Language Change in Language Acquisition and Interlanguage in Second Language Acquisition

--Examining Studies on the English Preposition *for*--

Hyun Kyung Bong

1. Introduction

Prepositions (P) along with Verbs (V), Nouns (N) and Adjectives (A) have been traditionally categorized as lexical (=content, open class, auto-semantic) words (see Bong 2013). However, some linguists and researchers have recently argued that Prepositions are not purely lexical, but functional in the sense that they are primarily used to express the grammatical relationship between other words (two or three objects) in a sentence. In addition, some researchers including Bong (2013) also argue that Prepositions are 'semi-lexical', 'semi-functional', 'dual or neutral' or 'ambiguous between lexical and functional words', and that some prepositions (P) and Adverbs (Adv) ought to be reclassified as functional (grammatical, closed class, auto-synsemantic) words.[1]

However, the distinction between lexical and functional is controversial. Nonetheless it has been agreed that some prepositions like *of, for*, and *with* have a polysemous categorical status between lexical and functional:"syntactic properties". For example, *for* in *for V-ing* is a head of a clause (CP) while *for* in *for a NP* is a head of a preposition phrase (PP). In addition, *for* can be used as a conjunction as in '*You should have pulled over, for the cop told you to do that.*'; '*It is morning, for the birds are singing.*' Although the lexical characteristics of the preposition *for* have been explored relatively well in the literature, little attention has been paid to consideration of lemmatic properties that include syntactic properties (e.g. categorical status, grammatical functions, compatibility between the head and the complement and the sub-categorization) and semantic properties (i.e. senses) in the fields of second language acquisition (Bong 2011, 2012, 2013).

Bong (2011) has started to examine lemmatic properties of English prepositions from the point of view of empirical studies such as second language acquisition (**interlanguage**) and generations of language acquisition (**language change**). Bong (2011) argues that prepositions like *of*, for example, can be viewed as being on their way to 'semantic bleaching' and 'category change', which are essential aspects in language change, supporting the minimalist

73

model of language acquisition. This model with its hypotheses about 'causal factors' predicts that functional words (lexical items) with a small number of meanings (semantic features) are more easily acquired than semi-functional words (lexical items) with some meanings (i.e. semi-lexical), and fully lexical ones with complex polysemous meanings (i.e. fully lexical and fully polysemous) in second language (L2) acquisition, since the identification of a set of features for a lexical item, and construction of features for the Agree operation between Head and Complement are vulnerable to both internal factors such as first language (L1) lexicon and external factors such as ambiguity and obscurity of the L2 input per se, as well as to learning-environmental factors such as induced increased obscurity or corrupted primary/secondary linguistic data.

Interestingly, the preposition *for* seems to be one of the best examples for showing (i) whether there is any difference between the L2 acquisition of a preposition's lexical use and that of its semi-functional use; for showing (ii) what meanings of a preposition can be acquired earlier than others (testing the Prototypicality Hypothesis driven by the Cognitive Approach (Yamaoka (1995, 1996) and Hayashi (2001)); (iii) how the polysemous meanings and categorical status of a preposition have been developed or changed diachronically; and (iv) how those lemmatic properties are acquired in the L2 acquisition by Japanese-Speaking Learners (JSLs) by examining their representation in the interlanguage. Pursuing these questions, this study attempts to explore studies on the preposition *for* both from the point of view of language change, which is assumed to be taking place because of 'language acquisitions through generations,' and from the point of view of the interlanguage in L2 acquisition.

This paper begins with examining linguistic properties of the preposition *for* while discussing the chronological development (language change) of the word *for*. In addition, this paper compares the two different approaches (cognitive vs. generative) and then moves on to examination of Bong's study (2014) on the L2 acquisition of the English preposition *for*. Through examination, this paper tests the two acquisition hypotheses driven from the two different approaches: that is, the Prototypicality Hypothesis of the cognitive approach (e.g. Yamaoka (1995, 1996) and Hayashi (2001)) versus the Feature Re/Construction Hypothesis of the Minimalist Model within the generative approach, whose coverage ranges from language acquisition to language change and to L2 acquisition (Bong 2005 onwards). In what follows, this paper discusses various causal factors that may have caused 'divergent aspects' or 'errors' found in the interlanguage of JSLs in the L2 acquisition of the English preposition *for*. This paper then concludes that studies of the preposition *for* support the Minimalist Model of language acquisition but cast doubt on the Cognitive Model of first language acquisition and the Cognitive Model of second language acquisition.

2. Linguistic Background and Rationale
2.1 Feature Based Language Change View

In the Minimalist Model of language acquisition (Bong 2005, 2009), learners have a built-in preference for economical options, so that they constantly make and test hypotheses about the settings of parameters and about sets of features for lexical items expressed in the

triggering input. These hypotheses are tested by the learners' ability to parse the input. One of the main arguments of this model is that the processes of **L1 acquisition, language change and L2 acquisition** are governed by the same economy principles but are subject to different causal factors affecting the divergence of parameter-settings and the selection of features in the lexicon from the inputs. Bong (2005) proposes that the quantitative and qualitative variability of input and the role of the L1 lexicon in the L2 acquisition process should be regarded as sources of such different causal factors (i.e. lexicon contact view). These causal factors contribute to an increased obscurity and ambiguity of the settings of parameters and of sets (combinations) of features embodied in the input. Thus language change which takes place through L1 acquisitions, and L2 variability (but systematic divergence) is inevitable and predicted, owing to the obscurity and ambiguity of meanings/senses found in the triggering input when learners are parsing the input.

