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A Construction Morphology Analysis of Old English *Bahuvrihi* Adjectival Compounds*

Sujin Park
(Hankuk University of Foreign Studies)

Park, Sujin. "A Construction Morphology Analysis of Old English *Bahuvrihi* Adjectival Compounds." *Studies in English Language & Literature* 45.2 (2019): 287-306. This study aims to provide a Construction Morphology analysis of Old English (OE) typical (TP) exocentric type of *bahuvrihi* (*BAH*) adjectival compounds with the data of 211 compounds collected and described in Park (2018). Within the theoretical framework of Construction Morphology (CM) (Booij 2010c), this study shows four things, which are distinguished from a traditional descriptive analysis (Kastovsky 1992, 2002, 2009, Park 2018). First, an OE TP *BAH* adjectival compound can be considered as a construction or a constructional idiom with a specific form and meaning. Second, the compounds' properties of form and meaning can be simply and straightforwardly represented by four subschemas, 'TP-Bah1 (Df)', 'TP-Bah1 (Df.O-F)', 'TP-Bah2 (Df.O-M)', and 'TP-Bah2 (Df.O-F/M)'. Third, by means of the mechanism, 'Default Inheritance' in CM, the four Df and Df.O subschemas can be generalized over and unified into one abstract schema ([[A]k[N]i]Aj ↔ [Having SEMk SEMi]j) for OE TP BAH adjectival compounds; idiosyncratic types of the compounds are not treated as 'exceptions'. Fourth, the inheritance tree contributes a simple and systematic classification of the compounds; the most abstract schema at the top and the four subschemas at the bottom construct a hierarchical network. This article is the first study that tries to account for the holistic, and thus idiosyncratic properties found in OE TP *BAH* adjectival compounds based on Construction Morphology. (Hankuk University of Foreign Studies)

Key Words: Old English compounding, Old English *Bahuvrihi* compounds, Construction Morphology, abstract schema, word-formation

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I. Introduction

In Old English (henceforth, OE), *bahuvrihi*[1] (henceforth, *BAH*) adjectival compounds (e.g., *līg-locc* 'having flaming locks' (lit. flaming-lock); *glæd-mōd* 'glad minded' (lit. glad-mind, etc.) were one of the productive compound types (Marchand 1969, Kastovsky 1992, 2002, 2009). OE *BAH* adjectival compounds have a naming function in poetry influenced by metonymic or metaphorical processes. For instance, the compound *rum-heort* 'noble-spirited' (lit. noble-heart) refers to *Beowulf*, 'the main character' of the OE epic poem, *Beowulf* (lines 1799~2110). Considering that a number of OE compounds were used as 'stylistic devices' especially in poetry (Kastovsky 2009:362), the productivity of the compounds is in no doubt.

According to traditional descriptive studies of compounds in OE (Sweet 1891, Quirk and Wrenn 1989, Kastovsky 1992, 2002, 2009, Mitchell and Robinson 2001, Baugh and Cable 2002, Hogg 2002, among others), OE compounds in general are formed by a concatenative morphological operation ($[X+Y] = [XY]_Y$). If a compound deviates from this 'rule-based' analysis, it is treated as an 'exception' or 'exocentric' compound.

OE *BAH* adjectival compounds have been treated as exocentric compounds since they do not conform to this rule; their morphological and semantic heads are outside of the compounds (Marchand 1969, Kastovsky 1992, 2002, Hogg 2002, Park 2018). Morphologically, OE *BAH* adjectival compounds are idiosyncratic in that the lexical categories of the right element and the compound are different; right element is a noun, but compound is an adjective (e.g., $[[rēad]_A[lēaf]_N]_A$). Semantically, the compounds are also distinctive because a compound as a whole does not refer to the right element (N); the compounds represent a possessive meaning with the first and the second elements 'Having XN' (e.g., *rēad-lēaf* 'having red leaves'). That is, OE *BAH* adjectival compounds carry holistic morphological and semantic properties

[1] According to Kastovsky (2002:36-7), *bahuvrihi* (बहुव्रीहि) is a Sanskrit term, meaning 'much rice' (*bahu* +*vrihi*), whose actual meaning can be 'having much rice'.

which cannot be deducible from the individual elements.

