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1. Introduction

Some of the problems concerning idiomatic expressions are traditional ones in the literatures of generative syntax. Although a considerable number of arguments have been presented, those problems have yet been settled even in the latest version of the framework<sup>[1]</sup>.

There are two main reasons why many linguists paid so much attention to the problems of idioms. First, some of the commonly assumed transformational processes are sensitive to idioms, i.e. whether those rules are applicable to certain structures or not often depends on whether those structures contain idiomatic expressions or not. For example,

(1) i. \*Sight was caught of Mary in the crowd.

ii. \*Fun is being made of John by his friends

iii. He's always being made fun of by his friends.

iv. Mary was caught sight of in the crowd.                      Bresnan (1982)

These sentences show that the passive transformation is sensitive to these idioms<sup>[2]</sup>. Second, the idiosyncratic varieties seen in the syntactic behavior of idioms have sometimes been considered as the counter-examples to the "formal" theories of syntax, especially, to the theory of generative syntax.

The goal of this article is to present the principled account of these problems. In particular, we would like to concentrate on the verbal idioms which consist of verb+noun+preposition sequences<sup>[3]</sup>.

At the same time, we will argue that the theory of syntax with highly modular character can and, in fact, only those theories which are based on a number of principles and parameters can provide satisfactory account of these constructions.

Arguments will be presented as follows. At first, in section 2, we briefly discuss the previous accounts of these constructions. In section 3, based on the theory of the logical form (LF) developed in Higginbotham (1985), we will propose that idioms should be regarded as unitary constituents in the LF. In section 4, we will argue that each idiom is "listed" in the lexicon. We then will examine how lexical entries for idioms are constructed. In section 5, following the argument of May (1985) and Speas (1986), and extending some of the basic ideas of them, we will introduce the revised theory of phrase structures. Based on this theory, we will develop the analysis of the phrase structures which idioms construct in actual sentences.

## 2. Previous Accounts

In this section, we briefly review the previous arguments on the syntactic properties of idioms. For example, Riemsdijk (1978) proposes an account based on 'the reanalysis rule' for the so-called pseudo-passive phenomena. (He noted that this analysis is proposed by Chomsky in 1974.)

(2) Simon was taken no notice of.

He argues that idioms in these sentences are reanalyzed as a single verb. Accounts of this kind are most prevailing and adopted also in Stowell (1981), Hornstein and Weinberg (1981), Bresnan (1982), and other quite a number of literatures.

With this type of rules, however, we front another type of difficulties in the following example.

(3) Your remarks have been taken careful note of.

In this type of sentences, there are adjectival modifiers in the middle of the idiom sequences. This means that there should be syntactically nominal elements in these idioms and that the entire sequences of idioms are something more than simple verbs. Therefore, it is not enough for our purpose to simply reanalyze these sequences as a single verb. The point we should express is that nominal elements in idioms are "nominal" in the syntactic representation of idioms. We will approach the problems from this standpoint in the following sections.

### 3. Logical Forms of Idioms

It is often argued that idioms are those elements in sentences whose meaning can not be derived compositionally from their parts. In other words, each idiom forms a single semantic unit in sentences. We are going to incorporate this traditional intuition in the logical forms of idioms<sup>[4]</sup>.

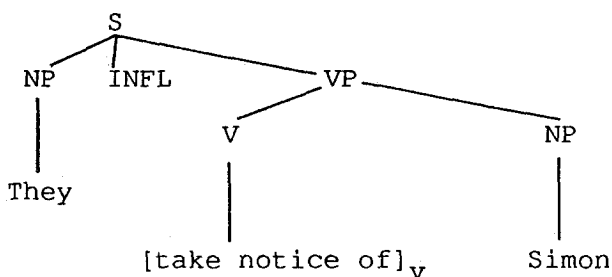
Preceding the argument on the logical forms of idioms, we should present brief discussion on the notion of the LF itself and clarify its role in the overall framework. Since there are a considerable number of literatures on this topic, the exact nature of the LF is still controversial one.

