The Axial Part Phrase in Japanese

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Abstract

In this paper, I investigate the categorial status of spatial terms in locative/directional expressions in Japanese. I will show that a certain class of spatial terms have a distinct categorial status from both regular postpositions and nouns. On one hand, syntactic diagnostics such as doubling, coordination by to, and co-occurrence with demonstratives indicate that these spatial terms belong to a nominal category rather than to a postpositional category. On the other hand, the fact that these spatial terms are modified by range modifiers indicates that they are more similar to regular postpositions than to nouns. On the basis of these diagnostics, I will argue that spatial terms in Japanese need to be assigned a new category Axial Part Phrase which is proposed by Svenonius (2006).

1. Introduction

Cross-linguistically complex adpositional phrases of space relations such as in front of in English consist of an adpositional head in and a spatial term front that is a complement of the adposition. Like English, complex adpositional phrases of space relations in Japanese consist of spatial terms and regular postpositions, as illustrated by the example in (1).

(1) Taro-ga basu-no mae-ni tatteiru

\[ T\text{-NOM } bus\text{-GEN front-LOC standing}\]

‘Taro is standing in front of the bus’

The categorial status of these spatial terms is not well studied in the literature on Japanese syntax. At first glance, however, they seem to belong to a nominal class due to the fact that they can be followed by a case-marker that typically marks a nominal constituent, as illustrated in (2).

(2) Taro-ga basu-no mae-o arukimawatta

\[ T\text{-NOM } bus\text{-GEN front-ACC walked.around}\]

‘Taro walked around in front of the bus’

In current literature, Svenonius (2006) proposes that these spatial terms have a syntactic status that is distinguished both from regular prepositions

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and regular nouns, which he calls Axial Part. In Japanese, syntactic diagnostics also indicate that the spatial terms appearing in the postpositional environment are neither regular nouns nor regular postpositions. This paper attempts to show that spatial terms in spatial postpositional phrases in Japanese should be categorially distinguished from regular postpositions and regular nouns and they should be given a new category such as Axial Part.

The organization of the paper is as follows. In section 2, I claim that the spatial terms should be distinguished from postpositions on the basis of doubling. Section 3 provides the distributional similarity between the spatial terms and regular nouns based on the coordination facts and co-occurrence with demonstratives. Despite the similarities, section 4 claims that spatial terms do not project full DPs, since they lack some prototypical noun syntax with regard to floating quantifiers and since they show adjectival properties in terms of *ma* affixation. In section 5, I show that the spatial terms are more similar to regular postpositions based on the facts regarding modification. Section 6 gives an analysis.

2. Distinguishing spatial terms from postpositions

2.1. Regular postpositions

Spatial relations in Japanese can be expressed by a closed class of particles *de* ‘in/on/at’, *ni* ‘in/on/at/to’, *e* ‘to’, *made* ‘to/up to’ and *kara* ‘from’ that are suffixed to nouns. Locational relations are expressed by *ni* and *de*, whereas directional relations are expressed by *ni*, *e*, *made* and *kara*, as illustrated by the examples below:

(3) a. Taro-ga kooen-de hashitta
   
   *T-NOM park-IN ran*
   
   ‘Taro ran in the park’

b. Taro-ga isu-ni suwatta
   
   *T-NOM chair-ON sat*
   
   ‘Taro sat on the chair’

(4) Taro-ga kooen-e/kara hashitte-kita
   
   *T-NOM park-TO/ FROM ran-came*
   
   ‘Taro ran to/from the park’

From now on I will gloss postpositional particles that are used in locative expressions as ‘LOC’, and the postpositional particles that are used in directional expressions as ‘DIR’.

In addition to these regular postpositions, Japanese contains special locative words like *mae* ‘front’, which can be called spatial terms. These spatial terms are combined with regular postpositions in order to express spatial relations projected from the axes of the object such as *mae-de* ‘in front (of)’. The tables in (5) and (6) provide examples of spatial terms.
followed by a locative postposition *de* and a directional postposition *e*.