By means of the 'rule-based' morphology, the earlier studies of OE *BAH* adjectival compounds has only described the distinctive features of the compounds. Since the compounds are idiosyncratic, the studies make a dichotomous classification between endocentric and exocentric by separating the category of OE *BAH* adjectival compounds from that of the other OE endocentric adjectival compounds (e.g., [[*hiw*]$_{N}$-[*beorht*]$_{A}$]$_{A}$ 'bright of hue' (lit. hue-bright); [[*hwæt*]$_{A}$-[*ēadig*]$_{A}$]$_{A}$ 'successful in war' (lit. brave-happy)). The traditional descriptive studies have a limitation that they do not present any theoretical method to account for the compounds' holistic properties, whereas Construction Morphology (henceforth, CM) (Booij 2010c) does.

CM, the 'word-based' morphology, assumes that a compound[2] can be seen as a motivated (non-arbitrary) linguistic sign, a 'Construction' with form and meaning, which can be represented specifically by an abstract schema ([Form] ↔ [Meaning]). By means of schematic representations, the holistic properties of OE *BAH* adjectival compounds can be accounted for, which cannot be done by any of the traditional 'rule-based' morphological analysis.

In this study, I firstly offer a constructional analysis of OE *BAH* adjectival compounds (211 types in total) by representing the idiosyncratic and holistic formal and semantic features of the compounds based on the data provided by Park (2018).[3] In Park (2018), OE *BAH* adjectival compounds are analyzed into two semantic subpatterns (Pattern 1: 'Having [[A/N] [N]]'; Pattern 2: 'Featured with [[A/N] [N]]'), and two morphological subtypes that are subdivided into four and two subtypes respectively (Type 1: [A N]$_{A}$ (subtypes (4): [A N]$_{A}$, [Prs.P N]$_{A}$, [Pst.P N]$_{A}$, [Num N]$_{A}$); Type 2: [N N]$_{A}$ (subtypes (2): [N N]$_{A}$, [Pron N]$_{A}$)).

Secondly, by means of 'Default Inheritance', I offer a comprehensive inheritance tree, which will show that various morphological subtypes and semantic subpatterns

[2] See Booij (2010a:1) for his argument for the suitability of schematization for compounding.

[3] Park (2018) provides a descriptive and statistical analysis of OE nominal, adjectival, and verbal compounds (9,875 in total).

of OE *BAH* adjectival compounds as subschemas are hierarchically and systematically interrelated with one another. The comprehensive inheritance tree will also reveal that the subschemas of OE *BAH* adjectival compounds at the bottom inherit the default properties in full or in part from the most abstract schema at the top.

Lastly, within CM, the present study will demonstrate that various types and patterns of OE *BAH* adjectival compounds can be classified in a systematic and straightforward way, not just in an enumerative or a descriptive way.

II. Backgrounds

2.1 Old English *Bahuvrihi* Adjectival Compounds

Marchand (1969) and Kastovsky (1992, 2002) state that OE compounds are binary constructions composed of a modifier (determinant) as the left element and a head (determinatum) as the right element. Given that the syntactic, morphological, and semantic properties of most compounds in OE are determined by the head, OE compounds are in general known as 'right-headed' (e.g., [[*sige*]$_{N}$ [*cempa*]$_{N}$]$_{N}$ 'victorious warrior' (lit. victory-warrior); [[*gold*]$_{N}$ [*beorht*]$_{A}$]$_{A}$ 'bright with gold' (lit. gold-bright), etc.).

In the case of OE *BAH* compounds, however, they are not endocentric but exocentric as to headedness. In OE, there were two morphological types of *BAH* compounds: i) Nominal *BAH* (e.g., [A N]$_{N}$: *ān-horn* 'unicorn' (lit. one-horn); [N N]$_{N}$ *brogden-mǣl* 'sword marked by signs' (lit. woven-sign)); ii) Adjectival *BAH* (e.g., [A N]$_{A}$ *blodig-toþ* 'bloody-toothed' (lit. bloody-tooth)). In both cases, the semantic head of the compounds is not the right element, nor is inside of the compound's morphological structure. For example, the *BAH* nominal compound *ān-horn* does not denote a 'one-horn', and the *BAH* adjectival compound *blodig-toþ* does not refer to

a 'bloody-tooth', but 'having bloody-tooth'. Hence, *BAH* compounds count as 'exocentric' compounds (Kastovsky 2002:37). Of the two types, the adjectival one was much more productive than the nominal one; Kastovsky (2002:40) and Park (2018:37) offer only 14 and 25 *BAH* nominal compounds respectively.

In the case of *BAH* adjectival compounds, Kastovsky (1992, 2002) divides them into three morphological types by claiming that they underwent diachronic changes to become endocentric compounds by acquiring overt adjectival endings or by the reversal of the two elements' order. Based on his argument, Park (2018:46) collects a total of 404 *BAH* adjectival compounds and analyzes them into three formal types as given below in (1).

