On the Prepositional Subject Construction*

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1. Introduction

In this paper, I investigate the prepositional subject construction (henceforth, PSC), which is exemplified by the following sentences:

(1) a. Under the bed is a cozy place to hide. (Nishihara (2005:221))
b. During the vacation may be convenient. (Quirk et al. (1985:658))
c. By air seems to be quite cheap. (Jaworska (1986:360))

In (1), the PPs *under the bed*, *during the vacation*, and *by air* occupy the initial position of the sentences, in which the subject of a sentence is usually located. For convenience, I call each of them the prepositional subject (PS). We can state that the PSC is a peculiar construction, since the subject is normally characterized as an NP which is immediately dominated by an S (cf. Chomsky (1965)). Taking the peculiarity into consideration, we cannot expect that the PSC occurs completely freely. Consistent with our expectation, some constraints on the occurrence of the PSC have been proposed in the literature. The purpose of this paper is to examine the constraints for developing a better understanding of the construction.

The organization of the paper is as follows. In section 2, I provide some pieces of evidence for the subject status of PSs. In section 3, I focus on the predicates in the PSC, and identify the meaning of it. In section 4, I point out that the finding obtained in section 3, i.e. the meaning of the PSC, requires a proposed constraint on the occurrence of the PSC to be reformulated. In section 5, I consider the syntactic category of a PS, and argue that it is an NP in spite of its PP appearance.

2. The Subject Status of the PS

In this section, I examine whether the PS has the subject status. As seen in (1), the PPs occupy the position where the subject of a sentence appears in ordinary cases. However, for them to occupy the sentence-initial position does not necessarily mean that they are qualified as the subject. As far as the linear order is concerned, there are other constructions in which PPs occupy the sentence-initial position. One example of them, for example, is so-called the locative inversion construction, which is exemplified in (2):

(2) a. In the corner was a lamp.

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b. On the bench sat a young woman.

In (2), the PPs *in the corner* and *on the bench* appear in the initial position in the same way as the PSs do in (1). It has been observed, however, that in fact they are not the subject (cf. Matsubara (2003)).[1] Given this fact, it is not trivial to assume that PSs are the real subject only because they appear in the sentence-initial position. Therefore, some empirical evidence is required to show that the PS has the subject status.

The first evidence is the fact that it is possible to apply Subject-Auxiliary Inversion (SAI) to the PS. Observe the following:

(3) a. Is under the bed a good place to hide?
b. Would after four be a good time to meet?
c. Does after four seem to suit everyone?

(Matsubara (2003:137), with slight modifications)

In (3), as the result of the application of SAI, the order of the PSs and the auxiliaries, including the copula *be*, is inverted. This operation, as its name indicates, is applied to the subject of a sentence. From the fact that the operation is applied to the PSs in (3), we can maintain that they are eligible to the subject.

Second, the PS allows the following copula *be* to have a reduced form and to attach to them. Consider the following:

(4) a. Under the rug's the safest spot.
b. Under the bed's a great restaurant.

(Matsubara (2003:137))

In the sentences of (4), the copula *is* is used in the reduced form *'s* and it attaches to the preceding PSs. These sentences are comparable to ones in which NPs are the subject, as exemplified in (5), in which the NP *Jack* is the subject and the reduced form of the copula is adjoined to it:

(5) a. Jack's a doctor.
b. Jack's leaving at dawn.

(Kaisse (1985:40))

This parallelism found in the sentences in (4) and (5) suggests that the PS is really the subject.

Third, the PS agrees in number and person with the following verb. Observe

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[1] One of the evidence, Matsubara presents, is that Subject-Auxiliary Inversion is not applicable to the inverted PPs in the locative inversion construction. Consider the following:

(i) a. * Did [into the room] walk Mary?
b. * Was [under the table] a cat?

(Matsubara (2003:144))

The inapplicability of the operation suggests that the PPs in question are not the subject.

the following:

(6) a. Under the bed is a warmer place than it used to be.
b. Under the bed and under the table are (*is) good for sleeping.
(Arimura (1987:22))

In (6a), the PS *under the bed* is replaced with the pronoun. The form of the pronoun shows that the PS is singular. What is relevant here is that it shows singular agreement with the verb *be*, manifested as *is*. In (6b), the PS *under the bed and under the table* is plural, and shows plural agreement with the verb *be*, and thus the latter is manifested as *are*, not as *is*. As for person agreement, as observed in (6a), the PS, which is obviously third person, shows third person agreement with the verb *be*, which is manifested as neither *am* nor *are*. Interestingly, the same agreement pattern is observed when an NP is the subject. Consider the following:

(7) a. John plays in the garden.
b. You are good students.

