Bare indeterminates in unconditionals

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Abstract. Indeterminates in Japanese have been studied extensively since Kuroda (1965) and all the previous works share the descriptive generalization that indeterminates must co-occur with overt quantificational particles such as *ka* and *(de)mo*. We present novel data indicating that the Japanese indeterminates are licensed "bare" without the presence of an overt particle to associate with. Conversely, we also point out data in which the mere presence of *mo* fails to license an indeterminate. We argue that our long-standing understanding of indeterminates has been misguided and that what truly licenses a bare indeterminate is a covert Q-morpheme. Our analysis that a covert Q-morpheme is the licensor of bare indeterminates departs from the traditional view that indeterminates require the overt licensing particle *ka* or *(de)mo*.

Keywords. indeterminates; unconditionals; alternatives; quantificational particles; question

1. Introduction. As Haspelmath's (1997) typological study on indefinite pronouns has shown, a number of languages possess a so-called indeterminate system. Indeterminates (or sometimes called *wh*-indefinites, less precisely) are words that may yield indefinite pronouns such as *wh*-pronouns, universal quantifiers, existential quantifiers, negative polarity items (NPI), and free choice items. The indeterminate system can be divided into two types: a system in which (some) indeterminates are morphologically unmarked and change their meanings depending on linguistic environments (e.g., Mandarin Chinese, Lakhota, Hopi, Dyirbal; see Haspelmath 1997, 170), and a system in which indeterminates need to combine with particular morphemes to express different meanings (e.g., Japanese, Hungarian, Basque, Latvian, Russian). The latter system is illustrated in Table 1 with indeterminates that refer to humans.

	Wh 'wh X'	Universal 'every X'	Existential 'some X'	NPI 'any X'	Free Choice 'any X'
Japanese	dare ... **ka**	da're-**mo**	da're-**ka**	dare-**mo**	dare-**demo**
Hungarian	ki	**vala**-ki	**sen**-ki	**minde**-ki	**akár**-ki
Basque	nor	nor-**bait**	**i**-nor		**edo**-nor

Table 1. Indeterminate systems

Indeterminates in Japanese have been studied extensively since Kuroda (1965) and all the previous works share the descriptive generalization in (1) that indeterminates must co-occur with

overt quantificational particles such as *ka* and *(de)mo* (Kuroda 1965, 2013, Nishigauchi 1990, Hagstrom 1998, Kishimoto 2001, Shimoyama 2001, 2006, 2008, 2011, Takahashi 2002, Watanabe 2004, Nakanishi 2006, Yatsushiro 2009, Hiraiwa 2015, 2017, 2018, Szabolcsi, Whang, & Zu 2014, Szabolcsi 2015, Miyagawa, Nishioika, & Zeijlstra 2017, Saito 2017, Uegaki 2018).

(1)   The Indeterminate-Particle Generalization in Japanese (informal)
      In Japanese, indeterminates must be licensed by c-commanding quantificational particles such as *ka* and *(de)mo*, and c-commanding quantificational particles license indeterminates.

For example, in Japanese, a *wh*-pronoun and an existential quantifier are built with the particle *ka*. A (strong) NPI (or a negative concord item) and a universal quantifier are built with the particle *mo*, while a free choice item is built with the particle *demo*. In all of these cases, the particles are required, and their absence leads to ungrammaticality.[1]

(2)   a.   *Wh*-pronoun: [Dare-ga   ki-ta   *(**ka**)]   wakara-na-i.
                                    who-NOM   come-PST   Q   know-NEG-PRS
                                    'I don't know who came.'
      b.   Existential quantifier: Dare-*(**ka**)-ga   ki-ta.
                                    who-KA-NOM   come-PST
                                    'Someone came.'
      c.   Negative polarity item: Dare-*(**mo**)   ko-nakat-ta.
                                    who-MO   come-NEG-PST
                                    'No one came.'
      d.   Universal quantifier: Dare-*(**mo**)-ga   ki-ta.
                                    who-MO-NOM   come-PST
                                    'Everyone came.'
      e.   Free choice item: Dare-*(**demo**)   kiteii   yo.
                                    who-DEMO   come.may   SFP
                                    'Anyone may come.'

Kuroda (1965, 43), based on this observation, argued that an indeterminate itself does not have any quantificational force and it is a logical variable that must be bound by a quantificational meaning of *ka* or *(de)mo*. On the other hand, Saito (2017) proposed that an indeterminate in Japanese is an operator. Common to these approaches is the idea that an indeterminate lacks a quantificational force and is uninterpretable without a quantificational particle. In other words, indeterminates in Japanese, unlike those in Mandarin Chinese and other languages, do not change their meaning simply depending on their environments (see Cheng 1991, Li 1992, Lin 1996, 1998, for Mandarin Chinese).