(5) Spatial terms followed by a locative postposition *de*

| spatial terms-P | gloss   |
|-----------------|---------|
| mae-de          | front-LOC |
| ushiro-de       | behind-LOC|
| yoko-de         | beside-LOC|
| naka-de         | inside-LOC |
| ue-de           | above-LOC |
| shita-de        | below-LOC |

(6) Spatial terms followed by a directional postposition *e*

| spatial terms-P | gloss   |
|-----------------|---------|
| mae-e           | front-DIR |
| ushiro-e        | behind-DIR|
| yoko-e          | beside-DIR|
| naka-e          | inside-DIR |
| ue-e            | above-DIR |
| shita-e         | below-DIR |

Intuitively one might think that spatial terms belong to the class of postpositions by looking at the English glosses. However, spatial terms and postpositions exhibit distinct syntactic behaviors, which suggest that the spatial terms are distinct from regular postpositions. In the next subsections, I will show the differences.

### 2.2. Doubling

Postpositions may allow doubling, whereas spatial terms do not. Kuno (1973) observes that there is a very peculiar phenomenon of particle doubling that applies only to some particles. For example, postpositions such as *ni*, *e* and *de* may be duplicated, as illustrated by an example in which a locative postposition *de* occurs twice in (7).

(7) Boku-wa Tokyo-de-de-wa tomatta ga, Osaka-de-de-wa
    I-TOP T-LOC-LOC-TOP stay,PAST but, Osaka-LOC-LOC-TOP
    tomaranakatta
    stay,NEG,PAST
    ‘I stayed in Tokyo, but did not stay in Osaka’

Doubling takes place when a PP receives a contrastive focus. This is shown by the fact that the doubling is not allowed when the PP is not followed by a particle *wa* that expresses a contrastive focus. Compare the sentence in (7) which contains a PP followed by a contrastive *wa* and a related sentence in (8) which lacks a contrastive *wa*.
In (8) the lack of the contrastive *wa in the PP *Tokyo-de-de makes the sentence ungrammatical, indicating that a PP must be contrastively focused in order for doubling to take place.

I assume that the doubling of a postposition does not give a semantic effect, since the truth conditions of the sentence with doubling and the ones without doubling are exactly the same except that a PP receives a contrastive focus in the doubling construction. The sentence in (9) is a non-doubling counterpart of the doubling construction in (7). Both (7) and (9) are true under the same truth conditions.

Doubling seems to apply only to functional categories and not to lexical categories. Regular nouns do not double. In (10), *kodomo-wa and *otona-wa receive contrastive focus, however they cannot be duplicated as illustrated by the example in (11).

There are cases where doubling may seem to apply to lexical categories such as a noun.

The duplication of *kodomo ‘child’ above, however, is not an instance of doubling, since the duplicated *kodomo *kodomo changes the meaning of *kodomo. A noun *kodomo means ‘child’, whereas the duplicated form *kodomo *kodomo means ‘childish’. Hence, we should distinguish doubling of postpositions from an instance of reduplication of the lexical categories. Doubling is a syntactic operation that does not give a semantic effect and it applies to...
The Axial Part Phrase in Japanese

functional categories, while reduplication gives rise to a semantic effect and it applies to lexical categories.

If spatial terms belong to a category of regular postpositions, they should undergo doubling just like postpositions such as de, e and ni. There are some cases in which the multiple occurrence of a spatial term is possible.

(13) Mary-ga Taro-no mae-no mae-ni suwatteiru
    M-NOM T-GEN front-GEN front-LOC sit
    ‘Mary is sitting in front of the front row of Taro’

This is not an instance of doubling, however, since the second mae takes part in the interpretation. Compare the sentence with two instances of mae in (13) with the sentence with one mae in (14).

(14) Mary-ga Taro-no mae-ni suwatteiru
    M-NOM T-GEN front-LOC sit
    ‘Mary is sitting in front of Taro’

The truth conditions of the sentence in (14) are different from the truth conditions of the sentence in (13) which contains two instances of mae. Since doubling of postpositions does not change the truth conditions of the sentences, the multiple occurrence of the spatial term mae in (13) is not doubling. If both regular postpositions and spatial terms belong to the same categorial membership, doubling should equally apply to both of them. The fact that doubling only applies to regular postpositions not to spatial terms indicate that they should not belong to the same category.

