Empirical Issues in Syntax and Semantics 8
O. Bonami & P. Cabredo Hofherr (eds.) 2011, pp. 239–266
http://www.cssp.cnrs.fr/eiss8

DP external epistemic 'determiner's in Japanese

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1 Introduction

In Japanese, a sequence formed by a WH word[1], like *dare* ('who'), *nani* ('what'), *doko* ('where'), etc., and a disjunctive particle *ka*, may serve as an indefinite pronoun when it is case-marked, as in (1a). It may also be disjoined with other noun phrases, as in (1b)[2]:

(1) a. **dare-ka**-ga kita (Watanabe 2006: 292)
who -or-NOM came
'Someone came.'
b. koohii-**ka** kootya-**ka nani-ka**-o nomu. (adapted from Okutsu 1996: 152)
coffee-**or** tea-**or** **what-or-**ACC drink
'(I) drink coffee, tea or something else.'

A sequence *WH-ka* has another use: it may be accompanied by a host NP[3] marked by nominative or accusative markers, while occupying a post-nominal position, as in (2a), or a distant position, as in (2b)[4]. In these cases, a WH word should semantically agree with the host NP: in (2a,b), the host NP, *nomiono* ('drink'), requires a WH word *nani* ('what') specified for [-human] feature rather than [+human] *dare* ('who'). These two

*I thank an anonymous reviewer for his helpful comments. I am only responsible for all the remaining problems.

[1]WH words in Japanese lack their own quantificational force and are licensed normally by being associated with the particles *mo* or *ka* (Kratzer & Shimoyama 2002, among others.). As for the semantics of these particles, see below.

[2]The abbreviation used in the gloses are the following: ACC: accusative; CL: classifier; COMP: complementizer; COP: copular; DAT: dative; GEN: genitive; LOC: locative; NEG: negation; NOM: nominative; NUM: number; PAS: passive; PROG: progressive; PST: past; Q: question marker; TOP: topic; WH: WH word.

[3]In this paper, a WH word and the particle *ka* are put into bald characters, while the host NP is underlined.

[4]A *WH-ka* may occupy a pre-nominal position, excluding identification reading, as in (i). This construction will not be discussed for lack of space:

(i) textbfnani-ka nomimono-o watasi-ni kudasai. #Coola-o onegaisimasu / nan-demo ii desu.
what-or drink-ACC me-DAT give Coke-ACC please / what-even good COP
'Give me some drink. {Coke, please. / Anything is ok.} (adapted from Kamio 1973: 82)

uses (henceforth, post-nominal and floating uses), have attracted mush less attention than its pronominal use in an argument position, as in (1a):

(2) a. nomimono-o **nani-ka** watasi-ni kudasai. #Coola-o onegaisimasu /
drink-ACC **what-or** me-DAT give Coke-ACC please /
nan-demo ii desu.
what-even good COP
'Give me some drink. Coke please. / Anything is ok.' (adapted from Kamio 1973: 82)

b. nomimono-o watasi-ni **nani-ka** kudasai. #Coola-o onegaisimasu /
drink-ACC me-DAT **what-or** give Coke-ACC please /
nan-demo ii desu.
what-even good COP

c. nomimono-o watasi-ni kudasai. Coola-o onegaisimasu / nan-demo
drink-ACC me-DAT give Coke-ACC please / what-even
ii desu.
good COP
'Give me a drink. Coke please. / Anything is ok.'

A semantic effect of post-nominal and floating *WH-ka*, as in (2a,b), is to convey the speaker's ignorance about the referent of the host NP, while a bare NP may convey either ignorance or identification meaning, as in (2c). This contrast between a bare NP and a host NP accompanied by post-nominal or floating *WH-ka* may be compared in Spanish with that between an indefinite article, as in (3a), and an epistemic determiner, *algún*, as in (3b) which requires the speaker's ignorance[5]:

(3) a. María se casó con **un** estudiante del departamento de lingüística,
María self married with **a** student of the department of Linguistics,
en concreto con Pedro. (Alonso-Ovalle & Menéndez-Benito 2009)
namely with Pedro
'Mary married a Linguistic student, namely Pedro.'

b. María se casó con **algún** estudiante del departamento de lingüística,
María self married with ALGUN student of the department of Linguistics,
(#en concreto con Pedro) (ibid.)
(namely with Pedro)
'Mary married some Linguistic student or other (#namely Pedro).'

Syntactically, Mikami (1972) and Kamio (1973) compare post-nominal and floating *WH-ka* with post-nominal and floating numeral+classifier (henthforce *Num+CL*), as in (4a,b). It has been much discussed i) whether a floating *Num+CL* is derived from a

[5]The same is true for French *quelque* in (iia) and Italian *un qualche* in (iib)

(i) a. Yoronda a dû rencontrer **quelque** amie (#je sais bien qui c'était).[Fr]
'Yoronda must have met some girl friend or other ("#I know well who it was).' (adapted from Jayez & Tovena 2008: 272)

b. Hai incontrato **un qualche** compagno di scuola (??cioè Vito) ? [It]
'Did you meet any schoolmate (??namely Vito)?' (Zamparelli 2007: 303)

post-nominal one, and ii) whether a case-marked host NP and a post-nominal *Num+CL* are in the same nominal projection:

(4) a. nomimono-o **ip-pai** watasi-ni kudasai.
drink-ACC **one-CL** me-DAT give
b. nomimono-o watasi-ni **ip-pai** kudasai.
drink-ACC me-DAT **one-CL** give
'Give me a cup of drink.'

Similarly, it may be asked i) whether a floating *WH-ka* is derived from a post-nominal one, and ii) whether a case-marked host NP and a post-nominal *WH-ka* are in the same nominal projection. These questions are interesting in view of a recent discussion on syntax and semantics of quantifiers and determiners in East Asian languages. Gil & Tsoulas (2009) argue that nominal quantification in these languages may be achieved in the verbal domain. Cheng (2009) observes that a Chinese adverb *dōu* in (5), although being outside coordinated quantifier phrases, restricts the denotations of the underlined two NPs ('student' and 'teacher'), and claims, assuming that the essential function of definite determiners is to restrict the alternative domain, that *dō* semantically acts as a DP-external definite determiner:

(5) [Dàpùfèn de xuéshēng hé měi-ge lǎoshī] **dōu** zǎo dào. (Cheng 2009: 68)
most of student and every-CL teacher **DOU** early arrive
'Most of **the** students and all **the** teachers arrived early.'

This paper will argue i) that syntactically, some cases of floating *WH-ka* are analyzed as parenthetical sluiced indirect questions, paraphrased in English by 'I don't know WH', while other cases are derivationally related to a post-nominal *WH-ka*, which in turn is an appositive of the case-marked host NP; and ii) that semantically, the ignorance meaning of the former is due to the implicit main clause corresponding to 'I don't know', while the ignorance meaning of the latter is only pragmatically derived from the fact that the alternative domain it induces should include at least two members, just as in the cases of epistemic determiners.

In what follows, I will first examine the syntax of post-nominal and floating *WH-ka*, by comparing them with post-nominal and floating *Num+CL* (Section 2). Next after having shown that two recent semantic analyses about *WH-ka* cannot make sense of distributions of post-nominal and floating *WH-ka*, and based on their common distributions with Romance epistemic determiners, I will apply one of the previous analyses advanced for epistemic determiners to post-nominal *WH-ka* (Section 3); I will finally recapitulate the results of this study (Section 4).

2 Syntax of floating and post-nominal *WH-ka*

2.1 Analysis of floating *WH-ka* in terms of parenthetical sluiced indirect question

The syntax of floating *Num+CL* has attracted much attention in the literature and two competing views have been proposed: i) Miyagawa (1989), Miyagawa & Arikawa (2007),

among others, argue that a floating *Num+CL* is adjacent to the host NP in the underlying structure, and is left behind after the movement of the latter, as in (6a) (henceforth 'stranding view'); ii) Nakanishi (2008), among others, claims that a floating *Num+CL* is, just as its surface position indicates, base-generated as a VP adjunct, as in (6b) (henceforth 'adjunct view'):

(6) a. [nomimono-o]$_k$ watasi-ni [t$_k$] [**ip-pai**] kureru. [stranding view]
[drink-ACC me-DAT **one-CL** give
b. [nomimono-o] watasi-ni [$_{VP}$ **ip-pai** [$_{VP}$ kureru]]. [adjunct view]
[drink-ACC me-DAT **one-CL** give
'(one will) give me a cup of drink.'

