

Is Category *P* Lexical or Functional?: A Generalized *pP*-Shell Approach

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Sungshim Hong & Xiaodong Yang. 2010. Is Category *P* Lexical or Functional?: A Generalized *pP*-Shell Approach. *Language and Information* 14.2, 71–84. The aim of this paper is to propose that a category *P* is encapsulated within a functional layer above the lexical layer, just like *vP* containing a lexical *VP*. As is well known, the category *P* has long been in the obscure domain of syntactic studies: Marantz (2001) and den Dikken (2003), for example, argue that *P* is a lexical category, but Emonds (1985), Grimshaw (1991), and Baker (2003), maintain that the category *P* is functional and is a closed category without its own intrinsic meaning. On the other hand, Zwart (2005) argues that it does have some meaning. Following the works of Svenonius (2003, 2006, 2007), and the spirit of Rizzi's (1997) split CP hypothesis, we elaborate and develop Svenonius' idea of split-*pP* analysis with detailed schematic representations of the novel examples in English, Korean, and Chinese in this paper. Unlike Svenonius, however, this paper incorporates *KP* into *pP*-Shell, which is a substantial simplification. Furthermore, Chinese Localizers that have long been considered as Postpositions are now under the category of Prepositions. This proposal renders an X-bar theoretic consistency over the categorical status of Chinese phrasal structures. In short, the present analysis accounts for inconsistency found in English complex preposition phrase (Quirk, et al, 1972, 1985), Chinese circumposition phrase (Ernst 1988, Liu, 2002) and Korean postposition phrase in a unified and consistent manner. Furthermore, by proposing a finer-grained phrasal architecture for the category *P*, the controversial status of the category subsides within this analysis. (Chungnam National University)

Key words: adposition, circumposition, split-*P* hypothesis, spatio-temporal relation, referential meaning, functional *P*, *pP*-shell

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1. Introduction

Adpositions whose category label can be translated into P for obvious reasons have been argued to be non-lexical. The reason behind this general agreement is mostly morphological; adpositions are closed categories so that no new adpositions have been added in the lexicon so far. Moreover, adpositions, most of them if not all, have no intrinsic meanings. Therefore, prepositions are basically Spatio-Temporal-Relational markers rather than having their own meanings.

Furthermore, the category P has been in the grey area when they come to the categorical status; one might argue that P is a lexical category (Marantz, 2001, den Dikken, 2003), whereas Baker (2003) argues, in length, that P is a functional category which lacks a derivational morphology. Zwarts (1997) indicates that all adpositions (including prepositions and postpositions) are non-lexical elements. Svenonius (2003) states that despite its association with encyclopedic information, P is essentially a functional category. Grimshaw (1991) proposes that P is a functional head in the extended projection of nouns, similar to the complementizers be the functional head in the extended projections of verbs. Emonds (1985) even argues that prepositions and complementizers are of the same functional category type. Lamontagne and Travis (1987) proposes a functional category K to bring P into it. No matter what nature K has, it is functional. The close properties that K and P make it plausible to put P into the list of functional category. What is interesting is that when we classify syntactic categories of lexical items, it seems that preposition is indistinctive and obscure in its nature; some prepositions seem to be devoid of intrinsic meanings, while some others seem to have some meaning.¹ For example, Zwart (2005) states that Dutch adposition *richting* 'direction, in the direction of' has its "meaning."

When we discuss whether P is lexical or functional, it is necessary to take a notion of the criteria of defining the term 'functional'. Along with Abney's (1987) sense, Zwart (2005) takes functional elements to be devoid of descriptive content, but existent of Spatio-Temporal relations as their referential content. Typological study reveals that adpositions are more or less grammaticalized nouns and verbs and generally serve to link constituents (Zwart, 2005). Bearing these ideas in mind, we deem that category P should be divided into two groups: functional Ps and lexical Ps. By our understanding, lexical Ps refer to those noun-like elements (grammaticalized or cognate with nouns) indicating PLACE, whereas functional Ps refer to those simple ones which are general and all-purpose, or those that can take lexical Ps as complements.² For instance, *in* and *of* in '*in front of*' is regarded functional while *front* lexical. Thus, Svenonius' (2003) proposal of "*Split P hypothesis*", based on some particle constructions in Dutch following Kratzer (1996), can be extended to many other languages, including Korean and Chinese. Although Chinese Adpositional Phrases and Korean Postpositional Phrases are not exactly

¹ S.-W Kim (2009) claims, for example, that preposition 'without' has more semantic features than 'with'. The word '*without*', of course, has more semantic features than '*with*'; it has 'NEG' feature, if we simply speculate. He, however, has not elaborated or specified what it means for a word to have more semantic features (more "meaning").