(1) Three Morphological Types of OE *BAH* adjectival compounds (Park 2018)

a. Typical *BAH* (exocentric): [A/N N]$_A$ (e.g., [*ēaþ-mōd*]'humble' (lit. soft-mind)
b. Extended *BAH* (endocentric): [[A N] + Suffix]$_A$ (e.g., [[*ēaþ-mōd*]*ig*] 'humble' (lit. soft-minded))
c. Reversed *BAH* (endocentric): [N A]$_A$ (e.g., [*glæd-mod*] 'cheerful' (lit. glad-mind))

Of these three types, the present study concerns only the first typical exocentric type ([A N]$_A$) of 211 OE *BAH* adjectival compounds by Park (2018) for two reasons. First, This type was the most canonical and productive form of *BAH* adjectival compounds in OE. Second, more importantly, this type carries a holistic properties with no overt head, which can be nicely explained within the framework of word-based construction morphology.

Park (2018) offers an in-depth descriptive analysis of OE *BAH* adjectival compounds, where there are six morphological subtypes ([A/Prs.P/Pst.P/Num/N/Pron +N]$_A$) and two semantic subpatterns ('Having/Featured with [[A/N] [N]]). Based on her descriptive analysis, the present study specifically represents the properties of

varied subtypes and subpatterns in abstract (sub)schemas in section 4.1.

2.2 Construction Morphology (CM)

CM (Booij 2010c) is a morphological theory influenced by the fundamental viewpoint of Construction Grammar (henceforth, CxG) that assumes a construction with form and meaning as the central unit of linguistic analysis. CM deals with the analysis of morphological constructions such as the structure of a word as a meaningful entity having form and meaning (Booij 2002, 2004, 2005, 2009, 2010a, 2010b, 2010c, 2013, 2015a, 2015b).

In CM, a construction consists of two main parts, 'Form' and 'Meaning'. The part of 'Form' is composed of two aspects, phonological form and morpho-syntactic properties. Meanwhile, the part of 'Meaning' is made up of three aspects, semantic, pragmatic, and discourse properties. A (complex) word is a linguistic sign of form and meaning with the linguistic components, and its formal and semantic properties can be specified by abstract schemas.

According to Booij (2010c, 2015a), a schema efficiently represents the systematic correlation between form and meaning of a construction. Rumelhart (1980:34) provides a number of advantages of a schema. First, a schema specifies the form and meaning of a (complex) word, which reduces the degree of arbitrariness between the form and meaning. Second, a schema expresses a generalization about the lexical items having various degrees of abstraction from regularities to the relevant subregularities. Third, a schema motivates the coinage of new words by predicting some of their properties.

As mentioned before, the properties of a compound (a complex word) as a construction can be represented in abstract schemas in CM. Booij (2010c:17) assumes the most abstract schema for right-headed noun compounds of English and Dutch compounds as seen in (2).

(2) $[[a]_{Xk}[b]_{Ni}]_{Nj} \leftrightarrow [SEM_i \text{ with relation R to } SEM_k]_j$

This schema illustrates that a compound is a morphological construction having a specific form and meaning.

In 'Form' on the left, the two phonological variables a and b denote that they are arbitrary sound sequences. Outside of the bracket [a], there is a variable X, which can be filled with any lexical categories such as a noun, an adjective, a verb, etc. The index N next to the bracket [b] indicates that the lexical category of the second element is fixed with a noun. The outermost index N expresses that the second element is the formal head and that this schema is for noun compounds. The lower case variables 'k', 'i', and 'j' are lexical indexes symbolizing the phonological, syntactic, and semantic properties of compounds. The symbol of a double arrow '↔' between Form and Meaning indicates a bidirectional and systematic relation between form and meaning.

In 'Meaning' on the right, SEM_i refers to the meaning of Ni, while SEM_k to the meaning of Xk. The variable 'j' outside the bracket indicates that the compound's meaning that can be made when SEM_i and SEM_k are related. The upper case 'R' denotes an unspecified semantic relation between the two elements of a compound. The relation 'R' can be determined by both the meanings of the two elements as well as the speakers' contextual or encyclopedic knowledge (Booij 2009, 2010c).

Booij (2010b:546) provides some Present-Day English (henceforth, PDE) endocentric nominal compounds, which can be the instantiations for the abstract schema in (2) as given below in (3).