In this article, by showing the data where indeterminates in Japanese show up bare without any particle, we cast doubt on the long-standing descriptive generalization in (1) and the analyses based on it. Conversely, we also provide data where indeterminates are illicit even when they are c-commanded by quantificational particles. We argue that at least in the cases we discuss below,

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[1] In standard Japanese, the universal quantifier has a pitch accent /da're/, whereas the strong NPI /dare/ lacks a pitch accent (Takahashi 2002, Shimoyama 2008, 2011, Kuroda 2013, Hiraiwa 2015, 2017). See Hiraiwa (2017) for arguments that the difference in pitch accent reflects different syntactic structures.

indeterminates are not licensed by overt particles but by an invisible Q-morpheme syntactically, which functions as a question operator semantically.

2. Bare indeterminates in Japanese. As we have pointed out above, there has been a long-standing descriptive generalization that indeterminates in Japanese require the presence of a c-commanding overt particle *ka* or *(de)mo*.[2] But as we show momentarily, there are in fact cases where indeterminates appear "bare" without any particle. In what follows, we refer to indeterminates that are licensed without the presence of an overt particle as *bare indeterminates*.

2.1. BARE INDETERMINATES IN UNCONDITIONALS. In this article, we focus on bare indeterminates that occur in so-called unconditionals (or concessive conditional clauses), different morpho-syntactic forms of which exist.[3, 4] The following data in (3)–(5) correspond to *wh-ever* and *no matter wh-* constructions in English. Consider example (3).

(3) Dare-ga   {ki-(tatosi)te-*(**mo**)/kuru-nisite-*(**mo**)/kuru-tosite-*(**mo**)},
    who-NOM   come-COND-MO/come-COND-MO/come-COND-MO
    Taro-wa   yorokob-u   daroo.
    Taro-TOP   please-PRS   will
    'Whoever comes, Taro will be pleased.'

This example of unconditionals conforms to the descriptive generalization in (1), because the particle *mo* is attached to the unconditional clause and its presence is obligatory.

As (4) shows, however, there are types of unconditionals where indeterminates appear without *ka* or *(de)mo*. The same observation is made by Shimoyama (2006, fn. 27). What is noteworthy about the bare indeterminate in (4) is the fact that an overt particle *ka* or *(de)mo* cannot attach anywhere and the indeterminate is nevertheless well-formed, contrary to (1).

(4) Dare-ga   {ko-yooga/ki-tatte/kuru-nisitatte/kuru-tositatte/kuru-nisiro/
    who-NOM   come-SBJV/come-COND/come-COND/come-COND/come-SBJV/
    kuru-niseyo/kuru-nodeare}(-***mo**/*****ka**), Taro-wa   yorokob-u daroo.
    come-SBJV/come-SBJV-MO/KA   Taro-TOP   please-PRS will
    'Whoever comes, Taro will be pleased.'

Furthermore, there are also other types of unconditionals where a particle *mo* is optional.

(5) Dare-ga   ko-yooto(-**mo**), Taro-wa   yorokob-u daroo.
    who-NOM   come-SBJV-MO   Taro-TOP   please-PRS will
    'Whoever comes, Taro will be pleased.'

These facts lead us to the observation in (6).

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[2] Even though it is not the case that the data in which indeterminates show up without *ka* or *(de)mo* have been ignored entirely in the literature, they have only been observed sporadically, often as an exception or a peripheral phenomenon. For example, Shimoyama (2006) claims that an indeterminate in Japanese must co-occur with *ka* or *mo*, but in footnote 27, she points out examples where an indeterminate appears without a particle or it does so optionally (see example (4) and (5) below), which she dismisses without any account.

[3] As Rawlins (2008, Section 1.2) points out, researchers diverge regarding how the construction in (3)-(5) is called. Rawlins, following Zaefferer (1990, 1991), calls it an *unconditional*. On the other hand, Haspelmath & König (1998) calls it a *universal concessive conditional*. In this article, we use the term *unconditional.*

[4] In this article, for expository purposes, we will refer to adjunct clauses that express concessive conditional meaning as *unconditional* (see Rawlins 2008), while we call the entire sentence consisting of an unconditional clause and its consequent clause an *unconditional construction.*

(6) In Japanese, licensing of indeterminates does not require overt particles (contra (1)).

One may maintain the observation in (1) and claim that the bare indeterminates in (4) and (5) are licensed by an invisible counterpart of particle *(de)mo*. Such a possibility is not untenable, given that the Q-complementizer *ka* is optional (or prohibited sometimes) in root *wh*-question, whereas question rising prosody is obligatory (see Yoshida & Yoshida 1997, Hiraiwa & Kobayashi 2019).

(7) a. Dare-ga   kimasu   (**ka**)↑?
       who-NOM   come   Q
       'Who will come?'
   b. Dare-ga   kuru   no   (***ka**)↑?
       who-NOM   come   C   Q
       'Who (is it that) will come?'

The particle *ka* is also optional in some exclamative and rhetorical question sentences.