In favor of the adjunct view, it is observed that a floating *Num+CL* can be related to the host NP within another NP, as in (7a), or within a postpositional phrase, as in (7b): it is widely accepted that a movement across a complex NP is prohibited and that, contrary to nominative and accusative markers which are cliticized onto the NP, the postposition *kara* 'from' is disposed with its own projection, and should disturb an association across its boundary. The acceptability of (7a,b) indicates that at least some cases of floating *Num+CL* are generated separately from the host NP since the underlying structure. The VP adjunct view is further supported by the fact that a floating *Num+CL* semantically quantifies not only over the referents denoted by the host NP, but also over the events denoted by the VP (Nakanishi 2008):

(7) a. ano isya-wa [$_{NP}$[$_{NP}$ zidoo]−no me]−o **sanzyuu-nin** sirabeta.
that doctor-TOP pupil-GEN eye-ACC **thirty-CL** examined
'That doctor examined thirty pupils' eyes.' [√host NP in complex NP] (Nakanishi 2008: 294)
b. [$_{PP}$[$_{NP}$ gakusee]-kara] **nizyuu-mei-izyoo** okane-o
student-from **twenty-CL-or more** money-ACC
atume-nakerebanaranai.
collect-must
'(We) must collect money from twenty students or more.' [√host NP in PP]
(Takami 2001: 129)

Two similar views may be proposed for floating *WH-ka*: i) it is adjacent to a host NP in the underlying structure, and is left behind after the movement of the latter, as in (8a); ii) a floating *WH-ka* is derivationally independent from the host NP, as in (8b):

(8) a. [nomimono-o]$_k$ watasi-ni [t$_k$] [**nani-ka**] kureru yooda [stranding view]
drink-ACC me-DAT **what-or** give likely
b. [nomimono-o] watasi-ni [**nani ka**] kureru yooda [adjunct view]
drink-ACC me-DAT **what or** give likely
'It is likely that one gives me some drink or other'

But differently from a floating *Num+CL*, a floating *WH-ka* cannot be analyzed as a VP adverb quantifying over the events denoted by the VP. Based on the observation that a sequence *WH-ka* is obtained by sluicing an indirect question, as in (9a) (Takahashi 1994), a possible approach is to analyze floating *WH-ka* as a parenthetical sluiced indi-

rect question whose interrupting nominative or accusative markers and matrix clause are phonologically omitted. According to this analysis, the particle *ka* is a complementizer occupying the head of CP, and the ignorance reading is due to an elliptical matrix clause paraphrased by 'I don't know', as in (9b):

(9) a. Mary-ga hon-o katta rasii ga, boku-wa [$_{CP}$ **nani**(-o)[$_{IP}$] [$_{C}$ **ka**]]
Mary-NOM book-ACC bought likely but, me-TOP **what**-ACC Q
wakara-nai.
know-NEG
'It is likely Mary bought a book, but I don't know what.' (Takahashi 1994: 266)

b. Mary-ga hon-o [(watasi-ni-wa) [$_{CP}$ **nani**(-o)[$_{IP}$] [$_{C}$ **ka**]] (wakara-nai
Mary- NOM book-ACC (me-DAT-TOP) **what-**ACC **or** know-NEG
ga)] katta-rassi
but bought-likely
'It is likely Mary bought a book – I don't know what.'

This analysis is supported by the following parallel distribution between sluiced indirect questions and some cases of floating *WH-ka*. When sluiced indirect question is related to genitive- or ablative-marked NP, the interrupting case-markers cannot be omitted, as in (10a) and (11a). The same is true for floating *WH-ka* related to genitive- or ablative-marked host NP, and requiring the interruption of a case marker, as in (10b) and (11b):

(10) a. ano kantoku-wa sensyu-no kao-o nagutta rasii ga, boku-wa
that trainer-TOP player-GEN face-ACC beat likely but, I-TOP
{??**dare-ka**/**dare**-no-**ka**} wakara-nai.
who-or/**who**-GEN-**or** know-NEG
'It is likely that trainer beat the face of a payer - I don't know {who / whose}.'

b. ano kantoku-wa [[sensyu]-no kao-o] {??**dare-ka**/**dare**-no-**ka**
that trainer-TOP player-GEN face-ACC **who-or**/**who**-GEN-**or**
(wakara–nai ga)} nagutta rasii. [host NP inside complex NP]
know-NEG but beat likely
'It is likely that trainer beat the face of some player - I don't know {who / whose}.'

(11) a. gakusee-kara denwa-ga atta rasii ga, boku-wa {??**dare-ka / dare**-kara
student-from call-NOM was likely but, I-TOP **who-or**/**who**-from
ka} wakara-nai.
or know-NEG
'It is likely that there was a call from a student, but I don't know {who / from whom}.'

b. gakusee-kara {??**dare-ka/dare**-kara **ka** (wakara-nai ga)} denwa-ga atta
student-from **who-or/who**-from **or** know-NEG but call-NOM was
rasii.
likely

'It is likely that there was a call from some student - I don't know {who /from whom}.' [host NP inside a PP adjunct]

But the adjunct view cannot apply to all cases of floating *WH-ka*. As will be discussed in Section 3, floating *WH-ka* typically occur in modal contexts, like imperatives, as in (12a), where a Free Choice reading is induced. In these contexts, it is redundant and pragmatically even inappropriate to say, by means of parenthetical indirect question, that the speaker cannot identify the referent, as in (12b):

(12) a. nomimono-o watasi-ni **nani-ka** kudasai. nan-demo ii desu. (=(2b))
drink-ACC me-DAT **what-or** give what-even good COP
'Give me some drink or other. Anything is ok.'
b. ??nomimono-o watasi-ni [**nani-ka** wakara-nai ga] kudasai. nan-demo
drink-ACC me-DAT **what-or** know-NEG but} give what-even
ii desu.
good COP
'Give me some drink– I don't know what. Anything is ok.'

Furthermore, some cases of floating *WH-ka* manifest scope variability as well as post-nominal *WH-ka*, and differently from parenthetical sluiced indirect questions: in (13a), floating *dare-ka* ('who-or') c-commanded by a quantifying adverb *mai-kai* ('every time') prefers narrow scope. The same is true for post-nominal *WH-ka*, as in (13b). On the other hand, *dare-ka* c-commanding *mai-kai* prefers wide scope, as in (13c). A parenthetical sluiced indirect question always takes wide scope over *mai-kai*, as shown in (14a,b,c):

(13) a. gakusee-ga *mai-kai* **dare-ka** situmon-o suru.
student-NOM *every time* **who-or** question-ACC ask
[√every >some / ??some > every]
'Every time, there is some student who asks a question.
b. *mai-kai* gakusee-ga **dare-ka** situmon-o suru.
every time student-NOM **who-or** question-ACC ask
[√every >some / ??some > every]
'Every time, there is some student who asks a question.
c. gakusee-ga **dare-ka** *mai-kai* situmon-o suru.
student-NOM **who-or** *every time* question-ACC ask
[??every >some / √some > every]
'There is some student or other who asks a question every time.'

(14) a. gakusee-ga *mai-kai* [**dare ka** wakara-nai ga] situmon-o suru.
student-NOM *every time* **who or** know-NEG but question-ACC ask
[*every >some]
'Every time, there is some student who asks a question – I don't know who.
b. *mai-kai* gakusee-ga [**dare ka** wakara-nai ga] situmon-o suru.
every time student-NOM **who or** know-NEG but question-ACC ask
[*every >some]
'Every time, there is some student who asks a question - I don't know who.'

c. gakusee-ga [**dare ka** wakara-nai ga] *mai-kai* situmon-o suru.
student-NOM **who or** know-NEG but *every time* question-ACC ask
[*every >some]
'There is some student who asks a question every time – I don't know who.'

These observations rather support the stranding view according to which a floating *WH-ka* is derivationally associated with a post-nominal *WH-ka*. I will examine in next section the syntax of post-nominal *WH-ka*, by comparing it with that of post-nominal *Num+CL*.

2.2 DP internal analysis of post-nominal *WH-ka*

Miyagawa (1989) argues that a post nominal *Num+CL* is a secondary predicate of a case-marked host NP and does not form a constituent with it[6]. Kamio (1973) however observes that a sequence <*NP+Case+Num+CL*> may be coordinated with another noun phrase, as in (15a), which suggests that this sequence forms a constituent categorically equivalent to a noun phrase [7]. This author points out that the same is true for a sequence <*NP+Case+WH-ka*>, as in (15b).

(15) a. [gakusee-ga **go-nin**] to Yoshida san-ga tukamatta.
student-NOM 5-CL and Yoshida Mr.-NOM were arrested
(Kamio 1973: 72)
'Five students and Mr. Yoshida were arrested.'

b. [otokonoko-ga **dare-ka**] to Yoshida san-ga kita hazuda. (idem.83)
boy-NOM **who-or** and Yoshida Mr.-NOM came must
'Some boy or other and Mr. Yoshida must have come.'

[6]Miyagawa himself rejects this analysis in a later work (Miyagawa & Arikawa 2007: 650) for a theoretical reason (i.e. a secondary predicate analysis amounts to a violation of the principle of binary branching), and identifies the projection formed by a case-marked host NP and post-nominal *Num+CL* as NumberP.

[7]Koizumi (2000) suggests that a coordination with a DP may not argue for the existence of a nominal projection, by claiming a possibility of across the broad verb raising, represented as in (i): according to this analysis, the sequence <*NP-Case+ Num+CL*> may instantiate an elliptical VP. Kawazoe (2002) refutes this analysis by pointing out that, when the sequence is naturally be interpreted as an elliptical VP (ex. when it involves a temporal adjunct, as in (ii-a), or when a *Num+CL* is replaced by a measure phrase counting events, as in (ii-b)), it cannot be coordinated with a DP.