(3) a. $[N\ N]_N$: $[[book]_{Nk}[shelf]_{Ni}]_{Nj} \leftrightarrow [shelf_i \text{ with relation to } book_k]_j$
b. $[A\ N]_N$: $[[black]_{Ak}[bird]_{Ni}]_{Nj} \leftrightarrow [bird_i \text{ with relation to } black_k]_j$
c. $[V\ N]_N$: $[[draw]_{Vk}[bridge]_{Ni}]_{Nj} \leftrightarrow [bridge_i \text{ with relation to } draw_k]_j$

In the three subschemas for PDE nominal compounds in (3), the indexes Nk, Ak,

and Vk illustrate that each of the left slots is filled with a noun, an adjective, and a verb respectively. The three semantic representations on the right show that each compound construction has a specific and holistic semantic feature with the relation between the two elements.

These three subschemas share the formal features that the second elements are all nouns, which can be generalized into the most abstract schema as seen in (2) before. CM assumes the information shared between (sub)schemas flows from top to bottom, hence 'Top down'. A lexicon is seen to be hierarchically organized to construct the network where the most abstract schema is at the top, from which (sub)schemas carrying typical or idiosyncratic features at the bottom inherit the default properties fully or partly. This conception is called 'default inheritance'.

'Default inheritance' is the conception that a particular feature of a word is inherited from the dominating node, if a word does not have another specification for that feature (Booij 2010c:27). It is the key notion to effectively account for the so-called 'exceptions' to generalizations (Booij 2015b). When a compound has a distinctive feature, it does not count as an exception, but as a compound that may partly override the default feature of the most abstract schema at the top.

One of the good examples of the compounds exhibiting an idiosyncratic, and hence a holistic property is the Dutch compound ending in *boer* 'farmer' given in (4) below (Booij 2005).

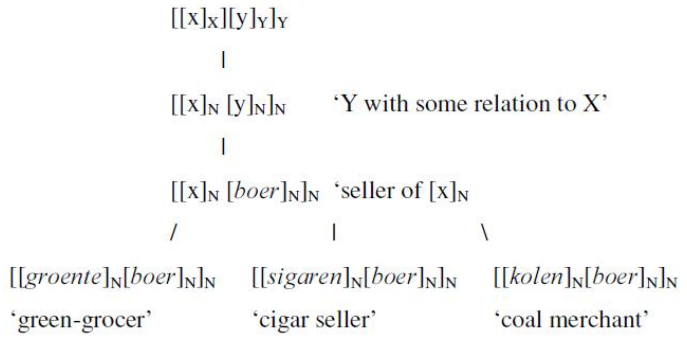
(4) a. *groente-boer* 'green-grocer' (lit. vegetables-farmer)
b. *kolen-boer* 'coal trader' (lit. coal-farmer)
c. *melk-boer* 'milkman' (lit. milk-farmer)
d. *sigaren-boer* 'cigar seller' (lit. cigar-farmer)

In (4), it is seen that when the noun *boer* 'farmer' is embedded in the compounds, it means 'seller of' or 'trader in' as a bound morpheme. Accordingly, the compounds can be considered as the constructions formed with $[\text{N boer}]_{\text{N}}$. In this case, the

construction [N boer]$_N$ is called a 'constructional idiom'.

In a hierarchical lexicon, a constructional idiom can be represented as a subschema that still inherits the default properties of the most general schema at the top. By means of inheritance trees, a hierarchical lexicon consisting of compounds with varying degrees of generalizations can be clearly illustrated as seen in <Figure 1>.

<Figure 1> The Inheritance Tree of Dutch Nominal Compounds Ending in *boer* 'farmer' (Booij 2005:16)



This inheritance tree reveals that the subschemas for the nominal compounds ending in *boer* carrying idiosyncratic features are dominated by the general schemas for Dutch compounds on the higher nodes. Within this hierarchical lexicon as a systematic network, the compounds are not considered as exceptions. In sum, the three CM conceptions of '(sub)schemas', 'default inheritance', and a hierarchical lexicon play very important roles in accounting for holistic properies found in compounds.

Based on the background of OE *BAH* adjectival compounds and the fundamental ideas of CM introduced so far, this study will present a constructional analysis of OE *BAH* adjectival compounds.

III. Data

According to Park (2018), there are a total of 211 typical exocentric [A/N N]$_A$ type of OE *BAH* adjectival compounds. The data collection is made from *An Anglo-Saxon Dictionary by* Bosworth and Toller (2010) (henceforth, BT).[4] The overall distribution of OE typical (TP) *BAH* adjectival compounds by Park (2018:46) can be seen in <Table 1>.