3. The nominal properties of spatial terms

If spatial terms are not regular postpositions, what are they? Since they are case marked, as we have seen in (2), one may suspect that they are nouns. This section demonstrates that the spatial terms exhibit some noun syntax.

3.1. Coordination by to ‘and’

Japanese has a coordination morpheme to ‘and’ that connects only nouns Kuno (1973). When other categories such as verbs, adjectives and clauses are coordinated, they use the gerundive forms.

(15) Taro to Ziro-ga subayaku hashitta (Noun)
    T and Z-NOM quickly ran
    ‘Taro and Ziro ran quickly’

(16) a. waka-ku-te utukushi-i musume (Adjective)
    young-KU-TE beautiful-i girl
    ‘young and beautiful girl’
b. *waka-ku-to  utukushi-i musume
   young-ku-and beautiful-i girl
   (‘young and beautiful girl’)  

(17) a. Taro-ga tabe-te nonda (Verb)
   T-NOM eat-TE drank
   ‘Taro ate and drank’

b. *Taro-ga tabe-to nonda
   T-NOM eat-and drank
   (‘Taro ate and drank’)

As shown in the examples above, regular nouns use *to whereas adjectives and verbs use gerundive forms marked by *te for coordination. Spatial terms pattern with the regular nouns in this respect, since they are also coordinated by *to.

(18) Taro-ga ie-no mae to ushiro-ni benchi-o oita
    T-NOM house-GEN front and behind-LOC bench-ACC put
    ‘Taro put a bench in front and behind the house’

Contrast (18) with the ungrammatical examples in which a postposition is coordinated with another postposition by *to and an example in which a PP is coordinated with another PP by *to.

(19) a. *Kuuoo-e to kara
    airport-to and from
    (‘to and from the airport’)

b. *Kuuoo-e to kuuoo-kara
    airport-to and airport-from
    (‘to the airport and from the airport’)

The fact that regular nouns and spatial terms are both coordinated by *to, whereas regular postpositions cannot be coordinated by *to, indicates that the spatial terms are more similar to regular nouns than to regular postpositions.

3.2. Demonstratives

Demonstratives ko-no ‘this’, so-no ‘that’, a-no ‘that over there’ appear prenominally when they modify nouns.

(20) ko-no /so-no /a-no
    this-GEN/that-GEN/that,over,there-GEN house
    ‘this/that/that house’

Like regular nouns, spatial terms can be preceded by demonstratives.
The Axial Part Phrase in Japanese

(21) Kuruma-o ko-no /so-no mae-ni tomete!
car-ACC this-GEN/that-GEN front-LOC park
  a) ‘Park the car here/there in front!’
  b) ‘Park the car in front of this/that!’

(21) gives rise to two interpretations: ‘here/there in front’ in (21a) and ‘in front of this/that’ in (21b). At first sight, therefore, one might suspect that demonstratives ko-no and so-no are phonologically reduced forms of demonstrative pronouns kore and sore in the (21b) reading. If this is the case, ko-no and so-no are Ground DP complements rather than modifiers of mae in the (21b) reading, just like a demonstrative pronoun kore in an example below in (22).

(22) Koko-ni terebi-ga aru. Kore-no mae-ni oite!
    here-LOC TV-NOM COPL this.one-GEN front-LOC put
    ‘Here is a TV. Put (it) in front of this one’

In (22) the pronoun kore is a Ground complement of mae, as the translation indicates.

However, ko-no/so-no are not reduced forms of the demonstrative pronoun kore-(no)/sore-(no). First, if ko-no/so-no were reduced forms of kore-(no)/sore-(no), it would be possible to replace ko-no/so-no with demonstrative pronouns kore/sore without changing the meaning.

(23) a. kore-no /sore-no nedan
    this.one-GEN/that.one-GEN price
    ‘the price of this/that’
  b. ko-no /so-no nedan
    this-GEN/that-GEN price
    ‘this/that price’

However, as the translations show, (23a) and (23b) give different meanings, which indicates that ko-no/so-no are not the reduced forms of kore-no/sore-no.

Furthermore, ko-no may cooccur with kore-(no).

(24) kore-no ko-no mae-ni
    this.one-GEN this-GEN front-LOC
    ‘here in front of this one’; *in front of this’

In (24), the Ground phrase is kore, indicating that ko-no is not a complement but a modifier of mae. Again if ko-no is a reduced form of kore, it should be possible to replace kore with kono. This replacement is not possible, however.

