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Author(s)	Maekawa, Takafumi
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Osaka University

SOME OBSERVATIONS ON ENGLISH PREPOSITIONAL POSSESSIVE CONSTRUCTIONS*

1 INTRODUCTION

It is a fundamental task for a theory of lexical semantics to determine what effect our knowledge of the lexicon has on our knowledge of syntax. Many recent studies have been focusing on how the syntactic properties of verbs are determined by their semantic structure, especially on the tendency for arguments bearing certain semantic roles to be associated with particular syntactic expressions (cf. Jackendoff 1990, Levin and Rappaport Hovav 1995, Rappaport Hovav and Levin 1998, Tenny 1994, Wechsler 1995 among many others). The present study, however, casts some light upon *adjuncts*, specifically those that are mapped from the semantic structure of *nominals*. The phenomena discussed here are a type of adjuncts, namely *prepositional possessive constructions*. The most typical examples are shown in (1).

- (1) a. friend of Adam
- b. father of the bride

(Chapman 1975)

The preposition *of* appears to express the possessive relation between *friend* and *Adam* in (1a), and between *father* and *the bride* in (1b). In these expressions, a prepositional phrase functions as a possessive expression. We call this expression an “*of*-possessive” (henceforth *of*-poss).

However, the preposition *to* also seems to express the possessive relation, as illustrated in (2).

- (2) a. friend to Adam
- b. father to the bride

(*ibid.*)

In these examples, the possessive relation between *friend* and *Adam* in (2a), and between *father* and *the bride* in (2b) is expressed by the preposition *to*, instead of *of* as

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in (1). We call this expression “*to*-possessive” (henceforth *to*-poss).¹

If both of these expressions indicate the identical relation, one may wonder whether there is any difference. In fact, Wilson and Mushiaki (1971) state that there is not much semantic difference while “(a *to*-poss) is more common today in American English.” However, we shall see later in this study that the data reveal clear distinctions in meaning and usage between the two types of prepositional possessive expressions. It will also be shown that the choice of preposition is motivated by the semantics of the head nominal, that is, *friend* in (1) and (2). The purpose of this article is to clarify how the nominals semantically select the prepositions to head the possessive prepositional phrases, in the framework of Generative Lexicon Theory (GL) with some modification.

The organisation of this article is as follows. We first observe some properties of the *of*-poss and the *to*-poss while reviewing some previous analyses of these constructions, and then point out a couple of problems that these analyses encounter, suggesting the necessity of an analysis from the viewpoint of lexical semantics. In Section 3 we introduce the general framework of GL. In order to characterise the prepositional possessive constructions more appropriately, in Section 4 we shall further introduce the concept of “primary qualia role.” Based on the theoretical preliminaries introduced in Section 3 and 4, we shall make a proposal concerning the function of the *of*-poss and the *to*-poss in Section 5. Section 6 then explores how the proposal can solve the problems posed in Section 2. In Section 7 we discuss other consequences that follow from the present account of the prepositional possessives. In Section 8 we shall summarise the discussion in this article.

2 PROPERTIES OF PREPOSITIONAL POSSESSIVE CONSTRUCTIONS AND PREVIOUS STUDIES

The prepositional possessive constructions have been touched from time to time but never been seriously explored. However, at least three linguists, Wood (1967), Konishi (1974, 1976) and Chapman (1975) have touched upon the constructions from a descriptive point of view. This section considers how the *to*-poss and the *of*-poss are used in the noun phrase, while reviewing these studies.

2.1 Wood (1967), Konishi (1974, 1976)

Wood (1967) and Konishi (1974, 1976) choose some prepositional possessive constructions to highlight the difference in meaning between the *to*-poss and the *of*-poss. Konishi (1976) describes the meaning contrast between the two constructions below.

¹ The terms *of*-poss and *to*-poss are applied to the possessive prepositional phrases, whereas the noun phrase that include them are named “*of*-poss expression” and “*to*-poss expression,” respectively.

- (3) a. the door of the room
 b. the door to the room

(Konishi 1976)

Konishi states that in the case of (3a) the speaker construes the door as part of the room, while (5b) can be paraphrased as “the door leading to the room.” The following serve as examples to confirm this observation.