Among the literatures, Higginbotham (1985) presents the most consistent account of the position and the nature of the LF in the theory of syntax. Following his arguments, we will postulate the assumption that certain elements in sentences have their own "θ-

grids", which represent their  $\theta$ -marking properties, as part of their lexical entries. These elements are almost identical to the elements traditionally called "predicates"<sup>[5]</sup>. Therefore, we will redefine the term "predicate", following Higginbotham, as those constituents which have unsaturated  $\theta$ -grids<sup>[6]</sup>. On the other hand, traditional term "argument" is defined as those constituents whose  $\theta$ -grids are saturated. Adopting these ideas, we can assume that the logical forms of sentences are representations of the "logical" properties of sentences, i.e. they represent predicate-argument relationships in sentences<sup>[7]</sup>.

Based on these assumptions, we can capture the intuition that each idiom is semantically a single unit by assuming that each idiom is a single predicate in logical forms. For example, we can postulate the following LF representation.

Figure 1.



Assuming this structure, we can explain some of the characteristic properties of passive constructions which contain idioms as their parts.

- (4) i. At that time travel permits were not easily got hold of.
  - ii. In the retreat, wooden houses were set light to. ODC
- In the framework which have no principled account of idioms,

these sentences are highly problematic. Since the NP-movement from these positions are impossible in ordinary sentences.

(5) i. John took a picture of Mary.

ii. \*Mary was taken a picture of.

cf. That picture of Mary was taken by John.

These constructions, which is one of the most well-known properties of idioms, are not at all problematic if we adopt the LF representation as Figure 1<sup>[8]</sup>.

We should start the argument with the discussion on the Case theory. Since this theory is most important for accounting the cases of normal passives like (5)cf. above. Let us first assume the "Visibility Hypothesis" of Chomsky (1981), that is, we are able to reduce the Case filter of Roubert and Vergnaud (1980) entirely to the  $\theta$ -criterion by assuming that arguments are not "visible" in the LF unless they are Case-marked. In other words, arguments must have Case in order to be assigned  $\theta$ -roles in the LF. As a result, argument noun phrases which are not Case-marked cannot satisfy the requirement of the  $\theta$ -criterion. Therefore, constructions such as (5)ii. are excluded as violations of the  $\theta$ -criterion.

This is a desired consequence for the analysis of pseudo-passive phenomenon. Since we had postulated that each idiom is single predicate as a whole, nominals in idioms are not necessarily Case-marked in the pseudo-passive constructions<sup>[9]</sup>. On the other hand, subject noun phrases should be Case-marked in pseudo-passive constructions because they are the arguments of the main predicates of these sentences. Therefore, we naturally assume that those argument

noun phrases are Case-marked by the main verb in the active counterpart of these sentences. Since main verbs are assumed to have lost their Case-marking ability in passive constructions, the rule "move  $\alpha$ " take such argument noun phrases to the subject position in the passive sentences. Thus we can provide a natural account of the pseudo-passive constructions.

There remains, however, one interesting problem. Consider the following sentences.

(6) i. The attack on Mr. Mackay is taken strong exception to.

ii. Your remarks have been taken careful note of. ODC

These examples clearly reject the account of the pseudo-passives in terms of the reanalysis rule, as already mentioned in section 1.

At a glance, these sentences are problematic in our approach as well. However, we argue that they are really problematic only partly. First, on semantic ground, our theory can provide the explanation of the meaning of these sentences. Because the adjectival modifiers in these constructions are, though they seem to restrict the meaning of only attached nominals, restricting the meaning of the whole predicates<sup>[10]</sup>. It can be maintained from the fact that we can easily produce their natural paraphrases by using adverbial modifiers.

(7) i. Your remarks have been taken note of carefully.

ii. The attack on Mr. Mackay is taken exception to strongly.

This means that the adjectives in these sentences are modifying the whole predicates. We should, then, conclude that these idioms construct the unitary predicates despite the existence of the intervening modifiers.

The problem remain, however, on the syntactic side of our ac-

count. Namely, how can we represent the phrase structures of these idioms? We will argue that the lexical properties of idioms play the most important role in determining the phrase structures which idioms construct. Therefore, let us turn to the examination of the lexical properties of idioms in the next section.

