



be interpreted as the argument of *heal* (cf. *heal X*). In this example, *healing* is concerned with the occurrence of the PP, even though it is a non-head of the compound. This means that in the compound *healing-time*, the non-head is not prevented from taking the complement by the head. In this example, the head is “transparent” in that it is ignored in the selection of a PP. Thus, Boase-Beier (1987) calls such a type of head “transparent head.”<sup>1</sup> She notes that not every noun can be transparent. In (3), for example, the noun *plant*, the head of the underlined compound, blocks the non-head from taking the complement, as with the case of (1b).

- (3) \* The dandelion is a healing-plant of many ill.  
 (Boase-Beier (1987:68), underlining mine)

The difference in the grammaticality between the example in (2) and that in (3) indicates that only a certain type of noun can be transparent.

Then, what kind of nouns can be transparent and why do they allow non-heads to take complements? This note aims to show a possible answer to these questions. To this end, it is helpful to consider the characteristics of transparent heads that Boase-Beier (1987:68) observes; “[t]ransparent heads are lexical elements of a very general, abstract semantic nature.” I will point out that this characteristic is similar to that of the elements called “semi-lexical categories.” Focusing on such a similarity, I will propose that the nouns that can be transparent are semi-lexical nouns, whose existence is argued for by Emonds (1985, 2000, 2001), Corver and van Riemsdijk (eds.) (2001), Corver (2008), Shimada (2013) and Naya (2016), among others. In so doing, I will adopt the framework of Emonds (2000), more specifically, the bifurcated lexical model and multi-level lexical insertion, which provide semi-lexical categories with a secure place in grammar. In addition, I will show that under this framework, the proposal can naturally account for why transparent heads allow non-heads to take complements.

This note is organized as follows. Section 2 will show the parallelism between transparent heads and semi-lexical nouns. Section 3 will introduce the bifurcated lexical model and multi-level lexical insertion, which are hypothesized in Emonds (2000). Section 4 will present possible answers to the questions raised above. Section 5 will provide some evidence for the present analysis. Section 6 will touch upon an issue related to transparent heads. Section 7 will give concluding remarks.

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<sup>1</sup> Boase-Beier (1987) adopts the term transparent head from Toman (1983:61).

## 2. The Parallelism between Transparent Heads and Semi-Lexical Nouns

In section 1, we observed that some nouns like *time* in (4a), but not others like *plant* in (4b), allow non-heads to take complements.

- (4) a. Spring is the healing-time of all ills. (= (2))  
 b. \* The dandelion is a healing-plant of many ills. (= (3))

This section provides additional data concerning transparent heads like *time* and shows similarities between nouns that can be transparent and a subset of nouns, which is labeled “semi-lexical.”

First, let us observe the following examples:

- (5) a. The waiting-period for news of the trapped miners was very trying for all concerned.  
 b. There were various questions about the amalgamating-process of mercury with gold.

(Boase-Beier (1987:67-68), underlining mine)

In these examples, *period* and *process* behave in the same way as *time* in (4a). That is, they do not block the non-heads from introducing complements; *waiting* and *amalgamating* in (5a, b) select the PPs *for news* and *of mercury with gold*, respectively (cf. *wait for X* and *amalgamate X with Y*). As with the case of (4), the non-heads lose the argument-taking capacity when the heads are changed. This point is demonstrated by the following examples:

- (6) a. \* There was a special waiting room for news of the miners.  
 b. \* There were questions about the amalgamating dish of mercury with gold.

(Boase-Beier (1987:68), underlining mine)

In the underlined compounds in (6), *waiting* and *amalgamating* serve as non-heads as in (5) but the compounds are not compatible with the PPs. Given that the compounds in (5) and those in (6) are different in the nouns used as heads, it is the properties of head nouns that determines whether non-heads can take arguments or not. According to Boase-Beier (1987), *period* and *process* in (5), along with *time* in (4a), are transparent heads.

The examples in (4b) and (6) indicate that not every noun can be transparent. Boase-Beier (1987:68) notes that “[t]ransparent heads are lexical elements of a very

general, abstract semantic nature” as represented by *time*, *period* and *process*. Note that these characteristics of transparent heads are shared by “semi-lexical nouns,” whose existence is argued for by Emonds (1985, 2000, 2001), Corver and van Riemsdijk (eds.) (2001), Corver (2008), Shimada (2013) and Naya (2016), among others. For instance, Emonds (1985:162) states that semi-lexical nouns are “comprised of [...] least semantically specific members.”<sup>2</sup> Interestingly, Emonds (1985, 2000) considers that semi-lexical nouns include *time*, which can be employed as a transparent head, as seen in (4a). Given this similarity between transparent heads and semi-lexical nouns, it is worth examining the possibility that the nouns that can be transparent in compounds are semi-lexical nouns only.