- (4) a. They kept newspaper cuttings on how dangerous the streets were, and stuck them to *the door of the fridge* with little magnets.
 (BNC: F9C 3321)
 b. Dolly made herself heard again, having swung herself off the bed to hop to *the door of the room*.
 (BNC: GKE 1394)
 c. *The door of the plane* opened and a man in white came out.
 (BNC: GW5 1082)

Konishi’s description correctly captures the use of the *of*-poss in these examples. *The door* in (4a) is merely a place to which the cuttings are stuck, so that there is no possibility of paraphrasing to “the door leading to the fridge.” In (4b) the whole event occurs in the girl’s bedroom. Therefore *the door* in this case does not lead to the bedroom, but it functions as a way out of it. In (4c) *the door* is what the man came out of, but not what he entered, as the underlined part shows. These examples support Konishi’s (1967) statement since *the door* in these sentences does not obtain the “leading to” interpretation, and is understood merely as a part of the whole thing.

Wood (1967) states that *friend* is normally followed by *of*, as in *friend of Adam*, while the *to*-poss is used in the following condition:

- (5) *a friend to* is used when the reference is to one who shows a friendly attitude or acts in a friendly way by giving practical assistance, support or sympathy to whoever or whatever is specified.
 (Wood 1967)

By way of illustration of this point, let us consider the following examples.

- (6) a. You’ve been *friend to me* and you’ve got to help now — you’ve just got to.
 (ECME: T. Dixon, *The Foolish Virgin*)
 b. The moon which had proved *a friend to her* by remaining hidden behind a bank of clouds, now emerged in all the glory of an early autumn night, and in a moment flooded the weird and lonely landscape with a rush of brilliant light.
 (ECME: E. Orezy, *The Scarlet Pimpernel*)

The parts in bald face in the examples above indicate that *friend* is the one who does something beneficial to the person in the complement position of *to*. These

examples support the statement cited in (5).

Thus, Konishi (1976) and Wood (1967) have made it clear that the *to*-poss and the *of*-poss have different interpretations, as illustrated by (3)–(6), although the prepositional phrases seem identical in meaning at the first approximation. This leads us to the question of what causes the difference in meaning between the *to*-poss and the *of*-poss.

2.2 Chapman (1975)

Chapman (1975) has made it clear that the *to*-poss has more restricted use than the *of*-poss. He states that the possessive relation expressed by the *to*-poss appears to be restricted to three subtypes. Let us consider each of the uses in turn.

The first type is the possession of personal relations, for which the *to*-poss is most commonly used, according to Chapman. This type is illustrated in (7).

- (7) a. She is aunt to George and Bill, and cousin to Herb and Avery
- b. friend to Adam

There is a personal relation between the two elements on either sides of *to*, such as *aunt* and her nephew in (7a), and *Adam* and his friend in (7b). The second type is the part-whole relation, which, according to Chapman (1975), is the least frequently used.

- (8) a. handle to the broom
- b. key to the lock
- c. gate to the castle

The element before *to* constitutes a part of the thing after it. (8a) denotes, for example, that *the handle* is a part of *the broom*. Thirdly, the *to*-poss is used to express a serving relationship.

- (9) a. vintner to Her Majesty the Queen
- b. executive assistant to the president
- c. aide to the general
- d. husband to the star
- e. printer to the University

In (9), the person described as the head nominal in some way serves what is described in the complement of *to*.

The classification made by Chapman (1975) is not exhaustive, however. Let us consider the data listed in (10). They can be regarded as expressing almost the same relation as the ones in (7)–(9).

- (10) a. i. father { *to/of } his country

- ii. father {*to/of} the idea (cf. (7))
- b. i. corner {*to/of} the table
- ii. redness {*to/of} the skin
- iii. size {*to/of} the apple (cf. (8))
- c. president {*to/of} the college (cf. (9))

In (10a) the concept of kinship relation seems to remain still in this metaphorical use of *father*. *Corner*, *redness* and *size* in (10b) can be regarded as part of the object in the complement position of *to*. *President* in (10c) is not in the serving relationship with the *college* in the strict sense of the word, but, compared with the examples in (9), it is difficult to define precisely what prevents this word from occurring in the *to*-poss expression.

Thus, the examples in (10) with the *to*-poss are impossible though they can be thought as indicating almost the same relations as the ones in (7)–(9). Now a question arises as to what causes the difference between (7)–(9) and (10) concerning the acceptability of the *to*-poss.