In (7), the subjects *John* and *you* agree in number and person with the verbs, which are manifested as *plays* and *are*, respectively. The same agreement patterns in (6) and (7) indicate that the PS is qualified as the subject.

Fourth, in tag questions, the PS is coreferential with the sentence-final pronoun. Consider the following:

(8) a. Under the bed is a good place to hide, isn't it?
b. Under the bed and in the fireplace are not the best (combination of) places to leave your toys, are they?
c. On Wednesday and on Friday will be fine, won't they?
(Matsubara (2003:137-138), with slight modifications)

In sentence (8a), the PS *under the bed* and the sentence-final pronoun *it* are coreferential. This coreferential relation is also established when an NP is the subject of a sentence. Consider the following:

(9) a. John is a tall man, isn't he?
b. Mary and Tom had lunch yesterday, didn't they?

In (9), the subject NPs *John* and *Mary and Tom* are coreferential with the pronouns *he* and *they*, respectively. The symmetry between the sentences in (8) and (9) suggests that the PS has the subject status.

Fifth, the PS permits control of attributive phrases. Consider the following example:

(10) Under the bed, [PRO not being a particularly warm and cozy spot], is not the cat's favorite place to sleep. (Matsubara (2003:138))

This sentence includes an attributive phrase, which is enclosed by the square

brackets, and describes a property of the place *under the bed*. The PS is the controller of PRO in the attributive phrase, and PRO is the understood subject of the attributive phrase. Given the control relation between the PS and PRO, it follows that the PS *under the bed* is the subject of the attributive phrase. Needless to say, this evidence strongly proves the subject status of the PS.

To sum up, I provided some pieces of evidence for the subjecthood of the PS. This in turn suggests that the PSC is an idiosyncratic construction, in that a PP, not an NP, actually behaves as the subject. This idiosyncrasy naturally leads us to regard it as less productive. Therefore, it is not surprising that there are some proposed constraints on the occurrences on the PSC.

3. The Meaning of the PSC

In this section, I introduce a constraint on the occurrence of the PSC stated in terms of the predicates of the PSC and point out that this constraint must be explained by the meaning of the PSC.

Matsubara (2003) presents the constraint as follows:

(11) The predicates in the PSC must be 'informationally light verbs.'

(Matsubara (2003:141), translated by the author)

He defines 'informationally light verbs' as stative verbs with some amount of the semantic content. He argues that the constraint in (11) accounts for the unacceptability of the following sentences:

(12) a. * Under the table fascinates John.
b. * After dinner made John sleepy.
c. * On Friday seems to please Bill.
d. * She expected on the roof to relax him.

(Matsubara (2003:142-143), with slight modifications)

He regards the verbs in (12) as informationally heavy, because they express causation. In addition, the verbs *fascinate*, *please*, and *relax* are psych-verbs, and they mean that a person undergoes some psychological change. The richness of their semantic content does not qualify the verbs in (12) as informationally light. Thus, constraint (11) makes all the sentences in (12) unacceptable.

To this extent, constraint (11) seems to be adequate. However, this constraint has a certain problem to be resolved in order for it to work properly. The problem is that the definition of the concept 'informationally light verbs' is not perfectly established, and as a consequence, it is difficult to identify the verb as informationally heavy or informationally light. In fact, in accounting for the unacceptability of the sentences in (12), Matsubara does not provide any rigid

measure for determining the heaviness of the verbs, but simply stipulates that the verbs in (12) are all informationally heavy verbs. Without the stipulation, constraint (11) could not predict the acceptability or unacceptability of the PSC.

Rather than focusing on the predicates of the PSC (cf. Matsubara (2003)), Iwasaki and Kobukata (2006), attempting to identify the meaning of the PSC, concludes that it has the predicative meaning; that is, the properties of the subject are expressed by the rest of the sentences. There are some pieces of evidence for this claim. First, the acceptability of the PSC can be dependent on the predicate in it. Consider the following:

(13) a. Under the chair attracted the cat's attention.
b.* Under the chair pleased the cat.

(Jaworska (1986:357))

We can find the difference in the acceptability between the sentences in (13), in which the same subject is used. Thus, it is quite natural to assume that this difference must be attributed to the predicates. Comparing the lexical meaning of the two verbs *attract* and *please*, we can find an interesting difference. Observe the following:

(14) a. *attract*
If something attracts people or animals, it has features that cause to them to come to it.
b. *please*
If someone or something pleases you, they make you feel happy and satisfied.

