

THE HEAD-FINALNESS OF JAPANESE: A MINIMALIST ACCOUNT

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Abstract: The well-known strict PF head-finalness of Japanese is apparently contradictory to Kayne's (1994) linear correspondence axiom and Chomsky's (1995) bare phrase structure theory, which entail that the specifier-head-complement order is the only base order made available by UG. This paper attempts to show that this universal base order hypothesis is tenable even in Japanese by presenting an outline of an essential part of Japanese CP and DP formation within the framework of the minimalist programme. Major theoretical proposals include compulsory overt complement-to-specifier movement, inherent Case theory, and the independent categorial status of inflectional endings.

Keywords: universal base order hypothesis, head-final, Japanese, inflection, minimalism.

1. INTRODUCTION: THE UNIVERSAL BASE ORDER HYPOTHESIS

Kayne's (1994) linear correspondence axiom and Chomsky's (1995) bare phrase structure theory entail that the specifier-head-complement order is the only base order made available by UG. The tree diagram in Fig. 1 expresses this hypothesis.

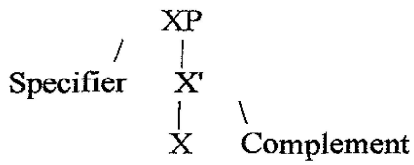

Fig. 1. The universal base order hypothesis.

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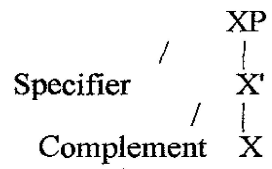

Fig. 2. The base for Japanese in the standard theory.

However, it is well-known that Japanese is strictly head-final at PF. This fact is standardly explained by the specifier-complement-head order at the base as expressed in the tree diagram in Fig. 2.

Therefore, the standard account of the head-finalness of Japanese is contradictory to the universal base order hypothesis. Kayne (1994) suggests that the fact that complements precede their associated head must be reinterpreted as indicating that, in Japanese, complements necessarily appear in specifier positions. In spite of Kayne's (1994) suggestion, the universal base order hypothesis has not been supported in the domain of rigid SOV order languages at PF like Japanese.

This paper attempts to show that the universal base order hypothesis is tenable even in Japanese by presenting an outline of an essential part of Japanese CP and DP formation within the framework of the minimalist programme. The presentation is inevitably very sketchy since the main purpose of this paper is to give a whole picture rather than detailed arguments of small part of it. Full discussion will be found in Oh-ishi (in preparation). Although conventional notations are followed, they can easily be translated into the minimalist equivalents.

2. CP STRUCTURE AT THE BASE

Let us see, first of all, the pattern of Japanese verbal morphology. The Japanese verbal morphology at PF can be formulated as in (1):

(1) Root + IE (+ Auxiliary*);
Auxiliary → Root + IE
(where 'IE' stands for 'inflectional ending'; '*' indicates that the element attached to this sign can recur).

'IE' stands for 'inflectional ending'. Inflectional endings are considered to be a stem-forming element. Most of the forms are straightforwardly segmentable, that is, Japanese inflection assumes the form of agglutination of the Turkish-type rather than the inflectional or fusional morphology of the Latin-type. There are several kinds of inflectional endings, but only adverbial and conclusive are relevant in this paper. They are labelled as shown in (2):

(2) Adverbial IE is labelled as IE(I);
Conclusive IE is labelled as IE(U).

An asterisk '*' in the formulation in (1) indicates that the element attached to this sign can recur. As indicated in the second part of the formulation, auxiliaries also inflect. Therefore, auxiliaries attached to a verbal stem also inflect to form complex stems, to which other auxiliaries may further attach to form more complex verbals.

The formulation in (1) is adopted in this paper as the general pattern of the Japanese verbal morphology. Crucially, we assume (3):

(3) IEs are functional categories that project.

T(ence) is expressed by auxiliaries in Japanese. Therefore, under the universal base order hypothesis, the base of a successful formation of a typical Japanese CP assumes a right-branching structure as depicted in the tree diagram in Fig. 3.

