was introduced, as illustrated in (5) (cf. Yoo 2002: 1029).

(5) *ha-*

a. $\left[\text{AG } \boxed{1}, \text{GOV}\langle\ \text{V[AG } \boxed{1}ni\alpha\text{]}\ \rangle\right]$

b. $\left[\text{AG } +, \text{GOV}\langle\ \text{V[AG } i-\text{]}\ \rangle\right]$

An intriguing phenomenon can be observed in the constructions with the verb *ha-*. In particular, when the verb *ha-* combined with a verbal noun is followed by the auxiliary verb *siph-* 'want', both a case marker *-ul/lul* and an information structure marker *-i/ka* can be attached to the second argument, as seen in (6). However, when the auxiliary verb *siph-* 'want' follows the complex predicate, the verb *ha-* with a psych verb, the information structure marker *-i/ka* cannot be attached to the second argument, as shown in (7).[4][5] It indicates that the verb *ha-* does not exhibit the same functions in each construction, revealing the syntactic and semantic differences between them.

(6) haksayng-tul-i {yenge-lul / yenge-ka} kongpwu-ha-ko siph-ess-ta.
student-PL-NOM english-ACC english-FOC study-do-CONN want-PST-DECL
'Students wanted to study English.'

(7) Hyenwu-ka {kangaci-lul / *kangaci-ka} mwuse-we ha-ko siph-essta.
Hyenwu-NOM puppy-ACC puppy-FOC be.scary-CONN do-CONN want-PST-DECL
'Hyenwu wanted to be scared of the puppy.'

I wonder whether the construction with the verb *ha-* combined with a psych verb truly exhibits agentive properties. To assess the property of agentivity, one can examine whether an event can be suitably modified with the adverb 'intentionally', as demonstrated in examples (8) and (9) (cf. Dowty 1991: 553–555; Verhoeven 2010: 224–227). As shown, sentences involving complex predicates with the verb *ha-* and a psych verb appear to be difficult to accept when modified with the adverb 'intentionally'. Given this, it is assumed that a structure involving the verb *ha-* combined with a psych verb is perceived to lack agentivity. In other words, it demonstrates a lower degree of agentive properties compared to the verb *ha-* with a verbal noun. To determine whether both structures exhibit the same level of agentivity, an experiment will be conducted.

(8) Hyenwu-ka yeksa-lul uytocekulo/ilpwule kongpwu-hay-ss-ta.
Hyenwu-NOM history-ACC intentionally study-do-PST-DECL
'Hyenwu intentionally studied English.'

(9) ? Hyenwu-ka holangi-lul uytocekulo/ilpwule mwuse-we hay-ss-ta.
Hyenwu-NOM tiger-ACC intentionally be.scary-CONN do-PST-DECL
'Hyenwu was intentionally scared of the tiger.'

[2] The agentivity hierarchy classifies the value of agentivity into agentive and non-agentive. The agentive is divided into inherently (*i*+) and non-inherently (*ni*+), while the non-agentive includes inherently (*i*−) and non-inherently (*ni*−) (cf. Yoo 2002: 1025-1026).

[3] The auxiliary verb *ha-* ('act like, show signs of some emotion') carries an agentive meaning (cf. Yoo 2002: 1029).

[4] The particle *-i/ka* can function as an information structure marker, for instance, to focus on the argument (cf. Park 2004: 113–114; Kim et al. 2007: 27–35; Kim 2014: 13–14; Kim 2015: 45–50, a.o.).

[5] In this paper, an information structure marker is defined as a particle that adds information structure properties—such as focus or topic—to the NP.