(8) a. Konna   samui   hi-ni   dare-ga   kuru n   da   yo   (***ka**)!
       this   cold   day-on   who-NOM   come C   COP   SFP Q
       'Who would come on such a cold day like today!'
   b. Nanto/Nante/Nantoiu samui   hi   da   (**ka**)!
       what/what/what   cold   day   COP   Q
       'What a cold day it is today!'

Nevertheless, it is problematic to assume an invisible counterpart of *(de)mo* for bare indeterminates. An indeterminate *naze* 'why' differs from other indeterminates in that it cannot be licensed by the particle *mo* and can only be used with the particle *ka*.

(9) a. Universal quantifier: *[Taro-ga   naze okot-ta   hito]-**mo**   hanron-si-ta.
                              Taro-NOM why angry-PST   person-MO objection-do-PST
                              'Everyone with whom Taro got angry why objected.'
   b. Negative polarity item:*Taro-ga   okot-ta   riyuu-ga   naze-**mo** wakara-na-i.
                              Taro-NOM angry-PST   reason-NOM why-MO   know-NEG-PRS
                              'I don't know the reason why Taro got angry at all.'
   c. Free choice item: *Taro-wa   naze-**demo**   okor-u.
                              Taro-TOP   why-DEMO   angry-PRS
                              'Taro gets angry for any reason.'

(10) a. *Wh*-pronoun: Taro-wa   naze   okorimasi-ta   **ka**?
                                Taro-TOP   why   angry-PST   Q
                                'Why did Taro get angry?'
    b. Existential quantifier: Taro-wa   naze-**ka**   okot-ta.
                                Taro-TOP   why-KA   angry-PST
                                'Taro got angry somehow.'

Now, note that *naze* can appear bare in unconditionals, as shown in (11) and (12). The fact that examples (9) are ungrammatical while examples (10)–(12) are grammatical cannot be explained even if we assume the presence of an invisible counterpart of *(de)mo* for bare indeterminates.

(11) Taro-ga   naze {okor-ooga/okot-tatte/okoru-nisitatte/okoru-tositatte/
     Taro-NOM   why   angry-SBJV/angry-COND/angry-COND/angry-COND/
     okoru-nisiro/okoru-niseyo/okoru-nodeare},   boku-ni-wa   kankee   na-i.
     angry-SBJV/angry-SBJV/angry-SBJV   1SG-DAT-TOP   matter   NEG-PRS
     'Whatever the reason why Taro got angry, I don't care.'

(12) Taro-ga   naze {okor-ˀ(tatosi)te-**mo**/okoru-nisite-**mo**/okoru-tosite-**mo**/
     Taro-NOM   why   angry-COND-MO/angry-COND-MO/angry-COND-MO/
     okor-ooto(-**mo**)},   boku-ni-wa   kankee   na-i.
     angry-SBJV-MO   1SG-DAT-TOP   matter   NEG-PRS
     'Whatever the reason why Taro got angry, I don't care.'

2.2. UNCONDITIONALS, CONDITIONALS, AND CONCESSIVE CLAUSES. Based on the observations so far, it is clear that the licensing mechanism of bare indeterminates in unconditionals is different from that of NPIs and universal indeterminates. Unconditionals or concessive conditional clauses, as their name stands for, refer to clauses that possess both "conditional" and "concessive" meanings. In this section, we compare unconditionals with conditionals and concessive clauses, and show that only unconditionals permit bare indeterminates.

   Unconditionals and concessive clauses are similar, but not identical. Examples (13) illustrate unconditionals, while examples (14) are mere concessive clauses.

(13) a.   Taro-ga   {ki-(tatosi)te-*(**mo**)/kuru-nisite-*(**mo**)/kuru-tosite-*(**mo**)},
          Taro-NOM   come-COND-MO/come-COND-MO/come-COND-MO
          Hanako-wa   yorokoba-na-i.
          Hanako-TOP   please-NEG-PRS
          'Whether Taro comes or not, Hanako won't be pleased.'
     b.   Taro-ga   {ko-yooga/ki-tatte/kuru-nisitatte/kuru-tositatte/kuru-nisiro/
          Taro-NOM   come-SBJV/come-COND/come-COND/come-COND/come-SBJV/
          kuru-niseyo/kuru-nodeare}(-***mo**/*ka),   Hanako-wa   yorokoba-na-i.
          come-SBJV/come-SBJV-MO/KA   Hanako-TOP   please-NEG-PRS
          'Whether Taro comes or not, Hanako won't be pleased.'
     c.   Taro-ga   ko-yooto-(**mo**)   Hanako-wa   yorokoba-na-i.
          Taro-NOM   come-SBJV-MO   Hanako-TOP   please-NEG-PRS
          'Whether Taro comes or not, Hanako won't be pleased.'

