Non-Isomorphic Mapping between Form and Function in English: A Constraint-based Perspective*

Jong-Bok Kim (Kyung Hee University)

Jong-Bok Kim. 2012. Non-Isomorphic Mapping between Form and Function in English: A Constraint-based Perspective. *Studies in Modern Grammar 68*, 91-112. Mismatch or non-isomorphic mapping between form and function is prevalent in natural languages. English is no exception in this respect. It displays various instances of mismatch phenomena that can be classified into two main groups: complexity and content mismatch. This paper discusses several instances of these two types of mismatch in English and sketches how the lexicalist grammar with parallel architecture can license such non-isomorphic relations or no direct correspondences between form and meaning.

[Key words: extraposition, raising, binominal, complexity mismatch, content mismatch, incongruity, form and function]

1. Introduction

It is often observed that form-function mapping in natural languages can be 'incongruent' with respect to more general patterns of correspondence in the language. Mismatch or incongruity between form and function is sometimes unavoidable in language communication as in evolutionary biology where organisms encounter suboptimal and mismatching cases to the existent environment or to the existent generalizations (cf. Francis and

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Michaelis 2003).

There are at least two main types of mismatch (cf. Francis and Michaelis 2003): complexity and content mismatch. Complexity mismatch involves a discrepancy in the number of elements involved at different levels of representation. Consider the following two examples (cf. Huddleston and Pullum 2002, Kim 2005, Kim and Sag 2005):

(1) a. Extraposition: It seems that he likes English.
b. Idiom: The police kept tabs on the suspect.

In (1a), the matrix subject *it* has no semantic contribution but syntactically functions as the subject as attested from the subject-verb agreement or tag question in *It seems that he likes English, doesn't it?* In a similar manner, *tabs* in (1b) is in the object position, but does not behave as a semantic argument of the verb *kept*. That is, the idiomatic expression *keep tabs on* as a whole maps onto one semantic predicate like *monitor*. As such, we have more word-level elements in syntax than the number of semantic expressions.

Meanwhile, content mismatch involves an incongruous mapping in the content of items between two different levels of representation. Consider the following:

(2) a. John is a good student.
b. John is in.

Both of these examples include category mismatches. In (2a), the NP *a good student* functions as a predicate, even though the canonical function of an NP is denoting an individual. In a similar sense, the preposition *in* in (2b) corresponds not to a simple location indicator but to a semantic predicate, canonically represented by an AP or VP.

There have been two main, different perspectives in dealing with these types of linguistic mismatch or non-correspondence. The first one is

'derivational perspective' advocated by the Principle and Parameters (P&P or Minimalist Framework, Chomsky 1981, Chomsky 2000). The derivational perspective represents mismatches by means of interactions between movement operations and functional projections which affect the hierarchical position or structural realization of syntactic categories projected by a given head. The second main perspective is 'surface-oriented' or 'constraint-based' one couched upon grammars such as HPSG, Construction Grammar, and Cognitive Grammar (cf. Kay and Fillmore 1999, Ginzburg and Sag 2000, Sag et al. 2003, Culicover and Jackendoff 2005, Kim and Sells 2008). In the latter perspective, mismatch phenomena are represented by nondefault constructions which contain information that is not inherited from those constructions. The nondefault constructions are licensed by tight interactions among different grammatical representations, e.g., between the lexicon and constructional constraints.[1)]

In this paper, we discuss some instances of complexity mismatch as well as content mismatch we find in English. In particular, we show that there is in fact a variety of discrepancies in English at many different grammatical representations. We then sketch how these can be dealt with in the lexicalist perspective where different grammatical levels exist in parallel, being mutually constrained by the grammar.

2. Complexity Mismatch in Raising Constructions

One major controversial construction, displaying mismatches between form and function, is the so-called raising construction, exemplified in (3):

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1) In fact, Francis and Michelis (2003) also discuss the level mapping perspective supported by the LFG framework and Autolexical Syntax The mismatch phenomena within this view are taken to be incongruent mappings between relatively independent levels of linguistic structure. That is, mismatch between different grammatical representations is defined relative to a prototypical association of components from different levels. In this respect, this view is similar to the surface-oriented, constraint-based perspective.