(i) [$_{VP}$ gakusee-ga **go-nin** t_v] to [$_{VP}$ Yoshida san-ga t_v] tukamatta$_v$
student-NOM 5-CL and Yoshida Mr.-NOM were arrested
'Five students and Mr. Yoshida were arrested.'

(ii) a. *[gakusee-ga kinoo **hura-ri**] to [sensee-ga] kita. (Kawazoe 2002: 169)
student-NOM yesterday 2-CL and teacher-NOM came
'(lit) Two students yesterday and a teacher came.'
b. *[Taroo-ga **ni-kai**] to [Ziroo-ga] keisatu-ni hodoos-are-ta (idem.170)
Taro-NOM two times and Ziro-NOM police-by arrest-PAS-PST
'(lit)Taro two times and Ziro were arrested by the police.'

(16) sono purojekuto-wa seika-o **nani-mo** age-nakat-ta.
that project-TOP achievement-ACC what-MO raise-NEG-PST
(Watanabe 2006: 281)
'That project didn't produce any results.'

In the same vein, discussing a sequence formed by a WH word and another particle *mo*, as in (16), which induces a NPI effect in negative sentences, Watanabe (2006) claims i) that it is in the same nominal projection as the host NP, as well as in the cases of post-nominal *Num+CL*, although their positions are different, and ii) that the particle *-ka* occupies the same position as the particle *-mo*. According to this analysis, a post-nominal *WH-ka* would be in the same nominal projection as the host NP. I will show below, after having presented the details of Watanabe's analysis, that this analysis encounters an empirical problem.

2.2.1 Watanabe (2006)

Watanabe observes that: i) a *Num+CL* may directly follow a host NP, as in (17a); ii) it may be accompanied by the genitive marker, *no*, in a pre-nominal position, as in (17b); iii) it may follow the case-marked host NP, as in (17c):

(17) a. gakusee **hito-ri**-ga kuru
student one-CL-NOM come
b. **hito-ri**- no gakusee-ga kuru
one-CL GEN student-NOM come
c. gakusee-ga **hito-ri** kuru
student-NOM one-CL come
'One student came.'

To account for these word orders, this author first assumes an articulated structure for DP in Japanese, consisting of DP, QuantifierP, CaseP, #P (for numeral quantifiers), and NP, as in (18), where a numeral and a classifier are respectively merged in Spec-#P and head #:

(18) $[_{DP}\ [_{QP}\ [_{CaseP}\ [_{\#P}\ [\ NP\ ]\ \#\ ]\ Case]\ Quantifier]\ Determiner]$ (Watanabe 2006: 252)

He then proposes the following iterated remnant movements[8]:

i) *gakuse hito-ri-ga* ('student one-CL-Nom') in (17a) is derived from an initial input in (19a) by a movement of NP to Spec-CaseP, as in (19b)

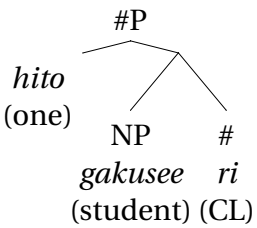
ii) *hito-ri no gakusee-ga* ('one-CL-Gen student-Nom') in (17b) is derived from (19b) by a movement of #P to Spec-QP, as in (19c), and by the insertion of the genitive *no*[9];

iii) *gakusee-ga-hito-ri* ('student-Nom one-CL') in (17c) is derived from (19c) by a movement of CaseP to Spec-DP, as in (19d);

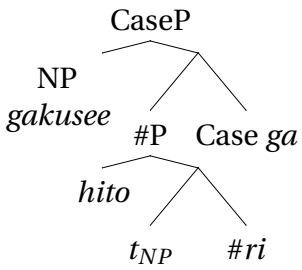
[8]Watanabe (2006) assumes that Japanese is head final since the beginning of the derivational history.

[9]According to Watanabe (2006: 256), the genitive marker, *no*, "is inserted after the derivation is handed over to the PF branch", and therefore "is not represented structurally".

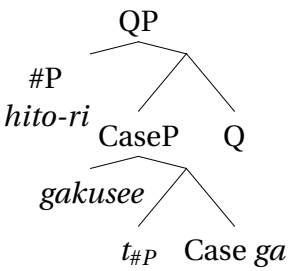
(19)a.



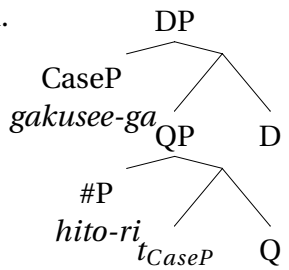
(19)b.



(19)c.



(19)d.



Next, Watanabe observes that: i) *WH-mo* cannot directly follow a NP, as in (20a), which indicates that the position of *WH-mo* is different from that of *Num+CL*; ii) in pre-nominal position, only a WH word is genitive-marked, while the particle *mo* follows a NP, as in (20b); iii) *WH-mo* may follow a case-marked NP, as in (20c); iv) in a post-nominal position, a WH word may precede *Num+CL*, which may be followed by the particle *mo*, as in (20d):

(20) a. *sono purojekuto-wa seika **nani-mo** age-nakat-ta.
that project-TOP achievement what-MO raise-NEG-PST
(Watanabe 2006: 281)

b. sono purojekuto-wa **nani-**no seika(-o)-**mo** age-nakat-ta.
that project-TOP what-GEN achievement-ACC-MO raise-NEG-PST
(ibid.)

c. sono purojekuto-wa seika-o **nani-mo** age-nakat-ta.
that project- TOP achievement-ACC what-MO raise-NEG-PST
(ibid.)

d. sono purojekuto-wa seika-o **nani-**hito-tu(-**mo**) age-nakat-ta.
that project- TOP achievement-ACC what-one-CL(-MO) raise-NEG-PST
(ibid.)
'That project didn't achieve any result.'

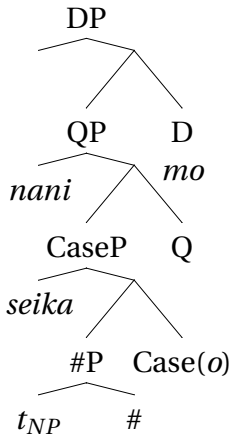
To make sense of these word orders, Watanabe assumes the following steps:

i *nani-no seika-mo* ('what-Gen-result-MO') in (20b) is derived from (19b) by merging *nani* ('what') in Spec-QP, and the particle *mo* in the head D, and by the morphological insertion of the genitive *no*, as in (21a);

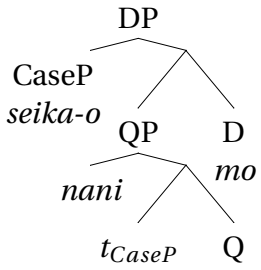
ii *seika-o nani-mo* ('result-Acc-what-MO') in (20c) is derived from (21a) by a movement of CaseP to Spec-DP, as in (21b);

iii *seika-o nani-hitotu-mo* in (20d) is derived from (19b) first by merging *nani* ('what') and the particle *mo* respectively in Spec-QP and in the head D, second by moving #P to inner Spec-QP, and third by moving CaseP to Spec-DP, as in (21c):

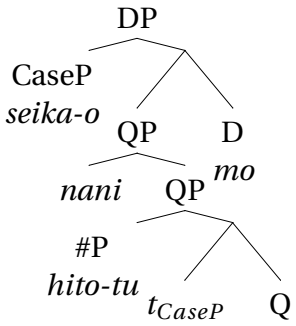
(21)a.



(21)b.



(21)c.



Crucially, Watanabe (2006: 288) assumes that "when a movement operation creates a second Spec, it must always be the inner-most Spec, because a shorter movement can achieve that."

2.2.2 Counter-examples to DP internal analysis

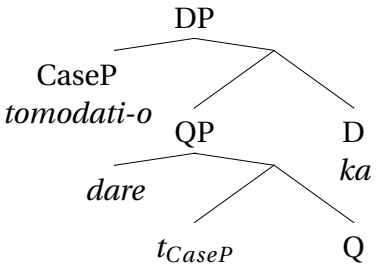
According to Watanabe (2006), the particle *-ka* occupies, as well as the particle *mo*, the head D. The sequence, *tomodati-o dare-ka* ('friend- ACC who-or'), would thus be represented by (22c). This approach however does not account for the order, *tomodati-o hito-ri dare-ka* ('friend-ACC one-CL who-or') in (22a). This sequence may be coordinated with another DP, as in (22b), and therefore forms a constituent with the host NP followed by *Num+CL*[10]:

(22) a. aru zyuku-de-wa seeto-ga tomodati-o **hito-ri dare-ka**
certain private-school-LOC-TOP pupil-NOM friend-ACC **one-CL who-or**
tureteki tara, okozukai-o ageru.
bring together if pocket money-ACC give
'A certain private school gives pocket money to a pupil if (s)he brings together some friend.'(http://strongpie.btblog.jp/cm/kulSc1a7W48DA71CF/1/)

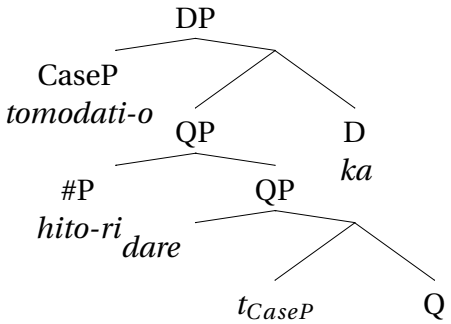
b. [tomodati-o **hito-ri dare-ka**] to [sono okaasan-o] turetekuru
friend-ACC **one-CL who-or** and that mother-ACC bring together
'bring together some one friend and his (her) mother

[10]The analysis in terms of a parenthetical sluiced indirect question is inappropriate here since *dare-ka* ('who-or') occurs in the antecedent of conditional which induces a free-choice like reading, and where it is redundant to say that the speaker cannot identify the referent in question.

c.



d.