If transparent heads are actually semi-lexical nouns, then why do they allow non-heads to take complements when used as heads of compounds? Note that we can easily find the case where non-heads take complements in derivatives. For example:

(7) protection of children (Roeper (1987:282))

In this example, *children* can be interpreted as the object of *protect* (cf. *to protect children*). Crucially, *protect* is the non-head of the derivative *protection*. This situation is very similar to that of compounds with transparent heads. Emonds (2000) explains why *protect* in (7) can take complements even when it is a non-head under the bifurcated lexical model and multi-level lexical insertion. In this note, I will extend his analysis to compounds with transparent heads.

### 3. Framework

#### 3.1. The Bifurcated Lexical Model

Emonds (2000) hypothesizes that the Lexicon consists of two inventories: the Dictionary and the Syntacticon. The Dictionary is the inventory for lexical categories (i.e. N, V, A and P) and the Syntacticon is that for functional categories. Lexical and functional categories are distinguished by means of an item’s feature composition. Emonds (2000) assumes two types of features: purely semantic features *f* and cognitive syntactic features *F*. The former features “play no role in syntax” (Emonds (2000:7)) but the latter ones “play a central role in both syntax and at Logical Form” (Emonds (2000:12)). Lexical categories, but not functional categories, have purely semantic features *f*; that is, functional categories have only cognitive syntactic features *F*. In terms of the two types of features, we can

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<sup>2</sup> In Emonds (1985, 2000), the term “grammatical” is used instead of “semi-lexical.” Though the terms differ, they label the same category.

characterize the two inventories as follows: the Dictionary is the inventory for lexical items with purely semantic features *f*, and the Syntacticon is the inventory for lexical items without such features.

In addition to lexical and functional categories, Emonds (2000) argues that there is an in-between class of lexical items. The class is called “semi-lexical.” According to Emonds (2000), each of the categories N, V, A and P has “a subset of say up to twenty or so elements fully characterized by cognitive syntactic features *F* and entirely lacking purely semantic features *f*” (Emonds (2000:9)). Semi-lexical items can thus be defined as follows:

- (8) Semi-lexical items are those N, V, A and P which have no purely semantic features *f*, but only cognitive syntactic features *F*.  
(cf. Emonds (2000:9; 2001:29))

Since semi-lexical items consist of only cognitive syntactic features *F*, they are “the least semantically specific members” (Emonds (1985:162)). Unlike lexical N, V, A and P, semi-lexical items mainly play syntactic roles. In this sense, they bear properties of functional categories. To illustrate the contrast between lexical and semi-lexical A, Emonds (2001) refers to the following examples:

- (9) a. The book seemed {real / pretty / awful / dammed}.  
b. She seemed {real / pretty / awful / dammed} {upset / happy}.  
(Emonds (2001:36))

In both examples in (9a, b), the adjectives *real*, *pretty*, *awful* and *dammed* are used but they have different lexical status. In (9a), they are ordinary lexical adjectives, and thus each of them describes the book with their own meanings. In (9b), on the other hand, they are semi-lexical adjectives; they lack their original meanings, just expressing an extreme degree by modifying the adjectives *upset* and *happy*. Emonds (2000:9) also refers to the subsets of other categories. For example, the subset of V includes *be*, *have*, *do*, *get*, *go*, *come*, *let*, *make* and *say*, and that of N includes *one*, *self*, *thing*, *stuff*, *people*, *other(s)*, *place*, *time*, *way* and *reason*.

As already noted, items without *f* features are listed in the Syntacticon. Thus, semi-lexical categories reside in this inventory. This enables semi-lexical items to behave differently from ordinary N, V, A and P especially in terms of lexical insertion, in Emonds’ (2000) model, as will be shown in the next subsection.