(3) a. [Stefan] seems [to enjoy the paper].
b. [Mary] believes [Stefan] [to enjoy the paper].

The sentence (3a) is traditionally called subject-to-subject raising while (3b) is subject-to-object raising. These two raising sentences display clear mismatches between syntax and semantics. Consider the syntactic arguments of these intransitive and transitive raising verbs as given in the following lexical information, represented in the HPSG feature structure system (Sag et al. 2003, Kim and Sells 2008):

(4)

a. $\begin{bmatrix} \text{FORM} \langle \text{seem} \rangle \\ \text{SUBJ} \langle \text{NP} \rangle \\ \text{COMPS} \langle \text{VP}[\textit{inf}] \rangle \end{bmatrix}$ b. $\begin{bmatrix} \text{FORM} \langle \text{believe} \rangle \\ \text{SUBJ} \langle \text{NP} \rangle \\ \text{COMPS} \langle \text{NP, VP}[\textit{inf}] \rangle \end{bmatrix}$

As illustrated here, the verb *seem* has two syntactic arguments, subject NP and infinitival VP, while *believe* takes three, subject NP, object NP, and infinitival VP. However, when we consider their semantic arguments, the verbs seem to have one less argument than their syntactic arguments, as represented in the following simple first order logic (the index *s0* here, an arbitrary index for a situation, means the proposition 'Stefan enjoys the paper'):

(5) a. *seem*'(*s0*)
b. *believe*'(*m,s0*)

The verb *seem* represents a seemingly situation (*s0*) while *believe* describes an individual's belief of a situation (*s0*). The number of the two verbs' semantic arguments is thus one less than that of their syntactic arguments, evoking no one-to-one mapping relation between syntactic and semantic arguments.

Note that there is no such incongruous mapping relations in control

predicates selecting similar syntactic arguments:

(6) a. [John] tries [to enjoy the paper].
b. [John] persuaded [Mary] [to enjoy the paper].

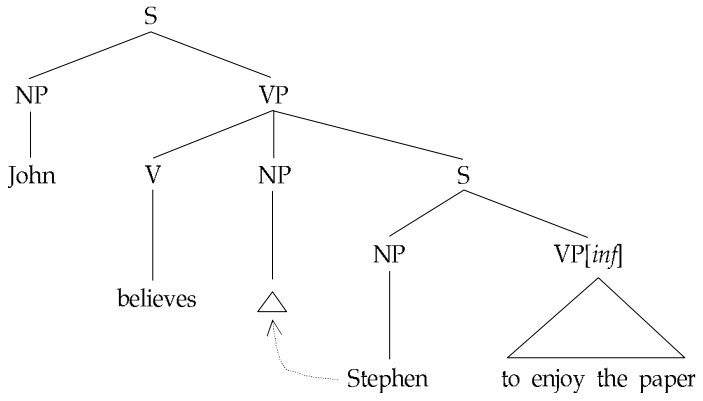
In these control predicates, *try* has two syntactic arguments while *persuade* requires three, similar to *seem* and *believe*, respectively. However, different from the raising predicates, each of these syntactic arguments is mapped onto the corresponding semantic argument as seen from the following:

(7) a. *try*'(*j*,*s0*)
b. *persuade*'(*j*,*m*,*s0*)

The subject NP of the verb *try* is mapped onto its semantic argument *j* and the VP onto the situation *s0*. The three syntactic arguments of *persuade* are each mapped onto the corresponding semantic arguments, *j, m, s0*, respectively. There is thus one-to-one mapping between syntax and semantic arguments in control predicates, unlike raising predicates like *seem* and *believe*.

How then can we account for this kind of conflict or mismatch between syntactic and semantic arguments in raising constructions? There have two contrasting views in capturing this kind of incongruity: derivational and lexicalist views. In the P&P framework, the key point of dealing with raising constructions is the Projection Principle requiring that the lexical properties specified by a verb be represented at all levels of syntactic structure (Chomsky 1981). This means that in the raising sentence (3b), the verb *believe* semantically selects two arguments and projects a structure like the following:

(8)



As seen here, the lexical properties of the verb *believe* and *enjoy* are projected into appropriate structures, observing the Projection Principle. As a way of deriving the surface structure, the movement operation of raising applies in which the subject *Stefan* is raised to the matrix object position in s-structure. There is thus no violation of the Projection Principle in the source as well as surface structure, but the mismatch is contributed to the movement operations.

