

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).

- (1) a. John played the banjo from Alabama to Louisiana.
b. [From Alabama to Louisiana] John played the banjo.

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- (2) a. I gave a book [to Mary for Bill].
 b. *[To Mary for Bill] I gave a book.
 cf. To Mary I gave a book for Bill. / For Bill I gave a book to Mary.
 (Williams 1994: 12)

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.

- (3) 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.’
- (4) a. Demotai-ga [kodomo-kara otona-made] kooosinsi-tei-ta.
 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 strawberries to melons.’

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}.’(=3)
- (6) a. *Demotai-ga {kodomo-kara/otona-made} kooosinsi-tei-ta.
 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 strawberries/to melons}.’ (=4)

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_i 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_i 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.’ (=3a)
- (8) a. Kyooshitsu-kara_i Ataru-ga *t_i* kootei-made booru-o nage-ta.
 classroom-from A.-NOM schoolyard-to ball-ACC throw-PST
 ‘From the classroom, Ataru threw a ball to the schoolyard.’
 b. Kootei-made_i 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.’ (=3b)
- (9) a. ?*Kodomo-kara_i demotai-ga *t_i* onona-made kooosinsi-tei-ta.
 child-from demonstrators-NOM adult-to march-ASP-PST
 Lit. ‘From children, demonstrators, to adults were marching.’

- b. *Otona-made_i demotai-ga kodomo-kara t_i kooosinsi-tei-ta.
 adult-to demonstrators-NOM child-from march-ASP-PST
 Lit. 'To adults, demonstrators, from children were marching.' (=4a)
- (10) a. *Ichigo-kara_i Yuko-ga kudamono-o t_i meron-made tabe-ta.
 strawberry-from Y.-NOM fruit-ACC melon-to eat-PST
 Lit. 'From strawberries, Yuko ate fruits, to melons.'
- b. *Meron-made_i Yuko-ga kudamono-o ichigo-kara t_i tabe-ta.
 melon-to Y.-NOM fruit-ACC strawberry-from eat-PST
 Lit. 'To melons, Yuko ate fruits, from strawberries.' (=4b)

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

- (11) a. [Kodomo-kara otona-made]_i demotai-ga t_i kooosinsi-tei-ta.
 child-from adult-to demonstrators-NOM march-ASP-PST
 Lit. 'From children to adults, demonstrators were marching.'
- b. [Ichigo-kara meron-made]_i Yuko-ga t_i 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.'

- cf. Yuko-ga Shinkansen-ni not-ta no-wa
 Y.-NOM bullet.train-on ride-PST NM-TOP
 [**Tokyo-kara Nagoya-made**] da.
 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 fruits to 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)
 Y.-NOM fruit-ACC eat-PST NM-TOP
[ichigo-kara meron-made] da.
 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)
 demonstrators-NOM march-ASP-PST NM-TOP
[kodomo-kara otona-made] da.
 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.² 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/kootai* ‘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 *seireisiteitosei* ‘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.

- (17) *Seireisiteitosei-ga* [Tokyo-karaNagoya-made] *hatansi-ta.*
 designated.city-NOM Tokyo-from Nagoya-to go.bankrupt-PST
 Lit. ‘The govt. designated cities went bankrupt, from Tokyo to Nagoya.’
- (18) Scrambling:
 a. *?*Tokyo-kara_i seireisiteitosei-ga t_i Nagoya-made hatansi-ta.*
 b. **Nagoya-made_i seireisiteitosei-ga Tokyo-kara t_i hatansi-ta.*
 c. ^{ok}*[Tokyo-kara Nagoya-made]_j seireisiteitosei-ga t_i hatansi-ta.*

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.

- (19) (Pseudo-)clefting:
- a. *Seireisiteitosi-ga Nagoya-made hatansi-ta no-wa
designated.city-NOM Nagoya-to go.bankrupt-PST NM-TOP
[Tokyo-kara] datta.
Tokyo-from COP.PST
Lit. 'It was from Tokyo that the government designated cities went bankrupt to Nagoya.'
 - b. *Seireisiteitosi-ga Tokyo-kara hatansi-ta no-wa [Nagoya-made] datta.
 - c. ^{ok}Seireisiteitosi-ga hatansi-ta no-wa [Tokyo-kara Nagoya-made] datta.

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.'
- b. Gakusei-ga daremo ko-nakat-ta.
student-NOM anyone come-NEG-PST
'No students came.'
- c. John-ga ringo-sika kudamono-o tabe-nakat-ta.
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).