Then, let us now consider the senses of the preposition *for* (in other words the set of its semantic features) and the categorical status of the preposition *for* (in other words syntactic features), which have changed or developed over the years owing to generations of language acquisition. According to OED (Oxford English Dictionary 2004), in Old English (OE, 5th - 12th Century), *for* and *fore* seem to have been used indiscriminately as prepositions while in Middle English (ME, 12th - 16th Century), they were gradually differentiated. The use of *for* as a conjunction has not been found earlier than the 12th century, while the conjunctional use of *for = for ðon ðe* may be explained either as an extension of the functions of the preposition to govern a noun-sentence, or as an ellipsis. On the other hand, from the 16th century, the word *fore* has often been regarded as an abbreviation of *before*, and hence written '*fore*.

The '*for*' as a preposition can be classified in three parts: (1) Original Senses of *for* as a preposition appear to be replaced by or absorbed into the various uses of *before*, such as <*of place*>, <*of time*> , and <*in preference to*>, which were prevalent in OE but seem to have disappeared in ME and are now obsolete (no longer in use) owing to the existence of the preposition *before* in Modern English; (II) Major Senses of *for* as a preposition take 'nouns' as complement (object) such as {of representation, substitution or exchange, of purpose or destination, of advantage or disadvantage, of attributed or assumed character (as), of the cause or reason, of correspondence or correlation, of reference}.; (III) Semi-functional senses of *for* in *for V-ing,* denote various senses such as {reason, causes, substitutions, benefit}. In addition, other uses and senses of *for* than as a preposition, such as *for to* ~ indicate the object of an action, meaning {in order to} which is no longer in use in Modern English, or *for X to* as a case marker, or *for* as a conjunction, introducing the cause of a fact, the ground or reason for something previously said or a detailed proof and so on. Thus, this paper discusses the major senses of *for* as a preposition as in *for a NP* (NP, noun phrase), forming a PP (Prepositional Phrase) and the semi-functional senses of 'for' as in *for+V-ing* forming a small clause or an adjunctive or subordinate clause.

In the earliest periods, the prevailing senses of *for* are those of (I) {of place (in front of, in

the presence or sight of, in asseveration, into the presence of), of time, or in preference to/above}. Interestingly, the remarkable development in the signification of *for* is the fact that the chief senses belonging properly to the preposition *for* and *fore* of the Old English seem to have disappeared in the Middle English period. These senses are mainly those denoting those of *before* in various uses, namely {of place (in front of, in the presence or sight of, in asseveration, into the presence of), of time, or in preference to/above}. In addition, the last stage was the extension or separation of *fore* from the core spatial, temporal and abstract senses of both *for* and *fore*, in which *for* and *fore* were used indiscriminately as prepositions, but in Middle English they seem to have gradually been differentiated and the original senses of *for* and *fore*, namely {before = of place, of time, in preference to..}, had been ambiguously used between *fore* and *before* for a while. In other words, *fore* seems to have taken in the major senses of *before* and had disappeared as *fore* disappeared in Middle English. In Modern English, the original senses of *for* and *fore*, which are no longer in use, must have been reanalyzed as either (i) being taken over by the chief senses of *before* or (ii) being absorbed by or transmitted into the coexisting preposition *fore* for the senses of {of place, of time, and in asseveration or into the presence of}, or having developed into being associated with the senses of *before*.

Nonetheless, it is important to note that the range of interaction of senses and sense-groups has been such that the position of a particular sense in the order of development is determined by language acquisition through generations and such **language change** is caused by various causal factors such as obscurity and ambiguity in the input, contact between languages (Lexicon-contact), and so on (Bong 2005 onwards).

2.2 The Proto Theory based Assumptions and Problems with language change

Under the prototype theory, a mode of graded categorization in the semantics of prepositions is assumed. In the theory, senses of prepositions are hierarchically organized in the way that each preposition has a prototypical sense (or senses) and less prototypical senses: i.e. the most typical senses of prepositions are locative and literal senses while the least prototypical ones are abstract senses. Under this theory, all senses of any polysemous word (such as prepositions) are assumed to be related to one another, and to have a prototypical sense (or prototypical senses), and other less prototypical ones are assumed to have resulted from an extension in some way from the prototypical sense(s) (Hayashi 2008, Cf. Lakoff 1987; Taylor 1989). Under this theory, cognitive principles such as metaphor, graded prototypicality, image-schema transformations, etc, schematic properties of a language (at least, prepositions in English) are assumed to be learned from/through "body movement" (see Bong 2013). This is the case only for the first language (L1) acquisition. On the other hand the proponents of these cognitive principles (e.g. Hayashi 2008) believe that it is impossible for L2 learners to acquire the schematic properties of the target language in the same ways as L1 acquisition (Bong 2013). The learnability of the schematic properties has been accounted for

by means of 'learning through L1'.