(25) *ko-no ko-no mae-ni
    this-GEN this-GEN front-LOC
    (‘here in front of this one’)
Hence *ko-no* is not a reduced form of demonstrative pronoun but is a modifier of the spatial terms. Spatial terms can be modified by demonstratives and are like regular nouns in this respect.

4. Difference between nouns and spatial terms

This section argues that despite the similarities between spatial terms and nouns, the spatial terms cannot be of the same category as true nouns in the strict sense due to the fact that they lack prototypical nominal syntax.

4.1. Floating quantifier

When a noun is counted or quantified in Japanese, it is associated with numeral quantifiers. Numeral quantifiers may appear prenominally, in which case they are connected to its modifying noun by a genitive particle *no*.

(26) Taro-ga subete-no omocha-o kinoo kowashita
   *T-NOM all-GEN toy-ACC yesterday destroyed*
   ‘Taro destroyed all the toys yesterday’

Alternatively, numeral quantifiers can be separated from the nouns which they modify without changing the meaning of the sentence significantly.

(27) Taro-ga omocha-o kinoo subete kowashita
   *T-NOM toy-ACC yesterday all destroyed*
   ‘Taro destroyed all the toys yesterday’

This ‘floating quantifier’ is licensed by argument NPs. Oblique PPs do not license a floating quantifier.

(28) a. Taro-ga tegami-o subete-no gakusei-kara moratta
   *T-NOM letter-ACC all-GEN student-from received*
   ‘Taro got letters from all the students’

b. *Taro-ga tegami-o gakusei-kara subete moratta
   *T-NOM letter-ACC student-from all received*
   (‘Taro got letters from all the students’)

If spatial terms are of nominal category, they should be able to license the floating quantifier. Contrary to this expectation, spatial terms cannot combine with floating quantifiers.

(29) a. Taro-ga kyooshitsu-no naka-ni hana-o kazatta
   *T-NOM classroom-GEN inside-LOC flower-ACC decorate*
   ‘Taro decorated the classroom with flowers’

b. *Taro-ga kyooshitsu-no naka-ni subete hana-o
   *T-NOM classroom-GEN inside-LOC all flower-ACC decorate*
   (‘Taro decorated the classroom all over with flowers’)

85
The Axial Part Phrase in Japanese

The ungrammaticality is due to the categorial membership of the spatial term. This is shown by the fact that \textit{kyooshitsu-nai}, which is a nominal counterpart of \textit{kyooshitsu-no naka}, combines with the floating quantifier.

(30) Taro-ga kyooshitsu-nai-o subete hana-de kazatta
\begin{tabular}{l}
\textit{T-NOM classroom-interior-ACC all flower-with decorate} \\
\textit{‘Taro decorated the classroom all over with flowers’}
\end{tabular}

A spatial term \textit{kyooshitsu-no naka} and a noun \textit{kyooshitsu-nai} give rise to approximately the same meaning. In (30) \textit{kyooshitsu-nai}, like other regular nouns, combines with the floating quantifier, whereas in (29b) \textit{kyooshitsu-no naka} does not. This contrast indicates that the spatial term \textit{kyooshitsu-no naka} should be distinguished from the category of nouns.

4.2. Adjectival properties: \textit{Ma} affixation

In this sub-section, I will demonstrate that spatial terms exhibit adjectival behavior with regard to \textit{ma} affixation. There is a derivational affix \textit{ma} that can be added to some adjectives. When \textit{ma} is attached to an adjective, the meaning of it will be ‘intensified’, as illustrated by the examples below:

(31) a. kura-i ‘dark’ $\rightarrow$ ma-kkura-na ‘really dark’
    b. aka-i ‘red’ $\rightarrow$ ma-kka-na ‘really red’
    c. kuro-i ‘black’ $\rightarrow$ ma-kkuro-na ‘really black’
    d. shikaku-i ‘quadrilateral’ $\rightarrow$ ma-shikaku-na ‘regular square’

\textit{Ma} affixation is sensitive to the categorial membership of the word, and it applies only to adjectives. The examples below demonstrate that \textit{ma} does not combine with other categories, like verbs, nouns and postpositions.