2.3 Conclusion

We have observed so far the properties of the two types of prepositional possessive constructions, the *to*-poss and the *of*-poss. From these observations one general point becomes clear: each type of prepositional possessive puts focus on distinct aspects of the meaning of the head nominal. It is possible to say that in the case of the *to*-poss expression the focus is more on the functional aspect of the head nominal, while the *of*-poss expression has a more neutral or basic interpretation. This consideration leads to the prospect that semantics of the head nominal could determine the selection of preposition. This motivates the lexical semantic analysis on the head nominal. In order to make such an analysis, we need a model which provides lexical semantic representations detailed enough to describe the semantic difference of the nominals discussed above. Also necessary is a mechanism which captures the mapping relationship between the meaning of the nominal and its syntactic realisations. Generative Lexicon Theory (GL), outlined in Pustejovsky (1991, 1995) and Pustejovsky and Boguraev (1993), provides such a model. In the next section, we review some of the basic assumptions of the framework of GL, and then in Section 4 we shall make a modification on this model.

3 LEXICAL SEMANTIC REPRESENTATIONS IN GENERATIVE LEXICON THEORY

GL can be characterised as a system involving at least the following four levels of representation.

- (11) a. *Argument structure*: Specification of number and type of logical arguments.
 b. *Event structure*: Definition of the event type of an expression and its subeventual structure.
 c. *Qualia structure*: A structural differentiation of the predicative force for a lexical item.
 d. *Lexical inheritance structure*: Identification of how a lexical structure is related to other structures in the type lattice.

(Pustejovsky 1998)

In this article, however, we add to the list another level of representation specifically for the semantics of the nominals, namely, the type structure, following the notation by Busa and Johnston (1996). Given this system, the lexical entry of the noun *knife*, for example, can be represented as in (12).²

(12)	<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px 10px;">knife</td> <td style="padding: 2px 10px;">TYPESTR = [ARG1 = x:artifact_tool]</td> <td style="padding: 2px 10px;"></td> </tr> <tr> <td style="padding: 2px 10px;">ARGSTR =</td> <td style="padding: 2px 10px;">[D-ARG1 = y:phys_obj</td> <td style="padding: 2px 10px;">]</td> </tr> <tr> <td style="padding: 2px 10px;"></td> <td style="padding: 2px 10px;">D-ARG2 = w:creature</td> <td style="padding: 2px 10px;"></td> </tr> <tr> <td style="padding: 2px 10px;"></td> <td style="padding: 2px 10px;">D-ARG3 = z:creature</td> <td style="padding: 2px 10px;">]</td> </tr> <tr> <td style="padding: 2px 10px;">QUALIA =</td> <td style="padding: 2px 10px;">[FORMAL = x</td> <td style="padding: 2px 10px;">]</td> </tr> <tr> <td style="padding: 2px 10px;"></td> <td style="padding: 2px 10px;">CONST = {blade,handle,...}</td> <td style="padding: 2px 10px;"></td> </tr> <tr> <td style="padding: 2px 10px;"></td> <td style="padding: 2px 10px;">TELIC = cut_act(e₂,w,x,y)</td> <td style="padding: 2px 10px;"></td> </tr> <tr> <td style="padding: 2px 10px;"></td> <td style="padding: 2px 10px;">AGENTIVE = make_act(e₁,z,x)</td> <td style="padding: 2px 10px;">]</td> </tr> </table>	knife	TYPESTR = [ARG1 = x:artifact_tool]		ARGSTR =	[D-ARG1 = y:phys_obj]		D-ARG2 = w:creature			D-ARG3 = z:creature]	QUALIA =	[FORMAL = x]		CONST = { blade,handle,... }			TELIC = cut_act(e₂,w,x,y)			AGENTIVE = make_act(e₁,z,x)]
knife	TYPESTR = [ARG1 = x:artifact_tool]																								
ARGSTR =	[D-ARG1 = y:phys_obj]																							
	D-ARG2 = w:creature																								
	D-ARG3 = z:creature]																							
QUALIA =	[FORMAL = x]																							
	CONST = { blade,handle,... }																								
	TELIC = cut_act(e₂,w,x,y)																								
	AGENTIVE = make_act(e₁,z,x)]																							

(cf. Busa and Johnston 1996)

The type structure (TYPESTR) is a level for representing the type of word. The type structure of *knife* specifies that the meaning of this noun is typed as an artefact and a tool. The argument structure (ARGSTR) lists arguments that appear in the qualia structure, except for those listed in the type structure. The argument structure for the noun *knife* specifies that this noun selects for three default arguments, that is, those arguments which are mapped to the syntax optionally, namely the first for physical object (D-ARG1), the second and the third for creature (D-ARG2 and D-ARG3, respectively). The qualia structure (QUALIA) encodes the basic semantic characteristics of a word, and expresses the following four aspects of the meaning of the lexical item.