However, the problems are as follows. First, in the application of the theory to L1 acquisition, it is claimed that the most typical senses are acquired earlier (more easily) than less typical ones through 'body movement' (see Bong 2013). This is supposed to be the case only for L1 acquisition. Since body-movements do not drastically alter diachronically, they cannot explain why the core meaning of word might change over time. Therefore, human body movement cannot be regarded as providing 'cues' for prepositional meaning change, and there seems on this theory to be no plausible account of language change such as would be provided by the disappearance of the core or the original meaning(s) of the preposition *for*. Second, in the application of the theory to L2 acquisition, proponents of the prototypicality hypothesis assert that prototypical meanings (senses) are easy to acquire, while less prototypical ones are difficult to acquire, taking for granted that the schematic properties of the target language are learned by noticing body movement in L1 acquisition. Nonetheless, these conceptual assumptions such as 'learning through body movement in L1 acquisition' have been simply incorporated into their core assumptions of L2 acquisition studies. That is, these core assumptions are not subjected to critical scrutiny. Third, the apparent weakness of the application of the theory to empirical L1 and L2 acquisition studies is that the logic behind the assertion that L1 and L2 learners both can acquire the prototypical sense/senses, but extend them differently owing to the influence of their L1 on the L2 learners has not yet been well motivated (see Bong 2013). Bong (2013) asks a very interesting question that remains unanswered by proponents of the theory: that is, "why does L1 not interfere with or constrain the identifying or learning of prototypical sense/senses of polysemous L2 words, but interfere with or constrain the extension of the prototypical senses?" (Bong 2013).

Then, the question is what the core concept of the preposition *for* would be under the theory. Proponents of cognitive grammar have attempted to delineate the core concept of *for* and suggested that the core concept of the preposition *for* in Modern English is the concept of [**Exchange**], while unfortunately there is no specific or plausible account why and how the original core concept of *for* in Old English, namely {**before, in front of**} had become one of the chief senses of the preposition *before* in Middle English.

According to Moriyama et al (2010), the core concept of *for* in Modern English is [Exchange]. Thus the core concept of [Exchange] is extended into various less prototypical senses. Based on the analysis of Moriyama et. al. (2010), we can now illustrate the degrees of prototypicality yielded by the core concept suggested. The most prototypical sense might be [Equal Exchange – Something/Someone Physical] = [Substitution] as in '*I bought **the book for $10**',* in which the two objects can be exchanged with *each other* and so rephrased as '*I paid $10 for the book*.' Based on their concept 'meta-process' or 'extension' of the core concept [Exchange], the senses of *for* can be arranged in the order of their distance (according to the theory of extension) from the core concept [Exchange], as shown in the following table.

Table 1. The Prototypicality Order : Exchange

Type of Object	Senses	Prototypicality
+Physical	Exchange [Substitution]	I. The most prototypical
	(1) I bought the book for $10.	
	Exchange [Period (of Time)]	II. 2nd most prototypical
-Abstract -Physical	*(2) She stayed there for a week.*	
	Exchange [Reason]	III. 3rd most prototypical
	(3) He was punished for stealing.	
	Exchange [Proxy-Substitution]	IV. 4th most prototypical
+Abstract	*(4) He did it for Mary (did it).*	
	Unequal Exchange [Benefit]	V. 5th most prototypical
	(5) He bought it for Mary.	
Extended Abstract	Unequal Exchange [Acquisition of Targets]	VI. The least prototypical
Extension -Target	*(6) The Train is leaving for Kyoto./ He went to the department store for milk/fun*	

Under this cognitive theory, all senses of any polysemous word (such as prepositions) are assumed to have a prototypical sense (senses), and others less prototypical ones extending in some way from the prototypical sense (Hayashi 2008). Upon this model, *for* is assumed to have a prototypical sense of [**Physical Exchange**] and less prototypical ones that are derived in the process of extension from the prototypical sense (or senses). Under this theory, L1 acquisition of English prepositions is referred to as an extension process of cognitive principles in learning schematic properties of any pholysemous words through *body movement* assuming 'semantic relatedness' between senses of prepositions and other schematic principles that are operative, while L2A involves an extension of **Schematic Principles (SPs)**, not through body movement, but *via L1*. In addition, proponents for the prototypicality hypothesis claim that prototypical ones are easy to acquire, while less prototypical ones are more difficult to acquire.

3. Bong's Studies (2014a) and (2014b)

3.1 Bong's Study (2014a) against the Prototypicality Hypothesis

Bong (2014a) attempts to investigate how Japanese Speaking Learners (JSLs) acquire the

English preposition *for*, addressing the following four research questions: (i) **L1 and L2 learning strategy**: which principles of 'language change view' or of 'body movement view with extension of the core concept' are at work; (ii) **L1 influence**: how much L1 plays in L1 acquisition; (iii) **Roles of obscurity** of L2 input plays in L1 acquisition, and (iv) **differential difficulty** (developmental order): which syntactic and semantic properties of the English preposition *for* are learned more easily or acquired faster than others? These research questions were to test the Prototypicality Hypothesis of the cognitive approach and the Feature Re/Construction Hypothesis of the Minimalist Model within the generative approach.