#### 4. Idioms in Lexicon

The arguments presented in the previous section were crucially rested on the assumption that each idiom is a single predicate in the LF. This means that each idiom is listed in the lexicon with their own  $\theta$ -grid<sup>[11]</sup>. In this respect, idioms are identical to the ordinary verbs. The problem is, however, that each part of idioms sometimes act as if it were an independent lexical item.

(8) i. John made a fool of Mary.

/John made fools of the students.

ii. John took advantage of Mary.

/ John took unfair advantage of Mary.

Nominals in these idioms are showing up the number contrasts in (8)i. and taking the adjectival modifier in (8)ii. If we simply regard these idioms as equivalents of ordinary verbs, we must introduce an extra mechanism to explain these observations.

In order to avoid these difficulties, we propose "complex" lexical entries for these idioms. We further argue that we can provide the most simple and appropriate explanation of their syntactic properties based on these complex lexical entries.

The possible objection to this proposal is something like the claim that the well-known restrictedness requirement on the theory is weakened considerably. We can argue, however, that there is one way to comprise this assumption and the requirement of the restrict-

edness. That is, we propose that such complex lexical entries are introduced into the lexicon only by the compounding of the already existing lexical entries, i.e. ordinary verbs or nouns and that the additional operations available in this process is quite restricted. In fact, the only option permitted in this process is to lose the already existing features in their entries. Put it differently, we claim that the lexical entry for idioms should not contain anything special to idioms. By this assumption, we can constrain the possible lexical entries for complex items in the principled manner.

For example, we can postulate the following lexical entry for an idiom, "take notice of", with a single  $\theta$ -grid and multiple sets of the syntactic features.

(9) Phonetic Features : take notice of  
 Syntactic Features : +Case +Count (+Case)  
 Semantic Features : < 1. 2. >

The complex lexical entries like this can, for instance, attribute the syntactic features such as [+/-Count] to the nominals in idioms. Hence we can easily explain the number contrasts in idioms.

At this point, we can get the half of the answer for the questions presented at the end of the previous section. We can expect the syntactic properties of idioms based on the syntactic features of their own. However, it is not at all clear how those complex lexical entries are projected from the Lexicon by now. The traditional theory of lexical insertion is not created so as to allow this complexed type of lexical entries. Therefore, we will present a revised theory of phrase structures in the next section, based essentially on the proposals by Speas (1986). We will argue that



the theory can restrict the possible phrase structures which idioms construct sufficiently and provide principled account of the syntactic properties of idioms.

## 5. The Theory of Phrase Structures

We have argued that, in order to explain the syntactic properties of idioms, we should introduce complex lexical entries into the lexicon. This leads us to the next question. That is, how should those lexical entries project from the lexicon to the syntactic representations?

### 5.1. Speas (1986)

The standard theory of phrase structures in this framework is not so constructed as to allow such lexical entries as we have adopted in the previous section. However, recent literatures on this topic, in particular, Speas (1986), shed new light on this problem.

The most important point of her argument is that the essential part of the phrase structures are determined by the lexical properties of their constituents. Speas argues that X-bar theory is derived from other subtheories of the core grammar. Of special importance is the "Saturation Principle" of Higginbotham (1985). This principle requires that all the lexically determined properties of lexical items, such as  $\theta$ -grids or Case-grids (in the sense of Stowell (1981)), should be fully satisfied (in Higginbotham's term "saturated") in well-formed sentences. Suppose that a transitive verb V did not project to the level of V', then it would necessarily violate the saturation principle because it cannot have a com-

plement to assign its  $\theta$ -role. Thus, the requirement of the X-bar theory, the requirement which force X to project up to X', is redundant in this case. In other words, the Saturation Principle requires lexical items to project up to appropriate levels. This means that the X-bar theory is derived from this requirement.

Unfortunately, however, even her theory of phrase structures is not sufficient for our purpose. Suppose we admitted that the lexical properties of idioms determine the phrase structures, the following problems would still remain. Namely, how can we know which lexical properties determine the phrase structures?

At this point, we propose the following idea. Thus far, we have assumed that the basic figures of phrase structure trees are identical in each syntactic levels, essentially following Emonds (1976)'s "Structure Preserving Hypothesis". Our claim is that this hypothesis also is derived from another principle of the universal grammar, namely, the Projection Principle. It means that the lexical properties which are relevant at a particular level (i.e. S-structure, LF, or PF) determine the representation of that level. Therefore, we should assume that the semantic features, i.e.  $\theta$ -grids are relevant in determining their logical forms, and the syntactic features i.e. [+/-Case], [+/-Count] etc., are relevant in determining their S-structures.

