
A Quantitative Exploration of Numeral Classifier Constructions in Japanese

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This paper reports on an experimental investigation of definiteness and specificity in two types of Japanese numeral classifier (NC) constructions: post-nominal NCs (1a), and floating NCs (1b). In the former, the NC precedes the case particle; in the latter, it follows it.

- (1) a. Hon san-satsu-o katta.
 book 3-CL-ACC bought
 ‘I bought three books.’
- b. Hon-o san-satsu katta.
 book-ACC 3-CL bought
 ‘I bought three books.’

Theoretical linguists agree that definiteness and specificity play a role in the distribution of NCs, but the precise nature of that role is disputed. Huang and Ochi (2014) judge that only the floating quantifier is felicitous in a non-specific context (2) (where the preamble ensures a [–definite –specific] interpretation of ‘three books’), whereas Furuya (2012) argues that both constructions are possible. For specific contexts (3–4), Watanabe (2006) argues that only the post-nominal construction is felicitous; but Nakanishi (2008) proposes an adverbial analysis of floating NCs which predicts felicitous occurrence of both constructions in indefinite specific contexts (4).

- (2) [–definite, –specific] PREAMBLE: Taro does online shopping almost every day.
- Kinoo-wa {hon san-satsu-o / hon-o san-satsu} kaimashita.
 yesterday-TOP book 3-CL-ACC / book-ACC 3-CL bought
 ‘He bought three books yesterday.’

- (3) [+definite, +specific] PREAMBLE: Taro has two little sisters.

Sensyu sono {imooto futa-ri-o / imooto-o futa-ri}
last.week that little.sister 2-CL-ACC / little.sister-ACC 2-CL
yuuenchi-ni tureteikimashita.
amusement.park-to took
'He took the two sisters to an amusement park last week.'

- (4) [-definite, +specific] PREAMBLE: Hanako got two PCs and one printer from a friend.

{pasokon ichi-dai-o / pasokon-o ichi-dai} shigoto yoo ni
PC 1-CL-ACC PC-ACC 1-CL for.work using to decided
tsukau-koto ni shimashita.

'She decided to use one PC for work.'

One cause of disagreement is methodological: researchers rely mainly on a small set of native language intuitions, including their own, resulting in a limited amount of data and potential expert bias (Sprouse, 2015). The present study instead adopts an experimental method, using random presentation of multiple test sentences, and non-linguist judges.

Thirty-six pairs of test items were created, 12 for each of the three definite-specific permutations in (2–4), with a post-nominal NC and floating NC version within each pair. Twenty native Japanese speakers each judged a subset ($n=18$) of items, with no individual judging the post-nominal and floating versions of the same sentence. They rated the acceptability of each NC sentence as a continuation of its preamble, on a scale of 0–6 (completely odd–completely natural).

Table 1 summarises the results. High ratings ($\geq 4.7/6$) obtained in all conditions except the floating NC in the [+definite +specific] context. The effect of construction type in each context was analysed using linear mixed effects models. The Likelihood Ratio Test found that construction type significantly affected ratings ($\chi^2(1) = 22.76, p < 0.001$) in the definite but not the two indefinite contexts. This between-construction difference only in the [+definite, +specific] context provides quantitative evidence for the floating

construction being incompatible with definite contexts and, crucially, for the acceptability of both constructions in [-definite, $\pm$ specific]. This result is consistent only with the floating-NC-as-adverbial view.

Table 1: Mean ratings out of 6 (SD) on the AJT

	[-definite, -specific]	[+definite, +specific]	[-definite, +specific]
Post-nominal	4.97 (1.22)	5.05 (1.47)	4.73 (1.51)
Floating	5.20 (1.20)	2.78 (2.03)	4.70 (1.39)