If the relevant sequence in (22a) were derived by a movement of #P, *hito-ri* ('one-CL'), to Spec-QP, we should assume that #P moves to outer Spec-QP over inner Spec-QP occupied by a previously merged WH word, as in (22d). But this derivation should be excluded by Watanabe's above principle that "when a movement operation creates a second Spec, it must always be the inner-most Spec". Thus, there is no place to put a post-nominal *WH-ka* inside a DP under Watanabe's (2006) framework, and we are led to conclude that, although a post-nominal *WH-ka* (when it cannot be analyzed as a parenthetical sluiced indirect question) forms a constituent with the case-marked host NP, it should be outside the DP including the latter. Where is such a post-nominal *WH-ka*?

2.3 Appositive analysis

Okutsu (1996) and Eguchi (1998) analyze a *WH-ka* associated with another NP as an appositive expression. They first point out that a use of *WH-ka* presupposes a set of contextually selected alternative members, and that *WH-ka* may be disjoined with some of such alternative members, as in (23a). In these cases, a *WH-ka* denotes a non-specified one of the alternatives. According to these authors, when it is preceded by the host NP, as in (23b), the sequence, *koohii-ka kootya-ka nani-ka* ('coffee, tea or something else'), is an appositive, and serves to describe the object in question extensionally, while the host NP represents it intensionally:

(23) a. koohii-**ka** kootya-**ka** **nani-ka**-o nomu. (=(1b))
coffee-**or** tea-**or** **what-or**-ACC drink
'(I) drink coffee, tea or something else.'

b. [nomimono-o] [(koohii-**ka** kootya-**ka**) **nani-ka**] watasi-ni kudasai.
drink-ACC coffee-**or** tea-**or** **what-or** me-DAT give
'Give me some drink, coffee, tea, or something else.'

According to this analysis, post-nominal *WH-ka* is obtained when the contextually selected alternatives members (ex. *coffee* and *tea* in (23b)) are not explicitly mentioned. This analysis is supported by the fact that a disjunction of alternatives following the case-marked host NP behaves in the same way as a post-nominal *WH-ka* with respect to the three tests discussed in Section 2.2: i) a sequence [NP-Case *X-ka Y-ka WH-ka*] may be coordinated with another DP, as in (24); ii) when the host NP is situated inside a PP adjunct, a post-nominal disjunction of alternatives is not acceptable, as in (25); iii) a post-nominal disjunction of alternatives manifests scope variability with respect to a clause-mate quantifier, as in (26a,b)

(24) [[otokonoko-ga] [John-**ka** Paul-**ka dare-ka**]] to Yoshida san-ga kita
boy-NOM John-**or** Paul-**or who-or** and Yoshida Mr.NOM came
hazuda.
must
'A boy, John, Paul or someone else, and Mr. Yoshida must have come.'

(25) ??[$_{PP}$ gakusee-kara] John-**ka** Paul-**ka dare-ka** denwa-ga atta rasii.
student-from John-**or** Paul-**or who-or** call-NOM was likely
'It is likely that there was a call from a student, John, Paul or someone else.'

(26) a. *mai-kai* gakusee-ga John-**ka** Paul-**ka dare-ka** situmon-o suru.
every time student-NOM John-**or** Paul-**or who-or** question-ACC ask
'Every time, there is a student, John, Paul or someone else,who asks a question.' [$\surd$every >or / ??or > every]

b. gakusee-ga John-**ka** Paul-**ka dare-ka** *mai-kai* situmon-o suru
student-NOM John-**or** Paul-**or who-or** *every time* question-ACC ask
'There is a student, John or Paul or someone else, who asks a question every time.' [??every >or / $\surd$or > every]

One might contest the appositive analysis for the following morphological, syntactic or semantic reasons, referring to Potts's (2005) influential analysis of appositives. First, according to Potts (2005: 107), the host NP and the appositive should 'share case'. But, in (23b), the host NP is marked by the accusative, while the post-nominal *WH-ka* is not case-marked.

Syntactically, Potts (2005: 106-107) argues that the right adjunction of an appositive is forbidden in languages without syntactically, morphologically or intonationally distinguished non-restrictive relative clauses, like Turkish and Japanese. But, in (23b), the disjunction of alternatives is obliged to be right adjoined to the case-marked host NP.

Semantically, Potts (2005) claims that appositives are "scoleless" and truth conditionally independent from the rest of the sentence, and convey conventional implicature computed separately from the truth value. But in (26a,b), the post-nominal disjunction may take narrow scope under a clause-mate quantifier. How can I resolve these problems?

For the morphological problem, it is to be noticed that iterated nominatives or accusatives are seriously restricted in Japanese. Double nominative is admitted in matrix clauses only when the first nominative DP is interpreted as a subject of predication (called 'major subject') and is focused, as in (27a)[11], which is not the case for the nominative host NP followed by *WH-ka*; double accusative is in principle excluded in Japanese (this restriction is called 'double *-o* constraint'), as illustrated in (27b). I therefore claim that post-nominal disjunction and post-nominal *WH-ka* are not case-marked because of language specific morphological restrictions:

[11]The object of psychological verbs may be marked by the nominative, which gives rise to double nominative, as in (i). This phenomena is not relevant for the post-nominal *WH-ka*:

(i) boku-ga Hanako-ga sukida. (Kuno 1973 49)
I-NOM Hanako-NOM love
'It is me that love Hanako.'

(27) a. kono kurasu-ga dansee-ga yokudekiru. (Kuno 1973: 39)
this class-NOM man-NOM good
'It is this class whose male students are good.' [double nominatives]
b. *watasi-wa Taro-o hon-o yama-seta[12]. [double *–o* constraint]
me- TOP Taro-ACC book-ACC read-made
'I made Taro read a book.'

Next, to account for the syntactic and semantic problems against the appositive analysis, I propose with De Vries (2009) to distinguish i) predicational appositive whose host NP is referential, as in *Joop, a nice guy*, and ii) specificational type which specifies the value of the host NP, as in *my roommate, Joop*. A disjunction of alternatives following the host NP may be classified among specificational appositives[13]. The syntactic and semantic constraints noted by Potts (2005) surely apply to the predicational type but not to the specificational type.

Syntactically, while a predicational appositive is situated to the left of the host NP and is marked by the genitive *no*, like *isya* ('doctor') in (28a), Heringa (2009) points out that a specificational type (which may be accompanied by an adverb, *sunawati* ('namely')) follows the host NP, as in (28b)[14]:

[12]In causative constructions in Japanese, the causee and the object of embedded verb may be accusative-marked if the accusative is used only once:

(i) a. watasi-wa Taro-o ika-seta.
me- TOP Taro-ACC go-made
'I made Taro go.'
b. watasi-wa hon-o yoma-seta.
me- TOP book-ACC read-made
'I made (someone) read a book.'

[13]De Vries (2009) observes that an appositive often includes a kind of coordinator, illustrated by *namely* in (i-a) and proposes that the host and the appositive form "specifying coordination" relation, which is expressed syntactically by specifying Coordination Phrase (noted by &P), as in (i-b), where the host and the appositive are respectively situated in Spec and Complement:

(i) a. In 1973, Skylab tool two animals, *namely* the spiders Arabbela and Anita, into space.
b. [&P $_{Spec}$ *two animals* [$_{Head}$ & *namely*] [$_{Complement}$ Arabella and Anita]]

But the coordination analysis gives a wrong result in terms of category projection: the category of the whole phrase is in fact a NP which is the category of the specifier or of the complement, and not of the head (this remark is owed to the anonymous reviewer). Furthermore, in Japanese, a head final language, the coordination analysis predicts that a coordinator, like *sunawati* ('namely'), might be situated to the right of the appositive, which is not true as shown by (28b). And crucially, my hypothesis that a floating *WH-ka* is derived from a post-nominal *WH-ka* by the movement of the case-marked host NP should suppose an extraction of one of two coordinated elements, and would violate the coordination constraint. I then do not adopt the coordination analysis for post-nominal *WH-ka*.