Following this new view of the phrase structures, we naturally conclude that the phrase structures which idioms construct are "asymmetric", in the sense that their S-structure representations and the LF representations differ much more than the ordinary sentences.

## 5.2. "Segments" vs. "Levels"

Further refinement of the theory is needed at this point . We have postulated two completely different structures for the S-structure and the logical form of a single sentence containing idioms. Then how we can relate those two structures in a principled manner? From the point of view of the well-known adequacy argument, we do not want to employ any sort of the deletion rules or the tree pruning rules.

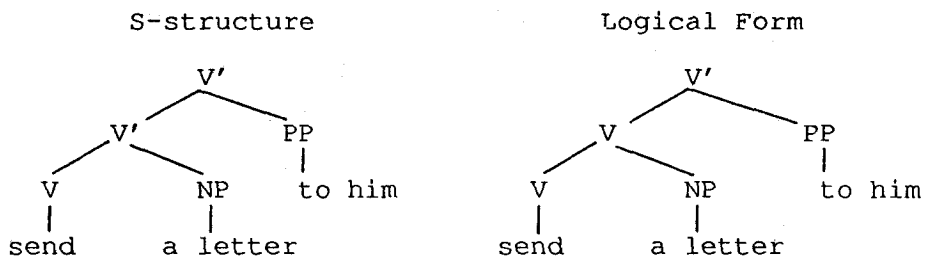
In order to answer this question, we propose the revision of the notion "projection levels" itself. Let us assume that, in the case of the sentences containing idioms, the entire figure of phrase markers should remain unchanged and that what is changed are the "projection levels". That is, the bar-levels which each node of the phrase markers belongs to are changed through the derivation. In other words, what we are proposing is that the theory of phrase structures which allows , for example, a complement of V single bar level in S-structure to become a complement of V double bar level in the LF if a certain condition is satisfied.

In order to build this idea into the theoretical framework, let us first introduce the notion "segments" here, following May (1985)<sup>[12]</sup>. We assume that each node in the phrase structure trees consists of a number of "segments". Second, let us assume that bar-projection is recursive in the phrase structures. This is essentially following the idea of Chomsky (1986b). Adopting these assumptions, we propose the further extension of this idea.

Let us start by assuming that every nodes in the phrase structure trees should be licensed by the principle of the grammar. This idea itself is a natural one in the recent development of the

framework we adopted here<sup>[13]</sup>. The main idea is that projection levels in the phrase structures consist of a number of "segments" which are licensed by the same principle of the core grammar. For example, if certain verb  $\theta$ -marks two complement phrases (i.e. NP or PP) as their internal arguments, the projection level ( $V^0$  level on the standard assumption) consist of two "segments" each with one complement phrase in the LF representation of this verb (to be more precise, the structure of VP which this verb construct)<sup>[14]</sup>. In this case, the projection level  $V^0$  consists of two segments which are licensed by the same principle of the core grammar, namely, the Saturation Principle (or  $\theta$ -theory of Chomsky (1981) and others).

Figure 2.



The S-structure representation of this VP should not be the same as the LF representation in this case. Within the framework we adopted here,  $\theta$ -marking properties are only relevant in the LF. It means that these two phrases belong to the same projection level only in the LF representation of the sentence. We will argue that, on the other hand, the level V consist of only one segment in the S-structure which is licensed by the Case theory. The prepositional

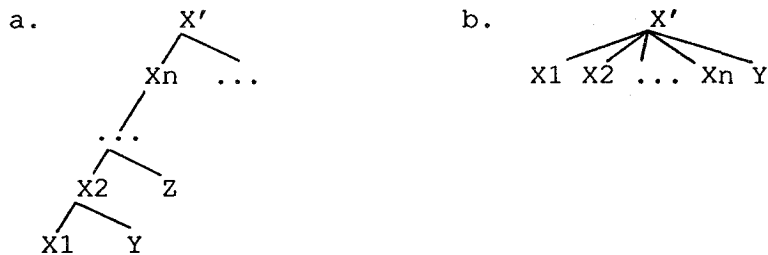
complement belongs to another level (namely,  $V'$  level) because that is not licensed by any theory in S-structure.