- (13) a. **FORMAL**: the basic category that distinguishes an object within a larger domain;

² For the purpose of this article, we will simplify the structure to include the first three of the levels of representation listed in (11).

- b. CONSTITUTIVE: the relation between an object and its constituent parts;
- c. TELIC: the object's purpose and function;
- d. AGENTIVE: factors involved in the object's origin or "coming into being."

(Pustejovsky 1998)

The formal role of *knife* shares the value with ARG1 of the type structure.³ The constitutive role indicates that a knife is composed of such parts as blade, handle and so on. The telic role denotes that a knife is generally used for cutting; $\text{cut_act}(e_2, w, x, y)$ says that the cutting activity is carried out by w towards y by using x . The agentive qualia role states that a knife is produced by "activity of making," namely z makes x .

4 A PRIMARY QUALIA ROLE

In this section we shall modify part of the lexical semantics model in GL by introducing the concept of *the primary qualia role*. This notion can be defined as the qualia role that is central in the interpretation of the noun phrase which the word enters. For example, consider the meaning of the adjective-plus-noun structures below.

- (14) a. i. a long knife
- ii. a good knife
- b. i. a young mother
- ii. a good mother
- c. i. a red car
- ii. a good car

All of these phrases are nominals in which the adjectives modify the nouns. However, there is a difference between (i) and (ii) in the mode of modifying the noun. In (i)-phrases the adjectives *long*, *young* and *red* actually modify the formal qualia role of the noun while in (ii) the adjective *good* modifies the telic role of the same noun. Consider the qualia structures of these nouns.

³ The same letters in the representation indicate that they are all shared.

- (15) a. $\left[\begin{array}{l} \mathbf{knife} \\ \text{TYPESTR} = [\text{ARG1} = \mathbf{x}:\text{artifact_tool}] \\ \text{QUALIA} = \left[\begin{array}{l} \text{FORMAL} = \mathbf{x} \\ \text{CONST} = \{\text{blade, handle, \dots}\} \\ \text{TELIC} = \text{cut_act}(e_2, w, \mathbf{x}, y) \\ \text{AGENTIVE} = \text{make_act}(e_1, z, \mathbf{x}) \end{array} \right] \end{array} \right]$
- b. $\left[\begin{array}{l} \mathbf{car} \\ \text{TYPESTR} = [\text{ARG1} = \mathbf{x}:\text{artifact}] \\ \text{QUALIA} = \left[\begin{array}{l} \text{FORMAL} = \mathbf{x} \\ \text{TELIC} = \text{drive_act}(e_2, w, \mathbf{x}) \\ \text{AGENTIVE} = \text{make_act}(e_1, z, \mathbf{x}) \end{array} \right] \end{array} \right]$
- c. $\left[\begin{array}{l} \mathbf{mother} \\ \text{TYPESTR} = [\text{ARG1} = \mathbf{x}:\text{human}] \\ \text{QUALIA} = \left[\begin{array}{l} \text{FORMAL} = \mathbf{x}.\text{kinship_rel}(\mathbf{x}, y) \\ \text{CONST} = \text{female}(\mathbf{x}) \\ \text{TELIC} = \text{bring_up}(e, \mathbf{x}, y) \end{array} \right] \end{array} \right]$

The adjectives *long*, *young* and *red* modify the value of the formal role in these structures, namely, \mathbf{x} , which is bound by $\mathbf{x}:\text{human}$ in the type structure. By this process the nominal *a long knife* in (14ai), for example, acquires the interpretation “a knife that is long.” The adjective *good* modifies the event expressed in the telic role in the above representation. Therefore, (14aii) *a good knife* has the meaning “a knife that cuts well,” (14bii) *a good car* “a car that someone can drive well” and (14cii) *a good mother* “a mother that brings up her son/daughter well.” In (i)-phrases the primary qualia role is the formal role while in (ii)-phrases it is the telic role.