(14) a.   Taro-ga   okurete   kuru*(-**mo**),   Hanako-wa   yorokoba-nakat-ta.
          Taro-NOM   late   come-MO   Hanako-TOP   please-NEG-PST
          'Although Taro came late, Hanako wasn't pleased.'
     b.   Taro-ga   kuru-{noni/ga}(*-**mo**),   Hanako-wa   yorokoba-na-i.
          Taro-NOM   come-though/but-MO   Hanako-TOP   please-NEG-PRS
          'Although Taro comes, Hanako won't be pleased.'
     c.   Taro-ga   ki-ta-{keredo/kedo}(-**mo**),   Hanako-wa   yorokoba-nakat-ta.
          Taro-NOM   come-PST-though-MO   Hanako-TOP   please-NEG-PST
          'Although Taro came, Hanako wasn't pleased.'

Unconditionals and concessive clauses are different in that the proposition that the antecedent denotes is only presented as a possibility in the unconditionals in (13), but it is assumed to be true in the concessive clauses in (14). However, they are similar in that they both have three patterns: *mo* is required, *mo* is disallowed, and *mo* is optional. One may wonder, then, if *mo* in (13)

and (14), which conveys concessiveness, is what licenses indeterminates.[5] As the examples of a concessive clause in (15) show, however, mere concessiveness is insufficient for licensing indeterminates.

(15) a. *Dare-ga   okurete   kuru-**mo**, boku-ni-wa   kankee   nakat-ta.
        who-NOM   late   come-MO   1SG-DAT-TOP   matter   NEG-PST
        '(lit.) Although who came late, I didn't care.'

    b. *Dare-ga   ki-ta   {noni/ga}, boku-ni-wa   kankee   na-i.
        who-NOM   come-PST   though/but 1SG-DAT-TOP   matter   NEG-PRS
        '(lit.) Although who came, I don't care.'

    c. *Dare-ga   ki-ta   {keredo/kedo}(-**mo**), boku-ni-wa kankee nakat-ta.
        who-NOM   come-PST   though-MO   1SG-DAT-TOP matter NEG-PST
        '(lit.) Although who came, I didn't care.'

It is equally important to note that bare indeterminates are disallowed in examples (15a) and (15c) despite the presence of the particle *mo*. This can be taken as counter-evidence against the descriptive generalization in (1).

Unconditionals are also different from mere conditionals. The consequent is entailed in the unconditional sentences in (13), but not in the conditional sentences in (16).

(16) (Mosi)   Taro-ga   {ki-ta-ra/kuru-nara/ku-reba/kuru-to},
     if   Taro-NOM   come-PST-COND/come-COND/come-COND/come-COND
     Hanako-wa   yorokob-u   daroo.
     Hanako-TOP   please-PRS   will
     'If Taro comes, Hanako will be pleased.

Nonetheless, in both sentences the antecedent is presented merely as a possibility, and one may assume that this common property plays a role in making bare indeterminates licit. As example (17) shows, however, that this shared property does not license bare indeterminates.

(17) *(Mosi)   dare-ga   {ki-ta-ra/kuru-nara/ku-reba/kuru-to},
     if   who-NOM   come-PST-COND/come-COND/come-COND/come-COND
     Hanako-wa   yorokob-u   daroo.
     Hanako-TOP   please-PRS   will
     'If who comes, Hanako will be pleased.

In this section, we have demonstrated that Japanese allows bare indeterminates, contrary to the previous descriptive generalization. At least in unconditionals, an indeterminate does not require an overt particle such as *ka* or *(de)mo*. Furthermore, a bare indeterminate is not licensed in mere concessive or conditional clauses. On the contrary, we have shown that there are even cases where an indeterminate is illicit despite the presence of an overt particle *ka* or *(de)mo*. In the next section, we examine a licensing mechanism of bare indeterminates in detail.

3. Semantics of unconditionals and bare indeterminates.

3.1. INDETERMINATES: SHIMOYAMA (2001, 2006). Before examining the semantics of unconditionals, we first need to introduce Shimoyama's (2001, 2006) analysis of Japanese indeterminates. Extending Hamblin's (1973) analysis of *wh*-pronouns in English, Shimoyama argues that indeterminates in Japanese denote sets of individuals (see also Hagstrom 1998). For

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[5] As for the meaning of *mo* in the *-temo* unconditional in (14a), see Matsui (2009).

instance, the indeterminate *dare* 'who' in (18) denotes a set of humans, as in (19a). In a Hamblin semantics, most of other lexical items denote singleton sets; for instance, the verb *kimasita* 'came' denotes a singleton set 'x came'. (19a) and (19b) are composed by applying functional application in a pointwise manner. As a result, we obtain a set of propositions of the form 'a came', 'b came', etc., as in (19c).

(18) Dare-ga   kimasi-ta   **ka**?
      who-NOM   come-PST   Q
      'Who came?'