### 5.3. The Phrase Structures of Idioms

The most important point of the theory of phrase structures presented in the previous section are that the projection level is determined by the principles of the core grammar. It follows that the complements licensed by the same principle must always appear in the same level of phrase structures and, at the same time, the projection level of the head of the phrases must always be the same for the complements licensed by the same principle of the core grammar.

This interpretation of the phrase structure theory leads to an interesting consequence. Namely, this theory should allow both of the following structures.

Figure 3.

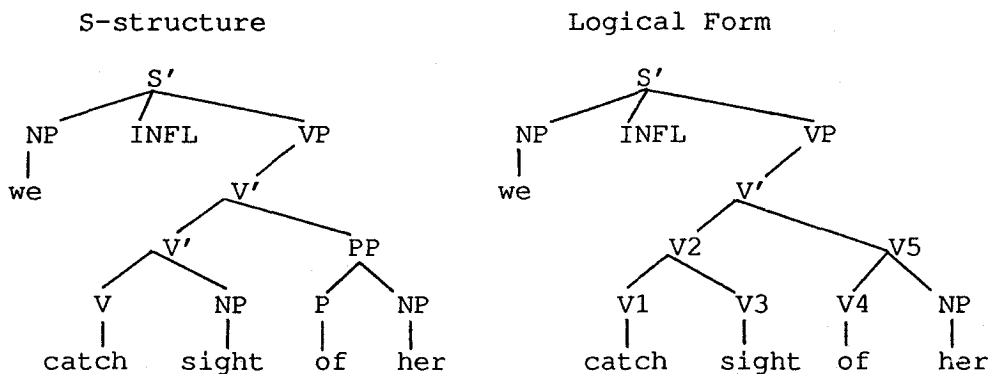


Our theory of phrase structures tells that  $X_1$  to  $X_n$  are the segments of the same projection level  $X^0$  in the representation of the both (a) and (b) above. Of course, this type of representations is allowed only under a number of quite restricted circumstances. The representation of (a) is allowed only when (i) a number of comple-

ments are licensed by the same principle and (ii) the licensing element is the single lexical item, namely the head of the phrase. This representation (a) stands for the phrase structure of multiple adjunction structures. On the other hand, the representation (b) is allowed only when the single complement is licensed by a number of lexical items in the same way (i.e. licensed by the same principle of the grammar). In other words, multiple element in the phrase act as if they all are the head of that phrase. We will argue that this assumption is crucial in determining the phrase structure of idioms.

Now, let us briefly examine how this revised theory of phrase structures work in determining the phrase structure of sentences containing idioms. Based on the previous arguments, we can assume the following type of logical forms and S-structures for sentences containing idioms.

Figure 4.



The point of our argument is that all the V nodes in LF, namely, V1 to V5 are segments of the same projection level  $V^0$ . Assuming this type of structures for idioms, we can finally answer the ques-

tion asked in section 1. The phrase structures, especially, S-structures which contain idioms are sometimes identical to the ones contain ordinary verbs. In LFs, however, all the constituents of the idioms should be regarded as the segments of the projection level  $V^0$ . Two structures are related to each other in a principled manner. These assumption provide the appropriate explanation for the syntactic behavior of the idioms.

## 6. Conclusion

Summarizing the arguments, idioms have complex lexical entries, which consist of one  $\theta$ -grid for each of idioms and multiple sets of syntactic features. The exact contents of the feature sets of idioms are determined in the principled manner based on the "original" lexical entries of each constituent of the idioms. Especially, they can sometimes lose the syntactic features which originally assumed to be there, i.e. some of the syntactic features of their parts are lost in idioms.