〈Table 1〉 Overall Distribution of OE TP *Bahuvrihi* Adjectival Compounds Based on Park (2018)

Semantic Subpatterns		Morphological Subtypes		Number of Compounds		Proportion
Pattern 1	Pattern 2	[A N]$_A$	[A N]$_A$	169	193	91.5%
'Having [[A/N] [N]]'	'Featured with [[A/N] [N]]'		[Num N]$_A$	16		
			[Pst.P N]$_A$	7		
			[Prs.P N]$_A$	1		
85 / 40.3%	126 / 59.7%	[N N]$_A$	[N N]$_A$	17	18	8.5%
			[Pron N]$_A$	1		
Total	211 / 100%	2	6	211		100%

(*A: Adjective; N: Noun; Num: Number; Pst.P: Past Participle; Prs.P: Present Participle; Pron: Pronoun)

<Table 1> shows that there are a total of 211 OE TP *BAH* adjectival compounds, where the morphological subtype [A N]$_A$ (193 types/91.5%) prevails over the other subtype [N N]$_A$ (only 18 types/8.5%). Among the six subtypes, the most productive one is [A N]$_A$ (169 types). As to semantic subpatterns, the pattern 2 'Featured with [[A/N] [N]]' is more productive than the pattern 1 'Having [[A/N] [N]]'.

Based on these varied morphological subtypes and semantic subpatterns, section 4

[4] BT is a record of OE language between 700-1100 A.D. used by the Anglo-Saxons of the British Isles. The online edition BT retaining about 52,000 headwords is based on two print editions: i) *Bosworth, Joseph* (1898), ii) *Toller, Thomas Northcote* (1921).

will provide a constructional analysis of OE TP *BAH* adjectival compounds.

IV. A Constructional Analysis of Old English *Bahuvrihi* Adjectival Compounds

4.1 A Schematic Representation of Old English *Bahuvrihi* Adjectival Compounds

In this section, OE TP *BAH* adjectival compounds are divided into four groups in terms of their formal and semantic idiosyncrasies as given in (5).

(5) a. $[A\ N]_A$ & Pattern 1 'Having [A N]': TP-Bah1 (Df)
b. $[N\ N]_A$ & Pattern 1 'Having [N N]': TP-Bah1 (Df.O-F)
c. $[A\ N]_A$ & Pattern 2 'Featured with [A N]': TP-Bah2 (Df.O-M)
d. $[N\ N]_A$ & Pattern 2 'Featured with [N N]': TP-Bah2 (Df.O-F/M)

The first type (5a) is called 'TP-Bah1 (Df)' which fully inherits the default properties of OE TP *BAH* adjectival compounds in both form and meaning. Df refers to 'Default', a full inheritance. The second type (5b) is called 'TP-Bah1 (Df.O-F)' because it overrides the formal default property of the compounds. Df.O refers to 'Default Override', a partial inheritance, while 'F' stands for 'Form'.

The third type (5c) is called 'TP-Bah2 (Df.O-M)' that overrides the semantic default property of the compounds. 'M' stans for "Meaning'. The fourth type (5d) is called 'TP-Bah2 (Df.O-F/M)' which overrides both the formal and semantic default properties of the compounds.

Let us first examine the schematic representations of the two types 'TP-Bah1 (Df)' in (5a) and 'TP-Bah1 (Df.O-F)' in (5b) below in <Table 2>.

〈Table 2〉 A Schematic Representation of OE Typical *Bahuvrihi* Adjectival Compounds (Pattern 1: 'Having [[A/N][N]]')

Typical Bahuvrihi	**Form**		**Meaning**
TP-Bah1 (Df)	$[[a]_{Ak}[b]_{Ni}]_{Aj}$	↔	$[\text{Having } SEM_k\ SEM_i]_j$
	$[[rēad]_{Ak}[lēaf]_{Ni}]_{Aj}$		$[\text{having red}_k\ \text{leaf}_i]_j$ 'having red leaves' (lit. red-leaf)
	$[[wunden]_{Pst.Pk}[mǣl]_{Ni}]_{Aj}$		$[\text{having wounded}_k\ \text{mark}_i]_j$ 'having curved markings' (lit. wounded-mark)
Condition	$[]_{AK}$ = Pure/Derived Adjective, Numeral, Past Participle		
	SEM_K = Color, Brightness, Physical Property, Dimension, Numeral, Passive State SEM_i = Object, Body Part (Concrete N)		
TP-Bah1 (Df.O-F)	$[[a]_{Nk}[b]_{Ni}]_{Aj}$	↔	$[\text{Having } SEM_k\ SEM_i]_j$
	$[[līg]_{Nk}[locc]_{Ni}]_{Aj}$		$[\text{having flaming}_k\ \text{lock}_i]_j$ 'having flaming locks' (lit. flaming-lock)
	$[brand]_{Nk}[stefn]_{Ni}]_{Aj}$		$[\text{having flame}_k\ \text{prow}_i]_j$ 'having a prow with a beak, high-prowed' (lit. flame-prow)
Condition	$[]_{Nk}$ = Noun		
	SEM_k = Action, Animal, Material, Place, Time SEM_i = Object, Body Part (Concrete N)		

