The Syntax of *Path/Range* PP Constructions in Japanese

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1 Introduction

This paper investigates the syntax of *from-to* PPs in Japanese. Different syntactic tests show that two distinct types of *from-to* PPs must be recognized. I propose that some *NP-kara NP-made* ‘from NP to NP’ (henceforth FNTN (Zwarts 2013)) form an inseparable constituent before they merge to larger structure. Williams (1994: 12-15) points out that the *from-to* phrase in English forms a single constituent, though other *P-P* phrases do not. The whole *from-to* is topicalized in (1b), but this is not possible with *to-for* in (2b).

a. John played the banjo from Alabama to Lousiana.

b. [From Alabama to Lousiana] John played the banjo.

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Japanese also has FNTN that denotes *path (trajectory)* or *range* in (3) and (4). What is important is that FNTNs in (4) are syntactically different from those in (3) regarding indivisibility and immobility.

In what follows, I distinguish the two types of FNTNs in (3) and (4) and refer to those in (4) as the complex PP. The rest of this paper is organized as follows. In section 2, I will first demonstrate that extraction from out of the complex PP in (4) is prohibited unlike other FNTNs in (3). Section 3 puts forth a descriptive generalization of the complex PP. I claim that the complex PP requires a head noun which it attaches to. This head noun can be covert in some cases. In section 4, I propose a syntactic analysis of the complex PP and other FNTNs in Japanese. It is suggested that the complex PP has parallel structures that share some features with coordinate structure. Section 5 is an overall summary.\(^1\)

2 FNTNs in Japanese

Different syntactic tests show that certain FNTNs in Japanese are inseparable. To begin with, though FNTNs in (5) allow either NP-*kara* ‘from NP’ or NP-*made* ‘to NP’ to stand alone, this is not the case with the complex PP in (6).

\(^{1}\) Due to the space limitation, I will not discuss FNTNs in English in this paper. The readers are referred to Williams (1994), Zwarts (2010, 2013), Kobayashi (to appear), and the references cited therein.
(5) a. Yuko-ga {Tokyo-kara/Nagoya-made} Shinkansen-ni not-ta.  
Y.-NOM Tokyo-from/Nagoya-to bullet.train-on ride-PST  
‘Yuko took Shinkansen {from Tokyo/to Nagoya}.’  
b. Ataru-ga {kyooshitsu-kara/kootei-made} booru-o nage-ta.  
A.-NOM classroom-from/schoolyard-to ball-ACC throw-PST  
‘Ataru threw a ball {from the classroom/to the schoolyard}.’  

demonstrators-NOM child-from/adult-to march-ASP-PST  
Lit. ‘Demonstrators, {from children/to adults}, were marching.’  
b. *Yuko-ga kudamono-o {ichigo-kara/meron-made} tabe-ta.  
Y.-NOM fruit-ACC strawberry-from/melon-to eat-PST  
Lit. ‘Yuko ate fruits, {from strawberies/to melons}.’  

The observations indicate that NP-kara and NP-made in the complex PP must appear together. Next, I will turn to scrambling, another syntactic test that distinguishes the two types of FNTNs in Japanese.

2.1 No Scrambling

Either NP-kara or NP-made can be scrambled in FNTNs in (7) and (8). However, neither of them can undergo movement from out of the complex PPs in (9) and (10).

(7) a. Tokyo-kara, Yuko-ga t_i Nagoya-made Shinkansen-ni not-ta.  
Tokyo-from Y.-NOM Nagoya-to bullet.train-on ride-PST  
‘From Tokyo, Yuko took Shinkansen to Nagoya.’  
b. Nagoya-made, Yuko-ga Tokyo-kara t_i Shinkansen-ni not-ta.  
Nagoya-to Y.-NOM Tokyo-from bullet.train-on ride-PST  
‘From Tokyo, Yuko took Shinkansen to Nagoya.’  

classroom-from A.-NOM schoolyard-to ball-ACC throw-PST  
‘From the classroom, Ataru threw a ball to the schoolyard.’  
b. Kootei-made, Ataru-ga kyooshitsu-kara t_i booru-o nage-ta.  
schoolyard-to A.-NOM classroom-from ball-ACC throw-PST  
‘To the schoolyard, Ataru threw a ball from the classroom.’  

