Labeling Roots and Pronouns

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1. A Puzzle—Two Gaps— Japanese, like many other languages, has a very productive system called *indeterminate system* (Kuroda 1965, Nishigauchi 1990, Watanabe 1991, Takahashi 2002; also Haspelmath 1997). As shown in the left side of table (1), various indefinite pronouns are built on so-called "indeterminate" pronouns combined with quantificational particles (*mo*, *ka*, ∅, etc.). Hiraiwa (2015), pursuing Kuroda's original insight, further argues that indeterminate pronouns themselves can be syntactically decomposed into a demonstrative root (Dem) (*da/do*) and a noun class (NC) element (*-re/ko/(t)ti*, etc.), as shown in the rightmost two columns of table (1). Furthermore, he demonstrates that the NPI *daré-mó* is syntactically a QP whereas the universal quantifier *dáre-mo* is a noun, despite their surface identity (this syntactic distinction is reflected in pitch patterns; I use an acute accent to indicate a high pitch accent throughout the abstract).

(1)

	Indeterminate	Wh	Universal	NPI		Dem	NC
'who'	dare	dáre	dáre-mo	daré-mó		da	re
'what'	nani	náni	[*2]	naní-mó		nani	[*1]
'where'	doko	dóko	dóko-mo	dokó-mó		do	ko
'which'	dore	dóre	dóre-mo	doré-mó		do	re
'which'	dotti	dótti	dótti-mo	dottí-mó		do	tti

In this paper, I focus on just one puzzle in the indeterminate system that has been consistently ignored or has not been considered to call for any further explanation—the two lexical gaps in (1). First, the indeterminate *nani* is not decomposable into a Dem and an NC (see Gap [*1]). Second, the indeterminate *nani* with *mo* cannot function as a universal quantifier (see Gap [*2]). The latter gap is illustrated in (2): *náni-mo* can neither take a case-marker nor function as a universal quantifier.

(2) a. dá-re-**mo**-ga ayasikatta. 'Everyone was suspicious.' (Universal)

b. da-ré-**mó**(*-ga) ayasikunakatta. 'Nobody was suspicious.' (NPI)

c. *náni-∅-**mo**-ga ayasikatta. 'Everything was suspicious.' (Universal)

d. naní-∅-**mó**(*-ga) ayasikunakatta. 'Nothing was suspicious.' (NPI)

I argue that the two gaps in (1) are not just lexical gaps but rather have significant consequences for grammar. The absence of the universal quantifier (**náni-mo*) follows from internal composition of pronouns and the Labeling Algorithm (LA) in Chomsky (2013, 2015). Thus, I will show that what looks like an accidental and trivial gap provides a crucial window into the nature of the structure-building algorithm.
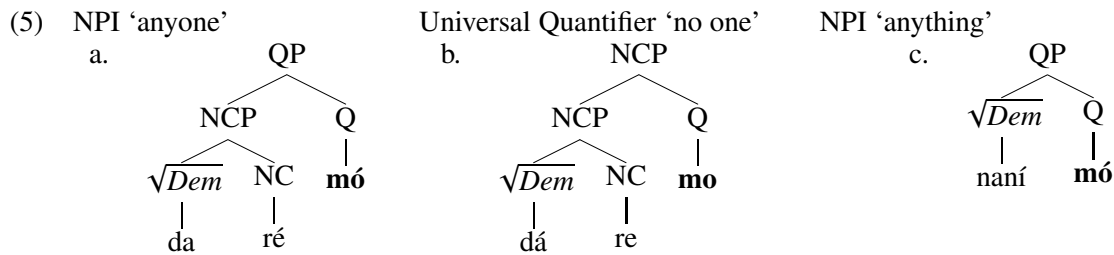
2. Proposal Chomsky (2013, 2015) propose the Labeling Algorithm (LA) and argue that every syntactic object (SO) must be labeled. Consider the indeterminate pronoun *dare* 'who' in Japanese. The Dem root *da* is merged with the NC *-re*, $\{_\alpha \text{ da}_{Dem}, \text{re}_{NC}\}$. The former being category-neutral, the latter determines the label α=NCP, forming the indeterminate pronoun *dare*. The category-neutral status of the demonstrative roots *da/do* is shown by (3). The entire category is determined by the following element.

(3)

Noun	Locative	Adverb	Adjective	Demonstrative
do/da-re	do-ko	do-o	do-nna	do-no
'which/who'	'where'	'how'	'what'	'which X'

Now, this SO $\{_{NCP} \text{da}_{Dem}, \text{re}_{NC}\}$ is further merged with the Q-particle *mo*, $\{_\alpha \text{ NCP}, \text{mo}_Q\}$. I propose that syntactic ambivalence comes in here, building on Aoyagi's (2006) insight. This is formulated in (4).

(4) In Merge $\{_\alpha \text{ X, YP}\}$:
   (i) label α=XP, if X is a head.
   (ii) label α=YP, if X is an adjunct.