(*TP: 'Typical'; Df: 'Default' (= a full inheritance); Df.O: 'Default Override' (= a partial inheritance); F: Form; M: Meaning)

In <Table 2>, there are two types of subschemas labeled as 'TP-Bah1 (Df)' and 'TP-Bah1 (Df.O-F)', both of which represent that the compounds of these types fully inherit the default semantic property of OE TP *BAH* adjectival compounds '[Having SEM_k $SEM_i]_j$'. For instance, when the two semantic slots SEM_k and SEM_i are filled with the two elements *rēad* and *lēaf* respectively, the meaning representation can be made as '[having red_k $leaf_i]_j$ 'having red leaves'.

This subschema 'TP-Bah1 (Df)' also fully inherits the formal default property OE TP *BAH* adjectival compounds, $[[a]_{Ak}[b]_{Ni}]_{Aj}$. The left element can be replaced by a pure or derived adjective, a numeral, or a past participle that function as an adjective.

In the case of the second subschema 'TP-Bah1 (Df.O-F)', it also fully inherits the default semantic property of OE TP *BAH* adjectival compounds '[Having SEM_k $SEM_i]_j$' ([having $flaming_k$ $lock_i]_j$ 'having flaming locks'). However, it specifies that the compounds of this type violate the formal default property of OE TP *BAH* adjectival compounds, $[[a]_{Ak}[b]_{Ni}]_{Aj}$. Instead, this subschema represents that its formal property is $[[a]_{Nk}[b]_{Ni}]_{Aj}$, where the left slot can be filled with a noun.

Accordingly, 'TP-Bah1 (Df.O-F)' is distinguished with the first subschema 'TP-Bah1 (Df)' in terms of the full and partial inheritance of the formal default property.

Next, <Table 3> offers the schematic representations of the other two subschemas 'TP-Bah2 (Df.O-M)' in (5c) and 'TP-Bah2 (Df.O-F/M)' in (5d).

〈Table 3〉 A Schematic Representation of OE Typical *Bahuvrihi* Adjectival Compounds (Pattern 2: 'Featured with [[A/N][N]]')

Bahuvrihi	**Form**		**Meaning**
TP-Bah2 (Df.O-M)	$[[a]_{Ak}[b]_{Ni}]_{Aj}$	↔	$[[\text{Featured with } SEM_k\ SEM_i]_j$
	$[[fela]_{Ak}[wyrde]_{Ni}]_{Aj}$		$[[\text{featured with much}_k\ \text{speech}_i]_j$ 'of many words, talkative' (lit. much-speech)
	$[[\bar{a}n]_{Ak}[r\bar{æ}d]_{Ni}]_{Aj}$		$[[\text{featured with one}_k\ \text{mind}_i]_j$ 'one-minded' (lit. one-intelligence)
Condition	$[]_{AK}$ = Pure/Derived Adjective, Numeral, Past/Present Participle		
	SEM_k = Human Propensity, Numeral, Passive/Active State SEM_i = Sense, Ability, Quality, Time, Action (Abstract/Actional N)		
TP-Bah2 (Df.O-F/M)	$[[a]_{N/Pronk}[b]_{Ni}]_{Aj}$	↔	$[[\text{Featured with } SEM_k\ SEM_i]_j$
	$[[lencten]_{Nk}[t\bar{i}me]_{Ni}]_{Aj}$		$[[\text{featured with spring}_k\ \text{time}_i]_j$ 'vernal' (lit. spring-time)
	$[[frymþ]_{Nk}[ild\ ]_{Ni}]_{Aj}$		$[[\text{featured with beginning}_k\ \text{age}_i]_j$ 'in its first years, young' (lit. beginning-age)
Condition	$[]_{N/Pronk}$ = Noun, Pronoun		
	SEM_k = Place, Time, Action, System, Quality, Material, Nature SEM_i = Sense, Ability, Quality, Time, Action (Abstract/Actional N)		

