The QP Syntax: Noun Class, Case, and Augment*

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1. Introduction

Quantifiers (or indefinite pronouns) in Japanese do not form a syntactically homogeneous class (Hirose & Suzuki 2009, Hiraiwa 2013). Some quantifiers behave as a full DP, while others behave as if they were not a noun, despite their appearances. For example, a *wh*-pronoun *dore* 'which' requires case-marking as shown in (1a), but an NPI *dore-mo* 'any' resists case-marking as shown in (1b).

(1) a. Watasi-wa [Ken-ga dore*(-o) kat-ta ka] sirimase-n.
1SG-TOP Ken-NOM which-ACC buy-PAST Q know-NEG.PRES
'I don't know which (of these) Ken bought.' (Japanese)

b. Ken-wa dore-mo(*-o) kaimase-n-desita.
Ken-TOP which-also-ACC buy-NEG-PAST
'Ken didn't buy any (of them).' (Japanese)

In this article, I refer to quantifiers (such as NPIs, existential quantifiers, universal quantifiers, and *wh*-pronouns) as QPs. I compare the syntax of QPs in Japanese and in Bantu and demonstrate that their decomposition reveals surprising similarity between these languages. More specifically, It is shown that QPs in both languages contain a noun class system, even though it has been taken to be a hallmark property of the latter group of languages. Furthermore, I also propose that QPs come in two kinds, bare QPs and full DPs and argue that the syntax of augmented vs. augmentless nominals in Bantu mimics the syntax of a full DP and a bare QP in Japanese.

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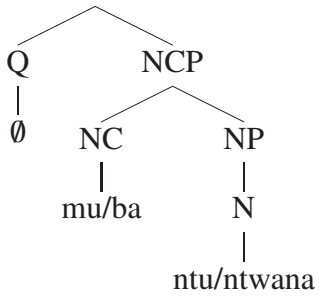
2. QP=Q+NC+N and QP=Q+NC+Dem

There are at least two different ways of composing QPs. The first strategy is to combine a noun class marker with a noun phrase (NP) (and nothing else). This is what Bantu languages employ, as shown in (2a) and (2b) (Buell 2005, 2009, de Dreu 2008, Halpert 2012). I propose the structure in (3).

(2) a. a-ngi-bon-i mu-ntu.
NEG-1SG-see-NEG 1-person
'I don't see anyone.' (Zulu: Halpert 2012, 89)

b. a-ka-limaza ba-ntwana.
NEG-1SA-hurt 2-children
'He doesn't hurt any children.' (Zulu: de Dreu 2008, 18)

(3) (QP=Q+NC+N)



The other is to combine an interrogative pronoun with a quantificational particle, as illustrated in the Japanese example (4).[1] Note that example (5) shows that *doko*, *dore*, *dotti*, and *dotira* in (4) are exactly the same morphological elements as the *wh*-pronouns. Following Kuroda (1965), I call such a *wh*-pronoun an indeterminate (pronoun).

(4) Boku-ni-wa {doko/dore/dotti/dotira-mo} omosiroku-nakat-ta.
1SG-DAT-TOP where/which/which/which-also interesting-NEG-PAST
'I did not find anyplace/anything/any one of them interesting.' (Japanese)

(5) Anata-ni-wa {doko/dore/dotti/dotira}-ga omosirokat-ta?
2SG-DAT-TOP where/which/which/which-also interesting-PAST
'Where/Which (one of them) did you find interesting?' (Japanese)

Assuming that an indeterminate pronoun has an XP projection for the moment, the QP in Japanese has the following structure.

(6) $[_{QP}\ [_{XP}$ dore/doko/dotti/dotira $]\ Q_{Particle}\ ]$

[1] Hiraiwa (2014) for some discussions on syntactic distribution of additive and disjunctive particles.

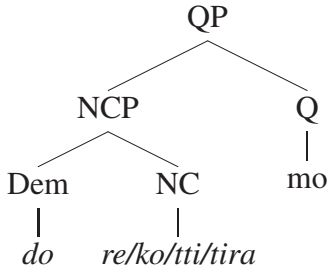
Indeed, combination of an interrogative pronoun with a quantificational particle is the most common strategy in languages with so-called indeterminate systems. The data below are from Haspelmath (2013).

