Feature projection and multiple feature checking within DPs

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ABSTRACT
The present paper examines the multiple WH construction within DPs in Japanese. I will argue that a categorial feature [nominal] of WH words and a strong [nominal-] feature of D are relevant to the multiple WH construction in Japanese. I will show that a WH word with the genitive Case marker -no has a [nominal] feature and is accounted for as nominal expressions. It does not project when it merges with an N. Both a genitive WH subject and a genitive WH object are base-generated within the NP receiving their respective theta-roles from the head N. When D with a strong [nominal-] feature and a genitive Case feature is selected from the Numeration, both the genitive WH subject and the genitive WH object can be raised to the [Spec, DP] without violating the Minimal Link Condition (Chomsky 1995) since they are equidistant from the target D. Under a layered specifier approach, I will claim that a strong [nominal-] feature of D has a parameterized property to allow the strong feature to be multiply checked. That is, it is optionally erased when checked. Therefore, the strong [nominal-] feature of D can check both the genitive WH subject and the genitive WH object optionally.

1. INTRODUCTION
The purpose of this paper is to examine the nature of the noun phrase construction in which both a subject and an object of a derived N are WH words (henceforth, ‘a genitive WH Subj’ and ‘a genitive WH Obj’). They are marked with the genitive Case marker -no and appear pronominally. I will call the construction ‘the multiple WH construction within DPs.’ Here is an example.
(1) [dare-no nan-no hihan]-ga yok-atta no?
    [who-GEN what-GEN criticism]-NOM good-was Q
    ‘Whose criticism of what was good?’

The present paper attempts to provide a Minimalist account of the multiple WH construction within DPs in Japanese.

This paper is organized as follows. In section 2, I will examine the syntactic properties of WH words in Japanese comparing them with those in English. In section 3, I will briefly review the analysis of NP-deletion phenomena by Saito and Murasugi (1990) and consider WH-movement within DPs in Japanese as A-movement. In section 4, I will address some issues arising from our discussion and suggest some answers to them.

2. PROPERTIES OF WH WORDS

In this section, I go over some syntactic properties of WH words (henceforth, ‘WH’) in Japanese and those in English.

In the Minimalist Program (Chomsky 1995), WHs in English are argued to have a categorial feature [wh] and accounted for as variants of D. Hence, WH closes the projection (Fukui 1986). No modifier can precede a WH as shown below.

(2) *[John’s what dictionary] do you want to use?

Given these properties, let us consider the feature projection within a WH phrase formed by a WH and an N. When a WH and an N merge, the WH projects and the sublabel of the newly formed syntactic category bears the [wh] feature in English as illustrated below.