[14]The case, as in (i), discussed by Furuya (2004), may be analyzed as another case of right-adjoined appositive in Japanese. But this sequence also may be analyzed as parallel to English "us linguists" where *us* and *linguist* are situated respectively in DP and NP projections, as in (i):

(i) [$_{DP}$ [watasi-tati] [$_{NP}$ gengogakusya]]
us linguist

(28) a. Isya-no Yooko-ni soodansi-yoo. (Nishiyama 2007: 9)
doctor-GEN Yooko-DAT consult-I will
'I will consult Yooko, (who is) a doctor.'
b. 1973 nen-ni Skylab-wa ni-hiki-no doobutu, (sunawati) kumo-no
1973 year-LOC Skylab-TOP 2-CL-GEN animal (namely) spider-GEN
Arabella to Anita-o utyuu-ni tureteitta. (Heringa 2009)
Arabella and Anita-ACC space-LOC took
'In 1973, Skylab took two animals, namely the spiders Arabbela and Anita, into space.'

Semantically, Wang, McReady & Reese (2004) show that "[specificational type of] appositives and main clauses interact in complex ways, often affecting each other's interpretation". Thus, while an indefinite NP, like *a car* in (29a) or *one man* in (30a), takes either wide or narrow scope with respect to other operator (ex. intensional verb in (29a) or universal quantifier in (30a)), the referential specificational appositive, *the red BMV*, forces wide scope, as in (29b). Inversely, the bound-variable specificational one, *himself*, requires narrow scope reading, as in (30b):

(29) a. John wants a car. (Wang, McReady & Reese 2004) [want >a / a > want]
b. John wants a car, the red BMW. (ibid.) [*want > a / a > want]

(30) a. Everyone admires exactly one man. (ibid.) [every > some / some> every]
b. Everyone admires exactly one man, himself. (ibid.) [every > some / * some> every]

I then claim that a disjunction of the alternatives (and a post-nominal *WH-ka*) is not a predicational appositive (situated to the left of the host NP), but a specificatinal one (right adjoined to the case-marked host NP). This hypothesis is supported by the following data. Potts (2005: 129) points out that a predicational appositive inducing conventional implicature can only be adjoined to a referential expression, and not to an expression which "contain(s) a pronoun that is bound from outside of [host NP]", as in (31a). On the other hand, post-nominal *WH-ka* allows, without any problem, the host NP to include a quantified variable, as in (31b):

(31) a. *Every student$_k$ spoke with [a psychiatrist of hers$_k$], [a caring individual who welcomes house calls]. (Potts 2005: 129)
b. dono kyooin$_k$-mo [zibun$_k$-ga sidoosuru gakusee]-o [**dare-ka**]
which teacher-∀ self-NOM supervise student-ACC **who-or**
suisen dekiru.
recommend can
'Each teacher can recommend some student that (s)he supervises.'

2.4 Summary of Section 2

In Section 2, I have argued that floating *WH-ka* is classified into the two subtypes: i) a type analyzed as a parenthetical sluiced indirect question, as in (32a); ii) another one where a *WH-ka* (which may be disjoined with some of the alternatives) is an appositive right adjoined to the case-marked host NP, and is stranded after the movement of the

latter, as in (32b). In both cases, a *WH-ka* is outside of the DP including the case-marked host NP:

(32) a. *parenthetical sluiced indirect question accompanied by elliptical matrix*
Mary-ga [hon-o] kinoo [$_{CP}$ **nani**(-o) [$_{IP}$] [$_{C}$ **ka**]] (wakara-nai
Mary-NOM book-ACC yesterday **what-**ACC **or** know-NEG
ga)] [katta-rasii].
though bought-likely
''It is likely Mary bought a book yesterday – I don't know what.'

b. *specificational appostive right-adjoined to the case-marked host NP*
[nomimono-o]$_k$ watasi-ni [[t$_k$] [(koohii-**ka** kootya-**ka**) **nani-ka**]] kudasai.
drink-ACC me-DAT coffee-**or** tea-**or** **what-or** give
'Give me some drink, coffee, tea, or something else.'

The first type is recognized by the fact that the host NP is inside another NP or inside s post-positional phrase and *WH-ka* is interrupted by a genitive marker or a post-position. The second type is identified by a possibility of coordination with another NP or by scope variability.

In the former case, the ignorance reading is due to an elliptical matrix clause corresponding to 'I don't know'. The derivation of the ignorance reading is not so direct in the latter case. Furthermore, although basically defined as specificational type of appositive, post-nominal *WH-ka* is informationally different form post-nominal disjunction of alternatives: the explicit disjunction of alternatives clearly adds stronger information to the meaning of the host NP, while a simple *WH-ka* is less informative than that of the host NP. The way of its semantic contribution should be different from that of post-nominal disjunction of alternatives. In Section 3, I will examine the semantics of the appositive type of post-nominal *WH-ka*.

3 Semantics of appositive type of post-nominal *WH-ka*

In this section, I will first show that two recent semantic analyses of *WH-ka* cannot account for the semantics of post-nominal *WH-ka* (3.1). After having shown that post-nominal *WH-ka* manifests the same distributions as epistemic determiners in Romance languages, I will present Alonso-Ovalle & Menéndez-Benito's (2009) analysis of the latter (3.2). I will then propose to apply their analysis to Japanese post-nominal *WH-ka*, slightly modifying it (3.3).

3.1 Previous semantic analyses

3.1.1 Hagstrom (1998)

Hagstrom (1998) observes that a case-marked *WH-ka*, as *nani-ka* in (33a), doesn't allow a donkey-type pronoun (bound by an external quantifier, like *taitei* ('in general') in (33a)), contrary to *something* in English in (33b). Based on this observation and assuming that a WH word, like *dare* ('who'), only provides a variable and restriction, as in (34a), Hagstrom (1998: 134) claims that "existential quantification must be an inherent part of the semantic value of *–ka*", and formalizes this idea by analyzing the particle *ka*

in *WH-ka* as an existential quantifier over choice function variable. The choice function takes a set of alternative members (denoted by a WH-word) and returns a contextually relevant singleton member, as in (34b):

(33) a. MIT Press-ga {***nani-ka**$_k$-o/**nani-ka**$_k$} syuppansur-eba, John-ga
MIT Press-NOM {**what-or**-ACC/**what-or**} publish-if John-NOM
taitei sore$_k$-o yomu.
in general it-ACC read
'If MIT press publishes something, in general John reads it.' (Hagstrom 1998: 132)

b. If something$_k$ is published in LI, John usually reads it$_k$.

(34) a. [[*dare*]] ={x∈D$_e$: person'(x)}

b. [[*dare-ka*]] = $\lambda\ P_{\langle e,t\rangle} \exists f^{choice}[P\ (f^{choice}$ (person'))] (Hagstrom 1998)

(35) MIT Press-ga toogoron-no hon-o **nani-ka** syuppansur-eba, John-ga
MIT Press-NOM syntax-GEN book-ACC **what-or** publish-if John-NOM
taitei sore-o yomu.
in general it-ACC read
'If MIT press publishes some book or other about syntax, in general John reads it.'

Hagstrom however admits that a donkey-type pronoun can retain a *WH-ka* without a case-marking, as in (33a). Moreover, a post-nominal *WH-ka* perfectly allows a donkey-type pronoun, as in (35). I then conclude that Hagstrom's (1998) analysis cannot be directly applied to a post-nominal *WH-ka*.

3.1.2 Yatsushiro (2009)

Yatsushiro (2009), although equally making use of the idea of choice function, advances a different hypothesis. This author first observes that a genitive-marked *WH-ka* embedded in a universally quantified noun phrase, as in (36a), only admits wide scope, as shown by (36b,c). Analyzing wide scope of indefinites in terms of choice function, she claims that an existential quantifier over choice function variable should be situated higher than the surface position of *ka*. She also observes that, when a *WH-ka* is situated in a relative clause whose head noun is universally quantified, as in (37a), the *WH-ka* takes either narrow or wide scope, as in (37b,c):

(36) a. [[**dare-ka**]-no **dono** kaban-**mo**] tukue-no ue-ni aru.
who-or-GEN **which** bag–∀ desk-GEN above-LOC exist
(Yatsushiro 2009: 148)

b. Someone's every bag is on the desk (ex. there are several bags, and there is one bag owner. All the bags belonging to this bag owner are on the desk.) [some > every]

c. *Every bag of someone is on the desk (ex. there are several bags, and there are several bag owners. There are potentially as many owners as there are bags) [every > some]

(37) a. [[**dare-ka**-o hihansita] **dono** gakusee-**mo**] zinmons-are-ta.
who-or-ACC criticized **which** student–∀ interrogate-PAS-PST

(adapted from idem.156)

b. Every student that criticized a specific person was interrogated [some > every]

c. Every student that criticized someone was interrogated (ex. A student A criticized X. A student B criticized Y. Both A and B were interrogated. [every > some]

In order to account for these observations, Yatsushiro (2009: 152) claims i) that the particle "*ka* is an open choice function variable selecting one element of the Alternative-set of its sister constituent", and ii) that the choice function variable is existentially quantified by the tense. In (36a), there is only one tense which necessarily takes wide scope over the universal quantifier introduced by *mo*, as in (38). On the other hand, in (37a), if the matrix tense binds the choice function variable, we get wide scope of *dare-ka*, as in (39a), while if it is the tense of the relative clause, we get narrow scope of *dare-ka*, as in (39b):

(38) $\exists f^{choice}$[∀x [f^{choice} (person')'s bag(x)]] [be-on-the-desk' (x)] (for (36b))

(39) a. $\exists f^{choice}$[∀x [student'(x)& criticize'(x)(f^{choice}(person'))]][be-interrogated'(x)] (for (37b))

b. ∀x [student'(x)&$\exists f^{choice}$[criticize'(x)(f^{choice}(person'))]][be-interrogated' (x)] (for (37c))

But the analysis of *ka* as a choice function variable does not seem to account for the fact that, if *WH-ka* is in a post-nominal position, as in (40a), the narrow scope reading is strongly preferred, as in (40b,c).