### 3.2. *Multi-Level Lexical Insertion*

#### 3.2.1. *Three Types of Insertion*

Emonds (2000) further hypothesizes that the Dictionary and the Syntacticon interact differently with syntactic derivation. Dictionary items are inserted at the beginning of a syntactic derivation and it is the only possible insertion. Syntacticon items can also be inserted at the start of a derivation but this is not the only possible insertion for them. They can be inserted at two other stages of a derivation. This hypothesis is named “multi-level lexical insertion,” which can be summarized as follows:

(10) **Multi-Level Lexical Insertion**

Lexical Items from the Syntacticon, in accord with their feature content, can be inserted at different stages of a derivation, via the Dictionary (“deep structure”), during a syntactic derivation, and during a phonological derivation. (Emonds (2000:179))

Along with Dictionary items, Syntacticon items can be inserted via the Dictionary at the start of a derivation. This type of insertion is called “Deep Insertion.” In addition, they can also be inserted during a derivation, more precisely, “after certain deep structure properties are expressed, but prior to what is called s-structure or Spell Out” (Emonds (2000:118)). The insertion at this stage is called “Syntactic Insertion.” Syntactic Insertion is exemplified by productive derivational morphology. Syntacticon items can also be inserted after Spell Out. This type of insertion is termed “PF Insertion.” A typical example of lexical items that undergo PF Insertion is inflectional suffixes.

#### 3.2.2. *Multi-Level Lexical Insertion and Headedness*

The hypothesis of multi-level lexical insertion has an important consequence for the notion of headedness during the syntactic derivation. Suppose that Syntacticon items such as derivational suffixes undergo Syntactic Insertion. In this situation, they are “absent” until the insertion occurs. That is, given that derivational suffixes generally serve as heads of words, the heads remain empty before the insertion. To distinguish between “empty” heads and “non-empty” heads, Emonds (2000) defines what counts as “head” during the syntactic derivation. He first notes that under his model, the structural head of XP is always  $X^0$  but the lexical head, or non-empty head, “is not always rotely  $X^0$ ” (Emonds (2000:155)). Then, he defines the lexical head as follows:

## (11) Lexical Head

Let  $Y^0$  be the highest lexically filled head in  $Z^j$ . Then  $Y^0$  is the lexical head of  $Z^j$ . (partially adopted from Emonds (2000:128))

If the structural head is empty, the role of the syntactic head is reserved for the highest lexically filled head in the related structure (Emonds (2000:128)). That is, the empty structural head is “entirely inert prior to the derivational moment which associates it with a lexical item” (Emonds (2000:155)). In other words, empty heads are “ignored.”

Let us see how multi-level lexical insertion works. Multi-level lexical insertion and the notion of lexical head can be exemplified by nominalization. Since Grimshaw (1990), it has been observed that deverbal nouns called complex event nominals behave like the verbs from which they are derived. For example, *development* in (12a) does not refer to concrete objects but has an eventive reading. Thus, they can be compatible with adjectives with the sense of time, duration and frequency adverbs such as *constant* in (12a) and *quick* in (12b). On the other hand, they cannot be modified by adjectives referring to concrete objects, as shown in (12b). Furthermore, complex event nominals are distinguished from other nominals (like result nominals, in Grimshaw’s (1990) term) by their “argument taking” properties. In (12a), for example, the PP *into the hills*, which can be interpreted as the complement of *develop*, occurs.

- (12) a. We protest the city’s constant development into the hills to attract industry.  
 b. We protest { quick / \*high-rise / \*treeless } development to attract industry.

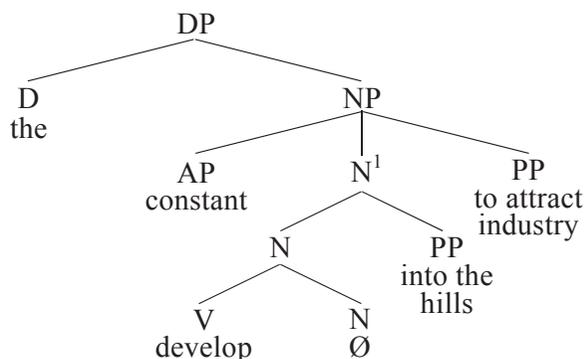
(Emonds (2000:152))

Emonds (2000) attributes these verb-like properties of complex event nominals to the difference between the structural head and the lexical head.<sup>3</sup> He argues that the suffix *-ment* in *development* in (12a) undergoes Syntactic Insertion and assumes that (12a) has the following structure at the beginning of the derivation:

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<sup>3</sup> See Emonds (2000:Section 4.7.2) and Naya (2016) for the analysis of result nominals.