(3) Feature Projection in a WH phrase in English

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  WH
 / \  /
|   |  |
W   N
```

Let us now turn to WHs in Japanese. It has been argued that Japanese is a WH-in-situ language; no WH phrase moves overtly (Huang 1982). In Japanese, a WH marked with the genitive Case marker -no (henceforth, ‘a genitive WH’) modifies a head N as shown below.

(4) nan-no hihan
    what-GEN criticism
    ‘a criticism of what’
Since other modifiers can show up to the left of the WH phrase as shown below, I assume that a WH with the genitive Case marker -no does not have a property of closing the projection.

(5) Taro-no nan-no hihan
    Taro-GEN what-GEN criticism
    ‘Taro’s criticism of what’

Given these properties of WHs in Japanese, I claim that WHs in Japanese are not variants of D but nominal expressions when they are marked with the genitive Case marker -no and modify the head N (Nishigauchi 1990). More specifically, when a genitive WH Obj (e.g. nan-no ‘what-GEN’) and an N (e.g. hihan ‘criticism’) merge, the N projects and a new syntactic object is formed. Feature projection within a WH phrase in Japanese is as illustrated below:

(6) Feature Projection in a WH phrase in Japanese

\[
\text{NP} \\
\text{WH} \quad \text{N} \\
\text{nan-no} \quad \text{hihan} \\
\text{what-GEN} \quad \text{criticism}
\]

My argument concerning feature projection within a WH phrase in Japanese explains (5), in which another modifier precedes the genitive WH. Since the genitive WH Obj nan-no ‘what-GEN’ does not close the projection, the newly formed syntactic object can merge with the genitive Subj Taro-no ‘Taro-GEN,’ and the N projects again.

So far, I have demonstrated syntactic properties of WHs in Japanese. I have claimed that in Japanese, genitive WHs are not variants of D but nominal expressions. Therefore, when a genitive WH and an N merge, the N projects; genitive WHs do not have a property of closing the projection in Japanese.

3. MULTIPLE WH CONSTRUCTION WITHIN DPs IN JAPANESE

In this section, I will argue that WH-movement within DPs in Japanese should be accounted for as A-movement, based on the DP-Hypothesis (Abney 1987).

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1. Not all WHs can appear with the genitive Case marker. *donna* ‘what kind of’ and *dono* ‘which’ cannot appear with the genitive Case marker. I assume that neither *donna* nor *dono* has a categorial feature [nominal]; thus, they are not considered nominal expressions.
the NP-internal Hypothesis (Drijkoningen 1993, Takezawa 1994) and NP-deletion phenomena (Saito and Murasugi 1990).

3.1. Genitive phrases within DPs

In English, one argument of a derived N can appear prenominally as shown in (7) and (8), whereas two arguments cannot co-occur prenominally as shown in (9).²

(7) *The alien’s destruction (of the city) (Subj’s N)

(8) *The city’s destruction (by the alien) (Obj’s N)

(9) *The alien’s the city’s destruction (*Subj’s Obj’s N)

In Japanese, on the other hand, both a genitive Subj and a genitive Obj of a derived N can co-occur and precede the head N as shown in (12) (Murasugi 1991, Takezawa 1994, among others).

(10) Taro-no hihan (Subj-GEN N)
    Taro-GEN criticism
    ‘Taro’s criticism’

(11) Minimarisuto puroguramu-no hihan (Obj-GEN N)
    Minimalist Program-GEN criticism
    ‘Minimalist Program’s criticism’

(12) Taro-no Minimarisuto puroguramu-no hihan (Subj-GEN Obj-GEN N)
    Taro-GEN Minimalist Program-GEN criticism
    ‘Taro’s criticism of the Minimalist Program’

I will show in the following subsection how these two genitive phrases are licensed in a DP in Japanese.

2. Adverbial noun phrases marked with the genitive Case marker can appear prenominally in English as shown below (Anderson 1983, Murasugi 1991).

(i) a. Yesterday’s lecture
    b. Connecticut’s best hotel

In the following examples, adverbial noun phrases marked with the genitive Case marker can precede the other genitive phrase (Roepel 1993).

(ii) a. [Yesterday’s people’s revolution] is [today’s dictator’s paradise].
    b. [Boston’s President’s welcome] was better than [New York’s mayor’s homecoming].

I will not pursue the syntactic properties of adverbial noun phrases within DPs in the present paper.
3.2. The position of genitive phrases

In the present paper, I adopt Saîto and Murasugi’s (henceforth, S & M) (1990) analysis of NP-deletion phenomena in English and Japanese. Here is an example of NP-deletion in English.

(13) [John’s reliance on the faculty] is more problematic than [Mary’s e].

In (13), the genitive Subj Mary’s is stranded. Following Jackendoff (1971), S & M (1990) provide three conditions of NP-deletion as follows. Firstly, in the second noun phrase in (13), the predicate phrase following the genitive Subj Mary’s is deleted. Secondly, the deleted phrase requires a linguistic antecedent as does VP-deletion in sentences (Hankamer and Sag 1976); the antecedent is [relience on the faculty]. Thirdly, the deleted phrase must follow a genitive phrase such as Mary’s.