(40) a. [[seezika-o **dare-ka** hihansita] **dono** gakusee-**mo**]
politician-ACC **who-or** criticized **which** student–∀
zinmons-are-ta.
interrogate-PAS-PST

b. ??Every student that criticized a specific politician was interrogated [some > every]

c. Every student that criticized some politician was interrogated [every > some]

The observation that a post-nominal *WH-ka* embedded in a complex NP cannot take wide scope over an operator quantifying the latter rather suggests that the particle *ka* itself introduces an existential quantifier.

3.2 Semantics of epistemic determiners

Having shown in Section 3.1 that the two recent analyses of a case-marked *WH-ka* cannot be applied to a post-nominal one, I will now try to elucidate its semantics by comparing it with epistemic determiners in Romance languages.

3.2.1 Parallel distributions with epistemic determiners

We observe at least four parallel distributions between a post-nominal *WH-ka* and epistemic determiners in Romance language.

Requirement of epistemic / modal contexts Corblin (2004: 100) observes that French epistemic determiner *quelque* "requires the presence of a marker of modality" and "is incompatible with genuine assertion". Zamparelli (2007) in the same vein points out that Italian *qualche* in its use of epistemic determiner is "acceptable in intentional contexts such as the antecedent of conditionals, future, optative and interrogative clauses, and declaratives with an epistemic *must*". The same is true for Spanish epistemic determiner *algún*. Some typical epistemic or modal contexts (i.e. antecedent of conditional, question and necessity auxiliary) are illustrated by the following French and Spanish examples:

(41) a. S'il n'a pas rencontré **quelque** collègue [...], il sera là bientôt. (Corblin 2004:102) [Fr]
'If he has not met some colleague, he will be there soon.' [antecedent of conditional]
b. Avez-vous rencontré **quelque** coquille [...] dans ce devoir? (idem.100) [Fr]
'Have you found any typo in this homework?' [question]
c. Juan tiene que estar en **alguna** habitación de la casa. [Sp] [necessity]
'Juan must be in some room inside the house.' (Alonso-Ovalle & Menéndez-Benito 2009)
d. María se casó con **algún** estudiante del departamento de lingüística. [Sp] (#en concreto con Pero) (=(3b)) [ignorance]
'Mary married some Linguistic student or other (#namely Pedro).'

Kawaguchi (1982) points out that a Japanese *WH-ka* associated with the host NP[15] requires similar epistemic / modal contexts to be licensed, as shown in (42a-d)[16]:

(42) a. aru zyuku-de-wa seeto-ga tomodati-o hito-ri **dare-ka**
certain private-school-LOC-TOP pupil-NOM friend-ACC one-CL **who-or**
tureteki -tara, okozukai-o ageru.
bring together if, pocket money-ACC give
(=(17a)) [antecedent of conditional]
'A certain private school gives pocket money to a pupil if (s)he brings to-

[15] All of Kawaguchi's (1982) examples involve a pre-nominal *WH-ka*, as in *dare-ka otokonoko* ('who-or boy'). But his remarks are also relevant for the analysis of post-nominal *WH-ka*:

[16] Other intensional contexts noted by Kawaguchi (1982) are the following

(i) a. otokonoko-ga **dare-ka** inakunatta sooda.
boy-NOM **who-or** disappeared reportedly
(Kamio 1973: 83) [hear-say / supposition]
'It is reported that some boy or other disappeared.'
b. nomimono-o **nani-ka** kudasai.
drink-ACC **what-or** give
(=(2a)) [optative]
'Give (me) some drink, please!'
c. Michiko-wa [yasasiku nagusametekureru] nito-o **dare-ka** motome-tei-ta.
Michiko-Top kindly encourage person-Acc **who-or** seek-Prog-Pst
[Intensional verb]
'Michiko was seeking someone who might encourage her kindly.' (adapted from Kawaguchi 1982:180)

gether some friend .'

b. otokonoko-ga **dare-ka** imase-n-ka? (Kamio 1973: 83) [question]
boy-NOM **who-or** be-NEG-Q
'Isn't there some boy or other?'

c. otoko-ga **dare-ka** goei-no yaku-o hatasa-nakerebanaranai.
man-NOM **who-or** guard-GEN service-ACC accomplish-must
[necessity]
'Some man or other must accomplish a service as guard.' (adapted from Kawaguchi 1982: 182)

d. okyaku-ga **dare-ka** sikirini zyotyuu-o karakat-teiru.
client-NOM **who-or** repeatedly waitress-ACC tease-PROG
[ignorance]
'Some client or other is repeatedly teasing a waitress.' (ibid.)

Incompatibility with clause-mate negation Corblin (2004) and Alonso-Ovalle & Menéndez-Benito (2009, note 13) observe that French *quelque* and Spanish *algún* are incompatible with a clause-mate negation, as in (43a). The same is true for post-nominal *WH-ka* in Japanese, as in (43b) (Yamamori 2006):

(43) a. *Je n'ai pas mangé **quelque** pomme.(Corblin 2004: 101) [Fr]
'I did not eat some apple or other.'

b. *?oisii mono-o **nani-ka** tabe-nai (Yamamori 2006: 39) [Jp]
delicious thing-ACC **what-or** eat-NEG
'We don't eat something delicious.'

Possibility of domain narrowing Epistemic determiners allow narrowing of the alternative domain: in (44a), the scenario serves to excludes *the bathroom* from the alternative set. (44b), where the relative clause excludes *Taro* from the alternative set, shows that, for this respect, Japanese post-nominal *WH-ka* behaves in the same way as epistemic determiners:

(44) a. [scenario: we are playing hide-and-seek. I'm sure that Juan is not in the bathroom, but for all I know, he could be in any of other rooms inside the house]
Juan tiene que estar en **alguna** habitación de la casa. [Sp]
'Juan must be in some room inside the house.'

b. [Taro-de-wa nai gakusee]-ga **dare-ka** kita sooda [Jp]
Taro-COP-TOP NEG student-NOM **who-or** came likely
'It is likely that some student who is not Taro came.'

Anti-singleton constraint Alonso-Ovalle & Menéndez-Benito (2009) observe that Spanish *algún* is subject to an 'anti-singleton constraint': it is not acceptable when the alternative set is singleton, for example, when the NP is modified by a superlative, as in (45a). A similar anti-singleton constraint is observed with Japanese post-nominal *WH-ka*, as in (45b):

(45) a. #Juan compró **algún** libro que resultó ser el más caro de la librería. [Sp]

'Juan bought some book that happened to be the most expensive one in the bookstore.' (Alonso-Ovalle & Menéndez-Benito 2009)

b. #Taro-wa [kono mise de itiban takai hon]-o **nani-ka** katta
Taro-TOP this store-LOC the most expensive book-ACC **what-or** bought
rasii. [Jp]
likely
'It is likely that Taro bought some book that was the most expensive in this store.'

3.2.2 Alonso-Ovalle & Menéndez-Benito (2009)'s analysis

Alonso-Ovalle & Menéndez-Benito (2009) claim that it is the anti-singleton constraint that defines the semantics of Spanish *algún*. To model this constraint, they make use of "subset selection function", which takes a set of individuals denoted by a NP, and returns its contextually relevant subset. The subset selection function variable is, as a free variable, contextually bound.

According to these authors, indefinite articles, like *un*, also introduce a subset selection function. The difference between *un* and *algún* is that *algún* is endowed with a lexical presupposition that the subset-selection function cannot be singleton, while the indefinite article is underspecified for this respect. Thus, both the indefinite article and *algún* are analyzed as existential quantifiers (over an individual variable) which take, as one of their arguments, a subset-selection function, as in (46a,b). The semantics of (47a) is, for instance, represented by the assertion in (47b) and by the anti-singleton presupposition in (47c):

(46) a. $[[un]]=\lambda f^{\text{subset}}_{\langle\langle et\rangle,\langle et\rangle\rangle}\lambda P_{\langle et\rangle}\lambda Q_{\langle et\rangle}\exists x[f^{\text{subset}}(P)(x)\ \&\ Q(x)]$ $(|f^{\text{subset}}(P)|\geqq 1)$
(Alonso-Ovalle & Menéndez-Benito 2009)

b. $[[algún]]=\lambda f^{\text{subset}}_{\langle\langle et\rangle,\langle et\rangle\rangle}\lambda P_{\langle et\rangle}\lambda Q_{\langle et\rangle}\exists x f^{\text{subset}}P(x)\&Q(x)]$ $(|f^{\text{subset}}(P)|>1)$ (ibid.)