(7)

a.	cu-riw	'somebody'	cu	'who'	:Lak
b.	ká-pjos	'somebody'	pjos	'who'	:Greek
c.	je-ka	'somebody'	je	'who'	:Korku
d.	jaroi'	'somebody'	jaró	'who'	:Southeastern Tepehuan

Apparently, the two types of QP formation have nothing in common. However, along the lines pursued in Hiraiwa (2013), a fine decomposition of Japanese indeterminate pronouns reveals that the noun class system is present in Japanese. I propose that indeterminate pronouns are further decomposed into an indeterminate demonstrative root and a noun class marker. Under this analysis, the bound-morphemes *-re*, *-ko*, *-tti*, *-tira* and so on, are taken to be noun class markers on a par with those in Bantu.

(8) (QP=Q+NC+Dem)



The evidence that they are a realization of a noun class head comes from their behavior in demonstratives. There are four demonstrative roots (*ko*, *so*, *a*, and *do*) in Japanese and the demonstrative part remains constant in each column in the demonstrative paradigms in (9). What gives rise to the semantic differences is the subsequent part: for example, if *-re* is suffixed to the proximal demonstrative root, it means *this* (a proximal inanimate thing), while if *-ko* is suffixed to the same root, it means *here* (a proximal location). It is worth noting that this patterns with a Bantu noun class system as shown in (10).[2]

(9) *Demonstratives and "Noun Classes" in Japanese*

Semantics	Proximal	Medial	Distal	Indeterminate
person	(*ko*-tira)	(*so*-tira)	(*a*-tira)	(*do*-tira)
thing	*ko*-re	*so*-re	*a*-re	*do*-re
place	*ko*-ko	*so*-ko	*a-so*-ko	*do*-ko
direction	*ko*-tti	*so*-tti	*a*-tti	*do*-tti
manner	*ko*-o	*so*-o	*a*-a	*do*-o

[2]Akira Watanabe (p.c.) points out that Bantu locative noun class markers appear outside noun phrases with noun class markers. In fact, they even appear outside the augment vowel (see Buell 2009, 58). This suggests that locative noun class markers attaches to null nouns. I leave this for future research.

(10) *Proto Bantu noun class system (cf. Demuth 2000)*

Noun Class	*PB	Semantics
1/2	mo-/va-	humans, other animates
7/8	ke-/vi-/di-	manner
9/10	n-/di-n-	animals, inanimates
16/17/18	pa-/ko-/mo-	locatives (near, remote, inside)

Thus, it is reasonable to assume that those little morphemes are realizations of different noun classes, as given in (11)

(11) The elements *-tira/re/ko/tti/-V* in Japanese are noun class markers.

Now, with this decomposition, a hidden similarity between Japanese and Bantu emerges into the picture. As (3) and (8) show, QPs in both languages share the NC layer (as well as the QP layer). What is not shared is, then, the bottom structure: the sister of NC is a noun in Bantu and indeterminate demonstrative root in Japanese.

This minimal difference makes a prediction about modifiability of QPs. As shown in examples (2), the NPI *ba-ntwana* in Zulu consists of the noun class 2 plural prefix *ba-* and the noun *ntwana* 'child'. As it clearly contains a nominal structure, it is expected that a relative clause can modify the NPI in this language. This is confirmed by example (12).

(12) a-ka-nced-i [m-ntwana [u-gul-a-yo]]
NEG-SA1-help-NEG 1-child SA1-sick-FV-yo
'She didn't help any child who is sick.' (Zulu: de Dreu 2008, 41)

This is in a clear contrast with Japanese NPIs. Example (13) shows that they resist being modified by a relative clause.