² We focus on spatial adpositions mainly in this paper.

identical, they do display some interesting properties of English complex PPs.

This paper is organized as follows. Section 2 focuses on the *pP*-shell analysis based on Svenonius (2003, 2006) and its utilization on complex prepositional constructions in English. In section 3, we display how *pP*-shell analysis fits in Korean, a head final language with postposition only. In section 4, more supports from Chinese will be discussed. Chinese P system, which is argued to hold a circumpositional structure (i.e., preposition-DP/NP-postposition), is more complex than English or Korean. We argue that Chinese has prepositions only, the so-called postpositions (or localizers) are indeed grammaticalized nouns. Therefore, *pP*-shell analysis consistently works on different languages with postpositions only like Korean and Japanese, languages with prepositions only like English, or languages with circumpositions like Chinese. Section 5 concludes this paper.

2. *pP*-shell analysis

Spatial expressions are encoded by adpositions which may either precede or follow the NP/DP in many languages. Take a brief look at (1) and (2). English and French may adopt simple prepositions like *on/sur* or word sequences like *in front of / à côté de*.³ Korean, a strict head-final language, adopts postposition *ey* and a nominal element *ui/aph*. Chinese adopts a preposition *zai* and a nominal element *shang/qian*. Chinese NP/DP (always expressing a GROUND meaning) follows the preposition but precedes the nominal element (i.e. PrepP-NP/DP-Nominal Item), which differs from English [PrepP-DP] and Korean ([NP/DP-Nominal Item-PostP]). The schematic representation is given in (3).

- (1) a. The cat is **on** the table. [English]
 b. Le chat est **sur** la table. [French]
 c. Koyangi-ka chaeksang **ui ey** iss-ta. [Korean]
 d. Mao **zai** zhuzi **shang**. [Chinese]
 cat at table on [The cat is on the table.]
- (2) a. The cat is **on** the table. [English]
 a. The cat is **in front of** the table. [English]
 b. Le chat est **à côté de** la table. [French]
 c. Koyangi-ka chaeksang **aph ey** iss-ta. [Korean]
 d. Mao **zai** zhuzi **qian**. [Chinese]
 cat at table front [The cat is in front of the table.]

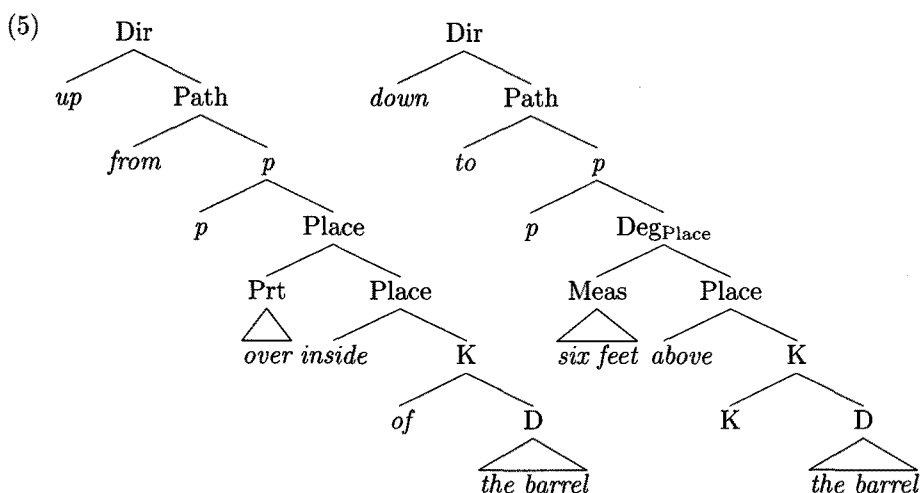
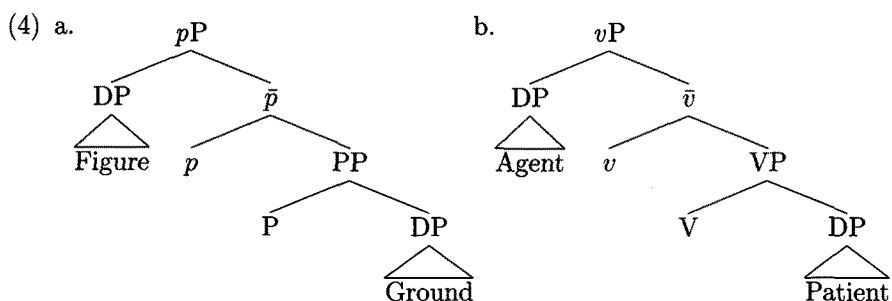
- (3) Schematic representation of PP structure: P₁ ... DP/NP ... P₂