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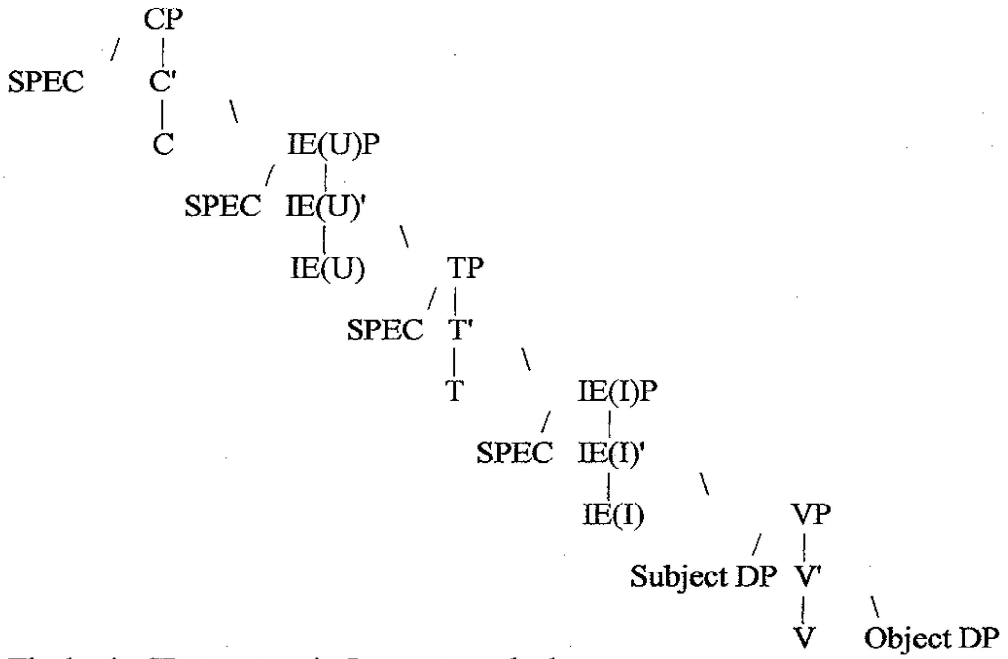

Fig. 3. The basic CP structure in Japanese at the base.

The Subject-inside-VP hypothesis is assumed here, that is, Subject and Object are inserted as the specifier of V and as the complement of V respectively.

3. DP STRUCTURE AT THE BASE

Let us move to DP structure at the base. The formulation in (4) expresses the basic internal pattern of Japanese DP at PF:

(4) NP + K(ase) + D(eterminer)
(where K can be *o* (so-called 'object marker'),
ni (so-called 'indirect object marker', but can mark Subject or direct Object for some predicates; = 'in', 'to'),
e (= 'to'),
de (= 'at'),
to (= 'with'),
kara (= 'from'),
made (= 'until'),
madeni (= 'by'); and
D can be *ga* (so-called 'subject marker', but can mark Object for some predicates),
wa (so-called 'topic marker'; old information),
mo (old information; implies other entity; = 'also').

Members of K have traditionally been recognised as case particles. A group of particles *ga*, *wa*, and *mo* can be considered as Ds, but *ga* is probably a mixed category of K and D. Unfortunately, all the important issues over the membership of Ds and Ks have to be put aside in this paper. See Oh-ishi (in preparation) for detailed discussion. We simply adopt the formulation in (4) as the basic pattern of Japanese DP at PF. Crucially, we assume (5):

(5) Ks and Ds are functional categories that project.

Therefore, under the universal base order hypothesis, the base of a successful formation of a typical Japanese DP assumes a right-branching structure as depicted in the tree diagram in Fig. 4.

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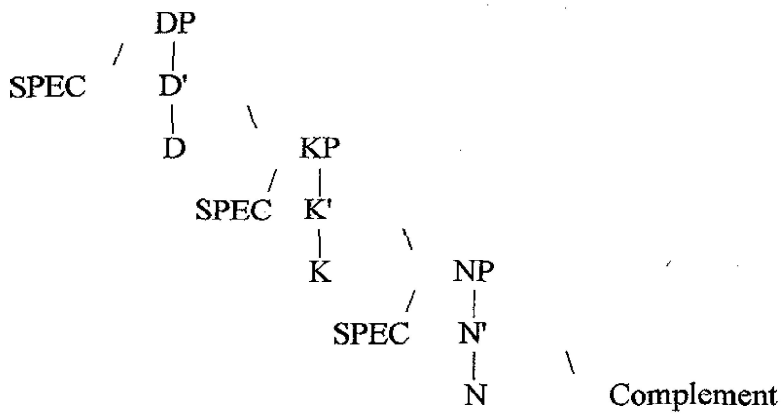

Fig. 4. The basic DP structure in Japanese at the base.