(COBUILD[4])

According to the definition in (14a), the verb *attract* refers to features of something as a causer of attracting, and they are highlighted as a necessary element for the realization of the event denoted by the verb. On the other hand, according to (14b), the verb *please* does not include any specific information of the causer of the event denoted by the verb. Therefore, unlike the verb *attract*, *please* does not emphasize features of someone or something that pleases others. Given these meanings, sentence (13a) means that features of the place *under the chair* cause the cat to direct attention to it. From this point, we are able to interpret sentence (13a) as one which describes the subject as having the features to attract the cat's attention. On the other hand, we cannot interpret sentence (13b) in the same way as sentence (13a), since the verb *please* does not refer to the properties of the causer. Relating the difference in the acceptability between the sentences in (13) with the interpretation of them, we can argue that the acceptability of a PSC is dependent on whether or not

the properties of a PS are described, and then conclude that the PSC has the predicative meaning.

Second, an unacceptable PSC may improve when it is incorporated into the discourse which focuses on the properties of a PS. Consider the following:

(15) a. *Under the bed pleased the cat (two weeks ago). (cf. (13b))

b. John: I think under the bed is a favorite place for cats. But strangely enough your cat does not like the place.

Mary: Really? Under the bed pleased my cat two weeks ago.

(Iwasaki and Kobukata (2006:124))

In sentence (15a), as with in (13b), the verb *please* is used, and for the reason given above, it is not acceptable. Here, let us consider the conversation in (15b). At the beginning of the conversation, John characterizes the place *under the bed* as a favorite place for cats. By virtue of his utterance, this property of *under the bed* is qualified as a topic of their conversation. Note that Mary's utterance includes a PSC, which is underlined in (15b) and is much the same as the unacceptable PSC in (15a).[2] Surprisingly, the PSC in Mary's utterance in (15b) is acceptable in sharp contrast to sentence (15a).[3] This fact can be reasonably accounted for by the discourse effect that highlights the property of the place *under the bed* as the topic. As the result of the effect, we can interpret the PSC in Mary's utterance as describing the properties of the place *under the bed* at a moment in the past, not as denoting an event. From the fact that an unacceptable PSC is improved under this kind of interpretation, we can state that the PSC receives a predicative interpretation.

Third, an unacceptable PSC can improve if some elements are added to it. Consider the following:

(16) a. *After dinner made me sleepy. (cf. (12b))

b. After dinner has always made me sleepy.

c. After dinner makes me sleepy these days.

d. After dinner used to make me sleepy.

(Iwasaki and Kobukata (2006:124))

In sentence (16a), as with in sentence (12b), the verb *make* is used. Given the status of the verb as informationally heavy, constraint (11) can account for the unacceptability of the sentence. However, in the sentences in (16b-d), they are all

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[2] We can observe the only difference between sentence (15a) and the PSC in Mary's utterance in (15b), i.e. *the cat* in (15a) and *my cat* in (15b). However, it is unlikely that this difference affects their acceptability. So, we ignore this difference in comparing the two PSCs.

[3] Needless to say, the PSC in Mary's utterance in (15b) is counterexample to Matsubara's (2003) constraint in (11), which is formulated in terms of the verbs in the PSC.

acceptable despite the fact that the same verb is used.[4] The remarkable difference between (16a) and (16b-d) is whether or not such elements as *has always*, *these days*, and *used to* are involved. They enable us to interpret sentences (16b-d) as habitual sentences, which describe events that occur for a good length of time. Conceptually, in order for the same events to occur repeatedly for a considerable length of time, they must be caused by the same factor. Otherwise, it is almost impossible for the events to maintain their uniformity. In habitual sentences, it is the entity denoted by the subjects that corresponds to the factor mentioned just above, because it is a causer of the same events. More precisely, given the homogeneous nature of the events, the causer must be an inherent characteristic of the denotation of the subject. Habitual sentences, therefore, refer to a certain characteristic or property of the subject. Taking this nature of habitual sentences into account, we can interpret the sentences of (16b-d) as describing the property of the time *after dinner* as the source of the event denoted by the predicate *make me sleepy*. The improvement of acceptability shown in (16) also suggests that the PSC has the predicative meaning.