(9) a. *Kodomo-kara demotai-ga t_i otona-made kooosinsi-tei-ta.  
child-from demonstrators-NOM adult-to march-ASP-PST  
Lit. ‘From children, demonstrators, to adults were marching.’
   Lit. ‘To adults, demonstrators, from children were marching.’ (=4a)

(10) a. *Ichigo-kara Yuko-ga kudamono-o meron-made tabe-ta.
    strawberry-from Y.-NOM fruit-ACC melon-to eat-PST
    Lit. ‘From strawberries, Yuko ate fruits.’
   b. *Meron-made Yuko-ga kudamono-o ichigo-kara tō tabe-ta.
    melon-to Y.-NOM fruit-ACC strawberry-from eat-PST
    Lit. ‘To melons, Yuko ate strawberries.’ (=4b)

The sentences in (9) and (10) become ungrammatical unless the whole complex PP is scrambled, as illustrated in (11).

    child-from adult-to demonstrators-NOM march-ASP-PST
    Lit. ‘From children to adults, demonstrators were marching.’
   b. [Ichigo-kara meron-made] Yuko-ga tō kudamono-o tabe-ta.
    strawberry-from melon-to Y.-NOM fruit-ACC eat-PST
    Lit. ‘From strawberries to melons, Yuko ate fruits.’ (=4a-b)

The observations in this section indicate that the complex PP differs from other FNTNs in that the former prohibits scrambling of either NP-kara or NP-made independently. This indicates that NP-kara and NP-made cannot be separated and must appear together in the case of complex PPs. In the next section, we observe yet another piece of evidence that distinguishes the two types of FNTNs in Japanese.

2.2  No (Pseudo)Clefting
The complex PP does not tolerate (pseudo)clefting, as in (13) and (14), unlike the other FNTNs in (12).

(12) a. Yuko-ga Nagoya-made Shinkansen-ni not-ta no-wa
    Y.-NOM Nagoya-to bullet.train-on ride-PST NM-TOP
    Tokyo-kara da.
    Tokyo-from COP.PRES
    ‘It is from Tokyo that Yuko took Shinkansen to Nagoya.’
   b. Yuko-ga Tokyo-kara Shinkansen-ni not-ta no-wa
    Y.-NOM Tokyo-from bullet.train-on ride-PST NM-TOP
    Nagoya-made da.
    Nagoya-to COP.PRES
    ‘It is to Nagoya that Yuko took Shinkansen from Tokyo.’
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The syntax of Path/Range PP constructions in Japanese cf. Yuko-ga Shinkansen-ni not-ta no-wa
Tokyo-from Nagoya-to COP.PRES
‘It is from Tokyo to Nagoya that Yuko took Shinkansen.’ (=3)

(13) a. *Yuko-ga kudamono-o meron-made tabe-ta no-wa (=4a)
Y.-NOM fruit-ACC melon-to eat-PST NM-TOP ichigo-kara da.
strawberry-from COP.PRES
Lit. ‘It is from strawberries that Yuko ate melons.’
b. *Yuko-ga kudamono-o ichigo-kara tabe-ta no-wa
Y.-NOM fruit ACC strawberry-from eat-PST NM-TOP meron-made da.
melon-to COP.PRES
Lit. ‘It is to melons that Yuko ate fruits from strawberries.’