Unlike this derivational view, the HPSG or Construction Grammar framework assumes no deep structures (Sag et al. 2003, Goldberg 2006, Kim and Sells 2008). It does not posit two different structures to deal with mismatches. The key point starts from lexical entries:

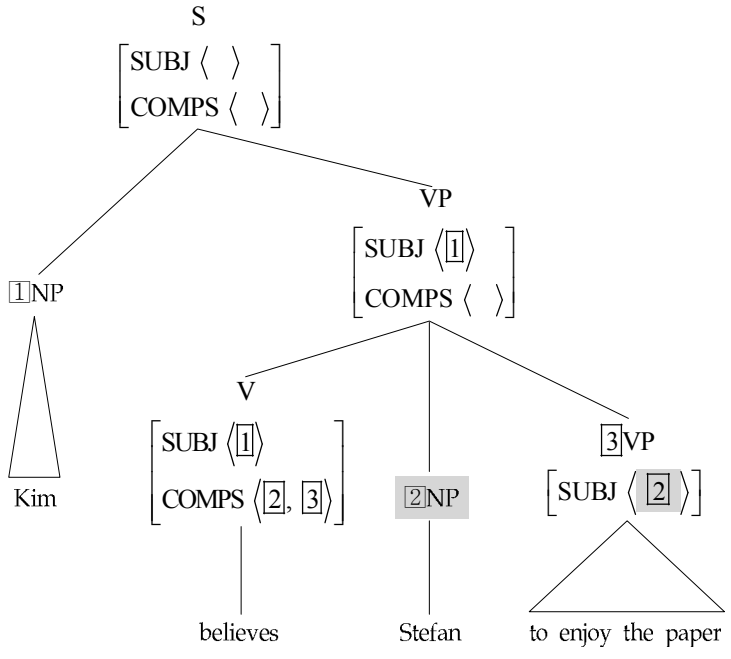
(9)

a. $\begin{bmatrix} \text{FORM} \langle \text{seemed} \rangle \\ \text{SYN} \begin{bmatrix} \text{SUBJ} \langle \boxed{\text{NP}} \rangle \\ \text{COMPS} \langle \text{VP}_{s0}[\textit{inf}] \rangle \end{bmatrix} \\ \text{SEM} \begin{bmatrix} \text{PRED} \ \textit{seem} \\ \text{ARG1} \ \textit{s0} \end{bmatrix} \end{bmatrix}$ b. $\begin{bmatrix} \text{FORM} \langle \text{believes} \rangle \\ \text{SYN} \begin{bmatrix} \text{SUBJ} \langle \text{NP}_i \rangle \\ \text{COMPS} \langle \boxed{\text{NP}}, \text{VP}_{s0}[\textit{inf}] \rangle \end{bmatrix} \\ \text{SEM} \begin{bmatrix} \text{PRED} \ \textit{believe} \\ \text{ARG1} \ \textit{i} \\ \text{ARG1} \ \textit{s0} \end{bmatrix} \end{bmatrix}$

These lexical entries directly license the conflict between syntactic and

semantic arguments. For example, the verb *seem* syntactically selects one subject NP and a VP denoting the situation *s0*. But note that this verb has only one semantic argument (ARG1) linked to the VP complement while its subject NP has no linked semantic argument in its semantic predication (PRED). The verb *believe* behaves in a similar manner: even though it has three syntactic arguments, the object NP has no linked semantic argument. This kind of incongrous mapping specified by the lexical entries will project raising constructions without resorting to movement operations, as illustrated in the following structure:

(10)



As observed here, unlike the derivational perspective, there is no movement operation at all for the mismatch. The complexity mismatch, in which the object *Stefan* is linked to no semantic argument, starts from the lexical properties of the raising predicate as we have seen in (9b). Even though the object NP is not mapped onto any semantic argument, it still

functions as the subject of the infinitival VP, as represented in the tree.[2)]

In sum, we have seen clear differences between derivational and lexicalist perspective in capturing the complexity mismatch in raising constructions. In the traditional movement perspective, the mismatch is attributed to interactions between two configurational structures (deep and surface) and movement operations. Meanwhile, in the lexicalist perspective, it is attributed to the lexical properties of the raising predicates and the relevant grammar rules and principles.