³ In the tradition of prescriptive grammar of English, Quirk, et al. (1972, 1985) classify English prepositions into two types; one is simple preposition and the other type is complex preposition.

a. simple Ps: one-word prepositions such as 'at', 'in', 'to', 'of', etc;

b. complex Ps: more than two-word prepositions such as 'in front of', 'instead of', 'out of', 'up to', etc.

Svenonius (2003) introduces Talmy's (2000) concept of Figure and Ground.⁴ In his understanding, Figure and Ground to P are what Agent and Theme are to V. A normal expression involving Figure, Ground and P is [Figure [P Ground]]. In (1a), for example, *the cat* is the Figure while *the table* is the Ground. Reverse relations are odd (?? *The table is under the cat*). He proposes a functional head *p* to introduce the Figure, parallel to Kratzer's (1996) *v* introducing the external argument of the verb. In Svenonius (2007), he suggests that P never introduces a Figure complement, and the complement of (spatial) P is a Ground. Not only Svenonius but various many scholars have argued for a functional head dominating PP for variety reasons (Koopman, 2000, Rooryck, 1996, Van Riemsdijk, 1990, Zeller, 2001). The relationship between Figure, Ground and P (or 'full structure of the transitive PP' in Svenonius' words) is illustrated in (4a), as opposed to *vP* structure in (4b). Later, Svenonius (2006) develops a vivid image of a stretched-out PP structure as (5).⁵



⁴ Talmy (2000): "The Figure is a moving or conceptually movable entity whose path, site, or orientation is conceived as a variable, the particular value of which is the relevant issue. . . . The Ground is a reference entity, one that has a stationary setting relative to a reference frame, with respect to which the Figure's path, site, or orientation is characterized."

⁵ K may have the function of turning 'things' (with φ -features and referentiality) into 'spaces' (collection of points). K can be realized by English *of* (Svenonius 2006). It is analyzed to be a functional *p* in our proposal.

Particularly, Svenonius introduces the concept of Axial Part (AxPart for short) in examining complex prepositions like *in front of*.⁶ He declares that, *front* in *in front of* refers to the spatial sense as its AxPart use but the ‘part’ sense as its N use in *in the front of*. In his sense, AxPart cannot take plural morphology (6b), nor adjectival modification (7b). AxPart may combine with measure phrases (8b), but cannot be coordinated (9b).

- (6) a. There were kangaroos *in the fronts of* the cars.
 b. *There were kangaroos *in fronts of* the cars.
- (7) a. There was a kangaroo *in the smashed-up front of* the car.
 b. *There was a kangaroo *in smashed-up front of* the car.
- (8) a. *There was a kangaroo *sixty feet in the front of* the car.
 b. There was a kangaroo *sixty feet in front of* the car.
- (9) a. There were kangaroos *in the front and back of* the car.
 b. *There were kangaroos *in front and back of* the car.