(14) a. *Demotai-ga otona-made koosinsi-tei-ta no-wa (=4b)
demonstrators-NOM adult-to march-ASP-PST NM-TOP kodomo-kara da.
child-from COP.PRES
Lit. ‘It is from children that demonstrators were marching to adults.’
b. *Demotai-ga kodomo-kara koosinsi-tei-ta no-wa
demonstrators-NOM child-from march-ASP-PST NM-TOP otona-made da.
adult-to COP.PRES
Lit. ‘It is to adults that demonstrators were marching from children.’

Again, unless clefted together in (15), they end up ungrammatical.

(15) a. Yuko-ga kudamono-o tabe-ta no-wa (=4a)
strawberry-from melon-to COP.PRES
Lit. ‘It is from strawberries to melons that Yuko ate fruits.’
b. Demotai-ga koosinsi-tei-ta no-wa (=4b)
child-from adult-to COP.PRES
Lit. ‘It is from children to adults that demonstrators were marching.’

We have seen that the complex PPs in (4) are syntactically distinct from other FNTNs in (3), though they look quite similar on the surface. In the next
section, I will propose a descriptive generalization of the complex PPs in Japanese.

3 Generalization

So far, we have seen that two types of FNTNs must be recognized in Japanese. I propose that the complex PP requires a head noun which it attaches to. At the same time, it must form a part-whole relation with the head noun. In (4a), *kodomo ‘children’ and *otona ‘adults’ are a part of the whole *demotai ‘demonstrators’. Likewise, *ichigo ‘strawberries’ and *meron ‘melons’ in (4b) are a part of the whole *kudamono ‘fruits’. On the other hand, FNTNs in (3) are not in such a relation. *Tokyo/Nagoya ‘Tokyo/Nagoya’ is neither a part of *Shinkansen ‘bullet train’ nor of *Yuko in (3a). In the same vein, *kyooshitsu/kootei ‘classroom/schoolyard’ is not a part of *Ataru or *booru ‘ball’ in (3b). This is summarized in (16).

(16) The complex PP must form a part-whole relation with the head noun it modifies.

The first half of the generalization in (16) predicts that if we manipulate the sentence in (4a) so that the FNTN *Tokyo-kara Nagoya-made ‘from Tokyo to Nagoya’ forms a part-whole relation with some head noun, then it should behave exactly the same as the complex PPs in (3). This prediction is indeed borne out. In (17), *Tokyo/Nagoya is a part of the whole *seireisiteitosi ‘government designated cities’. The interpretation of (17) requires *Tokyo, Nagoya, and all the other cities that are in the (geographical) path between *Tokyo and Nagoya, go bankrupt. The FNTN in (17) prohibits scrambling and (pseudo)clefts, as in (18) and (19), which indicates that the FNTN in (17) is an instance of the complex PP.


(18) Scrambling:
   a. *?Tokyo-kara seireisiteitosi-ga t Nagoya-made hatansi-ta.
   c. ak[Tokyo-kara Nagoya-made] seireisiteitosi-ga t hatansi-ta.

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2 I thank Hiroshi Aoyagi (p.c.) for bringing this into my attention and for suggesting this possibility. I owe the data in (17) to him.
In the remainder of this section, I will provide two discussions in favor of the modificational nature of complex PPs, in defence of the generalization in (16).

### 3.1 Complex PPs and Floating Quantifiers

The modificational nature of the complex PP is easily confirmed. In Japanese, certain quantificational or modificational expressions co-occur with an argument, as in (20).

(20) a. Gakusei-ga Taro-dake ki-ta.
    student-NOM T.-only come-PST
    ‘Among students, only Taro came.’

    student-NOM anyone come-NEG-PST
    ‘No students came.’

    J.-NOM apple-only fruit-ACC eat-NEG-PST
    ‘Among fruits, John ate only apples.’

(adapted from Aoyagi and Ishii 1994: 297)

The distribution of complex PPs is reminiscent of that of modificational expressions in (20). For the sake of discussion, I focus on numeral quantifiers in (21). The quantifier san-bon ‘3-CL’ may appear either before or after the head noun banana ‘banana’. It may even be scrambled to the clause-initial position, as in (21c).