Based on these assumptions, we can also answer the question about the "idiosyncrasy" of the idioms stated in section 1. It is highly natural that each speaker of certain language have their own lexicon of that language in their mind. The lexicon consist of the knowledge of the use of individual words, affixes, and, if we accept the argument presented above, idioms. At the same time, it is equally natural to assume that the contents of the lexicon of each speaker should be highly idiosyncratic one. Since the contents of the lexicon, the knowledge of the use of words, are learned by each individuals in the course of the language acquisition. Therefore, someone knows more words than others or someone knows more words in

a certain field than other fields. Although the structure of the lexicon is considerably restricted, i.e. all the lexical entries should belong to certain grammatical categories, the exact contents of the lexicon is in a sense "personal" or "idiosyncratic". Idioms are typical examples of this type of idiosyncrasies.

The possible lexical entry for idioms are not so distinct from that of ordinary grammatical categories as we have argued in the body of this article. There should not be any feature which is specific to idioms. There only exists, however, one difference in the case of idioms. They consist of a number of constituents and their syntactic features are determined compositionally. Therefore, there are always a number of possibilities in determining the exact contents of their lexical entries. Then, it is highly plausible that the choice among these equivalents depends on the actual experiences of each individuals. Our argument is that this is the reason of the highly idiosyncratic character of the syntactic behavior of idioms.

Following these arguments, we can conclude that the idiosyncratic behavior of idioms is not a serious problem in our approach and that the modular character of this theoretical framework (in particular, the distinction between a number of different levels of representations) shows much advantage in the explanation of the syntactic properties of idioms.



## NOTES

[\*] Earlier version of this article was presented at the regular meeting of Kansai Associates of Theoretical Linguistics in April 1988. Part of the idea is developed in my M.A. thesis submitted to the graduate school of letters, Kyoto university in January 1988. I am grateful to those people who gave me valuable comments and suggestions. Needless to say, all the mistakes and inadequacies are strictly of my own.

[1] This framework is sometimes called as "GB (Government-Binding)" theory or "PP (Principles and parameters) approach".

[2] These are typical examples of so-called pseudo-passive phenomenon. In these constructions, the prepositional objects can be passivised and, in addition, the direct objects of the verbs sometimes cannot be passivised.

[3] Concerning the analysis of a number of other types of verbal idioms, see Sakai (1988).

[4] Since the logical forms are assumed to be the inputs to the semantic interpretation in our framework, semantic properties of constituents should be explicitly represented in the LF.

[5] This approach was originally suggested in Williams (1980) and developed by Rothstein (1982).

[6] The term "saturated" roughly means that every theta-role of the theta-grid is assigned to their arguments.

[7] Of course, the "logical" properties of the sentences are not limited to the predicate-argument relationships. Other important properties, especially, quantifier scopes and operator-variable relationships also have to be represented explicitly in the logical forms.

[8] Baker (1985) also argues for the LF account of this phenomenon based on his theory of "incorporation". Our approach, however, crucially differs from his in that our account is "lexical", i.e. based on the lexical nature of idioms, but that his account is "syntactic", i.e. based on the transformational derivation. We argue that our account is correct and Baker's account is, although it shares some of the basic concepts with ours, not. The reason is that, though he argues forcefully that the

incorporation process is independent of the lexical idiosyncrasies, idioms are typical examples of that type of idiosyncrasies.

[9] Following so-called predicate nominal constructions exhibit the same point.

(1) i. This is an apple.

ii. Mary considered John a fool.

If we take the assumption that predicates are not necessarily Case-marked, we are free from the problem to explain how these nominals ("an apple" in (i) and "a fool" in (ii)) are Case-marked.

[10] See Bresnan (1982) which also points out this fact and proposes a different analysis.

[11] Di Sciullo and Williams (1987) also argues for this assumption. It is natural enough to take this position if we accept the following reasoning. If the meaning of a certain element is not given compositionally from their parts and if that meaning is not listed in the lexicon, there should be no way to get their meaning.

[12] May (1985) uses this notion more restricted way. Namely, he argues that only the LF adjunction process should create the segments. However, we extend this notion and argue that the every nodes in the phrase markers can, in principle, be made up of multiple segments.

[13] This essentially follows the argument of Chomsky (1986a). He proposed there that "Every element that appears in a well-formed structure must be licensed in one of a small number of available ways." Of course, the interpretation of the phrase "every element" as every node is of our own but we think it is the natural extension of his idea in this statement.

[14] Following Williams (1981), we should distinguish the "internal" and "external" arguments here.

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(酒井 弘、博士後期課程)