In Bong (2014a), the experimental study conducted consisted of a questionnaire designed to elicit participants' linguistic background and other information about learners, a proficiency test (Allan's (1992) Oxford Placement Test (OPT)), and a cloze test on various English prepositions. In Bong (2014a), the JSLs were grouped into three depending on their English proficiency results as detailed in the following table:

Table 2. Details of Experiment Japanese Subjects (Bong 2014a)

Group (Num)	OPT Mean Score	OPT Score Range
JSL G1 (13) (Elementary)	112.69 (56.3%)	100~120 (50%~60%)
JSL G2 (24) (Pre-intermediate)	124.67 (62.3%)	121~129 (60.5%~64.5%)
JSL G3 (20) (Intermediate)	137.65 (68.8%)	130~150 (65%~75%)
Total (57)	126.49 (68.8%)	100~150 (50~75%)

Out of sixteen, only three sample sentences used in the cloze test were reported in Bong (2014a) due to the page limit, while the results of sixteen experimental sentences were discussed. For the sake of further detailed reexamination and discussion, I shall illustrate those sentences whose experimental results have been discussed in Bong (2014a). In addition, this is to note that Bong (2014a) did not report any results of the most prototypical sense of *for* postulated by the proponents of cognitive approach, namely [Equal Exchange], for instance "*I bought the book for $10.00*" (see Table 3). An experiment was conducted to find out whether the most typical sense (senses) of *for* is learned by JSLs and whether the most prototypical sense (senses) is learned more easily (faster) than the less prototypical ones, and to test Bong's (2014a) arguments against the Prototypicality hypothesis and an extension of the so called L1 schematic principles such as 'extension' via L1. In particular, my argument is that the more easily acquired sense of *for* is not always the sense of [Equal Exchange], and that not learners' L1 is to be blamed for 'misdevelopment' (i.e. divergent meanings' represented in the learners' interlanguage from the target language) or 'failure to learn the rage of meanings of the preposition', but the L2 learning environment caused factors (see section 3.2 for the detailed discussion).

Table 3. Sentences used in the experiment and their Prototypicality (Bong 2014a)

	Sentence	Proto
1	He bought a ring (for) her. 彼は彼女に指輪を買ってあげた。	(V)
2	This equipment is (for) squeezing lemons. この容器はレモンを絞る**ため**のものである。	(VI)
3	I have not seen her (for) almost two decades. 私はほとんど20年間、彼女を見かけていない。	(II)
4	She looks young (for) her age. 彼女は年の割に若く見える。	(III)
5	I want to live here (for) another three years. 私はもう3年はここに住みたい。	(II)
6	The student went (for) the umbrella left in the class room. その学生は、教室に忘れた傘を取りに行った。	(VI)
7	The driver of the car was fined (for) speeding. その車の運転者はスピードで罰金を取られた。	(III)
8	The fair last (for) more than one months. そのフェアは1ヶ月以上続いた。	(II)
9	He used to write a letter (for) the governor. 彼はその知事に代わってて紙を書いたものだ。	(V) or (I)?
10	She left the office (for) home at 6:00 pm. 彼女は、午後6時に会社を出て自宅へ向かった。	(VI) or (I) Equal?
11	She made it a rule to walk (for) six miles every day. 彼女は毎日6マイル歩くのを日課としていた。	(II)
12	Is this a limited express (for) Paris? これはパリ行きの特急ですか。	(VI)
13	She went (for) the drugstore, but she couldn't find it. 彼女はそのドラッグストアの方に向かって行ったが見つからなかった。	(VI)
14	The city is notorious (for) its smog. その市はスモッグで悪評高い。	(III)
15	She is the ideal person (for) the position. 彼女はその地位にうってつけの人だ。	(IV)
16	In the end, she filed (for) a divorce. 結局、彼女は離婚訴訟を起こした。	(VI)

Bong (2014a) has reported the frequency results that four groups of tokens based on their performance levels as indicated in Table 4 below: (A) Acquired, (D) Developing, (ED) Early-Stage of Development, and (FM) Failed or Misdeveloping.

Table 4   Adequate English Preposition Placements

	JSL G1(13) (Element.)	JSL G2 (24) (Pre-Interm)	JSL G3 (20) (Intermed.)	**Total (57)**
1 (V)	7/13 (53.8%)	15/24 (62.5%)	15/20 (75.0%)	**37/57 (64.9%)**
2 (VI)	5/13 (38.5%)	14/24 (58.3%)	12/20 (60.0%)	**31/57 (54.4%)**
3 (III)	5/13 (38.5%)	12/24 (50.0%)	12/20 (60.0%)	**29/57 (50.9%)**
	43.58%	**56.94%**	**65.00%**	
● These three sentences are classified as A (acquired).				
4 (III)	4/13 (30.8%)	9/24 (37.5%)	9/20 (45.0%)	**22/57 (38.6%)**
5 (II)	1/13 (7.7%)	11/24 (45.8%)	9/20 (45.0%)	**21/57 (36.8%)**
6 (VI)	1/13 (7.7%)	6/24 (25.0%)	11/20 (55.0%)	**18/57 (31.6%)**
7 (III)	0/13 (0.00%)	8/24 (33.3%)	9/20 (45.0%)	**17/57 (29.8%)**
8 (II)	3/13 (23.1%)	9/24 (37.5%)	5/20 (25.0%)	**17/57 (29.8%)**
9 (V)	3/13 (23.1%)	6/24 (25.0%)	8/20 (40.0%)	**17/57 (29.8%)**
● These four sentences are grouped as D (developing)				
10 (II)	0/13 (0.0%)	7/24 (8.3%)	7/20 (20.0%)	**14/57 (24.6%)**
11 (II)	3/13 (23.1%)	6/24 (25.0%)	5/20 (25.0%)	**14/57 (24.6%)**
12 (VI)	1/13 (7.7%)	5/24 (20.8%)	8/20 (40.0%)	**14/57 (24.6%)**
13 (VI)	1/13 (7.7%)	7/24 (29.2%)	5/20 (25.0%)	**13/57 (22.8%)**
14 (III)	0/13 (0.0%)	4/24 (16.7%)	8/20 (40.0%)	**12/57 (21.1%)**
● This sentence is grouped as E (Early Stage Developing)				
15 (IV)	3/13 (23.1%)	2/24 (8.3%)	4/20 (20.0%)	**9/57 (15.8%)**
16 (VI)	0/13 (0.0%)	0/24 (0.0%)	2/20 (10.0%)	**2/57(3.5%)**
● These five are grouped into F (failed or misdeveloping)				
Sum	37/156 (17.8%)	118/288 (30.7%)	129/240(40.3%)	**239/684 (34.9%)**