Now that we identify the meaning of the PSC, we are ready to discuss its effect on Matsubara's (2003) constraint in (11). The representative example of the constructions which have a predicative meaning is a predicational sentence in the sense of Higgins (1979). The copula verb *be*, which is used in this sentence, functions only as a linker of the subject and the predicate, and has little semantic content on its own. Hence, it is evidently a informationally light verb. Given the fact that the copula verb *be* is used in most examples of the PSC, as shown in the examples above, we can reasonably argue that constraint (11) follows from the meaning of the PSC. To put it another way, the meaning of the PSC puts a somewhat strong restriction on the verbs occurring in it to the effect that the copula verb *be* is the most general option.[5, 6] This explanation is conceptually and

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[4] They are also counterexamples to Matsubara's (2003) constraint in (11).

[5] I have already given some instances in which the verb in a PSC is 'peripheral' in the sense that it is not the copula *be*. They are identified with the sentences in (15b) and (16b-d). However, as discussed before, these sentences receive a predicative interpretation; therefore, I regard such sentences as the extended version of predicational sentences in order to reflect the fact that they have the same meaning as the predicational sentences even although other verbs than copula *be* are used.

[6] There is an apparent counterexample to my analysis. It is the PSC in which the verb *suit* is used:

(i) A: When are we going have the next meeting?
B: In March suits me.

(Quirk et al. (1985:658), with slight modifications)

In actual fact, it is difficult for us to interpret speaker B's utterance as describing the property of the time *in March* in the same way as the PSC does, but it is impeccable. Interestingly, Quirk et al.

empirically desirable in view of the fact that constraint (11) includes an ill-defined notion 'infomationally light verb' and has some counterexamples suggested above. Furthermore, the counterexamples to the constraint indicate that it makes no sense to state that some verbs can appear in the PSC.

To summarize, I showed that it has a predicative meaning. Identifying the meaning of the PSC enables us to specify a set of the possible PSC more properly.

4. A New Characterization of the PSC

In this section, I deal with a condition on the occurrence of the PSC based on the meanings of a PS, and suggest that it is quite significant to relate this condition with the predicative meaning of the PSC.

Matsubara (2003) states the condition as follows:

(17) When a PP is the subject, it must be the one which expresses TIME, PLACE, and MEANS.

(Matsubara (2003:141), translated by the author)

Constraint (17) accounts for the acceptability/unacceptability of the following sentences:[7]

(18) a. During the vacation may be convenient. (= (1b))
b. On the porch is sunny enough. (Jaworska (1986:357))
c. By special delivery is good for sending letters. (Arimura (1987:22))
d. *Because of illness is convenient for not attending the meeting. (Arimura (1987:22))

Sentences (18a-c) are all acceptable, and the PSs *during the vacation*, *on the porch*, and *by special delivery* are those expressing TIME, PLACE, and MEANS, respectively. In sentence (18d), on the other hand, the PS *because of illness* expresses REASON, and this is not consistent with constraint (17). Hence, the unacceptability of the sentence.

Given that a PSC can be a predicational sentence, which is a central member of the constructions with the predicative meaning, we can argue that a PS is referential, that is, it has a certain referent in the universe of discourse. As for the evidence for the referentiality of a PS, consider the following:

(1985) points out that it can be regarded as an elliptical expression of such a sentence as *To meet in March suits me*. That is, the PP in the initial position is actually a nominal expression. On the other hand, it is reasonable to assume that the PSC is not an elliptical sentence. If a PS were an NP with a preceding element elided, we would expect it to occur more freely. On this basis, I distinguish the PSC from the speaker B's utterance, and do not treat it as a counterexample to my analysis.

[7] Arimura argues that PPs expressing MEANS are less likely to be the subject. Hence, such sentence as (18c) is not perfectly acceptable.

(19) a. The lead actress in that movie is Swedish, isn't *she*?
b. The lead actress in that movie is Ingrid Bergman, isn't *it*?
(Mikkelsen (2005:6))

Sentence (19a) is the predicational sentence, and sentence (19b) the specificational sentence, in the sense of Higgins (1979). The pronouns italicized in (19) appear as the result of pronominalization of the subject. In (19), in spite of the fact the subject of the sentences is the same, the pronouns are different. This difference is attributed to the different interpretations of the subject; the subject receives a referential interpretation in (19a), and a non-referential interpretation in (19b).[8] Mikkelsen (2005) suggests that this form-interpretation correspondence is provided from the reasoning below:

(20) a. Pronominalization is sensitive to the semantic type of the antecedent.
b. In the domain of humans, use of a gendered pronoun like *she* indicates a referential interpretation of the antecedent, whereas the use of the inanimate pronouns *it* and *that* indicates a non-referential interpretation.
c. The antecedent of the pronoun in a tag question is the subject of the tagged sentence.
d. Hence, the use of *she* in (19a) indicates a referential interpretation of the subject of the matrix clause, and the use of *it* in (19b) indicates a non-referential interpretation of the subject of the matrix clause.
(Mikkelsen (2005:6-7), with slight modifications)

According to the reasoning in (20), the sentence (19a) provides a piece of evidence that the subject in a predicational sentence is referential.[9] Since a PSC is a predicational sentence in most cases, the subject must be referential.[10]

The referential meaning of a PS enables us to consider the adequacy of the constraint (17). As a first step, let us observe the role of the notion 'referentiality' in the account of linguistic phenomena. Consider the following sentences:

(21) a. * Why does John believe who left?
b. * How does John believe who left?

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[8] Instead of the term 'non-referential', Mikkelsen (2005) uses the term 'predicative'. However, in order to avoid unnecessary confusion with the term 'predicative' used in discussing the meaning of the PSC, I do not use this term here.

[9] Nishida (1999) also argues that the subject of a predicational sentence is referential, presenting the same sort of data as (19). Note that his statement that personal pronouns such as *he* or *she* have the referential character is consistent with Mikkelsen's in (20b).

[10] As for a PSC in which the copula verb *be* is not used, I also argue that the subject is referential. If it has no referent in the universe of discourse, the predicate cannot describe the properties of the subject. This situation is not compatible with the meaning of the PSC.

c. * Who left why?
d. * Who left how?

(Stroik (1995:249))

Sentences (21) are examples of the so-called multiple question, and each of them includes two *wh*-words. Stroik (1995) argues that the unacceptability of the sentences in (21) is ascribed to the non-referential meaning of the *wh*-words, *why* and *how*. In (21a, b), they are *wh*-operators, and are not able to license *who*, the *wh*-in-situ element. In (21c, d), on the other hand, they are *wh*-in-situ elements, and the *wh*-operator *who* cannot license them. He states the reason why the *wh*-operators and the *wh*-in-situ elements must be referential, as below:

(22) ... the question-operators and wh-in-situ elements they license define a family of ordered n-tuple responses which requires each member of the n-tuple to vary according to the reference-value selected by the other members of the n-tuple. (Stroik (1995:249))

The statement in (22) presupposes that when an interrogator asks multiple questions such as those in (21), he/she requires an answer in which a certain value is assigned to the two *wh*-elements. Each *wh*-element must have a set of entities, which correspond to possible values assigned to it. In essence, answering a multiple question is that an answerer selects the entity from the respective sets. Furthermore, statement (22) also implies that in selecting the entity, an answerer must refer to the other entities and, more importantly, that the entities correspond to the referents. Given these properties of multiple questions, the reason why *wh*-elements must be referential becomes rather apparent. If a *wh*-element is non-referential, an answerer cannot select any entity because of the lack of any referent. In this case, it is in principle impossible for an answerer to give a specific entity as an answer to an interrogator. Thus, the unacceptability of the sentences in (21) suggests that it is basically nonsense for an interrogator to use them, because he/she can never draw any answer from an answerer. As Stroik argues, given the non-referential meaning of the *wh*-words *why* and *how*, the unacceptability of sentences (21) is accounted for on the basis of the essential characteristics of multiple question, as just stated above.

In contrast to the *wh*-words *why* and *how*, *where* and *when* can be used in a multiple question. Consider the following:

(23) a. I wonder what you fixed *t* {*why/*how/when/where}.
b. I wonder {*why/*how/when/where} you fixed what *t*.

(Oba (1998:155), with slight modifications)

In sentence (23a), the *wh*-elements *why*, *how*, *when*, and *where* are in-situ, and in

sentence (23b), they are *wh*-operators. In (23), we can observe an interesting asymmetry between the two types of *wh*-elements. *Why* and *how* can neither be licensed by *wh*-operators nor license *wh*-in-situ elements. In contrast, *when* and *where* can be licensed by *wh*-operators and license *wh*-in-situ elements. Note that as mentioned before, in order for a multiple question to be acceptable, all *wh*-elements must be referential. In light of this fact, it follows that whereas *why* and *how* are non-referential, *when* and *where* are referential.