On the basis of Svenonius’ illuminating idea on Ps indicating Direction, Path, etc (i.e., Dir and Path above *p* in 5, or monosyllabic simple prepositions in Quirk’s classification), we extend and elaborate a generalized *pP*-shell approach which cover English complex PP, Korean Postposition Phrase, and Chinese Adposition Phrase in the following subsection. In particular, Svenonius’ schematic representations given in (5) contain a dubious KP within PP, and we incorporate it into our *pP-Shell* for a language with overt case particles such as Korean. This seems to be a welcome move toward the simplification of grammar in general.

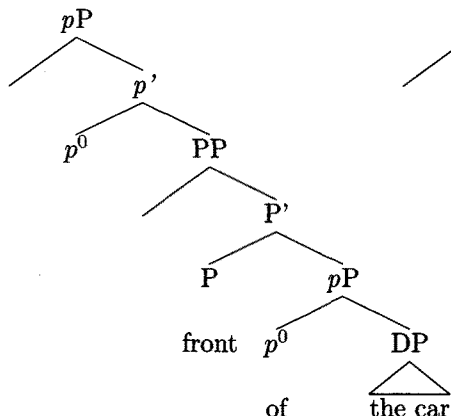
2.1 English Complex Prepositional Phrase

Under such a proposal, the structure of compound preposition such as ‘*in front of*’ is illustrated in (10). Phrases such as ‘*in the front of*’ is shown in (9b), where *front* is used as N. English is a language with DP and an N head cannot be coordinated, nor can it be pluralized or modified by an Adjective.⁷

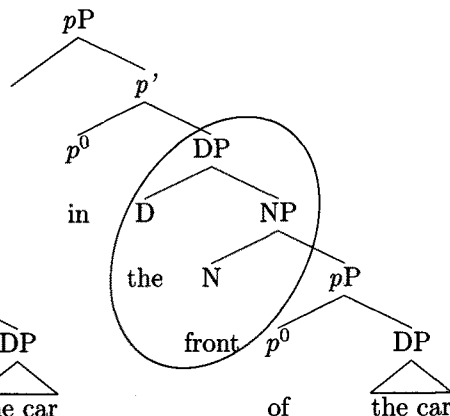
⁶ The term ‘Axial Part’ originates from Jackendoff (1996:14): “The ‘axial parts’ of an object—its top, bottom, front, back, sides, and ends—behave grammatically like parts of the object, but, unlike standard parts such as a handle or a leg, they have no distinctive shape. Rather, they are regions of the object (or its boundary) determined by their relation to the object’s axes. The up-down axis determines top and bottom, the front-back axis determines front and back, and a complex set of criteria distinguishing horizontal axes determines sides and ends.”

⁷ As an anonymous reviewer points out, English ‘front’ cannot be coordinated, whereas Korean lexical Ps can be. The difference between English and Korean is then attributed to the degree of the grammaticalization process in each language. See Footnote 9 for further discussion.

(10) a. in front of the car



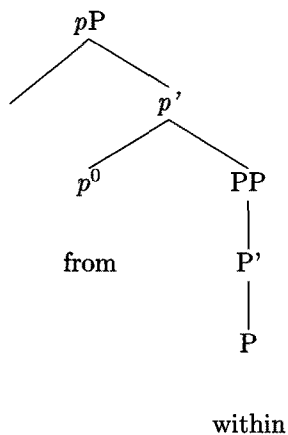
b. in the front of the car



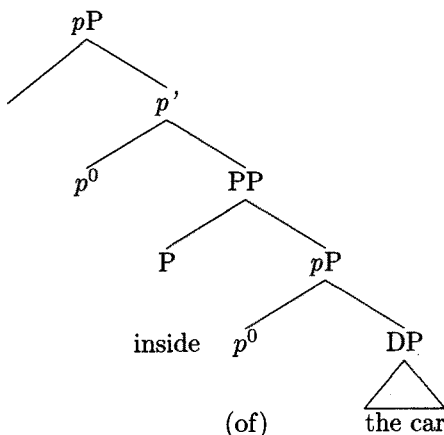
One may raise a concern over having the two types of 'front' in the above examples. It is not too burdensome, however, to propose two syntactic categories of the isomorphic element, 'front'. There are many words that belong to more than two syntactic categories in natural languages.⁸

More examples of English complex PPs that fit the structural representation (10a, b) include "from within" contains a functional *p* and a Lexical P (*within*), the lexical P is without complement. An example like "Inside of the car" contains a null *p* above the lexical P, *inside*, and the lexical P takes another functional *pP* (*of the car*) which takes the DP as its complement, etc. In this case, 'of' is optional. The structure of such example (*inside the car*) will have a null *p* above a lexical P (*inside*) which takes a DP (*the car*) as its complement, arriving at a unified and consistent analysis of English Complex PPs. More examples of English complex prepositional phrase are provided below:

(11) a. from within



b. inside (of) the car



⁸ See Hong, Lee, Suh and Kim (2006) for this point.