Based on the DP-Hypothesis proposed by Abney (1987), S & M (1990) claim that the genitive Subj of the N base-generates within the NP; then it is raised to the [Spec, DP] for Case checking. In the second noun phrase in (13), the genitive Subj Mary’s is raised to the [Spec, DP]. The remaining NP including the trace of the genitive Subj is identical to the NP in the first noun phrase; therefore, the NP in the second noun phrase can be deleted as illustrated below.

(14) [DP John’s [NP fsb] reliance on the faculty]] is more problematic

\[ \text{than } [DP Mary’s [NP s CLEAN[fsb] reliance on the faculty]] \]

S & M (1990) argue that the same analysis can be applied to the derived noun phrase in Japanese. Consider the following example.

(15) [Gakusei-no sensei-e-no izon]-wa yuruseru ga,
[undergraduate-GEN faculty-to-GEN reliance]—TOP can-tolerate but

\[ \text{[insei-no e]-wa yuruse-nai;} \]
[graduate student-GEN ]—TOP can-tolerate-not

‘I can tolerate the undergraduates’ reliance on the faculty, but not the graduate students’.

In the second noun phrase in (15), the predicate phrase following the genitive Subj insei-no ‘graduate student-GEN’ is omitted. S & M (1990) claim that within a derived noun phrase in Japanese, the genitive Subj is base-generated within the NP and is raised to the [Spec, DP] for Case checking. Hence, the
genitive Subj insei-no ‘graduate student-GEN’ is raised to the [Spec, DP]. The remaining NP including the trace of the genitive Subj is identical to the NP in the first noun phrase; therefore, the NP in the second noun phrase can be deleted as illustrated below.

\[(16) \ [\text{DP Gakusei-no} \ [\text{NP} \ t\text{Subj sensei-e-no izen}]]-\text{wa yuruseru ga,}\]
\[
\[\text{[DP insei-no} \ [\text{NP} \ t\text{Subj sensei-e-no izen}]]-\text{wa yuruse-nai.}\]

3.3. Multiple genitive WH construction within DPs

Let us now turn to ‘the multiple WH construction within DPs’ in Japanese. Both the genitive Subj and the genitive Obj within DPs can be replaced with the genitive WHs respectively within noun phrases. The example (1) is repeated in (17).

\[(17) \text{Q: } [\text{dare-no nan-no hihan}]-\text{ga yok-atta no?}\]
\[
[\text{who-GEN what-GEN criticism-NOM good-Past Q?}]
\]
\[\text{‘Whose criticism of what was good?’}\]

\[\text{A: } [\text{Taro-no Minimarisuto-puroguramu-no hihan}-\text{desu.}]
\]
\[\text{Taro-GEN Minimalist Program-GEN criticism]-is}\]
\[\text{‘(It’s) Taro’s criticism of the Minimalist Program.’}\]

Based on the analysis of NP-deletion by S & M (1990), I examine the multiple WH construction in Japanese. Interestingly, NP-deletion is possible in the multiple WH construction. As shown below, the genitive WH Subj dare-no and the genitive WH Obj nan-no can be stranded together in the second noun phrase.

\[(18) \text{Q: } [\text{Taro-no Minimarisuto puroguramu-no hihan}]-\text{wa}
\]
\[
[\text{Taro-GEN Minimalist Program-GEN criticism}-\text{TOP}]
\[
[\text{dare-no nan-no e }]-\text{yori yok-atta no?}\]
\[
[\text{who-GEN what-GEN }]-\text{than good-Past Q?}\]
\[
\text{(Lit.) ‘Is Taro’s criticism of the Minimalist Program better than [whose (criticism) of what?’}\]

\[\text{A: } [\text{Hanako-no Oputimirittii seorii-no (hihan)}]-\text{yori yok-atta.}\]
\[\text{[Hanako-GEN Optimality Theory-GEN (criticism)]-than good-Past.}\]
\[
\text{(Lit.) ‘(It’s) better than Hanako’s (criticism) of the Optimality Theory.’}\]
On the basis of S & M’s (1990) analysis and the NP-internal Hypothesis (Drijkoningen 1993, Takezawa 1994), I assume that in (18), both the genitive WH Subj and the genitive WH Obj are base-generated within the NP; they are raised from within the NP to the [Spec, DP] position as illustrated below.

\[
[\text{DP dare-no nan-no D }[\text{NP hihan}]]
\]

In the next section, I will account for the derivation of the multiple WH construction within DPs.

3.4. WH-movement as A-movement within DPs in Japanese

Let us then consider how the genitive WH Subj and the genitive WH Obj are raised to the [Spec, DP]. I showed in section 2 that genitive WHs in Japanese are accounted for as nominal expressions. From this, I claim that genitive WHs have a categorial feature [nominal] and are subject to movement triggered by a strong [nominal-] feature of D in Japanese. I account for the derivation of the multiple WH construction as follows. First, both the genitive WH Subj and the genitive WH Obj are base-generated within the NP and receive their respective theta-roles from the head N (Chomsky 1998, Ayano and Oga 1999). Second, D is selected from the Numeration and merges with the NP. D has semantic features and formal features, although it is phonetically empty in Japanese. Within the Minimalist framework, a strong feature must be eliminated by an identical categorial feature. Note that the strong feature is accounted for as [-interpretable] and must be eliminated before SPELL-OUT. As for D, I claim that Japanese D has a strong [nominal-] feature; a syntactic object with a categorial feature [nominal] is raised to the [Spec, DP] to eliminate the strong [nominal-] feature of D before SPELL-OUT. Under a layered specifier approach, (Chomsky 1995, Koizumi 1995, Ura 1996), a [-interpretable] feature is parametrically permitted not to be erased when checked. Based on this assumption, I further claim that Japanese D is parameterized to allow its strong feature to be multiply checked by syntactic categories with the categorial feature [nominal] (Kimura 1994).