Elsewhere (Oh-ishi, to appear), I suggested that K is a complex of at least two functional categories, but this issue will not be discussed here. Also only the simplest form of N will be considered in this paper. For analyses of various constructions of Japanese DP, see Oh-ishi (in preparation).

4. DP FORMATION

Let us illustrate the formation of a DP *Paul-ni wa*. As shown in Fig. 5, each element of the DP, that is *Paul*, *ni*, and *wa*, is inserted as N, K, and D respectively.

Firstly, notice in Fig. 5 that K has an intrinsic weak [+N] feature. In the minimalist programme, strength of categorial features like weak [+N] must be checked and eliminated. Thus, this weak [+N] in K triggers a covert head-to-head movement of N to K. Since N is [+N], this movement eliminates the weak [+N] in K when N enters into a checking relation with K through this movement, leaving the N with the phonological material of K added at the base. As shown in Fig. 6, this means that, at LF, the nominal complex *Paul-ni* is under K, but, at PF, the phonological features in question are bound under N.

There are at least two things to mention in this operation. First of all, nothing is said about the morphology of complex zero-level objects. It is outside the scope of this paper. Secondly, a weak categorial feature is considered to provoke two operations. One is: "Attract/Move the relevant category with its non-phonological features to the host of the weak categorial feature". The other is: "Transfer the phonological features of the host of the weak categorial feature to the attracted/moved category". The important thing here is that weak categorial features provoke both covert and overt operations. If this interpretation of weak categorial features is correct, the Numeration → λ computation is uniform in the sense that there is no boundary between the overt component and the covert component.

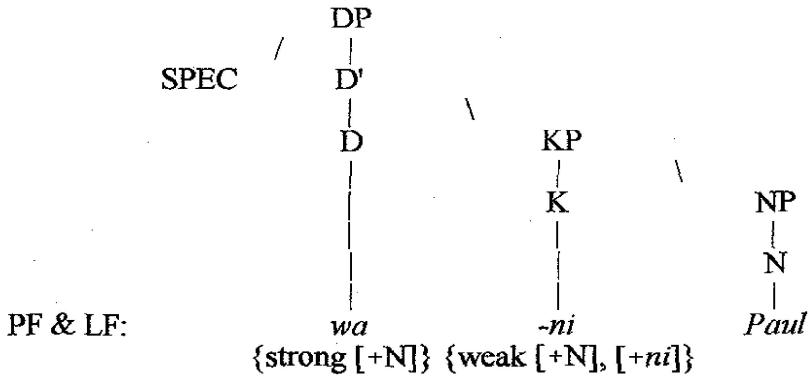

Fig. 5. After the insertion of the lexical items for *Paul-ni wa*.

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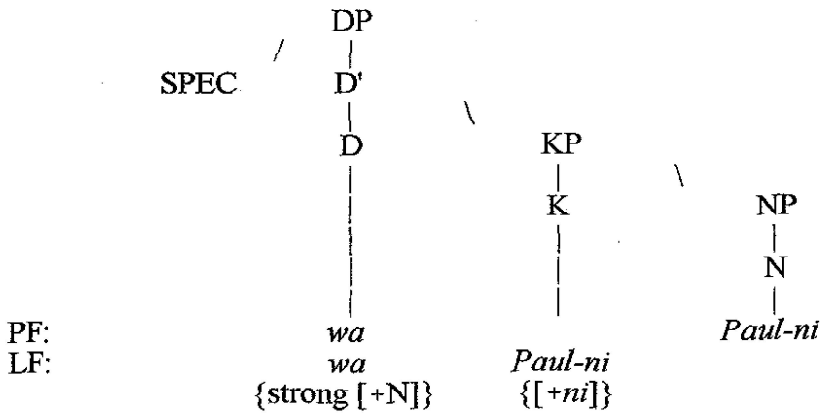

Fig. 6. After the N-to-K movement.

Returning to the DP formation, the next step is the overt movement of the KP as a whole to [SPEC, D] as shown in Fig. 7. This overt movement is triggered by an intrinsic strong [+N] feature of D. The closest [+N] category is found in the already formed syntactic object *Paul-ni*, that is, KP. Thus, when KP enters into a checking relation with D through this movement, the strong [+N] is eliminated.