    J.-NOM 3-CL banana-ACC eat-PST
    ‘John ate three bananas.’


c. san-bon John-ga banana-o tabe-ta.

The relatively free distribution of the complex PPs in (22) can be attributed to their modificational nature along with the quantificational or modificational expressions in (20).

(22) a. Yuko-ga [ichigo-kara meron-made] kudamono-o tabe-ta.  
    Lit. ‘Yuko ate fruits, from strawberries to melons.’
c. [Ichigo-kara meron-made] Yuko-ga kudamono-o tabe-ta.

3.2 Apparent Counterexamples
One may come up with examples like (23), in which FNTNs appear without a head noun. Nevertheless, the FNTN in (23) resists extraction of elements from out of it, as shown in (24) and (25). These data might comprise counterevidence against the generalization in (16).

(23) a. [Tokyo-kara Nagoya-made]-ga teidensi-ta.  
    Lit. ‘From Tokyo to Nagoya was blacked out.’

    Lit. ‘Stockholders sued from subsidiaries to the parent firm.’

(24) Scrambling:

    a. *Tokyo-kara teidensi-ta no-wa Nagoya-made datta  
    Lit. ‘It was to Nagoya that from Tokyo was blacked out.’

    b. *Nagoya-made teidensi-ta no-wa Tokyo-kada datta. (=23a)

(25) (Pseudo-)clefting:

    a. *Kabunusi-ga kogaisya-kara uttae-ta no-wa (=23b)  
    Lit. ‘It was to the parent firm that the stockholders sued from its subsidiaries.’


However, there is an alternative structure for the data in (23). Maki and Uchibori (2008) suggest that head nouns can be implicit in some environments. Since the data with genitive-nominative conversion in (26) have counterparts that do not contain a nominal head, they assume that the
head nouns are always present in the structure even though they are not pronounced in (26).

(26)  a. John-wa [ame-ga/no yamu (zikan)made] ofisu-ni i-ta.
      J.-TOP rain-NOM/GEN stop time until office-at be-PST
      ‘John was at his office until the rain stopped.’

     b. [Mary-ga/no yonda (teedo)yori]takusan-no hon-o yon-da.
      M.-NOM/GEN read degree than many-GEN book-ACC read.PST
      ‘I read more books than Mary did.’
      (adapted from Maki and Uchibori 2008: 203)

It is then not unnatural to question whether the examples in (23) are simply instances of complex PPs with head nouns that are somehow implicit. Let us look at (23) again. It is easy to come up with the counterparts that overtly contain head nouns, han ’i ‘range’ and zenbu ‘all’, as in (27).

(27)  a. [Tokyo-kara Nagoya-made-no han 'i]-ga teidens-ta.
      Tokyo-from Nagoya-to-GEN range-NOM blacked-out-PST
      ‘The range from Tokyo to Nagoya was blacked out.’

     b. Kabunusi-ga [kogaisya-kara oyagaisya-made(-no)
        stockholder-NOM subsidiary-from parent.firm-to-GEN
        zenbu][-o)] uttae-ta.
        all-ACC sue-PST
      ‘Stockholders sued every company, from subsidiaries to the parent firm.’

The data suggests that the difference between (23) and (27) is whether the head noun is implicit or explicit. Head-nounless examples in (23) then actually contain an unpronounced head noun that is present in the structure. As long as the sentences in (23) have counterparts with an overt head noun in (27), they would not be problematic to the genealization in (16). In the next section, I will propose a syntactic analysis of the complex PP.