(32) a. oko-ru ‘get angry’ $\rightarrow$ *ma-oko-ru ‘really get angry’
    b. gakusei ‘student’ $\rightarrow$ *ma-gakusei ‘really student’
    c. ie-kara ‘from home’ $\rightarrow$ *ie-ma-kara ‘really from home’

There are however, some instances in which \textit{ma} attaches to nouns. One might, therefore, think that \textit{ma} is sensitive to the meaning of the word rather than the categorial membership of the word.

(33) a. wata ‘cotton’ $\rightarrow$ ma-wata ‘floss’
    b. natu ‘summer’ $\rightarrow$ ma-natu ‘mid-summer’
    c. tara ‘cod’ $\rightarrow$ ma-dara ‘cod’

However, \textit{ma} affixation is sensitive to categorial status, not to the meaning of the word. I assume that cases of \textit{ma} attaching to nouns are instances of idioms. The meaning after \textit{ma} attachment to a noun, in most cases, is rather idiomatic and \textit{ma} affixation does not give rise to the ‘intensified’ readings.
Furthermore, if *ma* affixation is a semantic process, we predict that *ma* attaches to both nouns and adjectives that have similar meanings. This is not the case, however. For instance, *akairo*—a nominal counterpart of an adjective *akai*, to which *ma* attaches—does not combine with *ma*.

(34) a. aka-i (Adj) → ma-kka-na “*ma-red*” ‘really red’
    b. akairo (Noun) → “ma-kka-iro “*ma-red.color*” (‘really red color’)

The contrast between (34a) and (34b) indicates that *ma* affixation is sensitive to the category and not to the meaning of the word to which it attaches. Hence I assume that *ma* affixation applies to adjectives.

Spatial terms productively combine with the intensifier *ma*:

(35) a. mae ‘front’ → man-mae ‘right in front’
    b. ushiro ‘behind’ → ma-ushiro ‘right behind’
    c. ue ‘above’ → ma-ue ‘right above’
    d. shita ‘below’ → ma-shita ‘right below’
    e. yoko ‘beside’ → ma-yoko ‘right next to’

If *ma* affixation is a syntactic operation which applies to adjectives not to nouns, the fact that *ma* also attaches to spatial terms such as *mae* indicates that they have an adjectival property in this respect.

Again, *ma* does not pick out the meaning of the spatial terms but it seems to be sensitive to the category of them. Contrast a spatial term *mae* ‘front’ and a related noun *zenbu* ‘front part’. *Zenbu* is a noun, since it patterns with regular nouns in all syntactic diagnostics, i.e. (i) it is coordinated by *to* and (ii) it licenses floating quantifiers as illustrated by examples in (36a,b) respectively.

(36) a. Sharyoo-no zenbu to koobu-ni hana-o
  wagon-GEN front.part and back.part.LOC flowersACC
  kazatta
  decorated
  ‘(I) decorated the front part and the back part of the wagon
  with flowers’

    b. Sharyoo-no zenbu-o subete nuno-de kabaa-o
  wagon-GEN front.partACC all cloth-with sheet.ACC
  kaketa
  covered
  ‘(I) covered all of the front parts of the wagon with a sheet of
  cloth’

Unlike *mae*, *zenbu* does not combine with the *ma* affix.

(37) *ma-zenbu
The Axial Part Phrase in Japanese

The fact that zenbu is a nominal paraphrase of mae and minimally differs from it in not combining with the ma affix shows that ma affixation does not apply to a noun category. From this fact and the fact that spatial terms combine with ma we can draw a conclusion that the spatial terms such as mae show an adjectival property in terms of the ma affixation.

5. Modifiers

5.1. Attributive adjectival modifiers

Regular nouns combine with attributive adjective modifiers, whereas spatial terms do not.

(38) a. Ie-no kitanai mae-niwa-o soozishita
   house-GEN dirty front-garden-ACC cleaned
   ‘(I) cleaned the dirty garden in front of my house’

b. *Ie-no kitanai mae-ni benchi-o oita
   house-GEN dirty front-LOC bench-ACC put
   ‘(I) put a bench in the dirty front of my house’

At first glance it seems that the ungrammaticality comes from the semantic property of the spatial terms rather than their syntactic property, since a related noun omote ‘front space’, which has a meaning similar to that of mae, also disallows attributive adjectives.