(*TP: 'Typical'; Df: 'Default' (= a full inheritance); Df.O: 'Default Override' (= a partial inheritance); F: Form; M: Meaning)

As shown in <Table 3>, both subschemas 'TP-Bah2 (Df.O-M)' and 'TP-Bah2 (Df.O-F/M)' specify the idiosyncratic semantic property 'Featured with [SEM_k SEM_i]'; both subschemas violate the default semantic property of OE TP *BAH*

adjectival compounds '[Having SEM_k $SEM_i]_j$'.

In the case of the subschema 'TP-Bah2 (Df.O-M)', it only violates the default semantic property. For instance, in $[[fela]_{Ak}[wyrde]_{Ni}]_{Aj}$ ↔ [[featured with $much_k$ $speech_i]_j$, the semantic representation on the right tells us that the compound *fela-wyrde* does not mean 'having much-speech'. It means 'featured with much speech', which eventually becomes the meaning of 'talkative'. Still, the subschema 'TP-Bah2 (Df.O-M)' fully inherits the formal default property ($[[a]_{Ak}[b]_{Ni}]_{Aj}$) of OE TP *BAH* adjectival compounds.

Meanwhile, it is seen that the last subschema 'TP-Bah2 (Df.O-F/M)' violates the default properties in both 'Form' and 'Meaning'. For example, in $[[lencten]_{Nk}[tīme]_{Ni}]_{Aj}$ ↔ [[featured with $spring_k$ $time_i]_j$, the formal representation on the left reveals that the left slot is fixed with a noun; the formal default feature for the left slot is an adjective. Furthermore, in the semantic representation on the right, the compound does not mean 'having spring-time', but 'featured with spring time' > 'vernal'. Therefore, this subschema 'TP-Bah2 (Df.O-F/M)' is seen to have both formal and semantic default overrides; it clearly shows that this type of compounds are idiosyncratic both in 'Form' and 'Meaning'.

So far, it has been demonstrated that schematic representations for OE TP *BAH* adjectival compounds play crucial roles to specify the morphological and semantic features of the compounds. A constructional analysis allows the subschemas to simply represent the varied degrees of the formal and semantic properties from Df to Df.O, which cannot be done in a traditional descriptive analysis.

Now, the four subschemas in <Table 2> and <Table 3> can be generalized into one abstract, unified schema for OE TP *BAH* adjectival compounds as given in <Table 4> below.

〈Table 4〉 The Most General Schema for OE Typical *Bahuvrihi* Adjectival Compounds

$[[A]_k[N]_i]_{Aj} \leftrightarrow [\text{Having } SEM_k\ SEM_i]_j$	
Condition	A = Pure/Derived Adjective, Numeral, Past Participle
	SEMk = Color, Brightness, Physical Property, Dimension, Numeral, Passive State SEMi = Object, Body Part (Concrete N)

As seen in <Table 4>, the most abstract schema for OE TP *BAH* adjectival compounds shows that the compound type *rēad-lēaf* 'having red leaves' (lit. red-leaf) schematized as 'TP-Bah1 (Df)' in <Table 2> is the most typical one of OE TP *BAH* adjectival compounds.

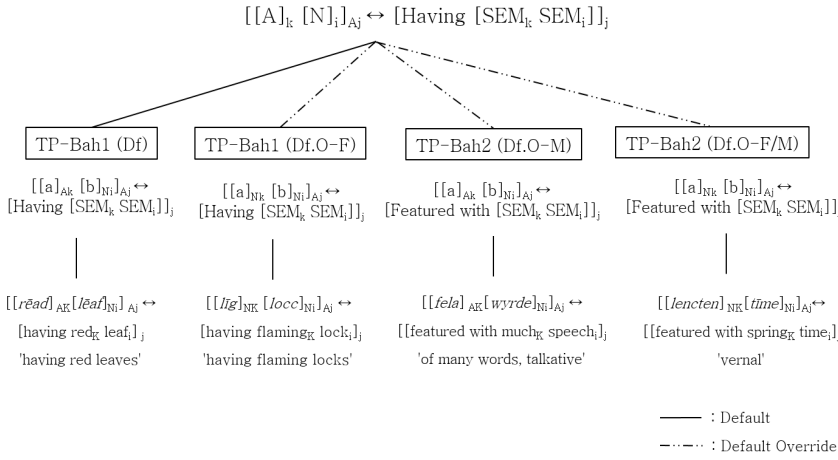
As to 'Form', the left and right slots are fixed with an adjective and a noun respectively. The index Aj outside the bracket denotes that the final lexical category is an adjective, which is the formal idiosyncratic feature of the compounds. In terms of 'Meaning', the sematic representation is specified as 'Having SEM_k and SEM_i', not as 'Featured with SEM_k SEM_i', which is the typical semantic feature of the compounds.