We can say that the more intricate structure (11) shows that the lexical *P*, ‘*within*’, has its own “referential” meaning, whereas the functional *P*, ‘*from*’, is just a linker; some entity (*x*) originates from a reference-point (*y*).

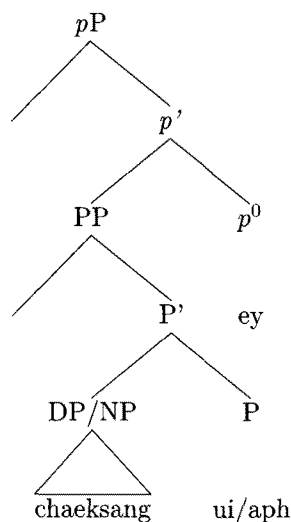
3. Korean *Ps* under *pP*-shell analysis

As mentioned in Section 2, Korean adopts postposition *-ey* and a nominal element *ui/aph* in (1c, 2c), repeated as (12a,b). Rudnitskaya (2009) separates Korean postpositions roughly into three groups: denominative postpositions including *tui* ‘behind’, *aph* ‘front’, *mith* ‘below’, *ui* ‘top’, *cen* ‘before’, *hu* ‘behind’; *pakk* ‘outside’, etc; verbal postpositions including *ey*, *eyse*, etc, as well as other postpositions (postposition proper in her gloss) including *puthe* ‘from’, *kkaci* ‘until’, *pota* ‘compare’, *chelem* ‘equate’, *hanthey(se)* ‘for/from’, *hamkkey* ‘together’, etc. Her classification happens to satisfy our proposal: those denominative postpositions, grammaticalized from nouns indicating spatial position, are Lexical *Ps*; those verbal postpositions are functional. For the third group, they all denote certain relationships, therefore, they are also functional. (12a, b) is illustrated as (13a). If the low *p*⁰ is phonetically realized by genitive marker *uy*, we have structure of (13b). Compare (13b) to (10a), Korean postpositional constructions display similarities to English complex prepositional constructions: it seems to be a mirror image of English corresponding one.⁹

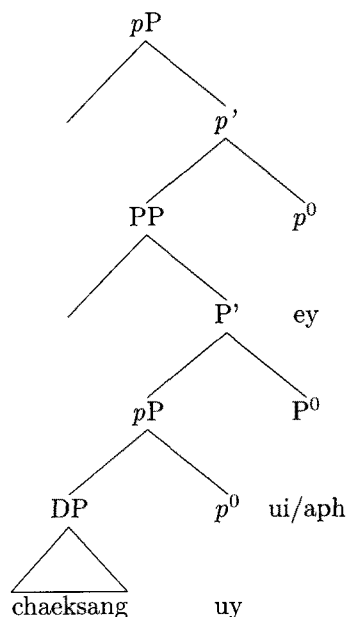
(12) a. Koyangi-ka chaeksang **ui ey** iss-ta.

b. Koyangi-ka chaeksang **aph ey** iss-ta.

(13) a.



b.



⁹ This point might be too oversimplifying, since the measure phrase in Korean with a *PP* can be a problem as a reviewer points out. We leave this issue open for further research.

By adopting the above structural representations for Korean data, we now sever the obscure nature of (non- structural) Case Particles in Korean from Post-positions.¹⁰ If *ui*, *aph*, *an*, *mit*, etc are Lexical Ps derived from nouns, we expect that they can be coordinated and can undergo some kind of morpho-syntactic operations that nouns can undergo. Our expectations are confirmed as illustrated in (14) and (15).