Note that Roman numerals in the first column of the table indicate the types of or the degrees of the prototypicality as discussed in Table 1.

Bong (2014a) discusses the fact that the data do not support the assertion of the developmental order of the senses of for in L2 acquisition made by the Prototypicality Hypothesis: that is, that the more prototypical sense (senses) is acquired more easily than the less prototypical ones. If the data are re-examined in more detail then one comes to the conclusion that experimental sentences with the same proto degree (II) are in effect not in the same development stage or the differential difficulty appears to be different depending on the sentence types and learners' ability to parse the sentences.

Recall the claim of the Prototypicality Hypothesis (PH) that the **acquisition-developmental order** of the senses of *for* in L2A is predicted to be that the I degree of prototypicality is easier than the II, which then in turn is easier than the III, and that IV>V>VI. However, predictions of this kind are **not supported by** the data presented in Table 4.Note

that the weakness of Bong's (2014) study is that there is no sentence tested (see section 4). Leaving the issues related to the I degree prototypicality and its identification to the next section, we still can argue that results do not support **the differential difficulty claim** of the PH that both L1 and L2 learners should find it easier to acquire the more prototypical senses than the less prototypical ones. There were two instances of the most prototypical use/sense of *for*: the senses of *for* in the three sentences - 1 (proto degree V) with 64.9% achievement, 2 (proto degree VI) with 54.4% achievement, and 3 (proto degree III) with 50.7% achievement, and these can be regarded as 'acquired' earlier/more easily than the senses of *for* in the five sentences which are 10 & 11 (proto degree II) with both 24.6% achievement, 12 (proto degree VI) with 24.6% achievement, 13 (proto degree VI) with 22.8% achievement, and 14 (proto degree III) with 21.1% achievement and which can be argued as 'more difficult' than the former three senses. In short, L2 learners performed much better with the former than the latter. Results of this kind again undermine the differential difficulty claim of the PH.

Moreover, the PH can neither predict such results, nor account for the difference between the four sentences 3, 5, 8 and 11 with the same proto degree II, nor with their claims of the L1 influence and of the Prototypicality (proto degree, more prototypical vs. less prototypical), which is unfortunately determined by the characteristics of the objects (complements) of a proposition (head), determined namely by whether they are locative and literal uses or abstract uses. One might argue for **the thesis that such L2 learning strategy exists,** namely '*via L1*' or by extending L1 schematic principles. However, it couldn't be the case that the L2 learners extend any schematic principles related to the core concept of *for* via their L1 Japanese, since Japanese doesn't have an equivalent post-position to *for* in English, but Japanese learners are familiar with various translations or equivalent interpretations such as *~no tameni* for the sense of *for the sake of*, or *ni taishite* for the sense of *about*, or *~no aida* for the sense of *during,* which can be regarded as 'causal factors derived from the learning environment. In other words, there are no proper schematic principles in their L1 to be used for extension. Thus, the results suggest that the claims of the PH about the extension of the core concept/sense and about "via L1 Learning strategy" should be amended.

In short, the differential difficulty and the learning strategy (via L1) of the PH are not supported by the results presented above. Instead the data cast doubt on the Prototypicality Hypothesis and thus undermine its claims about L2 acquisition. However, the earlier identification or acquisition of the most prototypical sense claim of the PH has not been attested by Bong's (2014a) study, since under the PH, the core concept (the proto sense) of any polysemous words is postulated to be acquired earlier both in L1 and L2 acquisition. Let us now examine an experimental study conducted to test this issue remained unattested.

3.2 Bong (2014b) against the Prototypicality Hypothesis

In order to test the claim that the most prototypical sense is acquired early in both L1 and L2 acquisition, Bong (2014b) conducted an experiment on 58 JSLs.[2] Among the sentences

used in the experiment, three representative sentences with three different uses/senses of *for* and two representative sentences with the presumably early identification of the sense/use (semantic features) of two prepositions *at* and *with* are illustrated in Table 5. I have extracted the results of the relevant sample sentences obtained from the experiment shown in Table 6.