The primary qualia role thus provides the central factor for deciding the interpretation of the noun. That is, it reflects the value of the primary qualia role while the basic category of the noun is unchanged. The following datum illustrates this point.

- (16) I have met women who epitomize the “good mother”; they genuinely love and care for their children and give them a great deal of attention, playing with them and guiding them in a way that most of us feel we can never emulate.

(BNC: CCN 971)

The underlined part describes what a “good mother” is. That is, the meaning of the word *mother*, while its basic category (human) is unchanged, reflects the content of the primary qualia value $\text{bring_up}(e, \mathbf{x}, y)$ in (15c). And then the adjective *good* modifies this event.

Furthermore, we assume a constraint concerning the primary qualia role.

(17) There is only one primary qualia role in one qualia structure.

This constraint explains the (un)acceptability of the data in (18).

- (18) a. i. She is a blonde and *beautiful* dancer.
 ii. *She is a blonde and *fast* dancer.

(Vendler 1967)

- b. *a tall and regular contributor
 c. *a handsome and frequent visitor
 d. *a young and early riser

(cf. Yasui et al. 1976)

In (18ai) the adjectives *blonde* and *beautiful* each modify the formal qualia role of the noun *dancer*, so that the formal role is a unique primary qualia role of the noun, conforming to constraint (17). However, in (18aii), *blonde* modifies the formal role of *dancer* while *fast* modifies the telic role of the same noun, namely, the event of dancing. That is, this structure has two primary qualia roles, the formal and the telic role, hence is unacceptable. The same explanation applies to (18b-d) sentences. The first adjective modifies the formal qualia role of the noun while the second one modifies the telic role.

We shall now return to the prepositional possessive constructions and offer a proposal concerning the function of the *of*-poss and the *to*-poss, based on the theoretical preliminaries reviewed in Section 3 and 4.

5 A PROPOSAL

5.1 The Function of the Of-Poss

Let us reconsider the semantic representation of *mother* in (15c), repeated in (19) for convenience.

- (19)
$$\left[\begin{array}{l} \mathbf{mother} \\ \text{TYPESTR} = [\text{ARG1} = \mathbf{x:human}] \\ \text{QUALIA} = \left[\begin{array}{l} \text{FORMAL} = \mathbf{x.kinship_rel(x,y)} \\ \text{CONST} = \mathbf{female(x)} \\ \text{TELIC} = \mathbf{bring_up(e,x,y)} \end{array} \right] \end{array} \right]$$

The value of the formal role is *kinship_relation(x,y)*, which means that *x* corresponds to *y*'s mother. Thus, this value includes a possessive relationship. Therefore, either of the possessive expressions dealt with here, the *to*-poss or the *of*-poss, may be concluded to have some relation to the formal role. Let us assume that it is the *of*-poss that has this relation.

(20) *The Function of the Of-Poss*

Of the arguments in the relationship that is a telic value of the head noun, the *of*-poss saturates the one that does not bind into the type structure.

In the case of *mother of the bride*, the *of*-poss of *the bride* saturates *y* in *kinship_relation(x, y)*, which is a formal value of *mother*, since *x* has already been bound by *x* in the type structure.

The assumption is that the *of*-poss saturates an empty argument in the formal value of the head noun. The question then arises as to why it is *of*-poss, instead of *to*-poss, that is related to the formal role. We shall see in the next section that there is evidence that the *to*-poss refers to another meaning component.

5.2 *The Function of the To-Poss*

Let us examine the data in (21).

- (21) a. *? Mary was a good mother *of* the bride.
 b. Mary was a good mother *to* the bride.

In the case where the adjective *good* occurs, the *of*-poss is inappropriate as in (21a), while the *to*-poss is completely acceptable as in (21b).

We have argued above that the adjective *good* selects the telic role and the telic role becomes a primary qualia role. We have just seen that *good* co-occurs with the *to*-poss rather than *of*-poss. Moreover we have constraint (17) that states that there is only one primary qualia role in one qualia structure. These three factors lead to the conclusion that the *to*-poss is closely related to the telic role of the noun that it is modifying. Therefore, we will make the following hypothesis concerning the function of *to*-poss.