- (14) a. Ku ca-uy *aph-kwua-tui* (the car's front and back)
 b. Ku ca-uy *aph-kwua-tui-tul* cal takk-a-la.
 The car-Gen. front-and back-Accusative well wash-(dummy Vowel)-Imp
 Wash (the) front and back of the car well!
- (15) a. Ne-nun *aph-eulo* ka-la.
 You-Topic front-p go-Imp
 You Go forward!
 b. *Aph-eulo* tasi-nun kuleci ahnulkkeyo.
 Front-P again such not-Future-Decl
 (I will) Not do such (a thing) again in the future.

Aph and *Tui* can be coordinated, shown in (14a). Interestingly, the combination *aph-kwua-tui* can take a determiner-like Genitive DP in (14b) in front of the PP under investigation.¹¹ Furthermore, the Lexical P can take an Accusative case marker. In (15), *Aph-eulo* has amalgamated and become an idiom-like Adverb, meaning *in the future*. It shows that lexical P is in the process of grammaticalization. Therefore, we can safely argue that Lexical Ps together with a functional *p* is still undergoing grammaticalization as they have been.

4. Chinese Circumpositional Structure

In (1d) and (2d), Chinese Ps are similar to English in that it adopts preposition (*zai*),¹² also similar to Korean in that it takes a nominal element to indicate position (*shang/qian*). However, distribution in (16) shows that these two elements cannot juxtaposed as English or Korean do. The syntactic status of the nominal element has been controversial for a long time. Light (1979), Li (1990), and McCawley

¹⁰ It seems a welcome consequence of our proposal that Korean '-ekey' (as in *Mary-ekey*) DP cannot serve as a indirect object in terms of Binding relation. This will be left open for further discussion, however.

¹¹ Furthermore, the ungrammaticality of *ku ca-uy ku aph-kwua-tui (*the car-Gen the front and back*) and *ku ca-uy ku aph-kwa-ku tui (*the car-Gen the front and the back*) supports the lexical P status of 'aph', 'tui', and so on. However, one should be aware of the fact that 'aph' 'tui' can be modified by an adjectival phrase such as the following: ku ca-uy nok-sun aph-kwua jijikuleocin-tui-lul taka-la (Lit.= *Wash rusty front and dented back of the car!*)

¹² *Zai* derives from existential verb "zai". It is widely accepted that *zai* and several other words (*cong*, 'from'; *dao*, 'to'; etc) are prepositions. Some say it is a co-verb (Li & Thompson, 1974). We follow the general view that *zai* is a preposition. One may doubt *zai* in (1d) and (2d) are verbs. We hold the idea that *zai* is originally generated in *p*⁰ position and later undergoes incorporation with null existential verb. More details please see Liu (2002).

(1992) argue that NP and the postposition-like elements form nominal expressions. Zhu (1982) puts it in a separate category juxtaposed with nouns. Gao (1948), Tai (1973), Ernst (1988), and Liu (2002) argue that the so-called localizers function as adpositions. More specifically, Liu suggests that they are indeed postpositions. Thus, Chinese *P* is circumpositional: [PrepP +NP/DP +PostP].

- (16) a. *zai* *zhuozi* *shang*.
 at table on
 on the table
- b. **zai shang* *zhuozi*
- c. **zhuozi zai shang*
- d. **zhuozi shang zai*
- e. **zai shang* *zhuozi*

Following our proposal, we argue that Chinese ‘postpositions’ are de facto prepositions derived from grammaticalized nouns, ergo Lexical Ps. First of all, Chinese Lexical Ps are limited in numbers, most of which are monosyllabic.¹³ As mentioned at the beginning of Section 1, Ps form a close category, but never do nouns. Secondly, they denote the spatial position as English and Korean Ps do. Their absence leads to ungrammaticality of the whole phrase (17b). Thirdly, they cannot be independently used, but their synonymic nouns can.¹⁴ So (18a) is ungrammatical. Fourthly, they cannot be coordinated with nouns. Thus, (19a) is not a good sentence. Interestingly, unlike Korean, Chinese Ps themselves cannot be coordinated like (19d).¹⁵ Fifthly, they cannot be modified by adjectives such as *zui* ‘right, very’ but their synonymic nouns can, as shown in (20).