3. Mismatches between Grammatical Categories and Functions

Another type of content mismatch can be observed from possible subjects and objects. In the traditional P&P framework, grammatical functions like subject and direct object can be indirectly defined (Chomsky 1981):

(11) a. Subject-of: [NP, S] (S → NP, VP)
b. Direct-Object-of: [NP, VP] (VP → V, NP)

Within a simple PS-rule system, as represented here, the subject is defined to be the immediate daughter of S, while the object to be the immediate sister of V. These two also are categorically specified to be NPs.

However, empirical evidence indicates that not only NPs but also other variety categories (e.g., CP, VP, and PP) can function as subject or object (Newmeyer 2000, 2003):

(12) a. [That John passed] surprised her.
b. [To attend] would give the wrong message.
c. [Between six and seven] suits her fine.
(13) a. The average fourth grader believes [that the earth is round].

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2) This information is added in the lexical entry in (9b). See Kim and Sells (2008) for details.

b. Everyone would prefer [to come early].
c. I'll choose [after the holidays] to hold my party.

Canonical subjecthood tests that literature has often assumed include raising, SAI (subject-aux-inversion), agreement, and tag questions, as illustrated in the following (cf. Kim and Sells 2008).

(14) a. The boys seem to make good cakes.
b. Can the boys make good cakes?
c. The boys make/*makes good cakes.
d. The boys make good cakes, don't they?

It is not difficult to see that in addition to the regular NP (and even expletives), non-NP expressions such as CP, VP, or even PP can serve as the subject or object, as evidenced from these subjecthood tests.

The subjecthood or objecthood of these non-NP expressions can be further attested with other tests too (Newmeyer 2000, 2003). For example, the CP can function as the raised subject as in (15a), agree with the main verb as in (15b), and even serve as the associate of the adnominal emphatic reflexive as in (15c):

(15) a. [That John passed] seemed to surprise her.
b. [That he will resign] and [that he will stay in office] seem/*seems at this point equally possible.
c. [That Leslie arrived drunk] itself put Kelly in a foul mood.

There is also enough evidence indicating that the CP can be a true object. Observe the following examples:

(16) a. [That the earth is round] is believed by every fourth grader.
b. [That Smith was guilty] was tough to prove.
c. I believe [that he likes olives] to be the best reason to consider a vacation in the Mediterranean region.

In (16a), the CP serves as the promoted subject of a passive and in (16b), it is the subject of a tough predicate which is linked to the object of the verb *prove*. In (16c), the CP clause is the object of the ECM verb *believe*.

In addition, the infinitival VP can behave either as the subject or object:

(17) a. Would [to attend] make the wrong statement?
b. [To attend] would make quite a statement, wouldn't it?
c. [To attend] is likely to make quite a statement.
d. [[To resign] and [to stay in office]] seem/*seems at this point equally possible.

As seen here, the VP can undergo the SAI, serve as the antecedent of the tag subject *it*, and function as the subject of a raising predicate like *likely*. The VP, though not a nominal element, is also sensitive to the subject-verb agreement as seen in (17d). We can observe that the VP can be the subject of a passive, the object of an ECM verb *believe*, and the subject of a tough predicate, as seen from the following data, respectively:

(18) a. [To win the lottery] is desired/expected/believed by every ticket buyer.
b. I believe [to love one another] to be a great virtue.
c. [To love one another] is tough to teach.