4 Syntax of FNTNs in Japanese

Why are complex PPs indivisible? Note that being a modification to a noun itself does not prohibit scrambling or (pseudo)clefiting, as in (28) and (29). It

\[\text{(i) } [\text{ Dekakete-kara } [\text{ ie-ni kaeru}-\text{made(-no aida)}]-\text{ga ensoku da}. \text{ go.out-from home-to return-to-GEN while-NOM excursion COP.PRES} \]

‘The trip isn’t over until you get back home.’

\[\text{3 The complex PP can take verbal phrases as complements as well. The sentence in (i) is grammatical regardless of whether the head noun is overtly pronounced.}\]
is therefore natural to assume that there is an independent reason that complex PPs resist extraction from out of it.

(28)  a. San-bon John-ga banana-o t_e tabe-ta.
      3-CL J.-NOM banana-ACC eat-PST
      ‘John ate three bananas.’

      J.-NOM banana-ACC eat-PST NM-TOP 3-CL COP.PST
      Lit. ‘It was three that John ate bananas.’

(29)  a. ?Taro-dake, sensei-ga gakusei-o t_i sikat-ta.
      T.-only teacher-NOM student-ACC scold-PST
      ‘Among students, the teacher scolded only Taro.’

      b. Sensei-ga gakusei-o sikat-ta no-wa Taro-dake datta.
      teacher-NOM student-ACC scold-PST NM-TOP T.-only COP.PST
      ‘It was only Taro that the teacher scolded among students.’

We have seen that the complex PPs in (3) must form constituency, unlike the other FNTNs in (4). I propose, following the insight of Williams (1994) and Hirose (2007), a coordination-like structure in (30a) for the complex PPs in (3). The inseparable nature then derives from the Coordinate Structure Constraint (CSC) (Ross 1967). I do not commit myself to a particular analysis of coordinate structure in this paper, since it does not affect the proposal. For the sake of discussion, I adopt Munn’s (1993) adjunction analysis here. In the case of complex PPs, PP_1 adjoins to PP_2, forming a single constituent in (30a). On the other hand, PPs in other FNTNs independently adjoin to V/NP without forming constituency, as in (30b)

(30)  a. \[
          \begin{array}{c}
            PP_2 \\
            PP_1 \\
            NP_1 \text{ \textit{karay}_1}
          \end{array}
        \]

   b. \[
          \begin{array}{c}
            X' \\
            PP_1 \\
            NP_2 \text{ \textit{made}_2}
          \end{array}
        \]

   The structure in (30a) is supported at least by two pieces of evidence. If the complex PPs are constrained by the CSC, then not only extraction of conjuncts (that is, extraction of either PP_1 or PP_2), but extraction out of conjuncts (that is, extraction out of either PP_1 or PP_2) should be prohibited as well. This prediction is indeed borne out. It has been observed that Complex

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4 “In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct” (Ross 1967, Section 4.2.1).
NP Constaint is at work in Japanese (Saito 1985). However, the effects with scrambling are relatively weak (Agbayani et al. 2015). In (31), the object is scrambled out of the complex NP, but the sentence is only slightly degraded.

(31) ?Sono-kuruma-o syoohisya-ga [t.hanbaisu-ru kaisya]-o uttae-ta
    that-car-ACC    consumer-NOM   sell-PRES   firm-ACC sue-PST
    ‘Consumers sued the company which sells that car.’

With this in mind, let us observe (32). Scrambling out of NP-kara or NP-made obtains ungrammaticality.

(32) a. Syoohisya-ga [[taiya-o seisansu-ru kogaisya-kara]
    consumer-NOM tire-ACC produce-PRES subsidiary-from
    [kuruma-o hanbaisu-ru oyagaisya-made]] (subete) uttae-ta.
    car-ACC sell-PRES parent.firm-to all sue-PST
    Lit. ‘Consumers sued (every company) from subsidiaries that produce tires to the parent firm that sells cars.’