It should be noted that there seems no principled explanation of why KP has to move as a whole to [SPEC, D] in Japanese. As will be seen in Section 6, the same is the case in IP movement to [SPEC, C]. Partly because of this, it could be that this sort of complement-to-specifier movement is universal for unknown reasons. If so, it can be said that Japanese can tolerate this heavy phonological movement, but that some other languages cannot, and do some phonological compromises like so-called WH-movement only when it is necessary for some reasons imposed by the conditions of the sensorimotor interface.

Now the desirable PF *Paul-ni wa* has been formed with no categorial feature to be eliminated, and we have accounted for the D (i.e. head)-finalness of Japanese DP at PF. However, the syntactic object obtained in Fig. 7 is not a legitimate one yet because it still contains a Case feature [+*ni*]. In the minimalist programme, Case features have to be eliminated. We will come back to this matter in Section 6.

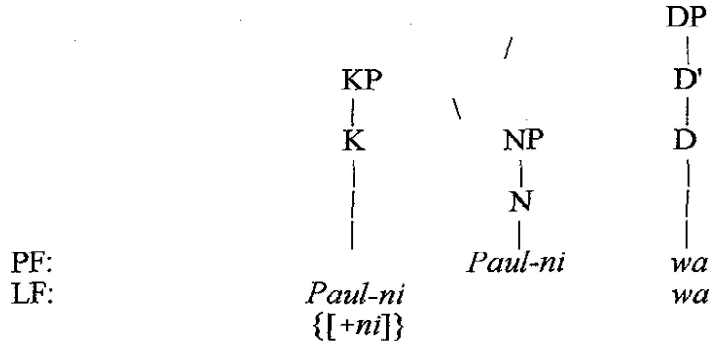

Fig. 7. After the KP-to-[SPEC, D] movement.

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5. THE INHERENT CASE THEORY

Table 1 summarises the possible patterns of the three major Case elements in non-scrambling two arguments' sentences. The Case patterns shown in Table 1 are enough to suggest that Japanese will almost certainly defy any structural Case anlysis.

Table 1. The patterns of the three major Case elements.

Subject	Object
ga	*ga*
ga	*o*
ga	*ni*
ni	*ga*

Thus, we adopt an inherent Case theory of Japanese. In this theory, the verb *deki* (= 'can do'), for instance, has the Case-assigning features in the lexicon as in (6):

(6) *deki* (= 'can do'): {[+*ni*]/[+*ga*], [+*ga*]}
(where '/' indicates optionality of the features of both sides).

Some generalisation of the representation of Case-features is possible, but no attempt for this is made here.

As the lexical item *deki* is chosen from the lexicon, one of the options indicated by the slash is also chosen. Suppose that [+*ni*] is selected rather than [+*ga*] in the first complex of the Case-assigning features in (6). Then, *deki* has the Case-assigning features as in (7):

(7) *deki* (= 'can do'): {[+*ni*], [+*ga*]}.

Since Case-assigning features have to be eliminated in the minimalist programme, they must be checked.

6. CP FORMATION

Let us illustrate the derivation of a clause in (8):

(8) *Paul-ni wa nihongo ga deki =ø -ru =ø.*
Paul -NI WA Japanese GA can+do =IE(I)-PRESENT=IE(U)
'Paul can speak Japanese'.

(where '-' is used between (loosely understood) bound morphemes,
'=' is used between the root and the inflectional ending, and
'+' is used to show that the elements connected by this sign correspond to a single Japanese element)

As we just saw in Section 5, the Case features of the verb *deki* are already fixed. Also, Subject DP *Paul-ni wa* has already been formed as explained in Sections 3 and 4. Object DP *nihongo ga* is formed likewise. These VP-internal objects, together with other lexical items, are inserted in the tree diagram in Fig. 3 in Section 2, and we have a structure as depicted in Fig. 8. Features that must be eliminated are shown in Fig. 8 under each syntactic object.