(19) a. $[\![\textbf{dare}]\!]^{w,g} = \{x \in D_e: \text{human}(x)(w)\}$
      b. $[\![\textbf{kimasita}]\!]^{w,g} = \{\lambda x \lambda w'. \text{come}(x)(w')\}$
      c. $[\![\textbf{dare-ga kimasita}]\!]^{w,g} = \{p: \exists x[\text{human}(x)(w) \ \& \ p = \lambda w'. \text{come}(x)(w')]\}$

In Hamblin's system, a set introduced by an indeterminate keeps expanding until it meets an operator that takes it as its argument. In (18), the question operator (hereafter Q-operator) takes (19c) as its argument. Kratzer & Shimoyama (2002) provides the following two denotations for the Q-operator.

(20) a. $[\![Q\alpha]\!]^{w,g} = [\![\alpha]\!]^{w,g}$
      b. $[\![Q\alpha]\!]^{w,g} = \{\lambda w'. \forall p[p \in [\![\alpha]\!]^{w,g} \rightarrow [p(w)=1 \leftrightarrow p(w')=1]]\}$

                                                    (Kratzer and Shimoyama 2002: section 3)

The Q-operator in (20a) is a trivial function that simply lets the alternatives through. In contrast, the Q-operator in (20b), which is based on Groenendijk and Stokhof (1984), returns a singleton set whose sole member is a question denotation. Shimoyama (2006, fn. 21) seems to opt for (20b), claiming that *ka* and *(de)mo* are the only lexical items that select Hamblin alternatives and return singletons. Her claim is based on the long-standing observation that indeterminates must co-occur with *ka* or *(de)mo*. If *ka* and *(de)mo* are the only alternative-selecting operators, we would predict that indeterminates always appear in the scope of *ka* or *(de)mo*. However, the existence of bare indeterminates casts doubt on Shimoyama's claim, and thus there is no reason of choosing (20b) over (20a). Indeed, as we will see shortly, we will adopt the denotation in (20a), following Rawlins (2008, 2013).[6]

3.2. UNCONDITIONALS: RAWLINS (2008, 2013). Rawlins (2008, 2013) provides a Hamblin analysis of unconditionals in English, exemplified in (21). He claims that the unconditionals in (21) can be paraphrased as a list of conditionals such as (22).

(21) a.   Whatever Alfonso has, he should stay home.
      b.   No matter what Alfonso has, he should stay home.   (Rawlins 2013, 146)

(22) If Alfonso has a cold, he should stay home, and if Alfonso has the measles, he should stay home, and if Alfonso has the flu, he should stay home, and …

Rawlins derives the meaning in (22) by analyzing an unconditional clause as a question, hence it denotes a set of propositions (see Jayaseelan 2001, 87 for a similar idea). On the surface, the unconditional clause in (21) looks like a free relative. Rawlins, however, points out the contrast in (23) as a piece of evidence against it (see Rawlins 2008, 2013 for other differences between

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[6] See Nakanishi & Hiraiwa (to appear) for more detailed comparison of the two denotations of the Q-operator.

the two). Unconditional clauses, like questions, allow for multiple *wh*-phrases, but free relatives do not.

(23) a.　　Alfonso knows who said what.
　　 b.　*Alfonso talked to who(ever) said what.
　　 c.　Whoever buys whoever's property, the town council will still grant a building permit. (Rawlins 2013, 150)

According to Rawlins, unconditional clauses as well as *if*-conditional clauses provide domain restrictions in a pointwise manner to an operator in the main clause such as a modal (see Kratzer 1981, 1986 on *if*-conditionals). But they differ in that while an *if*-conditional clause expresses a single proposition (or a singleton set of propositions in Hamblin's system), an unconditional clause denotes multiple propositions (or a set of propositions). In (21), the *wh*-phrase denotes the set of individuals in (24a) and the unconditional clause denotes the set of propositions in (24b) such as {Alfonso has a cold, Alfonso has the measles, Alfonso has the flu, …}.

(24) a.　　$[\![\textbf{what}]\!]^{\text{w,g}} = [\![\textbf{whatever}]\!]^{\text{w,g}} = \{x \in D_e: \text{non-human}(x)(w)\}$[7]
　　 b.　$[\![\textbf{whatever Alfonso has}]\!]^{\text{w,g}} = \{p: \exists x[\text{non-human}(x)(w) \ \& \ p = \lambda w'. \text{ Al has } x \text{ in } w']\}$

Recall Rawlins's claim that an unconditional clause is a question. Thus, he assumes that the Q-operator in (20a) scopes over the entire unconditional. This Q-operator lets through the set of alternatives provided by an indeterminate and hence the meaning of (24b) remains unchanged even after (24b) combines with the Q-operator, as in (25).[8]

(25)　$[\![\text{Q}]\!]^{\text{w,g}} ([\![\textbf{whatever Alfonso has}]\!]^{\text{w,g}}) = (24\text{b})$

Rawlins further claims that each proposition in (25) provides a domain restriction to the modal in the main clause. Putting the details aside, the denotation of the entire unconditional construction is provided in (26), where each alternative has a conditional paraphrase (e.g., *If Alfonso has that disease, he should stay home*).