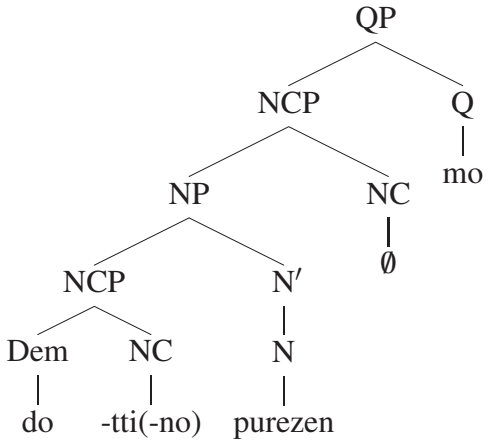
(13) *[[Ken-ga at-ta] dare-mo] kanozyo-o hihan si-nakat-ta.
Ken-NOM meet-PAST who-also her-ACC criticism do-NEG-PAST
'No one who Ken met criticized her.' (Japanese)

Interestingly, Japanese also has complex NPIs built on NP as shown in example (14a), with its structure given in (14b). Note that the NCP functions as a genitive modifier for the NP. [3]

(14) a. Boku-ni-wa [{doko-no/do-no/dotti-no/dotira-no}
1SG-DAT-TOP where-GEN/which-GEN/which-GEN/which-GEN
purezen-mo] omosiroku-nakat-ta.
presentation-also interesting-NEG-PAST
'I did not find any (one) of the presentations interesting.' (Japanese)

[3]Noun class markers only surface with indeterminate demonstrative roots in Japanese, unlike in Bantu. The reason for this is not clear at this moment.

b.



As expected, these NPIs allow modification, as shown in example (15).

(15) [[Ken-ga at-ta] do-no hito-mo] kanozyo-o hihan si-nakat-ta.
Ken-NOM meet-PAST which-GEN person-also her-ACC criticism do-NEG-PAST
'No person who Ken met criticized her.' (Japanese)

To summarize, a fine decomposition of QPs in Japanese and Bantu brings to light a shared NC structure. The difference between the two languages lies in the bottom structure, namely whether QPs contain an indeterminate demonstrative root or a noun structure.

(16) a. QP= Q+NC+N (Bantu (and Japanese))
b. QP= Q+NC+Dem (Japanese)

3. DP and bare QP in Japanese

Now that I have established the internal structure of QP, let us turn to the size of QPs. Japanese has six different indefinite pronouns as shown with the *dare* 'human' series in table (17): NPIs, free choice items, non-case-marked (NCM) and case-marked (CM) existentials, universal quantifiers, and *wh*-pronouns.

(17)

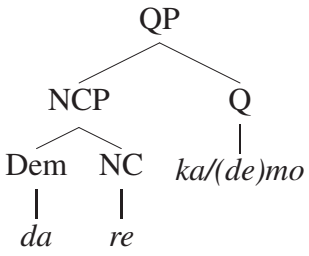
		Indet.	Particle	Case	Co-occur. w/ DP
Category A	NPI	dare	mo	*	ok
	Free Choice	dare	demo	*	ok
	NCM ∃	dare	ka	*	ok
Category B	CM ∃	dare	ka	obligatory	*
	Universal ∀	dare	mo	obligatory	*
	Wh	dare	∅	obligatory	*

Extending the analysis in Hiraiwa (2013), I propose that QPs in Japanese come in two different types, a bare QP (Category A) and a full DP (Category B).[4]

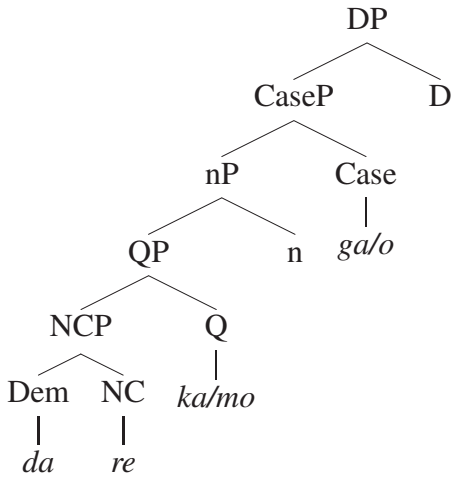
[4]For light noun "n", see Hiraiwa (2012, to appear) for details.

(18) *Two kinds of QPs*

a. Category A



Category B



Note that all of these QPs are composed of an indeterminate demonstrative root with a noun class element and a quantificational particle (See Section 2). There is no morphological indication for the existence of the two types. Nevertheless, two diagnostic tests, case-marking and co-occurrence with an argument DP, provide evidence for the bifurcation. I illustrate this below, using an NPI and a *wh*-pronoun as a representative of each category.