(39) a. Ie-no omote-o soozishita
   house-GEN front.space-ACC cleaned
   ‘(I) cleaned the front space of my house’

b. *Ie-no kitanai omote-o soozishita
   house-GEN dirty front.space-ACC cleaned
   ‘(I) cleaned the dirty front space of my house’

One could argue that kitanai mae ‘dirty front’ is ungrammatical due to the fact that ‘front’ has only one front, therefore cannot be modified by an restricted adjectival modifier irrelevant to the category.

If so, other spatial terms such as yoko ‘beside/side’ should be able to combine with a restricted modifier. However, this is not the case.

(40) *Ie-no kitanai yoko-ni neko-ga suwatteiru
   house-GEN dirty beside-LOC cat-NOM sitting
   ‘A cat is sitting dirty beside the house’

On the other hand, a regular noun yokomen that has a meaning similar to that of yoko can be modified by the restricted modifier.

(41) Hako-no kitanai yokomen-ni mushi-ga tomatteiru
   box-GEN dirty side-LOC insect-NOM attach
   ‘An insect is on the dirty side of the box’
5.2. Degree modification

Schwarzschild (2006) argues that degree expressions are divided into *degree* and *range* in relation to a scale, which he defines as a set of strictly ordered points. In his terms, *degree* is defined as a point on a scale, whereas *range* is a set that contains two points in a particular scale as well as all the points between them. Examples of *degree* and *range* are illustrated below:

(42) Degree
very/too/so/Enough/as/more, less, -er

(43) Range
much/a lot/a little/little/a bit/Enough/measure phrases

In Japanese, degree modifiers such as *totemo* ‘very’ freely modify regular adjectives, whereas they do not modify regular nouns, verbs and postpositions.

(44) a. Ano biru-ga *totemo* takai
that building-NOM very high
‘That building is very high’
b. *Taro-ga totemo* gakusei da
Taro-NOM very student COPULA
(‘*Taro is a very student’)
c. *Taro-ga totemo* aruita
T-NOM very walked
(‘*Taro very walked’)
d. *Taro-ga totemo* ie-kara aruita
T-NOM very house-DIR walked
(‘*Taro walked very from home’)

Since *totemo* exclusively combines with adjectives, this can be used to test the ‘adjectivehood’ of spatial terms. In the previous section, I showed that spatial terms are more similar to adjectives in terms of *ma* affixation. If spatial terms belong to the categorial membership of adjectives, they should be modified by degree modifiers. However, the spatial terms cannot be modified by *totemo*.

(45) *Keikan-ga Taro-no ie-no totemo mae-ni tatteiru
policeman-NOM T-GEN house-GEN very front-LOC standing
(‘*A policeman is standing very in front of Taro’s house’)

The ungrammaticality of (45) shows that spatial terms are distinct from regular adjectives.
Zwarts and Winter (2000) observe that locative PPs can be modified by expressions that involve some measure of distance or duration, which are called measure phrases (cf. (43)).

(46) two meters behind the house

Japanese data conforms to the observation of Zwarts and Winter. Like English, Japanese PPs take measure phrases.

(47) Keikan-ga ni-meetoru Taro-kara hanarete aruiteiru
policeman-NOM two-meter T-from apart walking
‘A policeman is walking two meters from Taro’

Adjectives and regular nouns, on the other hand, cannot be modified by measure phrases in Japanese, as illustrated by the examples below.

(48) a. *Ano biru-ga ni-meetoru takai
that building-NOM two-meter high
(‘That building is two meters high’)
b. *Taro-ga ni-meetoru shinchoo da
T-NOM two-meter height copula
(‘Taro is two meter height’)

The contrasts between (47) and (48) indicate that measure phrases select postpositional elements as their modifier. Like PP, spatial terms productively combine with measure phrases.

(49) Keikan-ga Taro-no ie-no ni-meetoru mae-ni
tatteiru
policeman-NOM T-GEN house-GEN two-meter front-LOC
standing
‘A policeman is standing two meters in front of Taro’s house’

In this respect, spatial terms are more similar to postpositions than regular adjectives.