(22) *The Function of the To-Poss*

The *to*-poss saturates the second argument of the event as a value of the telic qualia role of the head noun.

To show what this hypothesis indicates, let us take a *to*-poss expression *mother to the bride* as an example. The prepositional phrase *to the bride* serves to saturate the second argument of the event in the telic qualia role of the head noun *mother*. *Mother* has the semantic representation (15c), which is repeated here again for convenience.

$$(23) \left[\begin{array}{l} \mathbf{mother} \\ \text{TYPESTR} = [\text{ARG1} = \mathbf{x:human}] \\ \text{QUALIA} = \left[\begin{array}{l} \text{FORMAL} = \mathbf{x.kinship_rel(x,y)} \\ \text{CONST} = \mathbf{female(x)} \\ \text{TELIC} = \mathbf{bring_up(e,x,y)} \end{array} \right] \end{array} \right]$$

The second argument of the event $\text{bring_up}(e, \mathbf{x}, \mathbf{y})$, namely, \mathbf{y} in (23), is saturated by *to the bride*.⁴ By this process, *mother to the bride* comes to highlight the content of the telic qualia role of *mother*, and obtains the interpretation “the mother who brought up the bride.”

Now we can give an explanation for the unacceptability of (21a), which is repeated in (24).

(24) *? Mary was a good mother of the bride.

We have seen in Section 4 that when the adjective *good* is used, the telic qualia role of the noun it is modifying is the primary qualia role. However, the *of*-poss causes the formal role to be the primary qualia role. Therefore, (24) has two primary qualia roles, that is, the telic and the formal role, which violates constraint (17).

5.3 Summary

Section 5 has offered the proposal that an *of*-poss and a *to*-poss have the function (20) and (22), respectively. If this analysis is correct, these possessives are not pure “possessives” in the strict sense of the term. They are characterised as merely prepositional phrases that have the function (20) and (22). However, we will continue to refer to them as before, for ease of explanation.

6 AN EXPLANATION

In this section we shall show that our analysis provided in the last section can answer to the questions posed in Section 2.

6.1 Difference in Meaning

The first question to be answered is what makes the difference in meaning between the *of*-poss and the *to*-poss in the examples (3) and (5). We will begin with (3).

6.1.1 *Explanation to (3)* We have seen in Section 2 that Konishi (1976) states

⁴ An event argument, e , is not included in the counting of arguments in the rest of this article.

that the *of*-poss expression (3a) means that the door belongs to the room, while the meaning of the *to*-poss expression (3b) is similar to “the door leading to the room.” Examples (3) are repeated in (25).

- (25) a. the door of the room
b. the door to the room

In order to give an explanation to this phenomenon, we have to investigate the lexical semantics of the word *door*. This noun has the semantic representation given below.

$$(26) \left[\begin{array}{l} \mathbf{door} \\ \text{TYPESTR} = \left[\begin{array}{l} \text{ARG1} = \mathbf{x:phys_obj} \\ \text{ARG2} = \mathbf{y:aperture} \end{array} \right] \\ \text{ARGSTR} = \left[\begin{array}{l} \text{D-ARG1} = \mathbf{w:phys_obj} \\ \text{D-ARG2} = \mathbf{z:space} \end{array} \right] \\ \text{QUALIA} = \left[\begin{array}{l} \text{FORMAL} = \mathbf{hold(w,x)} \\ \text{TELIC} = \mathbf{lead_to(e,y,z)} \end{array} \right] \end{array} \right]$$

There are two values in the type structure: $\mathbf{x:phys_obj}$ and $\mathbf{y:aperture}$. This captures the fact that a door is a physical object and, at the same time, an aperture. In the qualia structure the formal role has a value $\mathbf{hold(w,x)}$. This relation states that a physical object w holds a door as a physical object. In the telic role, a door as an aperture has a function of leading to a space z which is a room or a house.

Assuming that the noun *door* has the semantic representation (26), we can explain (25). (25a) *the door of the room* is an *of*-poss expression. We proposed in (20) the function of an *of*-poss shown again here.

- (27) Of the arguments in the relationship that is a telic value of the head noun, the *of*-poss saturates the one that does not bind into the type structure.