3 Testing agentivity with the verb *ha-*

Building on the discussions in Section 2, I designed a repeated-observations study using a 1–5 Likert scale acceptability survey (with 1 indicating 'very awkward' and 5 'perfectly appropriate') to examine whether the verb *ha-* exhibits the same functions in constructions with verbal nouns and psych verbs. Specifically, I investigated whether the verb *ha-* imparts the property of agentivity to the sentence when combined with these elements. In addition, it was anticipated that acceptability judgments might be influenced by person types[6]. So, this study employed a 2x2 design with two factors: COMBINED ELEMENT TYPE (verbal nouns vs. psych verbs) and SUBJECT PERSON TYPE (1st vs. 3rd). The dependent variable was the acceptability of sentences that could be modified with the adverb 'intentionally'. Ten instances of the verb *ha-* with verbal nouns and ten with psych verbs were used as target items, as illustrated in examples (8) and (9). These items included the second factor, SUBJECT PERSON TYPE together with an additional 20 filler sentences. The experiment was presented online on IBEX. The expectations were as follows: (a) Regarding the first factor COMBINED ELEMENT TYPE, when the verb *ha-* combines with a psych verb, it would be more difficult to fully accept that the subject can act intentionally. This factor is expected to result in lower sentence acceptability ratings. (b) The second factor SUBJECT PERSON TYPE is expected to affect acceptability ratings in such a way that 1st person subjects would be more likely to allow the sentence to be modified with the adverb 'intentionally'.

A total of forty-nine native Korean speakers (n = 49) participated in the study, including 21 females and 28 males. The average age of the participants was 27.5 years and all participants lived in South Korea. Figure 1 for the acceptability of sentences modified with the adverb 'intentionally' shows that the second factor, the subject type, does not have an impact on the acceptability of sentences. From this result, it is supposed that the structure with the verb *ha-* combined with verbal nouns and psych verbs is not influenced by whether the subject is in the 1st or 3rd person. However, Figure 2 shows the frequency distribution of the scores[7] indicates a significant difference in acceptability with respect to the first factor, COMBINED ELEMENT TYPE. With verbal nouns, sentences exhibit higher acceptability, as evidenced by an average value of 4.2. In contrast, those with psych verbs demonstrate lower acceptability, with an average value of 2.4. This reveals that this factor plays a significant role in determining the acceptability of sentences. [8]

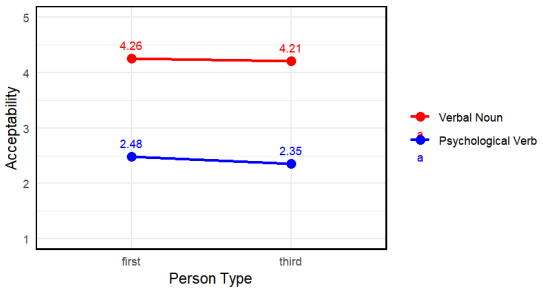

Figure 1: Acceptability of sentences with the adverb 'intentionally' (95% C.I.)

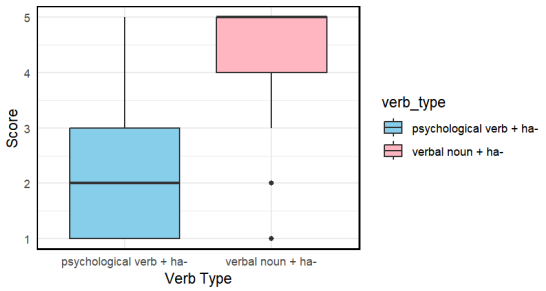

Figure 2: Frequency distribution of scores (95% C.I.)

Consequently, based on the experimental results, it is assumed that the verb *ha-*, when combined with verbal nouns and psych verbs, performs specific functions in each construction, regardless of the type of subject person.

4 HPSG: A linguistic approach to structure

Based on the experimental results, I propose the lexical entry for the verb *ha-* with a verbal noun as in (10) and with a psych verb as in (11) (cf. Müller 2002: 85–93, 2013: 241–246, 2019: 4–6). In the case of a verbal noun, the verb *ha-* should first be combined with a verbal noun, as no constituent is

[6] It has been argued that the subject is constrained by the type of verb, specifically that psych verbs can only be used with 1st person subjects, whereas psych verbs combined with the verb *ha-* can occur with both 1st and 3rd person subjects (cf. Yoo 2017: 77). In light of this argument, this paper aimed to investigate whether native Korean speakers truly accept subjects in the 1st and 3rd person without issue in complex predicate constructions involving psych verbs and the verb *ha-*.