(47) a. María se casó con **algún** estudiante. [Sp] (=(3b))
'Mary married some student or other.'

b. assertion: $\exists x[f^{\text{subset}}(\text{student'})(x)\ \&\ \text{married'}\ (m)(x)]$

c. presupposition: $|f^{\text{subset}}(\text{student'})|>1$

The idea of subset selection function also captures the fact that a post-nominal *WH-ka* may be disjoined with contextually selective members of the alternative set, as in (48a). Moreover, the anti-singleton constraint corresponds to the fact that a disjunction induced by the particle *–ka* in principle require at least two alternative members:

(48) a. gakusee-ga [(John-**ka** Mary-**ka**) **dare-ka**] kita rasii.
student-NOM John-or Mary-or **who-or** came likely
$(|f^{\text{subset}}(\text{student'})>1)$
'It is likely that a student, John, Mary or someone else, came'

b. **dare-ka**-ga kita (=(1a)) $(|f^{\text{subset}}\ (\text{student'})\geqq 1)$
who-or- NOM came
'Someone came.'

But if Alonso-Ovalle & Menéndez-Benito's (2009) hypotheses were directly applied to

Japanese, a case-marked *WH-ka*, as in (48b), which admits either specific (due to singleton alternative domain) or non-specific (due to anti-singleton domain) readings, would be analyzed as parallel to *un+NP* in (46a), while post-nominal *WH-ka* would be analyzed as lexically presupposed for the anti-singleton domain, as well as *algún* in (46b). Such lexical distinction however seems to be ad hoc in view of the same morphology of case-marked *WH-ka* and post-nominal *WH-ka*.

3.3 Proposals for the semantics of post-nominal *WH-ka*

I now advance, slightly modifying Alonso-Ovalle & Menéndez-Benito's (2009) analysis of *algún*, my hypotheses for the semantics of post-nominal *WH-ka*, and present some arguments.

3.3.1 Proposals

I first adopt the traditional view that a WH word introduces an individual variable and a restriction over it, and assume that, in cases of post-nominal *WH-ka*, the restriction of the host NP is percolated onto that of a WH word, through a semantic agreement (ex. [+human] for *dare*) and the specificational appositive relation (equivalence relation) between them. The restriction of a post-nominal WH word thus boils down to that of the host NP (which is more informative than the WH word), as in (49a)[17]. Next, I follow Alonso-Ovalle & Menéndez-Benito (2009) by assuming, as in (49b), i) that *-ka* is an existential quantifier over an individual variable, which takes, as its argument, a subset selection function (taking a set of members denoted by the host NP, and returning a contextually selected subset of it), and ii) that the subset selection function variable is bound contextually:

(49) a. $[[dare^{\text{appositive}}]] = \lambda x \lambda P_{\langle et \rangle}\ [P(x)]$ (where P is a property denoted by the host NP)

b. $[[dare\text{-}ka^{\text{appositive}}]] = \lambda f^{\text{subset}} \lambda P_{\langle et \rangle} \lambda Q_{\langle et \rangle} \exists x[f^{\text{subset}}(P)(x) \,\&\, Q(x)]\ (|f^{\text{subset}}(P)|>1)$

c. $[[dare\text{-}ka^{\text{argument}}]] = \lambda f^{\text{subset}} \lambda Q_{\langle et \rangle} \exists x[f^{\text{subset}}(\text{person'})(x) \,\&\, Q(x)]\ (|f^{\text{subset}}(\text{person'})| \geqq 1)$

(50) [[*gakusee-ga dare-ka kita* ('student- NOM who-or came')]]
$= \lambda f^{\text{subset}} \exists x[f^{\text{subset}}(\text{student'})(x) \,\&\, \text{come'}(x)]\ (|f^{\text{subset}}(\text{student'})| >1)$

I further assume that the anti-singleton constraint is not a lexical presupposition of post-nominal *WH-ka*, but is a default pragmatic condition: it is due to the fact that an appropriate use of a disjunction requires at least two alternatives. This condition is imposed when the use of *WH-ka* is optional, as in its post-nominal use, and the specific reading (due to the singleton alternative) is expressed by the bare host NP. It may be neutralized when *WH-ka* is directly case-marked and the specific reading cannot be

[17] According to this analysis, a post-nominal *dare-ka* in (50) is semantically equivalent to *dono gakusee ka* ('which student-or') in (I), which is however not preferred because of its morphological redundancy:

(i) gakusee-ga **dono** gakusee-**ka** kita yooda.
student-Nom **which** student-**or** came likely
'It is likely that some student or other came.'

expressed otherwise. The semantics of (48a) is thus represented by (50), putting aside the modal meaning.

3.3.2 Arguments

At least four arguments come in favor of these hypotheses.

(a) Kawaguchi (1982) points out that, as a host NP, *koziki* ('beggar') in (51a) is less acceptable than *zyoyuu* ('actress') in (51b). In order to account for this lexical restriction, this author claims that "the host NP should denote members which are easily individualized in view of encyclopedic knowledge." (Kawaguchi 1982: 176): the contrast between (51a) and (51b) is reduced to the fact that beggars are by default less easily individualized than actresses:

(51) a. ?Taro-wa [koziki-o] [**dare-ka**] mikaketa.
Taro-TOP beggar-ACC **who-or** saw
(adapted from Kawaguchi 1982: 176)
'Taro saw some beggar or other.'
b. Taro-wa [zyoyuu-o] [**dare-ka**] mikaketa. (ibid.)
Taro-TOP actress-ACC **who-or** saw
'Taro saw some actress or other.'

This restriction is nicely paraphrased, in view of my semantic hypotheses, by saying that the host NP must denote sufficiently individualized alternative members such that the subset selection function can easily select a subset of it.

(b) As shown in Section 2.1, post-nominal or floating *WH-ka* c-commanded by a clause-mate quantifier preferentially takes narrow scope, as in (52a,b), while *WH-ka* c-commanding a clause-mate quantifier prefers wide scope, as in (52c):

(52) a. gakusee-ga *mai-kai* **dare-ka** situmon-o suru.
student-NOM *every time* **who-or** question-ACC ask
[√every >some / ??some > every]
'Every time, there is some student who asks a question.
b. *mai-kai* gakusee-ga **dare-ka** situmon-o suru.
every time student-NOM **who-or** question-ACC ask
[√every >some / ??some > every]
'Every time, there is some student who asks a question.
c. gakusee-ga **dare-ka** *mai-kai* situmon-o suru
student-NOM **who-or** *every time* question-ACC ask
[??every >some / √some > every]
'There is some student or other who asks a question every time.'

According to the hypothesis in (49b) and if the moved host NP in (52a) is interpreted in its base-position adjacent to the post-nominal *WH-ka* (see Section 2), the semantics of (52a,b) and (52c) are respectively represented by (53a) and (53b), where the position of the existential quantifier over an individual variable corresponds to the surface position of the particle *ka*. These representations nicely capture scope differences observed between (52a,b) and (52c):

(53) a. [[*(52a,b)*]] = $\lambda f^{\text{subset}} \forall e \exists x$ [f^{subset}(student')(x) & ask-a-question'(x)(e)]
b. [[*(52c)*]] = $\lambda f^{\text{subset}} \exists x$ [f^{subset}(student')(x) & $\forall$e [ask-a-question'(x)(e)]]

(c) As discussed in Section 3.1.2, Yatsushiro (2009) observes that, when a case-marked *WH-ka* is situated in a relative clause whose head noun is universally quantified, as in (54a), the *WH-ka* takes either narrow or wide scope, and accounts for this scope ambiguity by assuming that the choice function variable introduced by *–ka* may be bound either by matrix or subordinate tense. But this analysis cannot account for the fact that, if *WH-ka* is in a post-nominal position, as in (54b), the narrow scope reading is strongly preferred:

(54) a. [[**dare-ka**-o hihansita] **dono** gakusee-**mo**] zinmons-are-ta. (=(37a))
who-or-ACC criticized **which** student–$\forall$ interrogate-PAS-PST
'Every student that criticized someone was interrogated.'
[$\surd$every > some / $\surd$some > every]
b. [[seezika-o **dare-ka** hihansita] **dono** gakusee-**mo**]
politician-ACC **who-or** criticized **which** student–$\forall$
zinmons-are-ta.(=(40a))
interrogate-PAS-PST
'Every student that criticized some politician was interrogated.'
[$\surd$every > some / ??some > every]