As we have seen so far, the grammatical category cannot determine its grammatical function, or vice versa. There is no isomorphic mapping between the two.[3] This implies that a viable grammar is one that assigns

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[3] In addition to these categories, there are also cases where even a PP or AdvP can function as a subject or object. This can be attested from the following:

(i) a. Is [under the chair] a nice place for the cat to sleep.
b. [Under the chair] is a nice place for the cat to sleep, isn't it?
c. [Under the chair] seems like the best place for the cat to sleep

As observed from the data, the PP under the chair undergoes the SAI, is sensitive to the tag question, and serve as the subject of a raising predicate. The PP can also appear in obligatory object positions:

no determined category to each grammatical function. In a lexicalist view like HPSG or Construction Grammar, the grammatical functions are not indirectly determined but taken to be primitives. For example, the categorical value of the verb's subject need not be determined from the beginning, but can be realized either as an NP or a CP or even an infinitival VP. One way to implement this idea in grammar is to assume that the lexeme expression is sensitive only to the argument structure (ARG-ST) and its semantic or role-based argument(s) is specified at this level. These semantic-based arguments are realized as the grammatical functions (valence features like SUBJ and COMPS) at syntax. The grammar will then constraint this mapping process to determine how the elements in the ARG-ST are realized in these syntax-relevant grammatical functions, SUBJ and COMPS, as roughly represented in the following (see Sag et al. 2003, Kim and Sells 2008):

(19)

a. $\begin{bmatrix} \text{FORM} \langle \text{surprise} \rangle \\ \text{SUBJ} \langle \text{XP} \rangle \\ \text{COMPS} \langle \text{YP} \rangle \\ \text{ARG-ST} \langle \text{XP, YP} \rangle \end{bmatrix}$ b. $\begin{bmatrix} \text{FORM} \langle \text{seem} \rangle \\ \text{SUBJ} \langle \text{XP} \rangle \\ \text{COMPS} \langle \text{YP} \rangle \\ \text{ARG-ST} \langle \text{XP, YP} \rangle \end{bmatrix}$

What the grammar needs to constrain is how to map or link the elements in the ARG-ST to those in the valence or grammatical functions SUBJ and COMPS. In what follows, we will briefly discuss how the grammatical categories can be constrained and linked to the argument structure.

4. Mismatches between Meaning and Grammatical Categories

(ii) a. They discussed [after the holidays].
b. The new tenants are reclaiming [behind the garage]
c. The campaigners planned [until Christmas] in detail.

It appears that some semantic restrictions may be enough to predict the possible phrasal categories of the given argument. For example consider *inform*:

(20) a. Mary informed Bill that a package had been left at his door.
b. *[That you met Alice] informed Bill that a package had been left at his door.
c. *[To watch television] informed Bill that a package had been left at his door.

The verb *inform* semantically requires its subject to be an animate individual. However, a clausal expression referring to a situation cannot be its subject. Also observe the following:

(21) a. [The fact that the weather was sunny] persuaded Mary to do some gardening.
b. [The fact that the WTO riots were violent] impressed upon the Italian police the need for extra precautions.
(22) a. *[That the weather was sunny] persuaded Mary to do some gardening.
b. *[That the WTO riots were violent] impressed upon the Italian police the need for extra precautions.

Verbs like *persuade* or *impress* require a subject argument, but this subject cannot be a CP even though the subject can be any NP with an individual reference.

However, this is not a whole story. Consider the difference between *ask* and *inquire*:

(23) a. I asked [what the number of students in the class was].
b. I inquired [what the number of students in the class was].
(24) a. I asked [the number of students in the class].
b. *I inquired [the number of students in the class].

The meaning of *ask* and that of *inquire* are quite similar, and can combine with an indirect question as in (23). However, the difference comes from the fact that *inquire* cannot take a concealed question NP as shown in (24b).[4)]

A similar situation happens with *become, go* and *get*, showing us a non-isomorphic mapping between meaning and grammatical category. These three verbs all have similar meanings but the category selection is different (cf. Pollard and Sag 1994):

(25) a. Harry became/went/got crazy.
b. Harry became/*went/*got a raving maniac.
c. Harry ?became/went/*got out of his mind.

What we can observe here is that all these verbs can have an AP predicative complement, but an NP can be the complement of the verb *become* only as seen in (25b). The verb *get* is different from the other two verbs in that it cannot select a PP complement.