(13)



(Emonds (2000:153), with modifications)

Although the structural head of the NP in (13) is N, it is empty and thus inert at this level. The highest lexically filled head in this structure is the verb *develop*, so that it serves as the lexical head until *-ment* is inserted. Therefore, it can select the complement. Other verb-like properties can be explained for the same reason.

Note that in a complex event nominal, a “non-head” (e.g. *develop* in *development*) takes its complement. This is exactly the same situation as in the case of the data observed in the examples (2) and (5) in Sections 1 and 2. Focusing on this similarity, the next section explores the possibility to extend the analysis of complex event nominals to compounds with transparent heads.

#### 4. Proposal

We are now in a position to consider the questions concerning transparent heads posed in Section 1. The questions are repeated in (14) for convenience.

- (14) a. What kind of nouns can be transparent?  
 b. Why do transparent heads allow non-heads to take complements?

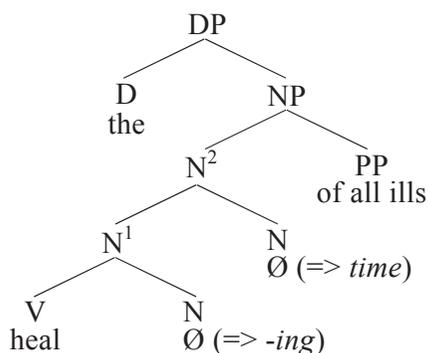
As briefly mentioned in Section 1, it is helpful in addressing these questions to consider the characteristics of transparent heads. Boase-Beier (1987:68) notes that “[t]ransparent heads are lexical elements of a very general, abstract semantic nature.” This semantic nature is reminiscent of that of semi-lexical categories. According to Emonds (1985:162), semi-lexical items are “least semantically specific members.” Crucially, Emonds (2000) considers that semi-lexical nouns include *time*, which can be employed as a transparent head (see (2) in Section 1). Given the parallelism

between transparent heads and semi-lexical nouns, it is reasonable to propose that the nouns that can be transparent in compounds are limited to semi-lexical nouns.<sup>4</sup> Importantly, if transparent heads are semi-lexical nouns, it follows that they allow non-heads to take complements. Since semi-lexical nouns reside in the Syntacticon, they can undergo Syntactic Insertion. This means that they are inert until the insertion, reserving the role as a head for other heads in the relevant structure. This is why transparent heads allow non-heads to take complements. The answers to the questions in (14) are thus summarized as follows:

- (15) a. The nouns that can be transparent are semi-lexical nouns.  
 b. Transparent heads allow non-heads to take complements because they are inserted via Syntactic Insertion and thus they are inert until the insertion.

Let us see the case of the compound with a transparent head in (16a) for illustration. We can assume that the compound has the structure in (16b) before the Syntactic Insertion.

- (16) a. Spring is the healing-time of all ills. (= (2))  
 b.



This structure contains two elements inserted at the level of Syntactic Insertion, i.e. *-ing* and *time*. Although they are the structural heads of N<sup>1</sup> and N<sup>2</sup>, they are not the lexical heads, which are defined as in (17).

<sup>4</sup> Interestingly, Boase-Beier (1987:68) points out that the lexical elements with “a very general, abstract semantic nature” “could be suffixes in other languages.” This description indicates that the elements differ from normal lexical nouns because suffixes are typically (but not always) functional categories. This peculiarity can also be captured under the assumption here; that is, semi-lexical items have the properties of functional categories.

- (17) Lexical Head  
 Let  $Y^0$  be the highest lexically filled head in  $Z^j$ . Then  $Y^0$  is the  
 lexical head of  $Z^j$ . (= (11))

The highest lexically filled head in  $N^2$  in (16) is the verb *heal* in the structure. Thus, the verb *heal*, ignoring the empty heads, functions as the lexical head in the structure and selects the PP complement.

As shown in this section, we can successfully account for why non-heads can take complements by assuming that transparent heads are semi-lexical nouns. Now we bear the burden of showing that transparent heads are actually semi-lexical nouns. The next section provides some evidence and discussions concerning semi-lexicality of transparent heads.

## 5. Evidence and Discussions

If transparent heads are semi-lexical nouns, the nouns *time*, *period* and *process*, which Boase-Beier (1987) refers to as the nouns that can be transparent, should (or can) behave as semi-lexical nouns. One way to prove that they are in fact semi-lexical nouns is to show that they can appear in the environments where semi-lexical nouns are assumed to be used. One of such environments, according to Shimada (2013) and Naya (2016), is nominalization, more specifically, verb-to-noun conversion. Thus, this section examines the semi-lexicality of the nouns in question in the context of verb-to-noun conversion.