- (17) a. *zai* *zhuozi* *shang*
 At table on
 on the table
- b. **zai* *zhuozi*
- c. *zhuozi shang*

¹³ Some scholars summarize 14 words because some words have the same semantic interpretation. Here we simply show them all, 17 words in total:

shang (up), *xia* (down, under), *zuo* (left), *you* (right), *qian* (before, in front of), *hou* (after, behind), *dong* (east), *nan* (south), *xi* (west), *bei* (north), *li* (inside), *wai* (outside), *jian* (middle), *zhong* (middle), *nei* (inside), *pang* (side), *bian* (side)

¹⁴ The monosyllabic words (Ps) can take a suffix such as *mian*, *bian*, *tou*, etc to form a synonymic noun. For example, *shang* (up) + *tou* (suffix) = *shangtou* (upside, upward). Only monosyllabic ones are Lexical Ps.

¹⁵ Probably Chinese Ps is more highly grammaticalized compared to Korean Ps.

- (18) a. Mao shui **zai yizi shang**, *bushi ~~yizi~~ xia.
 Cat sleep at chair on, not ~~chair~~ under.
The cat sleeps on the chair, not under it.
- b. Mao shui **zai yizi shangmian**, bushi ~~yizi~~ xiamian.
 Cat sleep at chair onside, not ~~chair~~ underside.
- (19) a. ***zai** [PPyizi shang] he [DPzhuozi xiamian]
 At chair on and table underside
On the chair and under the table.
- b. zai [PPyizi shang] he [PPzhuozi xia]
- c. zai [DPyizi shangmian] he [DPzhuozi xiamian]
- d. *zai zhuozi [Pshang] he [Pxia]
- (20) a. *Mao shui **zai shujia zui shang**.
 Cat sleep at bookshelf very up¹⁶
- b. Mao shui **zai shujia zui shangmian**.
 cat sleep at bookshelf upside
The cat sleeps on the very top of the bookshelf.

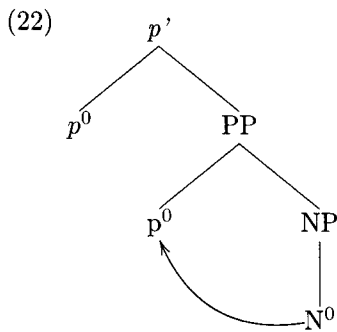
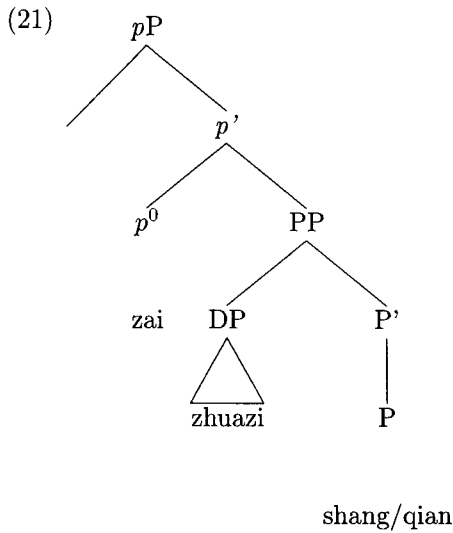
So far, we can illustrate (16a) and the P part of (2d) following our generalized *pP*-shell analysis in (21). One may doubt why P doesn't take a complement. If they are grammaticalized nouns, we can assume that their preexistence could be bare nouns occupying N⁰ position, while the whole NP is a complement of a null P. Grammaticalization triggers the bare noun to undergo head movement to P⁰, as shown in (22).¹⁷

¹⁶ An anonymous reviewer commented on the exact translation of the word, 'zui'. 'Zui' in Chinese seems controversial in its meaning; however, it is parallel with 'very'(Adjective) in English. Consider the following examples both in English and Chinese:

- (i) "In the very beginning of the Middle English period,"
- (ii) "zai Mingchao de zui kaishi"
 At Ming Dynasty POSS very beginning
at the very beginning of the Ming Dynasty.

Therefore, we can safely say that 'zui' is a legitimate translation of 'very'.