Following these characteristics of an *of*-poss, *of the room* in (25a) saturates the w -argument in the relation $\mathbf{hold(w,x)}$ of the formal role. The formal role then acquires the status of the primary qualia role. Therefore, *the door of the room* becomes an expression which directly reflects the value of the formal role, namely, $\mathbf{hold(w,x)}$. For this reason, (25a) means that the door belongs to the room.

Now we turn to the *to*-poss expression *the door to the room* in (25b). We have proposed the hypothesis (22) concerning the function of a *to*-poss, repeated here for convenience.

- (28) The *to*-poss saturates the second argument of the event as a value of the telic qualia role of the head noun.

Following this hypothesis, *to the room* saturates the second argument of the value of the telic role, that is, z -argument in $\mathbf{lead_to(e,y,z)}$ in (28). The telic role

acquires the status of the primary qualia role, so that the interpretation of *the door to the room* directly reflects the content of this event. Hence, the meaning of (25b) is similar to “the door leading to the room,” as Konishi (1976) observed.

6.1.2 *Explanation to (5)* We turn to the fact that Wood (1967) observed, (5), which is repeated in (29).

(29) *a friend to* is used when the reference is to one who shows a friendly attitude or acts in a friendly way by giving practical assistance, support or sympathy to whoever or whatever is specified.

Wood states that the noun *friend* is normally followed by *of*, as in *friend of Adam*, whereas the *to*-poss is used in the case where the reference is to the one who has the property indicated in the underlined part of the statement shown above. Before going to the main claim, let us investigate the meaning of the noun *friend*. The noun *friend* stands for a personal relation with someone. Therefore, the qualia structure of *friend* should include at least the concept of personal relation, that is, a friendship relation, as seen in (30).

(30) QUALIA = [FORMAL = **friendship_relation(x,y)**]

Hence, the *of*-poss expression *a friend of Adam*, for example, is an expression which designates a friendship relation with Adam because *of Adam* saturates the second argument *y* in **friendship_relation(x,y)**, the formal qualia role becoming the primary qualia role.

In the case of the *to*-poss expression *friend to Adam*, however, *to Adam* should be applied to the telic role of *friend*, following our analysis. If this is the case, what could be the telic role of *friend*? Generally speaking, a friend is a person who helps you or is kind to you. Therefore, it is possible to say that the telic role of this noun includes concepts such as helping or being kind. The qualia structure of *friend* may have the form as indicated below.

(31) The qualia structure of *friend*

[FORMAL = **friendship_relation(x,y)**
TELIC = **help/be kind to(e,x,y)**]

The *to*-poss saturates the second argument of the value of the telic role, namely *y* in **help/be kind to(e,x,y)**, and it then obtains the status of the primary qualia role. Therefore, the meaning of this expression directly reflects the content of this event. For this reason, the *to*-poss expression *a friend to Adam* is used when the reference is to “one who shows a friendly attitude or acts in a friendly way by giving practical assistance, support or sympathy”, as the underlined part in (29) indicates.

To sum up, our analysis of the *to*- and *of*-poss can accommodate the meaning contrast between the two constructions. As we have seen in Section 2, the observations made by Konishi and Wood are descriptively correct. However, they can be regarded as a sense enumerative analysis, to which a generative approach to

the lexicon, such as the present one, is preferable.⁵

6.2 *Difference in Acceptability of the To-Poss*

This section gives an answer to the second question that we posed in Section 2: what makes the *to*-poss expressions in (10) unacceptable? The data are repeated here for convenience.

- (32) a. i. corner {*/to/ of} the table
 ii. redness {*/to/ of} the skin
 iii. size {*/to/ of} the apple
 b. i. father {*/to/of} his country
 ii. father {*/to/of} the idea
 c. president {to*/of} the college

In order to give an answer, we will investigate the semantics of the head nouns. The following citations are the definitions of these nouns in *Collins Cobuild English Dictionary*.

- (33) a. *corner*: A corner is a point or an area where two or more edges, sides, or surfaces of something join.
 b. *size*: The size of something is how big or small it is.
 c. *president*: The president of the organization is the person who has the highest position in it.
 c. *father*: The man who invented or started something is sometimes referred to as the father of that thing.