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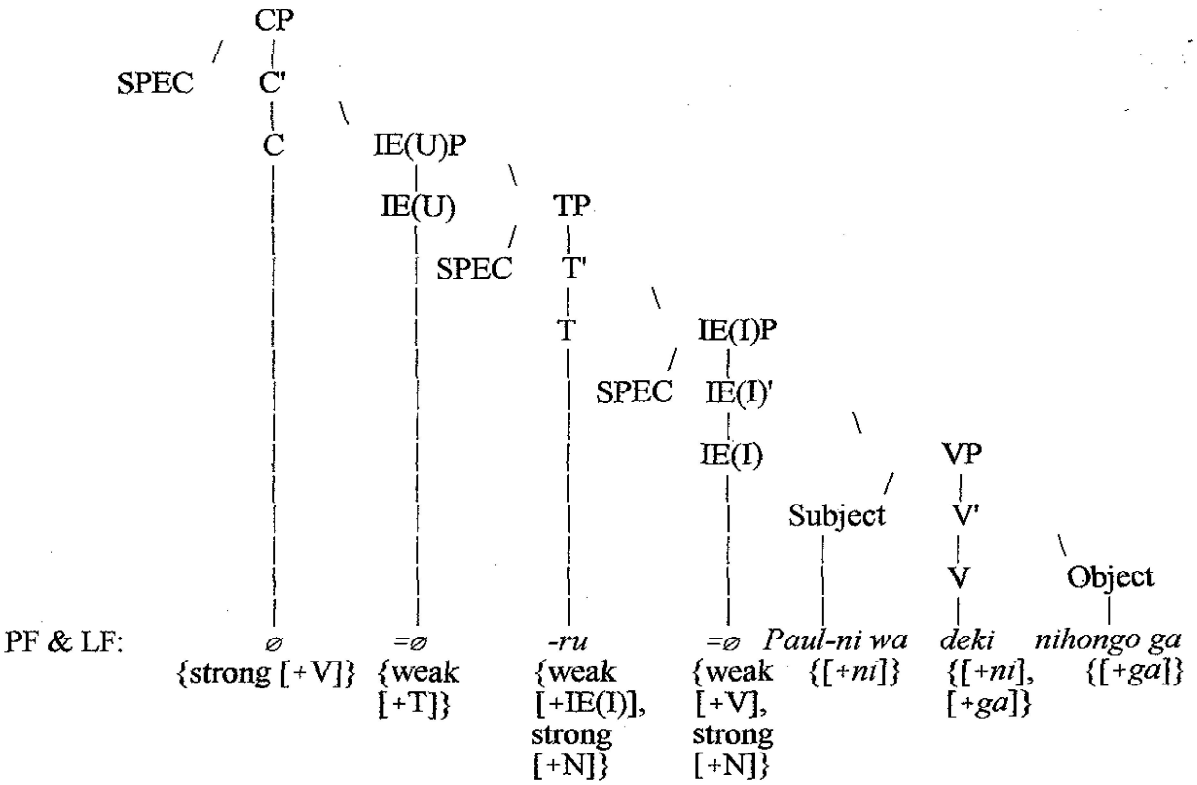

Fig. 8. After the insertion of the lexical items for *Paul-ni wa nihongo ga deki =ø-ru =ø.*

Firstly, notice in Fig. 8 that there are three intrinsic weak categorial features in I: a weak [+V] in IE(I), a weak [+IE(I)] in T, and a weak [+T] in IE(U). I is understood to be a cover-term for the functional categories between C and V. These weak categorial features trigger a series of covert head-to-head movements of V to IE(U). These movements eliminate the weak categorial features in I when the appropriate categories, that is, V, IE(U) and T, enter into a checking relation with them through these movements, leaving the V with the phonological material of I added at the base. As shown in Fig. 9, this means that, at LF, the verbal complex *deki =ø-ru =ø* is under IE(U), but, at PF, the phonological features in question are bound under V.

Secondly, notice in Fig. 8 that there are two strong [+N] features in I, that is, under IE(I) and T. They are optional, and allow variations in number of arguments. These strong categorial features trigger overt movements of the specifier and complement of V to the SPECs of I. These movements eliminate the strong [+N]s in I when the two arguments of V, which are [+N], enter into a checking relation with them through these movements.

And the Case features inside the arguments, i.e. [+*ni*] and [+*ga*], are eliminated when the arguments enter into a checking relation with V, which has the inherent Case features: [+*ni*] and [+*ga*]. As mentioned above, V undergoes a series of covert head-to-head movements to IE(U), so that V can enter into a checking relation with the arguments which are under the SPECs of I at this stage.