In their analysis of verb-to-noun conversion, Shimada (2013) and Naya (2016) focus on a property that Corver (2008) argues semi-lexical nouns have. According to Cover (2008), (certain) semi-lexical nouns are able to be silent (cf. Kayne (2005)). Shimada (2013) argues that silent semi-lexical nouns play an important role in nominalization in Japanese. His analysis is based on Chae's (2010) observation. Chae (2010) points out that the deverbal noun *hasir-i* in (18a), for example, does not simply mean the action or process of running but means the way of running. On the basis of this observation, Shimada (2013) argues that *hasir-i* has a silent semi-lexical noun *KATA* 'way' as a head, as shown in (18b).<sup>5</sup>

- (18) a. *hasir-i*  
           running-Inf  
           'the way of running'  
       b. *hasir-i KATA*  
           running-Inf-WAY

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<sup>5</sup> In what follows, silent elements will be represented by capital letters.

‘the way of running’

(Shimada (2013:84, 85), with modifications)

The existence of *KATA* can be supported by the fact that its overt counterpart can occur as in (19).

- (19) *hasir-i-kata*  
 running-Inf way  
 ‘the way of running’

(Shimada (2013:85))

Based on Shimada’s (2013) discussion, Naya (2016:60) defines verb-to-noun conversion (in English and Japanese) as “a process where a verb is combined with a silent semi-lexical noun.”

If the nouns *time*, *period* and *process* are semi-lexical nouns, then they can be silent and can be combined with verbs, forming converted nouns.<sup>6</sup> It seems to be safe to say that *time* can be employed in conversion. For example, the deverbal nouns in (20) have the meanings related to time.

- |      |    |             |         |        |
|------|----|-------------|---------|--------|
| (20) | a. | <i>kure</i> | dusking | ‘dusk’ |
|      | b. | <i>ake</i>  | dawning | ‘dawn’ |

The noun *kure* in (20a) means *dusk*, i.e. “the time just before night when the daylight has almost gone but when it is not completely dark,” and *ake* in (20b) means *dawn*, i.e. “the time of day when light first appears in the sky, just before the sun rises” (*COBUILD Advanced British English Dictionary*, s.v. dusk and s.v. dawn). Then, let us assume that these nouns are combined with silent *time*, as in (21a). This assumption can be supported given that *TIME* can overtly appear, as in (21b).

- |      |    |                  |           |        |
|------|----|------------------|-----------|--------|
| (21) | a. | <i>kure-TIME</i> | dusking   | ‘dusk’ |
|      | b. | <i>kure-doki</i> | dusk-time | ‘dusk’ |

Thus, the converted nouns in (20) suggest that *time* is a semi-lexical noun.

Let us then move on to the noun *process*. Its semi-lexicality can be confirmed by the data from verb-to-noun conversion in English. As mentioned above, Naya (2016) argues that verb-to-noun conversion in English is also the

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<sup>6</sup> Emonds (1985, 2000) and Corver (2008) have already argued that *time* is a semi-lexical noun. This note supports their argument from a different perspective than theirs.

combining process of a verb and a silent semi-lexical noun. If *process* is a semi-lexical noun, then we can find converted nouns with the meanings of process. Such converted nouns can be found easily:

(22) attack, attempt, fall, hit, laugh, promise, search (Namiki (1985:64))

According to Naya (2016:61), verbal elements in these converted nouns modify silent nouns in head positions. Though he does not explicitly identify the silent noun used in them, it can be said that the silent noun bears the abstract eventive meaning of action or process. Thus, converted nouns in (22) indicate that *process* can be counted as a semi-lexical noun.

Finally, let us consider the case of *period*. We face difficulties in directly supporting the existence of semi-lexical *period*. In this note, I just suggest the possibility regarding the relation between *period* and *time*. First, note that *period* is related to the notion of time. Based on this relation, I assume that abstract elements like *TIME* can have several overt forms, and suggest the possibility that *period* is one of the overt forms of *TIME*. The assumption and possibility are not so strange given the case of the semi-lexical adjectives in (23), which is repeated from (9b).