The semantic hypothesis in (49b) explains both (54a) and (54b) as follows. Narrow and wide scope readings of *dare-ka* in (54a) are represented by (55a) and (55b), in both of which the contextual binder of the subset selection function takes the widest scope. It is to be reminded that a case-marked *WH-ka*, as that of (54a), allows either singleton or anti-singleton domain. (55a) represents a case where the alternative domain is anti-singleton. Since *dare-ka* is inside a complex NP, the existential quantifier introduced by *ka* is obliged to take narrow scope under the universal quantifier outside the complex NP. On the other hand, (55b) represents a case where the alternative domain is singleton. In this case, the subset selection function boils down to the choice function selecting a unique alternative, and as its binder takes the widest scope, (55b) gives rise to a wide scope configuration:

(55) a. λf^{subset} [$\forall$x[student'(x) & $\exists$y [f^{subset}(person')(y) & criticize'(x)(y)]
[be-interrogated'(x)] (|f^{subset}(student')| >1) [every > some]
b. λf^{subset} [$\forall$x [student'(x) & $\exists$y [f^{subset}(person')(y) & criticize'(x)(y)]
[be-interrogated' (x)] (|f^{subset}(student')| =1)
= λf^{choice} [$\forall$x [student'(x) & criticize'(x)(f^{choice}(person'))]
[be-interrogated' (x)] [some > every]

(56) λf^{subset} [$\forall$x [student'(x) & $\exists$y [f^{subset}(politician')(y) & criticize'(x)(y)]
[be-interrogated' (x)] (|f^{subset}(student')| >1) [every > some]

On the other hand, in (54b) involving post-nominal *WH-ka*, the alternative domain should be anti-singleton because of a concurrence with the bare host NP allowing the singleton alternative domain, and only narrow scope configuration is allowed, as in (56).

By the way, Yatsushiro (2009) equally observes that a genitive-marked *dare-ka* em-

bedded in a universally quantified noun phrase only admits wide scope, as in (57a). On the other hand, my analysis seems to predict that both of narrow and wide scope *dare-ka* are possible as in (57b,c). How can I account for the unavailability of the narrow scope in (57a)?

(57) a. [[**dare-ka**]-no **dono** kaban-**mo**] tukue-no ue-ni aru. (=(36a))
who-or-GEN **which** bag–∀ desk-GEN above-LOC exist
'Someone's every bag is on the desk.' [$\surd$some > every / *every > some]
b. λf^{subset} [∀x [bag'(x) of ∃y [f^{subset}(person')(y)] [be-on-the desk' (x)]
[every > some]
(|f^{subset}(person')| >1 : anti-singleton alternative domain)
c. λf^{choice} [∀x [f^{choice}(person')'s-bag(x)]] [be-on-the desk' (x)]
[some > every]
(|f^{subset}(student')| =1 : singleton alternative domain)

(58) a. [[**dare**]-no **dono** kaban-**mo**] tukue-no ue-ni aru.
who-GEN **which** bag–∀ desk-GEN above-LOC exist
'Every bag of anyone is on the desk.' [*some > every / $\surd$every > some]
b. ∀x,y [bag'(x) of person'(y)] [be-on-the desk' (x)]

I assume that, since there is normally only one owner of a bag, the narrow scope reading of (57a) is truth conditionally equivalent to the reading conveyed by (58a) where *dare* is bare, and is bound unselectively by the distant universal quantifier, as in (58b). Moreover, (58a) is preferred to (57a) to express narrow scope of *dare* ('who'), because of its morphological simplicity.

Then, why does (54a) remain ambiguous between narrow and wide scope readings, in spite of a possibility of (59a) where *dare* is bare? It is to be noticed that the narrow scope reading of (54a), represented by (55a), is distinguished from the semantics of (59a), represented by (59b): a default reading of (54a) is that each student criticized one person, while such an existential meaning is totally lacking in (59a). Therefore, (54a) and (59a) do not enter into concurrence to express narrow scope of *dare*:

(59) a. [[**dare**-o hihansita] **dono** gakusee-**mo**] zinmons-are-ta.
who-ACC criticized **which** student–∀ interrogate-PAS-PST
'Every student that criticized anyone was interrogated.'
b. ∀x,y [student'(x) & person'(y) & criticize'(x)(y)] [be-interrogated' (x)]

(d) The hypothesis in (49b) also accounts for the distributional facts of post-nominal *WH-ka* discussed in Section 3.2.1. First, as regards the requirement of epistemic / modal contexts, Alonso-Ovalle & Menéndez-Benito (2009) suggest that a use of an expression requiring anti-singleton domain (which involves at least two different members) is pragmatically motivated, in terms of possible world semantics, only if it is not the case that in every accessible world, the referent is the same, that is, only if there are at least two accessible worlds where the referent of the host NP is different, as represented by (60). Such modal variation is satisfied only when the existential quantifier due to *-ka* takes narrow scope under a modal operator:

(60) ∃w,w'∈W [λx.*P*(x)(w) & *Q*(x)(w) ≠ λx.*P*(x)(w') & *Q*(x)(w')] (where W is a set of accessible worlds, and *P* and *Q* are two properties) [modal variation compo-

nent]

Second, concerning the incompatibility with clause-mate negation, the anti-singleton subset selection function evoked by epistemic determiners and post-nominal *WH-ka*[18] only minimally widens the alternative domain. The unique domain necessarily narrower is the singleton domain, which always takes wide scope over negation. Therefore, a negation scoping over anti-singleton domain does not implicate negation of narrower domain. In other words, a use of post-nominal *WH-ka* does not serve to strengthen negation, and their use is not motivated in negative sentences.

Third, the domain narrowing is possible since the alternative domain of epistemic determiners and of the post-nominal *WH-ka* (i.e. anti-singleton domain) may be as narrow as a set consisting of only two members.

4 Summary

In this study, I first claimed that syntactically, floating *WH-ka* is divided into the two sub-types: i) one type analyzed as a parenthetical sluiced indirect question, as in (61a); ii) another type where a *WH-ka* (which may be disjoined with some explicitly mentionned alternatives) is an appositive right adjoined to the case-marked host NP, and is stranded after the movement of the latter, as in (61b). In both cases, a *WH-ka* is outside of the DP including the case-marked host NP:

(61) a. *parenthetical sluiced indirect question accompanied by elliptical matrix*
Mary-ga [hon-o] kinoo [$_{CP}$ **nani**(-o) [$_{IP}$] [$_{C}$ **ka**]] (wakara-nai
Mary-NOM book-ACC yesterday **what-**ACC **or** know-NEG
ga)] [katta-rasii].
though bought-likely
'It is likely Mary bought a book yesterday – I don't know what.'

b. *specificational appostive right-adjoined to the case-marked host NP*
[nomimono-o]$_k$ watasi-ni [[t$_k$] [(koohii-**ka** kootya-**ka**) **nani-ka**]] kudasai.
drink-ACC me-DAT coffee-**or** tea-**or** **what-or** give
'Give me some drink, coffee, tea, or something else.'

Often, these two types are difficult to distinguish, but the first type is identified when the host NP is inside another NP or inside a post-positional phrase and the *WH-ka* is interrupted by a genitive marker or a post-position. The second type is identified by a possibility of coordination with another NP or by scope variability with respect to a clause-mate quantifier.

[18] A free choice determiner, like French *un N quelconque*, is compatible with clause-mate negation, as in (i-a), since it induces the maximal widening of the alternative set, which serves to strengthen the negation: if a negation scopes over the maximal domain, it necessarily applies to ordinary narrower domain, as represented in (i-b):

(i) a. Marie n'a pas lu **un** livre **quelconque**. (Jayez & Tovena 2006: 220) [Fr]
'Mary didn't read any book.'

b. $\neg\exists x_{\in D}$ *Marie read* ***un quelconque***$_D$ *book*(x) [D: maximal alternative domain]
$\rightarrow \forall D' \in D[\neg\exists x_{\in D'}$.*Marie read* ***un***$_{D'}$ *book*(x)] [D': ordinal alternative domain]

Semantically, the ignorance reading of the first type is due to an elliptical matrix clause corresponding to 'I don't know', as in (62a). In the second type, the ignorance reading is only pragmatically derived: since a use of the post-nominal *WH-ka* is optional, it is only motivated when it conveys the meaning which cannot be expressed otherwise, that is, the meaning that the alternative domain is not singleton (which is due to an appropriateness condition imposed on a use of a disjunction marked by *–ka*):

(62) a. *parenthetical sluiced indirect question accompanied by elliptical matrix*
The ignorance reading is due to the elliptical matrix, 'I don't know WH'
b. *specificational appostive right-adjoined to the case-marked host NP*
$\lambda f^{\text{subset}}$ $\exists$x [f^{subset} (drink')(x) & give-me'(x)] (|f^{subset}(drink')| >1)

The ignorance reading is derived through Grician Quantity principle from a disjunction: if the speaker affirms a disjunction, "A or B", the hear can assume that the speaker does not know the truth of a more informative proposition "A", nor that of "B".

This study thus shows the existence in Japanese of a new type of DP external determiner-like expression, whose semantics may be analyzed in the same way as epistemic determiners in Romance languages.

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