First, an NPI resists case-marking, whereas a *wh*-pronoun requires case-marking.

(19) a. Watasi-wa dare-mo(*-o) yoba-nakat-ta.
1SG-TOP who-also-ACC invite-NEG-PAST
'I did not invite anyone.' (Japanese: NPI)

b. Watasi-wa [anata-ga dare*(-o) yon-da ka] sira-na-i.
1SG-TOP 2SG-NOM who-ACC invite-PAST Q know-NEG-PRES
'I don't know who you invited.' (Japanese: *Wh*-pronoun)

Second, an NPI can co-occur with "a real" argument nominal (*gakusee-o* 'student-ACC'), while a *wh*-pronoun behaves as an argument itself (see Aoyagi & Ishii 1994).

(20) a. Watasi-wa dare-mo gakusee-o yoba-nakat-ta.
1SG-TOP who-also student-ACC invite-NEG-PAST
'I did not invite any student.' (Japanese: NPI)

b. *Watasi-wa [anata-ga dare-o gakusee-o yon-da ka]
1SG-TOP 2SG-NOM who-ACC student-ACC invite-PAST Q
sira-na-i.
know-NEG-PRES
'I don't know which student you invited.' (Japanese: *Wh*-pronoun)

Those in Category A (NPIs, free choice items, and NCM existentials) are bare QPs. Lack-

ing the nP, CaseP, and DP layers, they resist case-marking and behave like a non-NP, co-occurring with a real argument DP and occupying a non-argument position.[5] In contrast, those in Category B (CM existentials, universal quantifiers and *wh*-pronouns) have a full-fledged DP structure, requiring case-marking and exhibiting full argument properties (see Hiraiwa 2013 for a full range of data).

4. Case in Japanese and an augment vowel in Bantu

Now while the distinction between Category A and Category B is not morphologically visible in Japanese, I suggest that it is indeed visible in Bantu languages as a form of an augment vowel. As de Dreu (2008, 16) writes, "In Zulu, nouns usually start with what is called an initial vowel, augment or preprefix. This is a vowel that precedes both the noun stem and the noun prefix." This initial vowel is called an augment vowel. As de Dreu (2008) and Halpert (2012) show, however, sometimes nominals can appear without an augment vowel. Such nominals that lack the initial augment vowel are called augmentless nominals. This contrast is shown in Xhosa examples (21a) vs. (21b), and (21c) vs. (21d), from Carstens & Mletshe (2015).

(21)

a.	b.	c.	d.
mutu	*u*-mutu	bani	*u*-bani
1.person	AUG1-1.person	1.who	AUG1-1.who
'anybody'	'a/the person'	'who?'	'who?'

de Dreu (2008) lists cases where nominals appear without an augment vowel in Zulu. Those include, but are not limited to, NPIs (22a), vocatives (22b), nominals following determiners (22c), and nominals following absolutive pronouns (22d).

(22)

a. a-ku-fik-anga bahambi.
NEG-SA17-arrive-NEG 1.travelers
'No travelers arrived.' (Zulu: de Dreu 2008, 16)

b. Nkosi!
9.king
'King!' (Zulu: de Dreu 2008, 16)

c. Leli hhashi
5.this 5.horse
'this horse' (Zulu: de Dreu 2008, 16)

d. Nami mfundi be-ngi-bon-a.
1SG 1.student PAST-1SG-see-FV
'I, the student saw.' (Zulu: de Dreu 2008, 16)

Baker (2003), Halpert (2012), and Carstens & Mletshe (2015) observe that (i) augmentless nominals are typically NPIs/*n*-words/*wh*-words, and (ii) have a narrow-scope, nonreferential, nonspecific indefinite reading. Furthermore, Carstens & Mletshe (2015) argue that they lack uCase.

[5] This is reminiscent of the Pronominal Argument Hypothesis, in which an overt nominal is actually an adjunct, with a pronoun/agreement morpheme as a real argument (see Jelinek 1984 and Baker 1996).