¹⁷ A reviewer points out the potential problem with the structural position of 'zhuozi'; 'zhuozi' being a GROUND, it might as well be a Complement of P rather than a Specifier of the same category. This particular issue is not our immediate concern. However, it can be suggested that the DP in question starts from the Complement position and moves to the Spec. The triggering factor for this movement seems dubious, but it has been proposed in Huang (2009). Or more plausibly, Aboh (2009) has proposed a DP within Spec-position of PP.



By the proposal above, we are able to (1) tell why some Ps have intrinsic/referential meaning and some Ps don't, (2) eliminate the controversy over functional vs. lexical status of the category P, (3) justify the process of grammaticalization, and (4) maintain the X-bar theoretic consistency from a cross-linguistic perspective.

5. Conclusion

Based on the diversity in the structure of Ps in English, Korean, and Chinese, we have argued that these languages can be better analyzed if we accept *pP*-shell approach in that there is a functional layer above Lexical P. Svenonius' illuminating but complex ideas on *pP*-Shell approach have been advocated and generalized in this paper so that just like *vP*-VP shells, English complex PP, Korean Postposition Phrase, and Chinese Circumpositional Phrase can be uniformly accounted for. Therefore, what is common in those, if not all, languages, is that there is a functional *p* and lexical P. In particular, the difference amongst languages is the directionality of *p* and P. In English, both *p* and P "obeys" the Head Parameter of Head-first so that both *p* and P precede their complements. Korean, on the other

hand, is on the other side of the scale so that both *p* and P follow their complements. Thus, Korean, too obeys the Head parameter of Head-final. In Chinese, category P keeps head-initial, which doesn't violate Huang's (1982) X-bar schema of Chinese phrase structure.¹⁸ Also, Chinese Localizers which have long been considered to be a Postposition are now under the category of Prepositions, which is a substantial simplification of the theory of grammar.

Further study of Chinese Lexical Ps may reveal that even monosyllabic localizers (i.e. Lexical Ps) are getting functional.¹⁹ Assume that the grammaticalizational route 'relational noun → secondary adposition → primary adposition → agglutinative case affix → fusional case affix' (Hopper and Traugott, 2003, Van Gelderen, 2008) is on the right track, those lexical Ps are still on the verge of "grammaticalization".

One of the advantages of our analysis is that it resolves the long controversy of whether P is a lexical or functional. The category P can actually be either functional or lexical within the *Split-P* hypothesis. Or the controversy over the vagueness of the categorial status P, why some Ps seem to have lexical meanings, while others are purely linkers, can be better understood. Furthermore, some inconsistency with respect to X-bar theoretic analysis can be banished under our analysis. In particular, the optimality of P within English complex PPs is accounted for under the *pP-Shell* approach advocated if the finer-grained clausal architecture we have proposed for the category P is adopted.²⁰

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¹⁸ X-bar Schema of Chinese Phrase Structure in Huang (1982):

- a. [$x^n X^{n-1} YP^*$] iff $n=1, X \neq N$
 b. [$x^n YP^* X^{n-1}$] otherwise

If $X=P$, P' should be head-first as others. Liu (2002) and others' proposal that the localizers (i.e. Lexical P in our analysis) are postpositions therefore violates Huang's schema. Unfortunately they leave this problem aside.

¹⁹ Liu (2002) gives the following examples to show that Lexical Ps (postpositions in his gloss) are getting functional. In (i), P can be substituted by other Ps but the meaning maintains. In (ii), P can be substituted by antonyms (*shang* 'up' vs. *xia* 'under') without affecting the semantics of the whole sentence.

- (i) Nide haizi zai wo shou *shang/li*.
 Your child at my hand on/in
 Your child is in my hands. . . (kidnap)
- (ii) Haizi zai di *shang/xia* wan.
 Child at ground on/under play
 The child is playing on the ground.

²⁰ A remaining potential argument against our proposal is that this analysis assumes too many functional categories. It is our speculation that our brain cells and neural circuitry can handle the complexity of functional categories much faster than one can imagine, as implicated in many biolinguistic studies such as Caramazza & Shapiro (2004), Grodzinsky (2004) in Jenkins(2004).

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