Table 5. Sentences used in the experiment and their Prototypicality (Bong 2014b)

	Sentence	Proto
S1	He bought the book (for) $9.00. 彼はその本を9ドルで買った。	(I)
S2	He went to the department store (for) milk.彼は牛乳を買うために百貨店に行った。	(VI)
S3	Matsumoto is famous (for) Oyaki and Soba noodles. 松本はおやきとそばで有名だ。	(III)
S4	He arrived (in) Japan on 7 January. 彼は1月7日日本に着いた。	Inclusion
S5	I danced (with) him last night.私は昨晩彼と踊った。	Accompany

Table 6   Adequate and inadequate English Preposition Placements (Bong 2014b)

	Adequate Placement - *for*	Inadequate (error analysis)	Inadequate (error analysis)	Inadequate (error analysis)
S1 (I)	*for* 14/58 (24.1%)	*in* 7/58 (12.0%)	*at* 9/58 (15.5%)	*by* 28/58 (48.2%)
S2 (III)	*for* 58/58 (100.0%)			
S3 (III)	*for* 39/58 (67.2%)	*in* 10/58 (17.2%)	*at* 3/58 (5.2%)	*by* 6/58 (10.3%)
	Adequate *in/with*			
S4 *at*	*in* 11/58 (20.0%)	*at* 47/58 (81.3%)		
S5 *with*	**with 58/58 (100%)**			

Surprisingly, the results indicate that the L2 learners have not been able to identify the prototypical sense/use (classified as proto degree I) [Equal Exchange-Substitution] of *for,* while they definitely know the less prototypical sense (classified as proto degree III) [Exchange-Reason] as in *I went to the department store for milk.* Results of this kind definitely support Bong's (2014a) arguments but undermine the Prototypicality Hypothesis (PH) derived from the proto theory. In addition, the results of the S1in which *for* is supposed to be placed and S4 in which *in* is supposed to placed suggest that a systematic misdevelopment should result in the interlanguage of JSLs since the learners placed wrong prepositions but systematically (48.2 % placed *by* instead of *for* and that the JSLs seem to choose a preposition not in accordance with the characteristics of the object followed, but depending on the match between its Head, namely, the verb *buy* in S1 or *arrive* in S4 and its Complement (PP, prepositional phrase) or depending on the Head's subcategorization (in other words, dependent prepositional phrases, e.g. *arrived at, be famous for, depend on*)

First, recall the discussion on the earlier acquisition of the core sense (the most prototypical sense) postulated by the PH: that is, the most prototypical sense can be acquired

earlier than other senses in both L1 and L2 acquisition. This prediction seems to work with the postulated prototypical sense of *with,* namely [Equal Accompany], which was discussed in Bong (2013) and which does seem to be acquired earlier than other senses. However it does not work with the preposition *for* with the postulated prototypical sense since the L2 learners performed much better with the less prototypical senses/uses than with the most prototypical sense proto-degree I. With the proto degree III (which is postulated to be an extension of the most prototypical sense), they achieved 100% (S2) and 67.2% (S3), whereas with the proto-degree I (S1) they achieved only 24.1%. That is, the comparatively successful performance of the learners at proto-degree III cannot be explained either by supposing that a meta-process involved with the Schematic Principles of L1 occurred or by postulating L1 transfer or L1 influence. If we classify the result of the [Equal-Exchange] sense//use of *for* in S1 in accordance with Bong's (2014a) they application of the descriptive phrase 'early stage developing' or 'misdeveloping' to the group in Table 4 would be appropriate.

Let us now examine the data from the perspective of the 'via L1' claim by the PH in which the proto sense is identified or acquired by L2 learners regardless of their L1. One might argue that an L1 transfer effect or an L1 influence could account for the results that remain unexplained by the PH. Interestingly, the data on the erroneous use of *by* in S1 by the learners appear to suggest some L1 influence. However, this could be the effect not of L1 transfer but of an L1 translation influence: the Japanese post-position ~*de* (approximately *by means of*) is incorporated into the test as a detail in the translation of the experimental sentence *I bought the book for $9,00.* Error analysis of this kind rather suggests that L2 learners do seem to make use of their L1 lexicon in parsing the L2 input, supporting the Lexicon-Contact view. In addition, it is important to note that the L1 (first language) transfer effect or L1 influence should not be equated with causal factors derived from the learning environment such as L2 primarily linguistic data, which may be corrupted due to 'instructions' or 'unnatural exposure', and some ambiguity and obscurity in the L2 input per se. As noted earlier, there is no equivalent post-position in Japanese for the preposition for in English, but for is translated into or instructed (taught) in various uses/meanings depending on the context (sentence structure): for instance ~*no tameni (for the sake of), ~no kawarini (substitution), ~no okagede (thanks to), ~no riyude (for the reason)* and so no. It might be asserted that 'unnatural exposure' including instructions and translations could have caused the unpredictable development order in identifying senses/uses/meanings of the preposition *for* so that the L2 learners could have identified the core use of *for* as the semantic feature of [+benefit] , [+ purpose or reason] since they seem to know how to use for in the sentence with a main verb *buy* or *go* which selects its complements such as an NP (noun phrase) *the book* by *buy* or a PP (prepositional phrase) *for her,* or *to the department store for milk.* In short, not the learners' L1 per se plays any crucial role directly in identifying senses/uses (in other words, semantic features) of the preposition *for* or in extending the proto sense (in other words, one of the semantic features which may be prevalent in the target input), but other causal factors such as

'unnatural exposure' to the primary linguistic data caused in the L2 learning environment.

Here we can conclude that the results shown in Table 6 do not support the main postulations of the PH : that is, (a) the earlier acquisition of the prototypical sense because of the learning-strategy adopted at an early development stage, (b) a development order based on differential difficulty derived from meta processes or extensions of the prototypical sense, and (c) the divergence/failure account of L2 acquisition postulated to explain the different L1 and L2 learning strategies (L1 acquisition of prepositions by body movement, while L2 acquisition via L1 or via L1 schematic properties), which will be discussed in the following section.