[7] Given no significant difference between 1st and 3rd person, it was assumed that the first factor does not affect sentence acceptability. Thus, the data in Figure 2 were analyzed without distinguishing between the subject types.

[8] The results indicated a substantial difference between the two groups. The calculated t-statistic was 24.521, reflecting a large difference between the group means, and the corresponding *p*-value was $< 2.2e\text{-}16$.

allowed to intervene between them. I assume that the verb *ha-* functions as the head of the complex predicate, with the argument [1] and [2] being attracted from the verbal noun[9] (cf. Hinrichs & Nakazawa 1989: 195–199). In the case of a psych verb, the verb *ha-* should initially combine with a psych verb with the connective marker *-e*, and I assume that it functions as the head of the complex predicate. However, the key difference lies in that the argument [2] is raised from the subject of the embedded verb to the object of the complex predicate. Meanwhile, the argument [1] is triggered from the complex predicate *-e ha-*. The first argument, which bears the semantic role of *expereincer*, can thus be realized. As illustrated in the lexical entry (10), the verb *ha-* with a verbal noun creates a 'doing' event in the construction, since it exhibits the agentivity property (the value of agentivity +), which differentiates it from the verb *ha-* with a psych verb. Although the verb *ha-* combines with a psych verb, the complex predicate *-e ha-* does not display the agentivity property, as represented in (11).

(10) Lexical entry of the verb *ha-* with a verbal noun:

$$\begin{bmatrix} \text{PHON} & \langle\ ha\ \rangle \\ \text{CAT} & \left[\text{ARG-ST}\ \boxed{1}\left\langle \text{NP}_{\boxed{3}}\right\rangle \oplus \boxed{2} \oplus \left\langle \text{VN}\left[\ \text{LEX}+,\ \text{SUBJ}\ \boxed{1},\ \text{COMPS}\ \boxed{2}\ \right]\text{:}\left[\ \text{INDEX}\ \boxed{4}\ \right]\right\rangle\right] \\ \text{CONT} & \begin{bmatrix} \text{IND} & \boxed{5}\ \textit{event} \\ \text{RELS} & \left\langle \begin{bmatrix} \textit{agens} \\ \text{ARG0}\ \boxed{5} \\ \text{ARG1}\ \boxed{3} \end{bmatrix}, \begin{bmatrix} \textit{do} \\ \text{ARG0}\ \boxed{5} \\ \text{ARG1}\ \boxed{4} \end{bmatrix}\right\rangle \end{bmatrix} \end{bmatrix}$$

(11) Lexical entry of the verb *ha-* with a psych verb:

$$\begin{bmatrix} \text{PHON} & \langle\ ha\ \rangle \\ \text{CAT} & \left[\text{ARG-ST}\ \left\langle \text{NP}_{\boxed{1}}\right\rangle \oplus \boxed{2} \oplus \left\langle \text{V}\left[\ \text{VFORM}\ \textit{-e},\ \text{LEX}+,\ \text{SUBJ}\ \boxed{2}\ \right]\text{:}\left[\ \text{INDEX}\ \boxed{0}\ \right]\right\rangle\right] \\ \text{CONT} & \begin{bmatrix} \text{IND} & \boxed{0} \\ \text{RELS} & \left\langle \begin{bmatrix} \textit{experiencer} \\ \text{ARG0}\ \boxed{0} \\ \text{ARG1}\ \boxed{1} \end{bmatrix}\right\rangle \end{bmatrix} \end{bmatrix}$$