(50) Conclusions so far

| tests          | Noun | Adjective | Postposition | Spatial term |
|----------------|------|-----------|--------------|--------------|
| doubling       | no   | no        | yes          | no           |
| coordination by to | yes | no        | no           | yes          |
| demonstrative  | yes  | no        | no           | yes          |
| floating quantifier | yes | no        | no           | no           |
| adjectival modifier | yes | no        | no           | no           |
| degree modifier | no   | yes       | no           | no           |
| ma affixation  | no   | yes       | no           | yes          |
6. Analysis

6.1. Spatial terms are AxParts

I apply a layered PP structure proposed by Svenonius (2005-06) and Svenonius (2006) for the locative/directional phrases that contain spatial terms.

On the basis of the view that spatial adpositions involve an asymmetric Figure-Ground relation, Svenonius (2004) proposes an adpositional system that consists of a head P and a Ground DP as its complement.

In his system, the head P can be further decomposed into a series of functional phrases which comprises a Path head that expresses the relationship of the Path to the Ground (TO/FROM/VIA), a Place head that expresses location (IN/ON/AT/etc.), an Axial Part head that expresses the position of a Figure relative to a Ground represented by its relation to the Ground’s axes, and KP.

(51) PathP
     / \    / \     / \  
    P   PlaceP   AxPartP
       / \     / \     / \  
      Place AxPart KP DP

(52) PathP
     / \    / \     / \  
    to  PlaceP   AxPartP
       / \     / \     / \  
      in  AxPart KP DP
                     of the house

The layered PP system is motivated by complex prepositional phrases in English such as to in front of the house. The ordering of the constituents within such a complex PP nicely matches with the ordering of the heads in the layered PP: the Path head hosts directional prepositions such as to, the Place head hosts locative prepositions such as in, the AxPart hosts spatial terms such as front and KP hosts a Ground phrase such as of the house.

The layered PP system can be applied to the Japanese PPs. Japanese locative expressions such as the one in (53) conforms to the structural relationship between the Path head, Place head, the Axial Part head and
the K head proposed by Svenonius. Assuming a head final structure for Japanese, the base structure of the locative PP in (53) will be (54) which is the mirror image of its English counterpart: the Place head selects the Axial Part head, which selects a K head (no Path, since it is locative), just like English.

(53) Taro-ga ie-no mae-ni tatteiru

‘Taro is standing in front of the house’

\[ TP \\
\quad \text{DP} \\
\quad \text{Taro-ga} \]

\[ \text{TP} \]

\[ \text{DP} \]

\[ \text{T} \]

\[ \text{PRESEN} \]

\[ \text{T} \]

\[ \text{V} \]

\[ \text{tatteiru} \]

\[ \text{PlaceP} \]

\[ \text{PLACE} \]

\[ \text{ni} \]

\[ \text{AxPartP} \]

\[ \text{AxPart} \]

\[ \text{mae} \]

\[ \text{K} \]

\[ \text{ie} \]

\[ \text{no} \]

\[ \text{ie} \]

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(55) a. *Keikan-ga Taro-no ie-no mae-ni
   policeman-NOM T-GEN house-GEN front-LOC
   sugu/ni-meetoru tatteiru
   right/two-meter standing
   ('A policeman is standing right/two meters in front of Taro’s house')

b. Keikan-ga Taro-no ie no sugu/ni-meetoru
   policeman-NOM T-GEN house-GEN right/two-meter
   mae-ni tatteiru
   front-LOC standing
   'A policeman is standing right/two meters in front of Taro’s house'

They cannot, however, precede a Ground phrase.

(56) *Keikan-ga sugu/ni-meetoru Taro-no ie no mae-ni
   policeman-NOM right/two-meter T-GEN house-GEN front-LOC
   tatteiru
   standing
   ('A policeman is standing right/two meters in front of Taro’s house')

They cannot intervene in the middle of a Ground phrase.

(57) *Keikan-ga Taro-no sugu/ni-meetoru ie no mae-ni
   policeman-NOM T-GEN right/two-meter house-GEN front-LOC
   tatteiru
   standing

The ungrammaticality of (55a), (56) and (57) is not due to the unavailability of adverb scrambling. (58) shows that sugu can be freely scrambled when it modifies the VP just like a regular adverb.