While the specifier of V has to move to the SPEC of one of the functional categories in I, the complement of V usually has to move to a lower SPEC in IP than the SPEC to which the specifier of V moves.

These movements are possible because the covert V movement mentioned above makes the whole IP the minimal domain of V: inside IP, any specifier position higher than V is equidistant from any argument

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at the base. In other words, any movement of the arguments from the base to any specifier position higher than V is equally economical. This point is important in considering scrambling (Oh-ishi, in preparation).

And these movements are compulsory, not random. This is due to a stipulated economy principle stated in (9):

(9) Movement which does not change the order at the base is more economical than any other movement which does.

But this economy principle is weak, and can be violated to allow scrambling triggered by some features (Oh-ishi, in preparation). It may be expressed differently, but because at the moment there is no appropriate way to express this idea, and languages with the basic Object-Subject order are extremely rare, (9) is tentatively assumed to be an economy principle.

At this stage of derivation, there is no feature, inside IP, which has to be eliminated. The PF and LF representations are shown in Fig. 9. We have just accounted for the verbal complex (i.e. head)-finalness of Japanese IP at PF.

The final step is the overt movement of the IE(U)P as a whole to [SPEC, C]. This overt movement is triggered by an intrinsic strong [+V] feature of C as shown in Fig. 9. The closest [+V] category is found in IE(U), that is, *deki =ø-ru =ø*. Thus, when IE(U)P enters into a checking relation with C through this movement, the strong [+V] is eliminated. In this case, C is phonologically empty, but has a modality feature, that is, declarative.

Now, all the features which have to be eliminated have been checked and eliminated, and the desirable PF *Paul-ni wa nihongo ga deki =ø-ru =ø ø* has been formed. The PF and LF representations are shown in Fig. 10. We have also accounted for the C (i.e. head)-finalness of Japanese CP at PF.

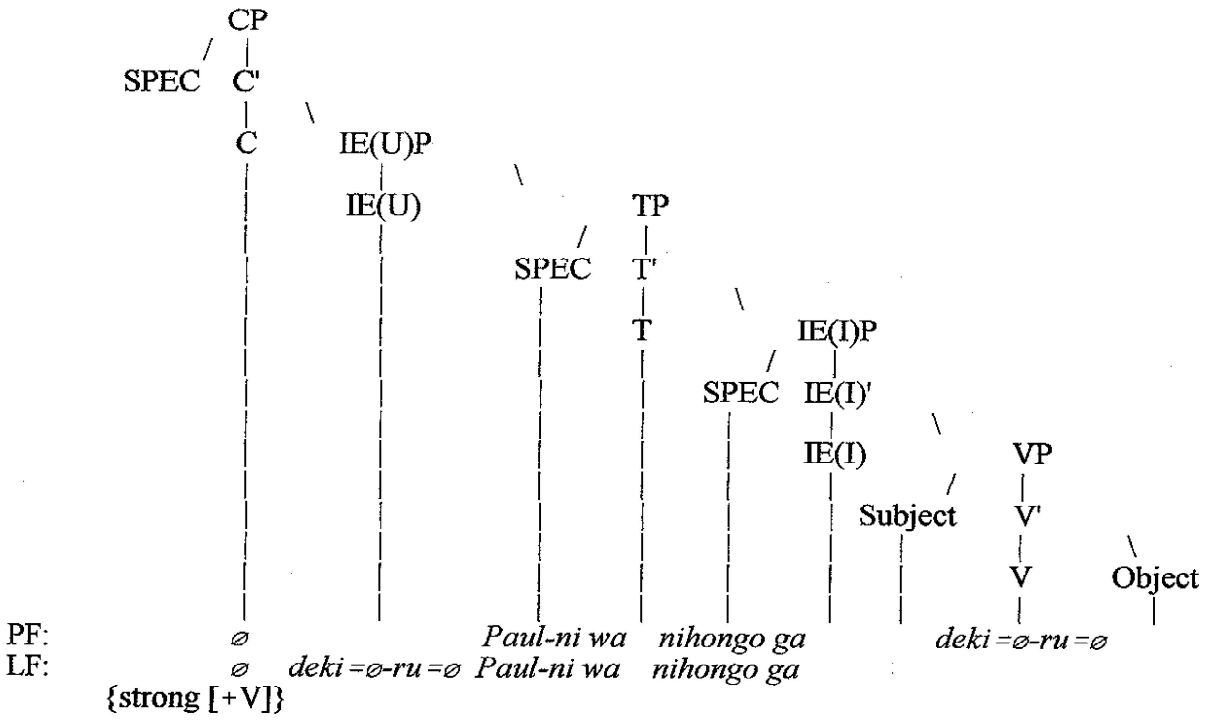

Fig. 9. Before the IE(U)P-to-[SPEC, C] movement.