The observations we have made so far imply that the semantic properties alone cannot predict the syntactic realizations of semantic arguments. As a way of capturing this relation and noted in the previous section, the lexicalist perspective introduces two different levels: argument-structure and valence structure. The general constraint controlling the mapping between these two is the argument realization constraint (cf. Ackerman 2003, Sag et al. 2004, Kim and Sells 2008):

(26) Argument Realization Constraint (ARC):
The first element on the ARG-ST list is realized as SUBJ, the rest as COMPS in syntax.

The lexical entry for a given expression will have only the ARG-ST value

4) Certain nouns that can be interpreted as a question are called concealed questions. Cf. Grimshaw (1979).

as illustrated in the following:

(27)

a. $\begin{bmatrix} \textit{v-lexeme} \\ \text{FORM } \langle \textit{disappear} \rangle \\ \text{ARG-ST } \langle \text{XP}[\textit{theme}] \rangle \end{bmatrix}$ b. $\begin{bmatrix} \textit{v-lexeme} \\ \text{FORM } \langle \textit{become} \rangle \\ \text{ARG-ST } \langle \text{XP}[\textit{theme}],\ \text{YP}[\textit{goal}] \rangle \end{bmatrix}$

The arguments in the ARG-ST are sensitive to only lexeme-level elements (not those at syntax) and closely related to semantics and thematic roles that each participant places in the given situation. When these lexical arguments are realized in syntax as a word level expression, in accordance with the Argument Realization Constraint, the ARG-ST values are realized as valence values (SUBJ and COMPS), as illustrated in the following:

(28)

a. $\begin{bmatrix} \textit{v-word} \\ \text{FORM } \langle \textit{disappear} \rangle \\ \text{SUBJ } \langle \boxed{1}\text{NP} \rangle \\ \text{COMPS } \langle\ \rangle \\ \text{ARG-ST } \langle \boxed{1}\text{XP} \rangle \end{bmatrix}$ b. $\begin{bmatrix} \textit{v-word} \\ \text{FORM } \langle \textit{become} \rangle \\ \text{SUBJ } \langle \boxed{1}\text{NP} \rangle \\ \text{COMPS } \langle \boxed{2}\text{XP}[\text{PRD} +] \rangle \\ \text{ARG-ST } \langle \boxed{1}\text{XP}, \boxed{2}\text{YP} \rangle \end{bmatrix}$

In this mapping process, the elements in the grammatical functions are specified with grammatical categories.

This direction can deal with the mismatches we have seen earlier. For example, the verbs *become, go, get* all are alike in that they select only two arguments.

(29) [ARG-ST 〈XP, YP〉]

However, each verb has slightly different syntactic realizations. That is, unlike *become*, *go* and *get* will have different categorical realizations for

their second argument:

(30)

a.
$$\begin{bmatrix} \textit{v-word} \\ \text{FORM} \langle \textit{go} \rangle \\ \text{SUBJ} \langle \boxed{1}\text{NP} \rangle \\ \text{COMPS} \langle \boxed{2}\text{AP} \mid \text{PP}[\text{PRD} +] \rangle \\ \text{ARG-ST} \langle \boxed{1}\text{XP}, \boxed{2}\text{YP} \rangle \end{bmatrix}$$

b.
$$\begin{bmatrix} \textit{v-word} \\ \text{FORM} \langle \textit{get} \rangle \\ \text{SUBJ} \langle \boxed{1}\text{NP} \rangle \\ \text{COMPS} \langle \boxed{2}\text{AP}[\text{PRD} +] \rangle \\ \text{ARG-ST} \langle \boxed{1}\text{XP}, \boxed{2}\text{YP} \rangle \end{bmatrix}$$

As seen here, the complement of *go* can be either an AP or a PP, while that of *get* can be only AP. This way of different mapping from the ARG-ST and valence features (SUBJ and COMPS) thus allows us to capture incongruities between argument structure and grammatical categories in a formal way.

5. Mismatches between Phrasal Structure and Meaning

The so-called English Binominal NP (BNP) construction also displays non-isomorphic mapping relations, together with its quite distinctive syntactic and semantic properties (see, among others, Aarts 1998, Keizer 2007, Kim and Sells 2010):

(31) a. It's been [a hell of a day] at the office.
b. And it introduced her to Budapest, [a jewel of a city].
c. Rune nodded [his shaven dome of a head].
d. She had [a skullcracker of a headache].