b. *Kuruma-o syoohisya-ga [[taiya-o seisansu-ru
    consumer-NOM tire-ACC produce-PRES subsidiary-from
    kogaisya-kara] [t.hanbaisu-ru oyagaisya-made]](subete) uttae-ta

c. *?Taiya-o syoohisya-ga [[t.seisansu-ru kogaisya-kara]
    [kuruma-o hanbaisu-ru oyagaisya-made]] (subete) uttae-ta

Another piece of evidence comes from the Across-the-Board (ATB) movement out of the complex PP. In (33), nani-‘what’ is extracted from PP1 and PP2 in the ATB fashion. Since ATB-movement requires parallel structures (cf. Goodall 1987), the grammaticality of (33), as well as the contrast between (32) and (33), suggests that complex PPs involve some parallel structures like the one in (30).

(33) Nani-o syoohisya-ga [PP2 [PP1 t.seisansu-ru kogaisya-kara]
    what-ACC consumer-NOM produce-PRES subsidiary-from
    [PP2 t.hanbaisu-ru oyagaisya-made]] (subete) uttae-ta no?
    sell-PRES parent.firm-to all sue-PST Q
    Lit. ‘Consumers sued (every company) from subsidiaries that produce what to the parent firm that sells what?’

A consequence of the current analysis is that it correctly predicts the distribution of genitive markers on FNTNs. Although -no is obligatory with
a single PP in nominal environments in (34), only some FNTNs allow genitive marking of NP-*kara* in Japanese, as in (35).5

(34) Tokyo-kara*(-no) basu.
    Tokyo-from-GEN  bus
    ‘The bus from Tokyo.’

    Nagoya-to-GEN  bus
    ‘The bus from Tokyo to Nagoya.’

b. Demotai-no kodomo-kara*(-no) otona-made-no sanka
    Demonstrators-GEN child-from-GEN adult-to-GEN entry
    Lit. ‘The participation of demonstrators from children to adults.’

The contrast naturally follows from the structural differences between the complex PP and other FNTNs in (30a) and (30b). It has been assumed that genitive phrases are immediately dominated by nominal projections (Saito 1982). In (30b), NP-*kara* is immediately dominated by N’, but this is not the case with (30a); hence -no cannot be assigned to NP-*kara* in (35b), but must be attached to the whole complex PP.

The analysis also explains optionality of no- in FNTNs in (35a). I claim that (35a) is structurally ambiguous between the complex PP in (30a) and other FNTNs in (30b). When it has the structure in (30a), -no may not appear on NP-*kara*. On the other hand, -no marking becomes obligatory when NP-*kara* and NP-*made* merge independently to the nominal projection, as in (30b). The generalization in (16) then predicts that in the former case there must be a (silent) head noun something like *aida* ‘section’ that forms a part-whole relation with *Tokyo* and *Nagoya*. This prediction is borne out that –no marking results in ungrammaticality in (36) where the head noun *aida* is overtly pronounced. The sentence sharply contrasts with the head-nounless example in (35a).

(36) Tokyo-kara(*-no) Nagoya-made-aida.
    Nagoya-to-GEN  section
    ‘The section from Tokyo to Nagoya.’

cf. Tokyo-kara Nagoya-made(-no *aida*)-o hasir-u basu.
    Nagoya-to-GEN  section-ACC run-PRES bus
    ‘The bus that goes all the way from Tokyo to Nagoya.’

5 I thank Takaomi Kato (p.c.) for bringing this difference to my attention.
5 Summary

Japanese has two types of FNTNs. While the complex PPs in (3) form constituency, other FNTNs in (4) do not, as illustrated in (30a) and (30b) respectively. I proposed a generalization that the complex PP has a part-whole relation with the head noun it attaches to. The coordination-based analysis accounts for the indivisibility of the complex PPs. Furthermore, the current analysis naturally explains the distribution of -no marking in two types of FNTNs in Japanese. Needless to say, the coordination-like structure in (30) requires further examination and elaboration. Nevertheless, I hope to have shown that the observations in this paper suggest that parallel structures can be observed not only with canonical coordination.

References