(26)　{in all the closest worlds where Alfonso has a cold, he stays home,
　　　in all the closest worlds where Alfonso has the measles, he stays home,
　　　in all the closest worlds where Alfonso has the flu, he stays home,　　…}

(26) cannot be the final meaning of the sentences in (21), however, because in Hamblin's system, a declarative sentence must denote a single proposition. To solve this issue, Rawlins claims that a singleton obtains from (26) with the help of the universal operator in (27).[9] The LF representation of unconditionals is given in (28).

(27)　$[\![\forall \alpha]\!]^{\text{w,g}} = \{\lambda w'. \ \forall p[p \in [\![\alpha]\!]^{\text{w,g}} \to p(w')=1]\}$　　(Kratzer & Shimoyama 2002, Section 3)

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[7] Rawlins initially presents the compositional analysis of unconditionals without considering the contribution of -*ever*. See Rawlins (2013: section 4.3) for the meaning of -*ever* (as well as *no matter*), where he claims that it introduces an ignorance presupposition.

[8] Rawlins (2013, Section 2.4) later modifies the denotation of the Q-operator, and argues that it comes with two presuppositions, namely, exhaustivity and mutual exclusivity. In this respect, it is too strong to say that the Q-operator does not contribute any meaning. However, we maintain the denotation (20a) as these presuppositions are not relevant to our discussion below.

[9] Rawlins suggests that an assertion operator is present in the matrix clause in unconditional constructions and that it requires a singleton set, which triggers the insertion of the universal operator. In this sense, the universal operator is inserted only when it is required (see also Menéndez-Benito 2006). In contrast, questions come with the Q-operator in (20a), which allow non-singletons, hence no insertion of the universal operator.

(28) [∀[[Q[… *wh-* …]] [matrix clause]]]

The universal operator in (27) combines with the alternative set and yields a singleton set that only contains propositions that are true if and only if every proposition in the set is true. With the case at hand, we obtain a singleton that contains the conjunction of the propositions in (26), which is exactly what the sentences in (21) mean.

3.3. SEMANTICS OF BARE INDETERMINATES IN UNCONDITIONALS. Having introduced Rawlins's analysis of unconditionals, let us now turn to Japanese. As stated above, indeterminates lack their own quantificational force, and thus they require the presence of quantificational operators. This view we share with Shimoyama. However, we diverge from her analysis and argue that the quantificational operators that indeterminates associate with need not be overt. More specifically, extending Rawlins's analysis of English unconditionals, we claim that bare indeterminates in Japanese unconditionals are licit because of the covert Q-operator. In syntax, this Q-operator takes the form of Q-morpheme (Cable 2010) and licenses a bare indeterminate. This means that an operator that combines with a set of individuals introduced by an indeterminate does not have to be overtly realized as a particle and that an indeterminate can be licensed without any particle—as a bare indeterminate, if an environment allows for an invisible operator (see Cable 2010 for a hypothesis that Q-morphemes are not externalized in many languages).

As we have seen above, the meaning of unconditionals with indeterminates is analogous to unconditionals with *wh-ever* or *no matter wh-*. If we assume that an indeterminate in Japanese introduces a set of alternatives, just as a *wh*-phrase in English does, then Rawlins's analysis easily extends to the Japanese unconditionals (3)–(5), and in the end we obtain the truth conditions in (29).

(29)   If Alan comes, Taro will be pleased, and if Bill comes, Taro will be pleased, and if Conan comes, Taro will be pleased, and …

In order to extend Rawlins's analysis to Japanese unconditionals, however, we need to show that unconditional clauses in Japanese are questions. On the surface, the complementizer *ka* does not show up in an unconditional clause, unlike in a root *wh*-question such as *Dare-ga kimasi-ta ka?* 'Who came?' in (18). However, recall that *naze* 'why', which is only licensed in a question (and its kins), is also licit in unconditionals (see (11)−(12)). This serves as a piece of evidence that an unconditional is syntactically a question.

This is further corroborated by another piece of evidence from the sentential disjunctive connective *soretomo* 'or'. It can disjoin questions in (30), but cannot disjoin declarative sentences in (31). This is expected because in Hamblin's system, a question denotes a set of alternative propositions and *soretomo* is a sentential disjunctive connective that is compatible with alternative propositions (see also Larson 1985 for the availability of the disjunctive connective *or* in English questions).

(30) a.   Taro-wa   [Jiro-ga   ki-ta   no   ka   dooka]   tazune-ta.
          Taro-TOP   Jiro-NOM   come-PST   C   Q   whether   ask-PST
          'Taro asked whether Jiro came or not.'
      b.   Taro-wa   [Jiro-ga   ki-ta   no   ka   (soretomo) Hanako-ga
          Taro-TOP   Jiro-NOM   come-PST   C   Q   or   Hanako-NOM
          ki-ta   no   ka]   tazune-ta.
          come-PST   C   Q   ask-PST
          'Taro asked whether Jiro came or Hanako came.'