As illustrated here, these bracketed BNPs involve two nominals, the preposition *of*, and certain determiners, resulting in the skeletal structure of 'Det1 N1 *of* Det2 N2'. In terms of meaning, N1 and N2 are in a reverse subject-predicate relation. That is, the first noun N1 denotes a

property or quality that is predicated of the second noun N2. The evidence of this reverse subject-predicate relation can be seen from the possibility of paraphrasing the BNPs as copular constructions (see Quirk et al. 1985; also the Huddleston and Pullum 2002):

(32) a. a hell of a day - the day is a hell
b. a jewel of a city - the city is a jewel
c. his shaven dome of a head - the head is a shaven dome
d. a skullcracker of headache - the headache is a skullcracker

The predication relation between the two nouns means that the first noun N1 ascribes a property to the second noun N2. When we interpret the property as evaluative, we can also paraphrase in a prenominal modifying construction (Quirk et al. 1985):

(33) a. a fool of a policeman - a foolish policeman
b. that idiot of a prime minister - that idiotic prime minister
c. a devil of a row - a devilish row

All of the data suggest that N2 is the semantic head while N1 serves as its predicate.

One possible analysis to capture this kind of discrepancy between structure and meaning is to assume movement operations. For example, Kayne (1994) assumes that N1 undergoes predicate inversion within a small clause, as represented in the following structure for the BNP *that idiot of a doctor*:

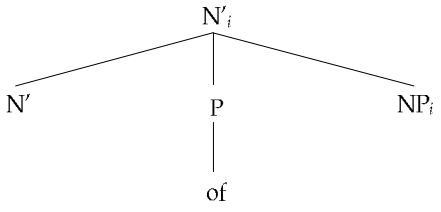
(34) that $[_{D/PP}\ [_{NP}\ \text{idiot}_i]\ [\text{of}\ [_{IP}\ \text{a doctor}\ I^0\ t_i]]]$ ...

In this structure, Kayne (1994) takes the preposition *of* as a 'prepositional determiner (D/P)' selecting an IP, and the subject and predicate relation is captured in the source structure before the movement.

The other possible analysis is to attribute the mismatch to constructional

properties, as proposed by Kim and Sells (2011). Following Kim and Sells (2011) and couched upon the lexicalist perspective, we can assume that the BNP construction is a type of nominal juxtaposition construction associated with certain specified properties. We can assume that the BNP is a juxtaposition of two nominal expressions linked by the preposition *of* in this syntactic skeleton:

(35)



This syntactic form is associated with higher morphosyntactic, semantic and pragmatic constraints such as Det2 needs to be marked with *a/an*, N1 and N2 are in a predication relation, and so forth. Reflecting these idiosyncrasies, we assume that English introduces the BNP construction linked with the syntactic and semantic constraints as given in Figure 1.

Syntax:

N'_i [N'_{δ} of NP_i[MRKR *indef*]]

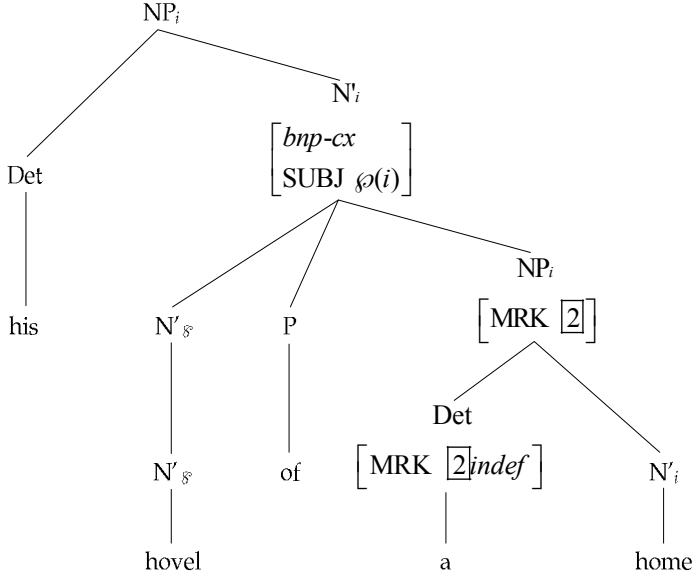
Sem/Prag: δ denotes an evaluative property of i