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As shown in (4), if *mo* is merged as a Q head, LA gives the label α=QP (non-nominal, NPI) (5a). In contrast, if it is merged as an adjunct Q particle, LA gives the label α=NCP (nominal, universal quantifier) (5b). Note that the pitch accent patterns correlate with labeling: *mo* bears a high pitch if it "projects" (5a), while it bears a low pitch if it doesn't (5b).

(5) NPI 'anyone' Universal Quantifier 'no one' NPI 'anything'

a.
```
        QP
       /  \
     NCP    Q
    /   \   |
 √Dem   NC  mó
   |    |
   da   ré
```

b.
```
        NCP
       /   \
     NCP     Q
    /   \    |
 √Dem   NC   mo
   |    |
   dá   re
```

c.
```
        QP
       /  \
   √Dem    Q
    |      |
   naní    mó
```

The situation is different in the head-head structure $\{_\alpha X, Y\}$, however. Chomsky (2015) hypothesizes that the $\{X, Y\}$ structure should be only possible when X is a root category. In such a configuration, X, being category-neutral, cannot be a candidate for labeling. Thus, Y is necessarily a category-determining element.

(6) In Merge $\{_\alpha X, Y\}$, where X is a category-neutral root, label α=Y.

Now, consider what happens with the Dem root *nani* 'what'. As this lacks the NC element (Gap [*1]), it is directly merged with *mo* leading to $\{_\alpha \text{nani}_{Dem}, \text{mo}_Q\}$. This α is necessarily labeled as QP according to LA in (6) (see Chomsky 2013, 2015). Thus, *nani-mo* is unambiguously a QP. Therefore, it only has an NPI interpretation and cannot behave as a noun phrase as seen in (2c), because a QP is not a nominal. Thus, Gap [*2] is not accidental, but rather a necessary consequence of Gap [*1].

3. "Getting Around" The account given above predicts that a *nani*-based universal quantifier could still be built if the NPI *nani-mo* is further merged with something to form a nominal category. An ingenious solution that Japanese came up with is to "nominalize" the QP *nani-mo* with a particle *ka*, after which another *mo* is added to form a QP, as shown in (7) (we depart from a deluding explanation seen in the traditional grammar).

(7) [náni-**mo**-ka-**mo**]-ga ayasikatta. 'Everything was suspicious.'   (Universal)

Let us consider the derivation of (7). First, the QP *nani-mo* in (5c) is merged with a particle *ka* to form NCP. That *ka* has a nominalizing property is clearly shown in (8), where the indeterminate Dem root *nani*, when combined with *ka*, forms an existential quantifier NCP.

(8) náni-**ka**-ga ayasikatta. 'Something was suspicious.'   (Existential)

Then, *mo* is merged $\{_\alpha \text{NCP}, \text{mo}_Q\}$, which can be labeled as NCP and hence become a universal quantifier as in (7).

4. Implications: Phase and Adjunction The particle *mo* can also appear with an ordinary noun, with the additive meaning 'also', as shown in (9). But the literature has missed the important fact that ordinary nouns with *mo* behave like adjuncts, despite the surface affinity with argument noun phrases. This is shown in (9). *NP-mo* resists case-marking just as NPIs in (2b) and (2d) do. (*sensee 'professor'*)

(9) $\{_\alpha$Sensee-**mo**$\}$(*-ga) ayasikatta. 'The professor was also suspicious.'

This fact shows that the label α of $\{_\alpha \text{sensee}_{nP}, \text{mo}_Q\}$ in (9) is QP, not NP (or DP), in accordance with the analysis given in (5a) above. However, this also suggests that the labeling ambivalence is not allowed in this case. Assuming that *-mo* in (9) is merged with nP and n is a phase head, we are led to the hypothesis (10).

(10) Phase heads (v, n, C) do not allow adjunction.

(10) also provides an interesting solution to the puzzle discussed by Takahashi (2002). It is well known that *mo* can split from an indeterminate pronoun *dare* but he observes that when it is attached to CP or vP, only an NPI interpretation is possible and a universal quantifier interpretation is missing, as illustrated with a CP example below.

(11)　Taro-wa [$_\alpha$[$_{CP}$ *dare*-ga　　Hanako-ni　okotteiru to]-**mo**] {omowanakatta/*omotta}.
　　　　Taro-Top　　　who-Nom Hanako-Dat get.angry C-Q　　thought.Neg/thought
　　　　'Taro did not think that anyone was angry with Hanako.'　　　　　　　　　　(NPI)
　　　　'*Taro thought that everyone was angry with Hanako.'　　　　　　　　　(Universal)

This case also falls within the scope of (10): C, being a phase head, does not allow adjunction and hence {$_\alpha$ CP, mo$_Q$} results in labeling α as QP and yielding an NPI interpretation.

Selected References

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