(31) *Jiro-ga   ki-ta   soretomo   Hanako-ga   ki-ta.
      Jiro-NOM   come-PST   or   Hanako-NOM   come-PST
      'Jiro came or Hanako came.'

What is crucial here is the fact that this disjunctive connective is perfectly fine in unconditionals, as in (32).

(32) a.   [Jiro-ga   ko-yooga   (soretomo) ko-naka-rooga]   Taro-wa   yorokob-u daroo.
             Jiro-NOM   come-SBJV or   come-NEG-SBJV Taro-TOP   please-PRS will
             'Whether Jiro comes or not, Taro will be pleased.'
       b.   [Jiro-ga   ko-yooga   (soretomo) Hanako-ga   ko-yooga]
             Jiro-NOM   come-SBJV or   Hanako-NOM   come-SBJV
             Taro-wa   yorokob-u daroo.
             Taro-TOP   please-PRS will
             'Whether Jiro comes or Hanako comes, Taro will be pleased.

In contrast, the concessive clause in (33) and the conditional in (34) do not accept *soretomo*.

(33) a.   * [Taro-ga   ki-ta-ke(re)do   (soretomo) Hanako-ga   ki-ta-ke(re)do]
              Taro-NOM   come-PST-though   or   Hanako-NOM   come-PST-though
              boku-ni-wa   kankei   na-i.
              1SG-DAT-TOP   matter   NEG-PRS
              'Although Taro comes or Hanako comes, I don't care.'
       b.   * [Taro-ga   okurete   ku-ru-mo   (soretomo) Hanako-ga   okurete
              Taro-NOM late   come-PRS-though or   Hanako-NOM   late
              ku-ru-mo]   boku-ni-wa   kankei   na-i.
              come-PRS-though   1SG-DAT-TOP   matter   NEG-PRS
              'Although Taro comes late or Hanako comes late, I don't care.'

(34) a.   * [Mosi Jiro-ga   ki-ta-ra   (soretomo)   Hanako-ga   ki-ta-ra]
              if   Jiro-NOM   come-PST-COND or   Hanako-NOM come-PST-COND
              Taro-wa   yorokob-u daroo.
              Taro-TOP   please-PRS will
              'If Jiro comes or Hanako comes, Taro will be pleased.'
       b.   * [Mosi Jiro-ga   ku-ru-nara   (soretomo)   Hanako-ga   ku-ru-nara]
              if   Jiro-NOM   come-PRS-COND or   Hanako-NOM come-PRS-COND
              Taro-wa   yorokob-u daroo.
              Taro-TOP   please-PRS will
              'If Jiro comes or Hanako comes, Taro will be pleased.'

Thus, we can safely conclude that unconditionals in Japanese is syntactically a question. In contrast, concessive clauses and conditionals are not a question and hence do not license bare indeterminates (see (15) and (17)).

        Extending Rawlins's analysis, we assume that Japanese unconditionals such as (3)–(5) have the LF representation in (35).

(35) [[[[… *indeterminate* …] Q] [matrix clause]] ∀][10]

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[10] In Section 3.4, we will consider a licensing mechanism of indeterminates from the viewpoint of syntax. Because we assume that the operator is syntactically a head, the schematic structure here reflects the head parameter, although word order is immaterial.

The indeterminate *dare* 'who' expresses a set of humans as in (36a). It combines with the predicate, and we obtain the set of propositions in (36b), i.e., a set of propositions of the form 'Alan comes', 'Bill comes', 'Conan comes', etc.[11] Then (36b) combines with the Q-operator in (20a), as in (36c). Each proposition in (36c) provides a domain restriction to the main clause modal operator, as in (37).

(36) a. $[\![\mathbf{dare}]\!]^{w,g} = \{x \in D_e : human(x)(w)\}$
      b. $[\![\mathbf{dare\text{-}ga\ ko\text{-}yooga/kite\text{-}mo/ko\text{-}yooto\text{-}(mo)}]\!]^{w,g}$
          $= \{p : \exists x[human(x)(w)\ \&\ p = \lambda w'.\ come(x)(w')]\}$
      c. $[\![Q]\!]^{w,g} ([\![\mathbf{dare\text{-}ga\ ko\text{-}yooga/kite\text{-}mo/ko\text{-}yooto\text{-}(mo)}]\!]^{w,g}) = $ (36b)

(37) {If Alan comes, Taro will be pleased, if Bill comes, Taro will be pleased, if Conan comes, Taro will be pleased…}

The set of propositions in (37) then combine with the universal operator in (27), yielding a singleton that contains the conjunction of the alternatives, which amounts to (29).

   We have shown that a bare indeterminate is well-formed in unconditionals. Our analysis demonstrates that an indeterminate does not require an overt operator such as *ka* or *(de)mo*, contrary to the long-standing view. Instead, we have argued that an indeterminate associates with an invisible Q-operator. The facts that the particle *mo* often appears in unconditionals and that unconditionals are semantically universally quantified has misled us in the previous literature. In fact, it should be emphasized that the particle *mo* may appear in the unconditionals, irrespective of whether or not they contain an indeterminate, as shown in examples (13).