(23) She seemed {real / pretty / awful / dammed} {upset / happy}. (= (9b))

In (23), all of the semi-lexical adjectives play the role of expressing “an extreme degree.” Likewise, *time* and *period* can be considered to express some notions related to time.<sup>7</sup> I leave the precise explanation of the relationship among *time*, *period* and *TIME* for future research.

In sum, this section showed that *time* and *process* are likely to be semi-lexical nouns. The evidence comes from verb-to-noun conversion in English and Japanese. It is true that we need more careful examination especially regarding *period*, but the discussion in this section supports the proposal in Section 3.

## 6. Related Issues

Finally, let us briefly consider a similar phenomenon to transparent heads,

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<sup>7</sup> One may doubt that semi-lexical *time* and *period* share exactly the same properties except for phonological one. In fact, they seem to be semantically different from each other in temporal boundedness, for example. I tentatively assume that they can differ to some extent because they maintain the “flavors” of their lexical counterparts. In the case of the four semi-lexical adjectives in (23), they may be distinguishable in their semantic nuances even though they are all related to “an extreme degree.” Likewise, *time* and *period* may be used in a different way according to their semantic nuances.

which is observed by Namiki (1985) (see also Namiki (1987, 1994)). His examples are shown in (24).

- (24) a. \* a book to modern linguistics  
 b. a guide to modern linguistics  
 c. a guidebook to modern linguistics  
 (Namiki (1985:151-152))

As indicated by the examples in (24a, b), the noun *book* cannot but *guide* can take the *to*-phrase. Importantly, when the two nouns are combined, the resultant compound *guidebook* can introduce a *to*-phrase, as shown in (24c). This means that *guide* in *guidebook* can be responsible for selecting a PP even though it is a non-head. Notice that *guide* cannot always take a PP:

- (25) \* guidedogs to the hospital (Namiki (1985:153))

As shown in (25), when *guide* is combined with *dog*, the *to*-phrase cannot occur. Namiki (1985) provides further examples:

- (26) a. \* structure to the reanalysis rule  
 b. input to the reanalysis rule  
 c. input structure to the reanalysis rule  
 (27) a. \* structure from the reanalysis rule  
 b. output from the reanalysis rule  
 c. output structure from the reanalysis rule  
 (Namiki (1985:151-152))

These examples show that *structure* allows the occurrence of the arguments of the non-heads *input* and *output*. Since in the examples in (24c), (26c) and (27c), the head nouns *book* and *structure* allow their non-heads to take complements, they may also be transparent heads in Boase-Beier (1987)'s sense.<sup>8</sup> We can easily capture the phenomenon if the head nouns are semi-lexical nouns as proposed in Section 3.

In fact, they apparently show the semantic property of semi-lexical elements. Namiki (1994) points out that *book* and *structure* are semantically empty in the relevant compounds by referring to the following examples:

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<sup>8</sup> Focusing on the "head-like" properties of non-heads, Namiki (1985) calls non-heads like *guide* in *guidedog* "subheads."

- (28) a. a guidebook to modern linguistics (= (24c))  
 b. a guide to modern linguistics (Namiki (1994:227))

In these examples, only (28a) contains the noun *book*. However, they are (almost) synonymous. Based on these examples, Namiki (1994) argues that *book* in (28a) is semantically almost empty (see also Namiki (1985:152-153)). The semantic emptiness seems to indicate that *book* (and *structure*) are semi-lexical nouns; they lack lexical meanings and just have syntactic ones.

However, the semantic emptiness does not seem to be an inherent nature of the noun *book*. To see this point, let us consider the following definition of the noun *guide*:

- (29) a book that instructs or explains the fundamentals of a subject or skill  
 (*COBUILD Advanced British English Dictionary*, s.v. *guide*)

According to this definition, *guide* itself has the meaning of book. In this sense, *book* in *guidebook* is redundant. That is, *book* is semantically (almost) empty only when it is combined with *guide*. Therefore, it is hard to count *book* as a semi-lexical noun. Besides, we also face difficulties in examining their feature compositions. Recall that semi-lexical elements exclusively have cognitive syntactic features *F*. If *book* and *structure* are semi-lexical nouns, they need to be composed of syntactic features only. However, they are unlikely to consist of such features.

The above consideration suggests that *book* and *structure* are not semi-lexical nouns. Then, why do they behave like transparent heads such as *time*, *period* and *process*? I leave this issue for future work.