Here, let us consider the relation between the *wh*-elements in question and PPs. If there is a connection between them, we can state that some PPs are referential, and in contrast, others are non-referential. Observe the following:

(24) a. *When* did she drive to Chicago?
On Sunday.
(Quirk et al. (1985:481))

b. *Where* was he lying?
On his bed.
(Quirk et al. (1985:480))

c. *How* did you travel?
By air.
(Quirk et al. (1985:699), with slight modifications)

d. *Why* did Hilda help Tony?
Because of his injury.
(Quirk et al. (1985:505), with slight modifications)

The sentences in (24) are pairs of interrogative sentences, in which the *wh*-words in question are italicized, and answers to them. The italicized PPs in (24) represent the specific values of the *wh*-words in each interrogative sentence. So, we can recognize the relation between the *wh*-words and the PPs. The PPs are one of the members of the sets which the *wh*-words have. From this relation observed in (24), it can be reasonably argued that PPs expressing TIME and PLACE are referential, and ones expressing MEANS and REASON are non-referential.

At this point, let us recall the referential meaning of the PS. Given that PPs expressing TIME and PLACE are referential, we can formulate a new constraint of the PSC, as follows:

(25) When a PP is the subject, it must be the one which expresses TIME and PLACE.

We can regard constraint (25) as a semantic one, because it requires that a PP must have a specific semantic property, i.e. must be referential, to be licensed as the subject.

Comparing constraint (17) and (25), we can observe a clear difference. The former allows PPs expressing MEANS to be the subject, whereas the latter does not. In fact, we can find examples in which a PP expressing MEANS occupies the subject position. One instance is exemplified in sentence (1c), repeated here in (26):

(26) By air seems to be quite cheap.

If we adopt constraint (25) rather than (17), it wrongly predicts that sentence (26) is unacceptable. In order to show that it is not a counterexample to (25), it is necessary to examine the nature of a PSC in which a PP expressing MEANS occurs.

Mikami (2006) points out that a sentence in which a PP expressing MEANS occurs as the subject is actually unnatural. Observe the following:[11]

(27) a. ? In capital letters will have the best effect.
b. ? By special delivery is good for sending letters. (= (18c))
c. ? They consider on foot to be too slow.

(Mikami (2006:24))

In the sentences in (27a, b), the PPs *in capital letters* and *by special delivery* are the subjects. In sentence (27c), which is an instance of the ECM constructions, the PP *on foot* is the subject of the infinitival predicate *to be too slow*. Mikami mentions that his informant makes a judgment that even though they are not entirely unacceptable, the sentences in (27) are actually awkward. Furthermore, according to his informant, the awkwardness of the sentences in (27) can be eliminated by means of some modifications. Compare the following sentences with the sentences (27), respectively:

(28) a. Writing in capital letters will have the best effect.
b. Special delivery is good for sending letters.
c. They consider walking to be too slow.

(Mikami (2006:24))

In (28), the PPs in (27) are replaced by the nominal expressions *writing in capital letters*, *walking*, and *special delivery*, respectively. As a result of this replacement, the sentences in (28) are all perfectly acceptable. The impeccability of them is virtually self-evident, given the general tendency that a subject is an NP. Since both the sentences in (27) and (28) have much the same semantic content, one should be inclined to use the latter rather than the former.[12]

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[11] The unnaturalness of sentence (27b) indicated in Mikami (2006) accords with Arimura' (1987) observation described in note 7, although it is not explicitly indicated in sentence (18c).

[12] This point is not stated explicitly in Mikami (2006). However, it does not seem so difficult to find this relation between the sentences in (27) and (28), given the fact that the PPs in (27) and the nominal expressions in (28) have the nearly identical semantic content.

The fact that sentences (27) are awkward indicates that the constraint in (25) is more appropriate than that in (17). Nevertheless, we cannot conclude that it is a piece of the crucial evidence for the constraint (25). This is because they are simply awkward, and are not completely unacceptable. It is of great importance here to identify a factor which does not make such sentences as (27) unacceptable. In order to do this, let us consider the following:[13]

(29) a. In capital letters will have the best effect. (= (27a))

b. Should I do it in lower case or in capital letters?
I think in capital letters will have the best effect.
(meaning printing in capital letters)

(Nishihara (2005:240-241))

Nishihara (2005) argues that sentence (29a) is not natural and suggests that its unnaturalness can be improved when it is included in an appropriate discourse.[14] The sentences in (29b) are a dialogue between an interrogator and an answerer. The answerer uses the PSC in (29a). In sharp contrast to it, the PSC in (29b) is acceptable. In this case, by virtue of the preceding question in (29b), the underlined PP is interpreted as 'printing in capital letters.' The fact that discourse plays a crucial role in improving the unnatural PSC suggests that it is licensed pragmatically. Note that as a result of the licensing, the underlined PP in (29b) changes into a kind of NP at the level of interpretation. That is, the underlined PP in (29b) is interpreted with the aid of the word *printing*. Since a PP expressing MEANS is actually an NP at the level, it is not particularly surprising that it can be

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[13] Note that there is a difference in the indication of the acceptability between (27a) and (29a). It is due to the literal citations of the original examples presented by the respective authors.