3.3 Alternative Accounts by the Minimalist Model of language acquisition

Instead of the accounts by mean of claims of the PH, the learning strategy involved with the Economy Principles and the hypotheses-testing mechanisms of the Minimalist Model that are at work both in L1 and L2 acquisition can provide plausible accounts for the data remained unexplained. First, recall the results that L2 performances (achievements) on the uses (senses) of the same proto degree II vary shown in Table 4 above and the results that L2 learners seem to have acquired none prototypical sense(s) of the preposition *for* (namely the proto-degree III) more easily/earlier than the most prototypical sense (namely the proto-degree I) as shown in Table 6. Under the Minimalist Model, semantic features and syntactic features universally exist in the Lexicon, and they neither graded, nor hierarchically organized. In addition, any features including semantic and syntactic features in the Lexicon can be equally candidates for identification (selection) of features for a lexical item (a word) in a sentence when learners are testing hypotheses about a set of features for a lexical item (e.g. *for*) via Selection (e.g. various features) and Agree operation between a Head and a Complement (e.g. a verb (V-Head *go*) for prepositional phrases (PPs, Complements *to the department store* and *for milk*), and a prepositions (Ps, P-Head *to* and *for*) for an object noun phrase (NPs, Complements *the department store* and *milk*). That is, structures of sentences, types of constituents (characteristics of Head and Complement) in the sentence and quantity and quality of the primary linguistic data along with learners' parsing ability and other causal factors should take into account in determining not only the earlier development and the development order, but also misdevelopment (failure or divergence) (see Bong 2011, 2012, 2013). In conclusion, it is not wise to predict the specific order of development of semantic features (senses/meanings) of any polysemous words without taking into account both learners' cognitive development and parsing ability[3] and quality and quantity of primary linguistic data, and other causal factors that might make the primary linguistic data obscure.

Let us now move on to the data that undermine the theoretical assumptions on differential difficulty due to 'graded senses' of any polysemous words by the PH. For example, as for the [Exchange-Reason] proto-degree III postulated in the PH, compare the results (21.1% achievement) of the sentence 14 (*The city is notorious for its smog.*) in Table 3, with the

results (67.2% achievement) of the sentence S3 (*Matsumoto is famous for Oyaki and Soba noodles.*) in Table 5. Differences of this kind cannot be explained by the PH. One might argue that the learners have learned the word *famous*, but not the word *notorious* so that they performed better with the sentence with *famous* than with *notorious*. Nonetheless this line of argument does not justify the accounts by the PH, since the PH postulates that the characteristics of the object following the preposition are more crucial than other constituents such as verb phrases (VPs) or adjectival phrases (APs) or adverbial phrases (AdvPs) in VPs: that is, the characteristics of *its smog* vs. *Oyaki and Soba noodles* are more important than those of *notorious* vs. *famous*. On the other hand, under the Minimalist Model of language acquisition, the Head that selects its Complement with a matching set of features for Agree operation is crucial and learners involve making hypotheses about the combination of features for the Head (here adjectives (A) such as *notorious* and *famous* in the AP), and the matching set of features for the Complement (here prepositional phrases (PP) such as *for its smog* and *for Oyaki and Soba noodles*). Thus, the results that the L2 learners performed better with the word *famous* than with the word *notorious* can be accounted for as a correspondence between the learners' ability to parse the sentences and the fact that they are at various different developmental stages in their identification of a set of features for the word *famous* and for the word *notorious*. This line of argument can be interpreted as suggesting that the L2 learners should have identified matching features of *famous* with features of *for* better or earlier than matching features of *notorious* with features of *for*.

Recall the error analysis that the majority of the JSLs placed *by* (48.2%) instead of the correct *for* (24.1%) in the experimental sentence of *He bought the book (for) $9.00* and *at (81.3%)* instead of the correct *in* (20.0%) in the experimental sentence of *He arrived (in) Japan on 7 January* in Bong's (2014b). We cannot simply regard results of this kind as 'failure'. Instead, we should examine them as to see whether showing how L2 learners develop their interlanguage and whether indicating what strategies they use. In fact, results of this kind suggest that the learners could not have used the PH postulated strategies of the earlier acquisition of the prototypical sense or of the meta-process (extension) of the prototypical sense using L1 schematic principles in placing a preposition. Instead, the results suggest that they must have used (i) the Head properties of the verb *arrive* as in S4 (in the primary linguistic data for the L2 learners, (ii) the prevalence of the case that the verb *arrive* selects *at* may have caused misdevelopment of this kind) and (iii) the parsed contextual meaning or the enforced meaning by the approximate Japanese translation (*by the price of $9.00*) of the prepositional phrase instead of the postulated prototypical sense of [Equal Exchange] with $9.00 as in S1 in Table 5.

