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Anatomy of *what* and NUMBER in Japanese

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It has been well known that an inanimate wh-pronoun *nani* in Japanese is optionally contracted to *nan* in colloquial speech if and only if followed by a coronal consonant (Martin 1975, among many others).

(1) **Nan**(i)-ga *nani*-no jaanaru-ni notta no?

what-NOM what-GEN journal-on appeared C

‘What appeared in what journal?’

It has been unnoticed, however, that the same wh-pronoun is obligatorily “contracted” to *nan* in certain cases (actual forms are subject to sequential voicing and gemination).

(2) a. nan(*i)-{kai/pataan/hiki}

what-{CL-times/CL-pattern/CL-animal}

‘how many times/patterns/animal’

b. nan(*i)-banme

what-order

‘which (ordinal) number’

c. nan(*i)-{zyuu/hyaku/sen}

what-{ten/hundred/thousand}

‘(Lit.) how many tens/hundreds/thousands’

Note that the “contraction” in (2) is not phonologically conditioned because it is obligatory even when *nan* is not followed by a coronal consonant.

This obligatory short form *nan* in (2), however, has semantics distinct from *nani*. The latter refers to a concrete thing or an abstract property/concept etc., but the former exclusively refers to number. In all the examples in (2), *nan* appears in exactly the same position as numerals: before numeral classifiers (2a), before ordinal nouns (2b), and before numerical bases (as a multiplicand) (2c). It can be replaced with a numeral (e.g. *go* ‘five’) or another wh-element for amount (e.g. *iku* ‘how many’).

The minimal pair in (3) clearly shows this semantic difference: the same noun *ken* ‘prefecture’ gives rise to different interpretations, depending on whether it is prefixed by *nan* or *nani*.

(3) a. nan-ken

what-prefecture

‘how many prefectures’

b. nani-ken

what-prefecture

‘what prefecture’
One might hypothesize that *nan* itself is a numeral and hence a *num* head. But this is not tenable because *nan* co-occurs with a numeral classifier, which is a *num* head (Watanabe 2006). Given that numeral classifiers (in *num*) in Japanese require a number category as their specifier, *nan* cannot be a functional head higher than *num* either.

(4) a. go-hiki
    five-CL_{animal}
    ‘five (animals)’

  b. *hiki
    CL_{animal}
    ‘(animals)’

  c. *{takusan/arera}-hiki
    many/those-CL_{animal}
    ‘many/those (animals)’

It is thus reasonable to think that *nan* is combined with a silent element *number* (see Zweig 2005, Kayne 2005) and forms a numeral in the specifier of *numP*. This silent element *number* in (5) can also be overtly realized as a numerical base *zyuu/hyaku/zen* ‘ten/hundred/thousand’ in example (2c).

(5) \[\text{numP } [\text{numeral } \{\text{nan/go}\} \text{ number}] [\text{num \{num classifier\}}]]
    ‘{how many/five} (NP)’

If this analysis is correct, the obligatory lack of *-i* is understood as morphological evidence for the presence of the silent *number*. This in turn suggests that what we call numerals are more complex than they look. A number of studies have investigated the syntax of numerals (Ionin and Matushansky 2006, Cheng and Sybesma 1999, Watanabe 2006, 2010), but what kind of syntactic category a numeral is has rarely been addressed. The anatomy of *nan* shows that a numeral is a combination of a number word (e.g. *ichi* ‘one’, *ni* ‘two’, *nani* ‘what’) and *number*.

**References**


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