[14] Nishihara (2005) argues that an EQPP (equative construction with PPs), which corresponds to a PSC in this papar, is an equative sentence in which the referent denoted by the subject is the same as that denoted by the postverbal DP. He gives a following sentence of an example of EQPPs:

(i) They consider on foot to be too slow. (= (27c))

However, this sentence should not be treated as an EQPP, because it is widely accepted that an adjective phrase does not have a referent. In contrast, sentence (i) is compatible with the characterization of a PSC here as having the predicative meaning, for the adjective phrase describes a property of the subject.

Nishihara (2005) offers the sentences in (29) to show that when the verb of an EQPP is not an equative verb, the EQPP is awkward, and requires a proper discourse for its improvement. However, given the fact that Nishihara's (2005) definition is wrong, we are forced to interpret what sentences (29) indicates in a different way. In sentence (29a), the predicate describes a property of the subject, because it expresses that the means *in capital letters* has the ability to produce the best effect. In light of its compatibility with the characterization of the PSC, it is reasonable to interpret sentences (29b) as indicating that the discourse is required for covering the shortcoming of the subject.

the subject.[15]

In this section, I formulated a new constraint of the PSC on the basis of the referential meaning of PSs. My analysis requires that the PSC is divided into two classes. The one class is the PSC in which PPs expressing TIME and PLACE are the subject and the other is the PSC in which PPs expressing MEANS are. Whereas the subject is licensed semantically in the former construction, the subject is licensed pragmatically in the latter.[16] More importantly, a pragmatically licensed PS must be distinguished from a 'real' PS, i.e. a semantically licensed PS, in that it is in fact an NP at the level of interpretation. Given that the PSC is licensed either semantically or pragmatically, we can argue that Matsubara's (2003) constraint in (17) is not adequate, for it can only describe the possible meanings of PPs in the subject position of the PSC. In contrast, constraint (25) is far more founded, since it is derived from the meaning of a PSC.

5. The Syntactic Category of the PS

In this section, I discuss what the syntactic category of a PS is. A casual glance leads one to believe that its syntactic category is a PP. However, observing the distribution of it, this belief must be discarded. Consider the following:

(30) a. Kim believes [under the bed] to be a good hiding place.
b. They considered [after the holidays] to be too late for a family gathering.
c. They considered [in the garage] to be the best place to meet.
d. Kim considers [under the bed] a good hiding place.
e. I consider [after four] a good time to meet.
f. They considered [in the garage] the best place to meet.

(Matsubara (2003:136))

The sentences in (30a-c) are instances of the ECM constructions, and those in (30d-f) are the instances of the Small Clause constructions. The PPs enclosed by the square brackets in (30) actually receive Structural Case, although they do not change their forms with respect to agreement. Compare sentences (30) with the following sentences:

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[15] This analysis predicts a possibility that a PP expressing REASON can be the subject in the same way as one expressing MEANS. However, because of a paucity of the data which confirms the prediction, I do not pursue this any further, leaving it for future research.

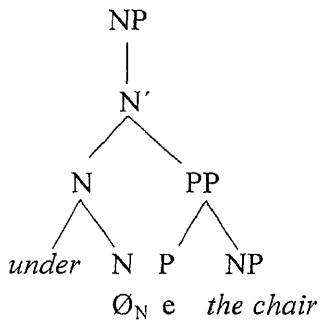
[16] By this statement, I do not mean that the PSC in which PPs expressing TIME and PLACE are the subject cannot be licensed pragmatically. One example of such case is given in note 6. Instead, it is more natural to interpret the statement here as corresponding to Arimura's (1987) observation that PPs expressing TIME and PLACE are more likely to be the subject than PPs expressing MEANS.

(31) a. Billy believes *her* to be an intelligent girl.
b. I believe *him* to be popular.
c. I considered *him* honest.
d. She appointed *him* president.