Figure 1: BNP Construction in English

The constructional constraint in Figure 1 links two nominal phrases. The two nominal phrases, N' and NP, denote a property (δ) and an individual (*i*) respectively (cf. Jackendoff 1977). This resulting juxtaposition induces a predicative relation in which the first nominal (δ) denotes an evaluative property of the second nominal (*i*). The second NP has the marker value *indef*, to be realized either as *a(n)* or as ∅ for bare plurals.

Note that this juxtaposition does not assign any specific syntactic headedness property, except for specifying that N2 is the semantic head: the index value of the composite N'_i is that of the second NP_i. One additional thing to note here is that the first nominal requires a specifier (DetP) which is also identical to the required specifier (SPR) value of the whole BNP. This direction of construction -based, lexicalist perspective can generate a structure like (36). As seen in the structure, the two nominal phrases *hovel* and *a home* are linked by the preposition. The constructional constraint in Figure 1 also requires that the second NP is marked with the indefinite article *a/an*. The index value of the whole NP structure (*i*) is identical with the second NP, ensuring its primacy with regard to semantic headedness. The semantic value (SEM) also shows that the value of the first N' is predicated of the index of the second NP.

(36)



This structure will eventually give us the semantic representations of the NP as represented in the following simplified MRS (minimal recursion

semantics, Copestake et al. 2005, Kim et al. 2011):

(37)
$$\begin{bmatrix} \text{INDEX } i \\ \text{RELS} \left\langle \begin{bmatrix} \text{PRED } \textit{home-rel} \\ \text{ARG1 } i \end{bmatrix}, \begin{bmatrix} \text{PRED } \textit{hovel-rel} \\ \text{ARG0 } s0 \\ \text{ARG1 } i \end{bmatrix}, \begin{bmatrix} \text{PRED } \textit{his-rel} \\ \text{ARG0 } j \\ \text{RESTR } i \\ \text{BODY } s0 \end{bmatrix} \right\rangle \end{bmatrix}$$

As seen in this simplified version of semantic representations, the whole NP describes an individual whose index value is *i*, but includes a predicate relation in which *hovel* is predicated of this individual. The indefinite article has no quantificational force unlike the possessive one.

This direction follows the spirit of Construction Grammar (see, among others, Goldberg 2006, Kim and Sells 2010, Michaelis 2012, and Sag 2012). The CG (construction grammar) assumes that all levels of description (including morpheme, word, phrase, and clauses) are understood to involve pairings of form with semantic or discourse functions. In particular, the juxtaposition analysis treats the BNP similar to the 'asyndetic coordinated construction' in that the headedness properties are distributed to the two nominals N1 and N2, with the first nominal being predicated of the second. This way of construction-based perspective can thus capture the discrepancy between structure and meaning in a straightforward way.

6. Conclusion

We have seen several different types of mismatch or incongruity among different representations in the grammar. As literature has pointed out, complexity and content mismatches are two main types.

In this paper, we cite canonical as well as unusual examples of mapping relations between two different levels. Raising constructions display

non-isomorphic mapping from semantic to syntactic arguments. One traditional approach is to follow the derivational perspective positing two different structures keeping the Projection Principle with the introduction of syntactic movement operations. The other lexicalist perspective attributes the conflict to specified lexical properties. Both perspectives have their own merits, but we have seen that there are many different types of incongruity. For example, mapping from argument structure to grammatical categories, from meaning to categories, from phrasal or clausal structures to meaning, and so forth. These kinds of incongruity cannot be easily captured within the same mechanism that the derivational view assumes. In this paper, we have seen that the grammar, allowing different grammatical levels to co-exist in parallel while being mutually constrained by the grammar, can offer us a viable way of capturing these different types of mismatch.

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email: jongbok@khu.ac.kr