   It follows then that syntactically, a bare indeterminate is licensed by a Q-morpheme with a [Q]-feature, as in (38).

(38) [[… indeterminate …] X$_{[+Q]}$]

The licensing mechanism in (38) is evidenced by the fact that the Q-morpheme is optionally overt in root questions (see (7)) and that a bare indeterminate is also licit in such questions.

3.4. KURODA (1965) AND SYNTACTIC LICENSING MECHANISM OF INDETERMINATES. We have so far argued that what allows for a bare indeterminate is neither *ka* nor *(de)mo*, but a covert Q-operator. We now address the question of where the Q-operator appears in syntax.

   In answering this question, Kuroda's (1965) analysis of the topic marker *wa* and focus particles such as *(de)mo* is quite insightful. Kuroda (1965) proposed that particles such as *wa* and *(de)mo*, even when they are syntactically adjoined to a noun (39b) or a verb (39c), are underlyingly attached to a clause, as shown in (39a), from where they undergo *attachment transformation* and show up in their surface positions (see also Kuroda 1992, Chapter 9).

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[11] The verbs in the unconditionals in (3)–(5) take a subjunctive or conditional form. However, we do not have a commitment to the distinction between the two forms as the task is not straightforward.
   A subjunctive form is also used in unconditionals in English.
(i) a. Rain or shine, we're having our party outside today.
         =Whether it rains or shines, ...
     b. Come what may, we will go ahead with our plan.
         = Whatever may happen, we will go ahead with our plan   (Quirk et al. 1985:156, 1101–2)
Space precludes the consideration of why this is the case, and we put aside its semantic contribution. That is, in (3)–(5), we simply assume that the indeterminate combine with the predicate *kuru* 'come'.

(39) a.   [CP [CP Taro-ga   ki-ta]   **(de)mo**]   (D-Structure)
                 Taro-NOM   come-PST   DEMO

     b.   [CP [DP Taro-**(de)mo**]   ki-ta]].   (S-Structure)
                 Taro-DEMO   come-PST
          'Even Taro came. / Taro also came.'

     c.   [CP Taro-ga   [VP ki-**mo**]   si-ta].   (S-Structure)
                 Taro-NOM   come-MO   do-PST
          'Taro did come, too (not only did he say he would come).'

Our analysis of bare indeterminates reconfirms Kuroda's attachment analysis, which was proposed in the 1960's. Even though we cannot accept his hypothesis that particles themselves move through attachment transformation, his insight lies in the idea that a morpheme that has a particular meaning is underlyingly attached to a clause. In other words, we propose that the Q-morpheme that semantically binds an indeterminate is syntactically a complementizer C and it is exactly this morpheme that licenses bare indeterminates syntactically in Japanese (see Watanabe 1991 for the syntax of question in Japanese).

(40) [CP   [… indeterminate …] C$_{[+Q]}$]

This operator is interpreted in this position at LF, but it is not externalized at PF because it does not have any phonetic feature in unconditionals. Often times, an indeterminate co-occurs with a particle such as *ka* and *(de)mo* and this gives us an impression that it has an operator-like meaning, but it is due to the fallacy that we often link a particular meaning to an overt morpheme.[12] This is the reason why bare indeterminates has not attracted attention or received a fair description in the literature.

4. Conclusion. In this article, we have investigated the syntax and semantics of bare indeterminates and reconsidered the Indeterminate-Particle Generalization. Indeterminates in unconditionals are licensed by a covert Q-operator, regardless of whether the particle *mo* appears in unconditional clauses. Bare indeterminates have rarely been noted in the literature, but they may be more ubiquitous than we think. In addition to Shimoyama (2006, fn. 27), Watanabe (2006, 247) and Kuno, Kato, & Narita (2012, 126–127) note examples of bare indeterminates outside unconditionals. See Nakanishi & Hiraiwa (2019) for a comprehensive list of environments where bare indeterminates are allowed.

     Our analysis has many important ramifications. One is intervention effects. Indeterminates in unconditionals show intervention effects even though they do not associate with the particle *mo*. See Nakanishi & Hiraiwa (2019, to appear) for a detailed analysis. Another is a reconsideration of free choice and existential indeterminates. Readers are referred to Hiraiwa & Nakanishi (to appear) and Hiraiwa (2020) for evidence from Japanese and Okinawan that their internal structures are an unconditional clause and a question clause, respectively.

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[12] It is not a trivial question what role the particles such as *ka* and *(de)mo* play, if our proposal that an indeterminate is actually licensed by an invisible operator is correct. For example, Kuroda (1965) assumes that an indeterminate is a logical variable and the particles *ka* and *(de)mo* have a function of implying a set of alternatives. See Hiraiwa & Nakanishi (to appear) on the particle *ka*.

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