The sentences in (31a, b) are instances of the ECM constructions, and those in (31c, d) are the instances of the Small Clause ones. Observe that the italicized pronouns in (31) are inflected for Accusative Case. Since the sentences in (30) and (31) are the examples of the same constructions, we can plausibly argue that the PPs enclosed by the square brackets in (30) receive Accusative Case. Note that the notion Case is applied only to NP.[17] Hence, the sentences in (30) suggest that the syntactic category of a PS is in fact an NP.[18]

Pointing out this fact, Conway (1997) postulated a Null N, and proposed that a PS is a null-headed NP. The structure of the NP is represented below:

(32)



(Conway (1997:65))

In (32), $\emptyset_N$ stands for a Null N, and the PP *under the chair* is originated as a complement of it. The Null N, which is an affix, has a morphological requirement for its licensing. In order to fulfill this requirement, the Null N Merges with a P, which corresponds to the preposition *under* in (32), at PF.

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[17] To see this, let us observe the mechanism of Case-assignment proposed in Chomsky (1981), given below:

(i) a. NP is nominative if governed by AGR.
b. NP is objective if governed by V with the subcategorization feature: _ NP (i.e., transitive)
c. NP is oblique if governed by P
d. NP is genitive in $[_{NP}\ \bar{X}]$
e. NP is inherently Case-marked as determined by properties of its [-N] governor.

(Chomsky (1981:170))

We can see that while there are some assignors of Case, it is only NPs that can have some kind of Case. This means that the notion of Case is a defining property of only NPs.

[18] This fact may lead one to suggest that the PSC is not idiosyncratic at all. The suggestion is completely opposite from what I have argued above. However, it is necessary to postulate a construction-specific apparatus to change the syntactic category of a PS to an NP and it guarantees the peculiarity of the PSC.

What is more relevant to the argument here is the semantics of a null-headed NP. Conway argues that it is a definite NP. Its semantic characteristic can be confirmed by the unacceptability of the following sentence:

(33) a. * Which window did Mother reserve [$_{NP}$ [$_{N'}$ $\emptyset_N$ [$_{PP}$ by __]]]?
b.* Which bridge did Emily suggest [$_{NP}$ [$_{N'}$ $\emptyset_N$ [$_{PP}$ under __]]]?
c. * Which car did John describes [$_{NP}$ [$_{N'}$ $\emptyset_N$ [$_{PP}$ during __]]]?
(Conway (1997:66))

In each sentence in (33), the complement of the prepositions is extracted. Conway discusses that the unacceptablity of them is due to the violations of Presuppositional NP Constraint, which says that the extraction out of a presuppositioal NP is impossible. Conway relates them with the sentence given below:

(34) * Who did Beth see the picture of? (Conway (1997:68))

In (34), the complement of the preposition *of* is extracted from the definite NP, resulting in the unacceptability of the sentence. The unacceptability of the sentences in (33) and (34) suggests that the NPs enclosed by the square brackets in (33) are definite NPs.[19]

Based on the definiteness of a null-headed NP, Conway (1997) attempts to place a restriction on the distribution of it. Conway states that "well-formedness for null-headed locatives seems to depend on the ability of the prepositional phrase to describe an area with a sufficient amount of concreteness to be a definite location or delineated space (Conway (1997:79))." We can plausibly argue that this ability has a close connection with the notion of referentiality. That is, without any referent, it is in principle impossible for a PP to describe it. Accordingly, well-formedness of a null-headed NP relies on the referentiality of it.

Whereas the adoption of Conway's proposal enables us to capture the fact that a PS is actually an NP, it raises a natural question: Why a PS must be referential. As a matter of fact, however, in view of the discussion given above, it no longer requires any consideration. Since a PSC has the predicative meaning, the PS included in it is necessarily referential, as stated in section 4. To put it a different way, the predicative meaning of the PSC guarantees that the syntactic category of a PS is an NP.

To sum, I pointed out from the empirical evidence, that the syntactic category of a PS is not a PP but actually an NP. Interestingly, given that a PS is definite, and its definiteness is derived from the predicative meaning of the PSC.

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[19] As for further evidence for the definiteness of a null-headed NP, see Conway (1997).

6. Conclusion

In this paper, I examined the syntactic and semantic aspects of the PSC. The main claim is that they have the predicative meaning. As shown in section 4, it provides a crucial basis for the formulation of an empirically more plausible constraint. In addition, it justifies the existence of Null N in a PS, and accounts for the fact that the syntactic category of a PS is actually an NP. This paper provides a systematic explanation of the PSC, with the meaning of them as a premise.

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