(58) Taro-ga (sugu) kooen-ni (sugu) kita
   T-NOM immediately park-DIR immediately came
   ‘Taro immediately came to the park’

The contrast between ungrammatical sentences in (55a), (56) and (57), on one hand, and a grammatical sentence in (55b), on the other hand, shows that modifiers must immediately precede spatial terms.

I adopt an analysis of Adverb Phrases as the unique specifiers of distinct functional projections by Cinque (1999) and assume that modifiers are generated in the specifier position of an Adverb Phrase. Since modifiers must immediately precede spatial terms, I assume that the position of AdvP is right above Axial Part Phrase, as illustrated by a tree diagram in (59):
If this is the base structure of (55b), one must assume that the KP \textit{Taro-no ie-no} moves to in front of AdvP in order to get the right order. However, the movement of KP is not generally allowed. A Genitive marked dependent of the NP cannot be moved in Japanese.

(60) a. Keikan-ga ie-no mado-o yabutta
\textit{policeman-NOM house-GEN window-ACC broke}
\textquoteleft The policeman broke the window of the house\textquoteright

b. *Ie-no keikan-ga mado-o yabutta
\textit{house-GEN policeman-NOM window-ACC broke}
\textquoteleft The policeman broke the window of the house\textquoteright

On one hand, movement of the dependent of NP is generally disallowed. On the other hand, Ground phrase complements in spatial PPs always precede modifiers. This suggests that there is something special going on inside the PP complex. I propose that KPs are rather sitting in a higher position, above AxPartP, in Japanese postpositional constructions, as illustrated by a tree diagram in (61).
A Ground DP obligatorily moves up to KP for case reasons, resulting in the linear order in which the Ground DP phrase *Taro-no ie* precedes the modifier *sugu/ni-meetrou* which precedes the AxPartP *mae*, in (62).
If we assume that KP is higher than the AdvP that modifies AxPartP, as in (62), and further assume that Ground DP complements move to KP for case reasons, we can predict that modifiers always follow Ground complement DPs but must precede spatial terms.

7. Conclusion

In this paper I have attempted to show that spatial terms in spatial PPs should be analyzed as having a distinct categorial status from regular postpositions and regular nouns. I have shown that the spatial terms exhibit some noun syntax on the basis of the coordination facts by to and demonstratives. These are prototypical nominal properties and therefore it seems that spatial terms should belong to a category of a noun. However, whether the spatial terms form full DPs or not is far from obvious, since they lack other prototypical nominal properties. Furthermore, spatial terms show some adjectival properties in terms of ma affixation. The last test in relation to degree/range modifiers, however, shows that the spatial terms are different from adjectives. These ‘strange’ mixed properties of the spatial terms may be deduced from the categorical properties of AxPart in the layered PP system.
References

Cinque, Guglielmo. 1999. *Adverbs and Functional Heads: A Cross-Linguistic Perspective*. Oxford University Press, New York.

Kuno, Susumu. 1973. *The Structure of the Japanese language*. MIT Press, Cambridge, MA.

Schwarzschild, Roger. 2006. Adverbials of degree, range and amount. A handout for Chicago Workshop on Scalar Meaning May 19-20, Chicago.

Svenonius, Peter. 2004. Spatial prepositions in English. Ms. University of Tromsø; available at http://ling.auf.net/lingBuzz/000001.

Svenonius, Peter. 2005-06. Adposition seminar connected to the Moving Right Along project, CASTL, Fall 2005 - Spring 2006. University of Tromsø; available at http://www.hum.uit.no/mra/index.html.

Svenonius, Peter. 2006. The emergence of axial parts. In Nordlyd, Tromsø Working Papers in Language & Linguistics: 33.1, Special Issue on Adpositions, edited by Peter Svenonius and Marina Pantcheva, pp. 49–77. University of Tromsø, Tromsø. Available at http://www.ub.uit.no/baser/nordlyd/.

Zwarts, Joost and Yoad Winter. 2000. Vector space semantics: A model-theoretic analysis of locative prepositions. *Journal of Logic, Language, and Information* 9: 169–211.