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3. It is also the case that in Japanese, only the genitive WH Subj can be stranded when the NP is deleted as shown below.

(i) [Taro-no Minimarisuto Puroguramu-no hihan]- wa [dare-no e]-yori yok-atta no?  
[Taro-GEN Minimalist Program-GEN criticism]-TOP [who-GEN ] than good-Past Q?  
(Lit.) ‘Is Taro’s criticism of the Minimalist Program better than whose (criticism of the Minimalist Program)?’
Since genitive WHs have a categorial feature [nominal], they are subject to movement to the [Spec, DP] triggered by the strong feature of D. Note that both the genitive WH Subj and the genitive WH Obj are in the same minimal domain of the head N; they are equidistant from the target D. Thus, both can move to the [Spec DP] without violating the Minimal Link Condition (Chomsky 1995). In the multiple WH construction in question, the strong feature of D is not erased when checked by the genitive WH Obj; it can be checked again by the genitive WH Subj. The derivation is illustrated below.

(20)

Having provided a Minimalist account of the multiple genitive WH construction, I think it is reasonable to conclude that both the genitive WH Subj and the genitive WH Obj are subject to movement, which is accounted for as A'-movement. I have demonstrated that the construction at issue is relevant to the properties of D and the categorial feature [nominal] of WHs.

4. FURTHER ISSUES

In the previous section, I gave an account for the multiple WH construction with regard to the properties of D and a categorial feature [nominal] on WHs. In this section, I will discuss some issues on the [nominal] feature of WHs raised by the proposed analysis.

4.1. [Nominal] feature on WHs

In section 3, I demonstrated that genitive WHs are not variants of D. I claimed that they have a categorial feature [nominal] and are subject to movement. My argument predicts that if WHs have a categorial feature [nominal], WHs could be a head N of a noun phrase. The prediction is born out: in Japanese, a WH can be a head of a noun phrase, and modified by genitive DPs as shown below.

From this, I assume that in this example, only *dare-no ‘who-GEN’* is raised out of the NP for feature checking and the strong [nominal-] feature of D is erased when checked.

(21) Q: [Jiro-no * nani]-o Taro-wa hihansi-ta no?
   [Jiro-GEN * what]-ACC Taro-TOP criticize-Past Q?
   (Lit.) ‘[What of Jiro] did Taro criticize?’

   A: ronbun-desu,
   [thesis]-is
   ‘(It’s his) thesis.’

   It follows from this fact that genitive WHs are accounted for not only as XP-level arguments in the [Spec, DP], but also as X-level Ns in the head position.

4.2. Other WH modifiers

In Japanese, WHs such as *doko ‘where’ and *itsu ‘when’ are also marked with the genitive Case marker and can modify the head Ns within the DPs. Consider:

(22) *[itsu-no kouen]-ga yok-atta no?
    [when-GEN talk]-NOM good-Past Q?
    (Lit.) ‘[talk on what date] was good?’

(23) *[doko-no kouen]-ga yok-atta no?
    [where-GEN talk] -NOM good-Past Q?
    (Lit.) ‘[talk at which place] was good?’

   These examples suggest that both *doko ‘where’ and *itsu ‘when’ have a categorial feature [nominal] and are accounted for as nominal expressions in Japanese.5

5. CONCLUDING REMARKS

The present paper has provided a Minimalist account of the multiple WH construction within DPs in Japanese. First of all, I have demonstrated that genitive WHs are accounted for as nominal expressions; thus, they have a categorial feature [nominal], whereas WHs in English are accounted for as variants of D. Second, I have claimed that Japanese D has a strong [nominal-] feature to be erased optionally when checked. Thirdly, I have argued that both the genitive WH Subj and the genitive WH Obj are subject to movement triggered by the strong [nominal-] feature of D since they have a categorial feature [nominal]. Finally, based on NP-deletion, I have proposed that both the genitive WH Subj and the genitive WH Obj can be raised to the [Spec, DP] for feature checking without violating Minimal Link Condition within the multiple WH construction, since both are in the same minimal domain and are equidistant from the target D.

5. It is interesting to note that the syntactic properties of *doko ‘where’ and *itsu ‘when’ are similar to those of English adverbial noun phrases denoting time and place. See footnote 2.
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REFERENCES