In sum, this unified schema for OE TP *BAH* adjectival compounds clearly reveals the formal and semantic default properties of the compounds.

4.2 A Comprehensive Inheritance Tree of Old English *Bahuvrihi* Adjectival Compounds

This section presents the inheritance tree of OE TP *BAH* adjectival compounds in order to demonstrate the systematic connection among the four subschemas at the bottom, as well as their full or partial default inheritance from the dominating unified schema at the top. The tree is shown in <Figure 2>.

〈Figure 2〉 The Inheritance Tree of OE Typical *Bahuvrihi* Adjectival Compounds



This inheritance tree in <Figure 2> shows that the most abstract schema for OE TP *BAH* adjectival compounds on the top node dominates the four subschemas on the intermediate node. At the bottom, there are the instantiations of the compounds. The solid line stands for a full inheritance (Df), while the broken lines refer to a partial inheritance (Df.O).

The leftmost subschema 'TP-Bah1 (Df)' linked with the most abstract schema by a solid line indicates that it fully inherits the default properties from the top. Meanwhile, the other three subschemas linked with the most abstract schema by broken lines display that they only partly inherits the default properties from the top.

It is noticeable that even though the three (Df.O) subschemas carry idiosyncratic formal or semantic properties, all of the four subschemas are interconnected one another since they all inherit the default properties of OE TP *BAH* adjectival compounds. To sum up, within a constructional analysis, different types of OE TP *BAH* adjectival compounds can be represented as interrelated constructions with typical or idiosyncratic properties in 'Form' and 'Meaning'.

V. Conclusion

The present study has provided a Construction Morphology analysis of OE TP *BAH* adjectival compounds based on a total of 211 compounds collected by Park (2018). By applying the theory of Construction Morphology (CM) to the compounds, this study has presented four things.

First, this study has shown that an OE TP *BAH* adjectival compound can count as a construction with form and meaning, whose properties are holistic and idiosyncratic. Therefore, the compound can also be seen as a constructional idiom.

Second, it has offered schematic representations of the compounds by means of the four subschemas, 'TP-Bah1 (Df)', 'TP-Bah1 (Df.O-F)', 'TP-Bah2 (Df.O-M)', and 'TP-Bah2 (Df.O-F/M)'. In this way of schematization, the compounds' formal and semantic properties can be specified much simpler and more straightforwardly than in the descriptive analysis.

Third, with the crucial notion of 'Default Inheritance' in CM, it has revealed that one Df subchema 'TP-Bah1 (Df)' and the other three Df.O subschemas can be generalized over and unified into one abstract schema ($[[A]_k[N]_i]_{Aj} \leftrightarrow$ [Having SEM_k $SEM_i]_j$) for OE TP *BAH* adjectival compounds. 'Default Inheritance' has a strong advantage that it allows the holistic or exceptional properties carried by the compounds to be accounted for; all of the four Df and Df.O subschemas are interrelated with a full or partial inheritance. Therefore, idiosyncratic types of OE TP *BAH* adjectival compounds do not have to count as 'exceptions'.

Fourth, this study illustrates the inheritance tree of OE TP *BAH* adjectival compounds, where there is a hierarchical network between the most abstract schema at the top and the four types of subschemas at the bottom. The inheritance tree contributes a simple and systematic way of a classification; were it not for the inheritance tree, the classification of OE TP *BAH* adjectival compounds would be dichotomized into two, typical type versus idiosyncratic one.

In conclusion, this article is the first attempt to provide a construction

morphology analysis of OE TP *BAH* adjectival compounds in the field of OE compounding and word-formation. It has tried to account for the holistic properties found in the compounds, which is distinguished from a traditional descriptive analysis. I hope that this constructional analysis sheds new light on the traditional analysis of OE compounding and word-formation for future study.

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Sujin Park (Hankuk University of Foreign Studies-Global Campus/Instructor)
Address: (17035) Oedae-ro 81, Mohyeon, Cheoin, Yongin, Gyeonggi, Korea
E-mail: sjpark@hufs.ac.kr

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