- (21) a. John-ga san-bon banana-o tabe-ta.
J.-NOM 3-CL banana-ACC eat-PST
'John ate three bananas.'
- b. John-ga banana-o san-bon tabe-ta.
- c. san-bon John-ga banana-o tabe-ta.
- (Fujita 1991, cited in Aoyagi and Ishii 1994: 298)

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.
 Y.-NOM strawberry-from melon-to fruit-ACC eat-PST
 Lit. ‘Yuko ate fruits, from strawberries to melons.’
 b. Yuko-ga kudamono-o [ichigo-kara meron-made] tabe-ta.
 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.
 Tokyo-from Nagoya-to-NOM black.out-PST
 Lit. ‘From Tokyo to Nagoya was blacked out.’
 b. Kabunusi-ga [kogaisya-kara oyagaisya-made](-o) uttae-ta.
 stockholder-NOM subsidiary-from parent.firm-to-ACC sue-PST
 Lit. ‘Stockholders sued from subsidiaries to the parent firm.’

- (24) Scrambling:
 a. *Tokyo-kara teidensi-ta no-wa Nagoya-made datta
 Tokyo-from black.out-PST NM-TOP Nagoya-to COP.PST
 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)
 stockholder-NOM subsidiary-from sue-PST NM-TOP
 oyagaisya-made da.
 parent.firm-to COP.PRES
 Lit. ‘It was to the parent firm that the stockholders sued from its subsidiaries.’
 b. *Kabunusi-ga oyagaisya-made uttae-ta no-wa
 kogaisya-kara da.

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 ofice-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 teidensi-ta.
 Tokyo-from Nagoya-to-GEN range-NOM black.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 generalization in (16).³ 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)clefting, as in (28) and (29). It

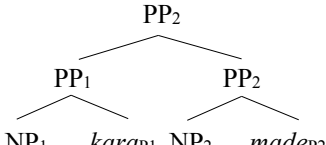
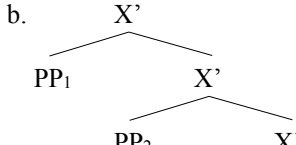
³ The complex PP can take verbal phrases as complements as well. The sentence in (i) is grammatical regardless of whether the head noun is overtly pronounced.

- (i) [[Dekakete]-kara [ie-ni kaeru]-made(-no aida)]-ga ensoku da.
 go.out-from home-to return-to-GEN while-NOM excursion COP.PRES
 ‘The trip isn’t over until you get back home.’

is therefore natural to assume that there is an independent reason that complex PPs resist extraction from out of it.

- (28) a. San-bon_i John-ga banana-o *t_i* tabe-ta.
 3-CL J.-NOM banana-ACC eat-PST
 ‘John ate three bananas.’
 b. John-ga banana-o tabe-ta no-wa san-bon datta.
 J.-NOM banana-ACC eat-PST NM-TOP 3-CL COP.PST
 Lit. ‘It was three that John ate bananas.’
- (29) a. ?Taro-dake_i 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).⁴ 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, PP₁ adjoins to PP₂, 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.  b. 

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 PP₁ or PP₂), but extraction out of conjuncts (that is, extraction out of either PP₁ or PP₂) should be prohibited as well. This prediction is indeed borne out. It has been observed that Complex

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 Constraint 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_i-o syoohisya-ga [_{t_i} 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_i-o syoohisya-ga [[taiya-o seisansu-ru
 kogaisya-kara] [_{t_i} hanbaisu-ru oyagaisya-made]](subete) uttae-ta
 c. *?Taiya_i-o syoohisya-ga [[_{t_i} 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-o* ‘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_i-o syoohisya-ga [PP₂ [PP₁ _{t_i} seisansu-ru kogaisya-kara]
 what-ACC consumer-NOM produce-PRES subsidiary-from
 [PP₂ _{t_i} 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.'
- (35) a. Tokyo-kara(-no) Nagoya-made-no basu.
Tokyo-from-GEN Nagoya-to-GEN bus
'The bus from Tokyo to Nagoya.'
b. Demotai-no kodomo-kara(*-no) otona-made-no sankā
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-no *aida*.
Tokyo-from-GEN Nagoya-to-GEN section
'The section from Tokyo to Nagoya.'
cf. Tokyo-kara Nagoya-made(-no *aida*)-o hasir-u basu.
Tokyo-from 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.

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