What these citations make clear is that the meaning of these nouns can be defined by its formal characteristics, a factor which is listed in the lexical semantics of a noun as a formal qualia role. That is, it is possible to say that these nouns do not contain a concept of purpose or function, which should be a telic qualia role. Therefore, these nouns do not have a meaning component to which a *to*-poss is applied. It is possible for the *of*-poss to occur, however, because these nouns have a formal role, and then the *of*-poss applies.

6.3 *Summary*

We have observed in Section 6 that the present account of the *to*- and the *of*-poss can offer an answer to both questions asked in Section 2, concerning the difference in meaning between the two constructions and the impossibility for the *to*-poss to modify the nominals which lack the telic qualia role.

⁵ For the sense enumerative analysis, see Pustejovsky (1995).

7 OTHER CONSEQUENCES

In this section, we will show other consequences that follow from our proposal concerning the function of the *to*-poss and the *of*-poss. The following example poses us an interesting question.

- (34) ... *he was her brother*, had been mother, father, friend to her ever since she, a tiny babe, had lost both her parents.

(ECME: E. Orezy, *The Scarlet Pimpernel*)

The person described as *he* in the beginning of example (34) is a brother of the person expressed as *her*, as *he was her brother* indicates. If a *to*-poss expresses a personal relationship in the same way as an *of*-poss, the underlined *to*-poss expression *mother, father, friend to her* have to be concluded as a contradiction. It must be impossible that a person has a parent-child relationship with someone while the former is actually the latter's brother. The question now arises: how can the man be described as *mother, father, friend to her* although he is actually her brother?

Our proposal for the function of the *to*-poss can easily give an explanation to this question. We have proposed that the *to*-poss is applied to the telic qualia role of the head nominal, and then in that case the telic role is selected as the primary qualia role. Based on this analysis, the interpretation of *mother, father, friend to her*, a *to*-poss expression, reflects the content of the telic role of the head nouns. Therefore, this *to*-poss expression indicates that her brother does what mother, father and friend normally do for her. Hence, the content of the formal role, which includes a concept of personal relation such as a kinship relation or a friendship relation, is irrelevant here. For this reason, it is possible to describe the man as *mother, father, friend to her* although he is actually her brother.

The same explanation can be applied to the use of the *to*-poss in (35a), and the description shown in (35b) made by Wood (1967) concerning this datum.

- (35) a. They have been good neighbours to us.
 b. *A neighbour to* usually refers to a neighbourly attitude, rather than to the mere fact of living near.

(Wood 1967)

As the underlined part in (35b) indicates, *neighbours to us* does not refer to "the mere fact of living near." This observation conforms to our proposal that a *to*-poss is applied to the telic qualia role of the head nominal and is not related to the formal role. Concepts such as "living near" are considered to be stored in the formal qualia role. Therefore, *neighbours to us*, a *to*-poss expression, does not have the interpretation which reflects the concept "living near." Instead, the meaning directly reflects the value of the telic role of the noun *neighbour*, that is, to show a neighbourly attitude to someone.

8 CONCLUSION

In this article we made the following proposals concerning the possessive expressions with prepositions *of* and *to*.

(36) a. *The Function of the Of-Poss*

Of the arguments in the relationship that is a telic value of the head noun, the *of*-poss saturates the one that does not bind into the type structure.

b. *The Function of the To-Poss*

The *to*-poss saturates the second argument of the event as a value of the telic qualia role of the head noun.

By proposing the characterisation of the *to*-poss and the *of*-poss, we can solve the problems which were put forward in Section 2. The first question was what causes the difference in meaning between the *to*-poss and the *of*-poss in (3) and (5). The second question was what makes the *to*-poss expression in (10) unacceptable. We answered these questions with our proposals in (36). In section 8, we presented another consequence which is derived from our characterisation of the prepositional possessive constructions.

What is expressed as a *to*-poss and an *of*-poss has the status of a default argument in the argument structure. The default argument is an argument which is optionally mapped to the surface syntax. Pustejovsky (1995) states that “defaults arguments can be satisfied by full phrasal expression as a PP (p. 66).” However, he does not discuss the mechanism that determines the choice of preposition. Nor do other theories of the semantics-syntax interface give a satisfactory explanation to this matter. Therefore, this study gives a new direction to work on linking of optional elements to surface syntax.

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Takafumi Maekawa
 2-2-24 Higashi-ochiai, Suma-ku, Kobe
 Hyogo 654-0152
 taka1973@livedoor.com