## 7. Concluding Remarks

In certain compounds, heads can be transparent and allow non-heads to take complements. We have addressed the question of why they can behave in such a way. Adopting the bifurcated lexical model and multi-level lexical insertion proposed by Emonds (2000), we have provided a possible answer to this question: The nouns that can be transparent in compounds are semi-lexical nouns; and they can be “ignored” because they are absent at the beginning of a syntactic derivation. We have also discussed the possibility that the evidence for the former part of this answer comes from converted nouns in Japanese and English.

It is true that we still have remaining issues, especially in proving that *period*

is actually a semi-lexical noun and in capturing the related phenomenon mentioned in Section 5, but we have shown that the above answer is valid to a considerable extent. If we successfully establish that transparent heads are semi-lexical nouns, we will acquire diagnostics to identify semi-lexical elements. That is, the ability of being transparent heads can be counted as one of the properties of semi-lexical elements. In this sense, compounds with transparent heads are important to the study of semi-lexical categories.

#### REFERENCES

- Boase-Beier, Jean (1987) *Poetic Compounds: The Principles of Poetic Language in Modern English Poetry*, Max Niemeyer, Tübingen.
- Chae, Seong Sik (2010) “Nihongo no Dooshiren’yookeimeishi ni Kansuru Ichikoosatsu (A Note on Japanese Nouns in Adverbial Forms of Verbs),” *Nihonbunka Kenkyuu* 36, 487-509.
- Corver, Norbert (2008) “On Silent Semi-Lexical Person,” *Lingue e Linguaggio* 7, 5-24.
- Corver, Norbert and Henk van Riemsdijk (eds.) (2001) *Semi-lexical Categories: The Function of Content Words and the Content of Function Words*, Mouton de Gruyter, Berlin.
- Emonds, Joseph E. (1985) *A Unified Theory of Syntactic Categories*, Foris, Dordrecht.
- Emonds, Joseph E. (2000) *Lexicon and Grammar: The English Syntacticon*, Mouton de Gruyter, Berlin.
- Emonds, Joseph E. (2001) “The Flat Structure Economy of Semi-Lexical Heads,” *Semi-lexical Categories*, ed. by Norbert Corver and Henk van Riemsdijk, 23-66, Mouton de Gruyter, Berlin.
- Grimshaw, Jane (1990) *Argument Structure*, MIT Press, Cambridge, MA.
- Kayne, Richard S. (2005) *Movement and Silence*, Oxford University Press, New York.
- Marchand, Hans (1969) *The Categories and Types of Present-Day English Word-Formation: A Synchronic-Diachronic Approach*, 2nd Edition, C. H. Beck’sche, Munich.
- Namiki, Takayasu (1985) *Gokeisei* (Word Formation), Taishukan, Tokyo.
- Namiki, Takayasu (1987) “Eigoni Okeru ‘Hukusyuyoubu’ (Subheads in Compounds),” *Eego Seenen* (The Rising Generation) 132, 528.
- Namiki, Takayasu (1994) “Heads and Subheads of Compounds,” *Synchronic and Diachronic Approaches to Language: A Festschrifts for Toshio Nakao on the Occasion of His Sixteen Birthday*, ed. by Shuji Chiba, Yasuaki Fujiwara, Masayuki Ike-uchi, Tsuguyo Kohno, Osamu Koma, Yukio Nagahara, Takayasu Namiki, Yukio Otsu, Masanori Suiko, Kazuhiro Ushie and Noriko Yamada, 269-285, Lieber Press, Tokyo.
- Naya, Ryohei (2016) “Deverbal Noun-Forming Processes in English,” *English Linguistics* 33, 36-68.
- Roeper, Thomas (1987) “Implicit Arguments and the Head-Complement Relation,” *Linguistic Inquiry* 18, 267-310.
- Shimada, Masaharu (2013) “Coordinated Compounds: Comparison between English and Japanese,”

*SKASE Journal of Theoretical Linguistics* 10, 77-96.

Shimamura, Reiko (1990) *Eigono Gokeiseito Sonoseisansei* (Word Formation in English and Its Productivity), Liber Press, Tokyo.

Toman, Jindrich (1983) *Wortsyntax: Eine Diskussion ausgewählter Probleme deutscher Wortbildung*, Niemeyer, Tübingen.

Williams, Edwin (1981) "On the Notions of 'Lexically Related' and 'Head of a Word'," *Linguistic Inquiry* 12, 245-274.

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