When the auxiliary verb *siph-* 'want' combines with the verb that has the agentive value, the second argument of the complex predicate *-ko siph-* can be marked with the information structure marker *-i/ka* to indicate focus (cf. Oh 2024: 145).[10] Based on this argumentation, the phenomenon mentioned in Section 2 can be explained. This phenomenon involves the second argument of the complex predicate with the verb *ha-* and the verbal noun, which can be marked with the information structure marker *-i/ka*, as shown in (12). As illustrated in the lexical entry (13), the second argument of the verb *ha-* with a verbal noun can also be marked with the information structure marker *-i/ka*, when the auxiliary verb *siph-* 'want' follows the complex predicate, since the combination of *ha-* and a verbal noun displays the agentive value +. However, the information structure marker *-i/ka* cannot be attached to the second argument of the verb *ha-* with a psych verb, as the complex predicate *-e ha-* does not possess the agentivity property.

(12) ai-tul-un {phiano-lul / phiano-ka} yecwu-ha-ko siph-ess-ta.
child-PL-TOP pinao-ACC piano-FOC play-do-CONN want-PST-DECL
'The children wanted to play piano.'

[9] Verbal nouns display verbal behavior with respect to their internal characteristics, whereas externally, they function as nouns (cf. Kim 2016: 125–128). It can be claimed that verbal nouns have an argument structure (cf. Müller 2019: 4–6).

[10] In the present analysis, the feature [CASE *non-str*] indicates that the case marker (e.g., *–i/ka*) is not assigned syntactically but pragmatically, typically associated with focus. As shown in the lexical rule (i), the NP marked with [FOCUS +] receives the marker *–i/ka* as an information structure marker rather than as a structural nominative case. It is assumed that the availability of such a focus-marked NP correlates with the agentive index value of the verb, since agentive contexts more readily license such focus-marking due to their interaction with volitionality.

(i) The lexical rule for the auxiliary verb *siph-* 'want' with agentive verbs:

$$\begin{bmatrix} \text{CAT} & \left[\begin{array}{ll} \text{HEAD} & \textit{verb} \\ \text{ARG-ST} & \left\langle \boxed{1}\left[\text{LOC|CAT|HEAD}\left[\begin{array}{l}\textit{noun}\\ \text{CASE}\ \textit{str}\end{array}\right]\right], \boxed{2}\left[\text{LOC|CAT|HEAD}\left[\begin{array}{l}\textit{noun}\\ \text{CASE}\ \textit{str}\end{array}\right]\right] \right\rangle \\ & \oplus \boxed{3}\left\langle \text{V}\left[\begin{array}{l}\text{VFORM}\ \textit{-ko},\ \text{LEX}+,\ \text{SUBJ}\ \boxed{1},\\ \text{COMPS}\ \boxed{2},\ \text{INDEX}\ \textit{agentive}\end{array}\right]\right\rangle \end{array}\right] \end{bmatrix} \mapsto \begin{bmatrix} \text{CAT} & \left[\begin{array}{ll} \text{HEAD} & \textit{verb} \\ \text{ARG-ST} & \boxed{1} \oplus \boxed{2}\left\langle \left[\text{LOC}\left[\begin{array}{ll}\text{CAT} & \left[\begin{array}{ll}\text{HEAD} & \textit{noun}\\ \text{CASE} & \textit{non-str}\end{array}\right]\\ \text{CTXT} & \left[\begin{array}{l}\textit{infostr}\\ \text{FOCUS}\ +\end{array}\right]\end{array}\right]\right]\right\rangle \oplus \boxed{3} \end{array}\right] \end{bmatrix}$$

(from Oh 2024: 145)