Finally, recall the discussion on the senses (meanings, uses) of the preposition *for* in terms of 'language change' from the point of view of causal factors driven by **the Feature Re/Construction Hypothesis** of the Minimalist Model of language acquisition (Bong 2005 onwards). Under this view, a set of features for a lexical item (a word) in a particular language

86

can change because of ambiguity and obscurity of the primary linguistic data (the input per se). Some of the features of a lexical item can be incorporated into a set of features for a particular lexical item in the language in the construction process of features: that is, the Feature Construction Process is seen as the process of learning lexical items for individual languages. In particular, the language change process from Old English *for, fore* to Modern English *for, before* can be described in the way that some of the semantic and syntactic features have been shared in both when two lexical items come to co-exist in the lexicon for a while, and then have given rise to the meanings of the current English by loss of some of the senses (or some features) of the word *for, fore* so as to form different sets of features for the prepositions *for* and *before*: that is, the Feature Re/Construction Hypothesis (Bong 2005 onwards). Such language changes are motivated by the linguistic fact that the Old English *for, fore* had lost the senses (semantic features) of *<of place>, <of time>, and <in preference to>*, which were then incorporated by the Modern English *before* into its set of features. In short, language changes occur via language acquisition through generations due to obscurity and ambiguity of the primary linguistic data, and L2 acquisition is in fact to be discussed in terms of mechanisms of language acquisition, language change and of language contact between L1 and L2 that are governed by the same principles. In other words, under this view, it is not necessary to set up specific rules or ad hoc criteria to set up or to put forward the core concept of each lexical item (each word).

4. Conclusion

In conclusion, the accounts of (a) the earlier acquisition of the prototypical sense because of the learning-strategy adopted at an early development stage, (b) a development order based on differential difficulty derived from meta processes or extensions of the prototypical sense, and (c) the divergence/failure account of L2 acquisition postulated to explain the different L1 and L2 learning strategies by the PH are not supported by the results presented in Bong (2014a) and Bong (2014b). Instead, the data presented cast doubt on the Prototypicality Hypothesis, undermining its claims about not only L1 acquisition but also L2 acquisition. However, the Feature Re/Construction Hypothesis of the Minimalist Model of LA can account for not only the current data, but also language change related to the words *for, fore* and *before*. The claims of the Feature Re/Construction hypothesis of other causal factors such as L1 and L2 language contact, ambiguity and obscurity of the input, L2 learning environment caused factors for misdevelopment, and so on are supported by the findings from Bong's studies (2014a and 2014b), and by the current discussions on language change.[4]

---

[1] See Bong (2013) for the discussion of 'semi-lexical/functional' words or categories.

[2] In Bong (2014b), results from two proficiency tests of Oxford Placement Test (OPT, Allan 2005, 2006) were conducted with the same 58 JSLs show the same OPT score ranges.

[3] Under these, the development order of types of English prepositions is suggested as Spatial uses first

followed by Temporal and then by Abstract in L1 acquisition (see Bong 2011, 2012, 2013).

References

1. Allan, D. (1992, 2005, 2006). *The Oxford Placement Test.* Oxford: Oxford University Press.

2. Bong, H. K. (2005). 'Economical Parameter-Setting in Second Language Acquisition: Japanese Speaking Learners of English.' Doctoral Dissertation: University of Cambridge.

3. Bong, H. K. (2009). *A Minimalist Model of Language Acquisition.* UK: VDM Verlag Dr. Muller Publishing Co.

4. Bong, H. K. (2010a). 'Acquisition of English Prepositions.' In the *14th PAAL International Conference Proceeding.* pp 158-168

5. Bong, H. K. (2010b). 'Misdevelopment.' In the *2010 KETA Joint Conference and ETAK International Conference Proceedings*: pp 276-284

6. Bong, H.K. (2011). 'Lemmatic Transfer in the Second Language Acquisition of English Preposition.' In the *2011 PAAL International Conference Proceedings*: pp. 109-116.

7. Bong, H.K. (2012). 'Acquisition of the English Preposition *at.*' *Journal of Humanities and Social Sciences: Shinshu University.* No.6: pp 148-164.

8. Bong, H.K. (2013). 'Acquisition of the English Preposition *on:* Assessing the Prototypicality Hypothesis.' *Journal of Humanities and Social Sciences: Shinshu University.* No.7: pp 142-156.

9. Bong, H. K. (2014a). 'L2A of the English Preposition 'for', In the *2014 PAAL International Conference Proceedings:* pp. A1~A2.

10. Bong, H. K. (2014b). 'Prototypicality vs Causal Factors' *unpublished manuscript.*

11. Dirven, R. (1993). 'Dividing up physical and mental space into conceptual categories by means of English prepositions.' In C. Zelinsky-Wibbelt (Ed.), *The semantics of prepositions* (pp. 73-97.) Berlin: Mouton de Gruyter.

12. Hayashi, M. (2001) 'The acquisition of the prepositions 'in' and 'on' by Japanese learners of English.' *JACET Bulletin,* 33:29-42.

13. Hayashi, M. (2008). *Second language acquisition of English preposition.* Tokyo: Eihosha.

14. Yamaoka, T. (1995). 'A prototype analysis of the learning of "on" by Japanese learners of English and the potentiality of prototype contrastive analysis (part I). *Hyogo University of Teacher Educational Journal,* 15 (2): 51-59.

15. Yamaoka, T. (1996). 'A prototype analysis of the learning of "on" by Japanese learners of English and the potentiality of prototype contrastive analysis (part II). *Hyogo University of Teacher Educational Journal,* 16 (2): 43-49.A

16. Moriyama, T. et al. (2010). *Eigo Zenchisino Gainen.* Nagoya: Vits Solution.