Thus, augmented and augumentless nominals show an important semantic asymmetry, as shown in examples (23) (see Halpert 2012; de Dreu 2008).

(23) a. a-ka-limaza ba-ntwana.
NEG-1SA-hurt 2-children
'He doesn't hurt any children.' (Zulu: de Dreu 2008, 18)
b. a-ka-limaza *a*-ba-ntwana.
NEG-1SA-hurt AUG-2-children
'He doesn't hurt (some particular) children.' (Zulu: de Dreu 2008, 18)

This contrast is also observed in Japanese, between an NPI in Category A and an case-marked existential quantifier in Category B.[6]

(24) a. Ken-wa dare-mo home-nakat-ta.
Ken-TOP who-also praise-NEG-PAST
'Ken did not praise anyone.' (Japanese: NPI)
b. Ken-wa dare-ka-o home-nakat-ta.
Ken-TOP who-or-ACC praise-NEG-PAST
'Ken did not praise some particular person.' (Japanese: CM existential)

I argue that this asymmetry is due to Case. More specifically, I make the following hypothesis (25) and propose the structure of augmented nominals in (26).

(25) An augment vowel is the realization of uCase.

(26) $[_{DP}\ [_{CaseP}\ [_{Case}\ a]\ [_{QP}\ [_{NCP}\ [_{NC}\ ba\ ]\ [_{NP}\ [_{N}\ ntwana\ ]]]]]]$

It is natural to think that vocatives in (22b) and nominals following demonstratives and absolutive pronouns and (22c)–(22d) are not arguments DPs and hence surface as bare nouns. Vocatives in Japanese in fact do not appear with any case-marking. NPIs are also case-less in Japanese as we have seen in example (27).[7]

(27) {Ken/Dare-ka}(*-ga), tetudatte
Ken/who-or(-NOM) help.me
'Ken/Someone, help me' (Japanese)

If hypothesis (25) is correct, then, we are led to the following conclusions.

(28) a. Augmentless nominals in Bantu have the same structure as quantifiers in Category A in Japanese.
b. Augmented nominals in Bantu have the same structure as quantifiers in Category B in Japanese.

[6] See also Hasegawa (1991) for pertinent observations on NCM and CM existential quantifiers.
[7] Augmentless nominals following determiners may require a separate explantion.

As expected, in Zulu, an NPI appears without an augment, but a universal quantifier comes with an augment on a par with NPIs and universal quantifiers in Japanese.

(29) a. mu-ntu
1-person
'anybody'

b. wonke *u*-mu-ntu
every AUG-1-person
'everyone'
(Zulu: Halpert 2012, 39, 89)

The absence of uCase in augmentless nominals is also indicated by the absence of agreement. As Baker (2003) observes, augmentless nominals do not trigger agreement. This is shown by Kinande and Zulu examples (30) (Baker 2003; cf. Halpert 2012).

(30) a. Omukali mo-a-teta(*-ki)-gul-a ki-ndu.
woman.1 AFF-1.SA-NEG/PAST-OM7-buy-FV 7-thing
'The woman didn't buy anything.' (Kinande: Baker 2003, 111)

b. A-ngi(*-m)-bon-i mu-ntu.
NEG-1SG-see-NEG.PAST 1-person
'I don't see anybody.' (Zulu: Halpert 2012, 96)

5. Conclusion

In this article, I have investigated the QP syntax and reached two conclusions. First, it has been shown that a fine decomposition of QPs reveals an underlying noun class system in both Japanese and Bantu. Second, the syntax of augmented and augmentless nominals in Bantu patterns with the syntax of full DPs and bare QPs in Japanese, respectively.[8]

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[8]The third strategy of composing QPs is to combine a quantifier with a light noun. English composes QPs exactly in this way (see Abney 1987, Kishimoto 2000) as shown in (ia). As the structure contains an nP/NP projection, it is expected that QPs of this type allowed modification. This is indeed confirmed by example (ib).

(i) a. $[_{DP}\ [_{D}\ ]\ [_{QP}\ [_{Q}$ some/any/every $]\ [_{nP}\ [_{n}$ one/body/thing/place/time $]\ ]\ ]\ ]$
b. I have never seen anyone who criticizes her.

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