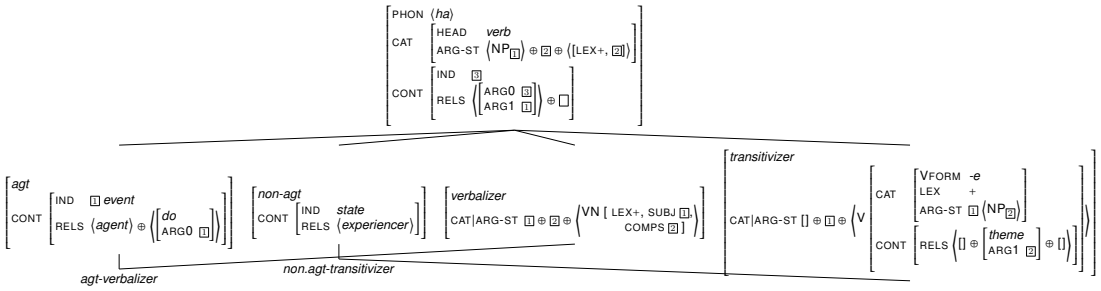

Figure 3: Type hierarchy for the Korean verb *ha-*

(13) The lexical entry of the complex predicate with the auxiliary verb *siph* 'want' and the verb *ha* with the verbal noun *yecwu* 'play

$$\left[\begin{array}{l}\text{PHON} \langle\ \textit{yecwuhako siph}\ \rangle \\ \text{CAT} \left[\begin{array}{l}\text{HEAD} \quad \textit{verb} \\ \text{ARG-ST} \left\langle \left[\text{LOC|CAT|HEAD} \left[\begin{array}{l}\textit{noun} \\ \text{CASE} \ \textit{str}\end{array}\right]\right], \left[\text{LOC} \left[\begin{array}{l}\text{CAT} \left[\begin{array}{l}\text{HEAD} \ \textit{noun} \\ \text{CASE} \ \textit{str}\end{array}\right] \\ \text{CTXT} \left[\begin{array}{l}\textit{infostr} \\ \text{FOCUS} -\end{array}\right]\end{array}\right] \vee \left[\text{LOC} \left[\begin{array}{l}\text{CAT} \left[\begin{array}{l}\text{HEAD} \ \textit{noun} \\ \text{CASE} \ \textit{non-str}\end{array}\right] \\ \text{CTXT} \left[\begin{array}{l}\textit{infostr} \\ \text{FOCUS} +\end{array}\right]\end{array}\right]\right\rangle\end{array}\right]\end{array}\right]$$

Figure 3 illustrates the different types of the verb *ha-*. These include one type represented in the semantic structure of the 'doing' event and another without such event. Both types inherit from a general *ha-* lexeme type. The *ag(en)t(ive)-verbalizer* type initially functions to change the part of speech from a noun to a verb and to emphasize the action of doing. Additionally, the *non.ag(en)t)ive)-transitivizer* type introduces an additional argument, rendering the psych verb transitive.

5 Conclusion

In this study, I have investigated the complex predicate with the verb *ha-* specifically with verbal nouns and psych verbs. It is challenging to delineate the syntactic functions that the verb *ha-* performs and the semantic properties it exhibits. In particular, it has been claimed that when the verb *ha-* combines with psych verbs, the complex predicates display agentive properties. This raises some doubts. To address this issue, an experiment was conducted. The results of the experiment demonstrated that the verb *ha-* does not perform the same functions in constructions with verbal nouns and psych verbs. Based on the experimental findings, I argue that the verb *ha-* exists in different types. When combined with a psych verb, the verb *ha-* does not create a *doing* event, since the complex predicate does not exhibit agentivity. The subject of the verb *ha-* with psych verbs lacks agentivity. In contrast, with verbal nouns, the verb *ha-* influences the incorporation of a 'doing' event into the structure. I account for these findings in HPSG by means of an inheritance hierarchy of the Korean verb *ha-* which includes two subtypes. Moreover, I assert that the phenomenon in which the complex predicate with the verb *ha-* is followed by the auxiliary verb *siph-* 'want' is also explained by these findings. Since complex predicates with the verb *ha-* and psych verbs do not exhibit the property of agentivity, the information structure marker *-i/ka* cannot be attached to the second argument of the complex predicate *-e ha-*, in contrast to the complex predicate with the verb *ha-* and verbal nouns.

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