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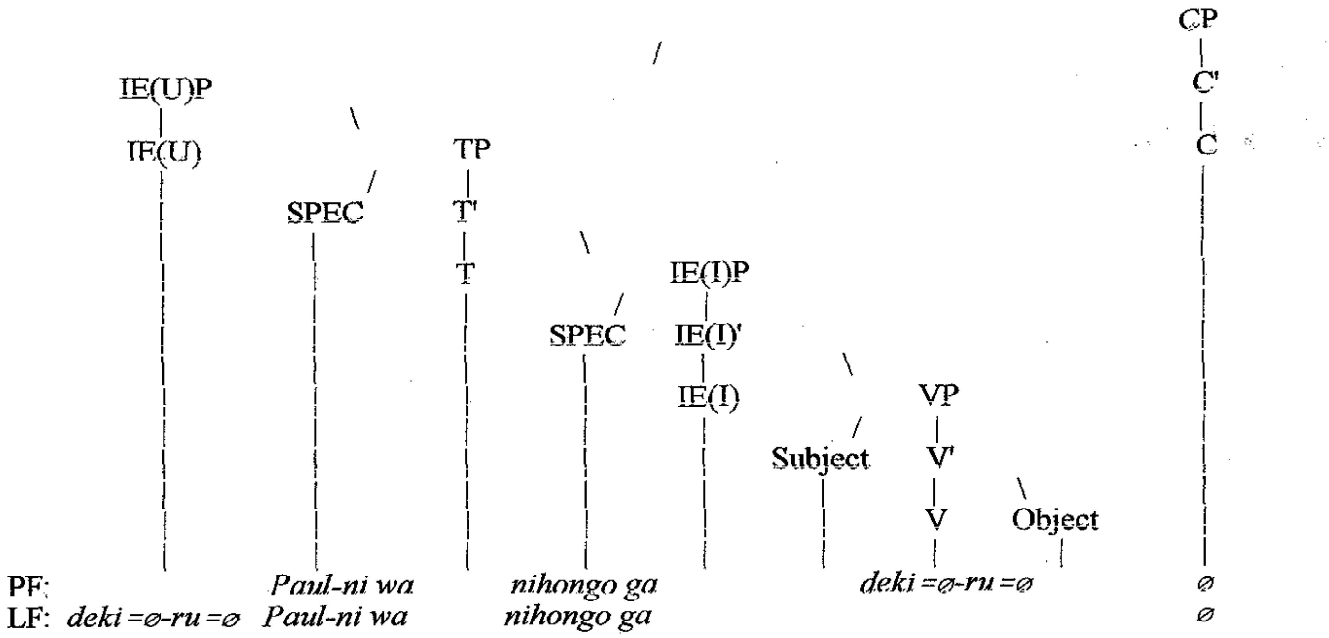

Fig. 10. After the IE(U)P-to-[SPEC, C] movement.

7. PARALLELISM BETWEEN DP AND CP FORMATION

As obvious by now, the computation for DP formation is parallel with that for CP formation in Japanese: covert movements of V and N to I and K respectively, overt movements of the specifier and the complement of V and N to the SPECs of I and K respectively, overt movements of IP and KP to the SPEC of C and D respectively, and the possession of inherent Case features by V and N (See Oh-ishi (in preparation) for Case features of N and their function). That is to say, the basic functions of C, I and V in CP correspond to those of D, K and N in DP respectively. It is no accident that Cs and Ds, and Vs and Ns are often cognate and even phonetically identical in Japanese (Oh-ishi, 1997; Oh-ishi, in preparation).

8. CONCLUSION

This is the outline of the essential part of Japanese DP and CP formation. In conclusion, it is possible to account for the strict head-finalness of Japanese at PF under the universal base order hypothesis in the framework of the minimalist programme.

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