Japanese NPs require idiosyncratic classifiers when they are modified by numeral quantifiers. For example, book-like objects require the classifier -satsu; birds are counted by -wa, etc. Thus, the integration of numeral classifiers and their host-NPs must involve some kind of agreement process. This study sought to determine the nature of the agreement by investigating ERP responses to a classifier mismatch and a classifier-omission. A specific ERP component (i.e., N400 vs. P600) should be elicited depending on whether the agreement and the requirement involve semantic processes or syntactic processes.

In their ERP experiment, Mueller et al. (2005) observed sustained-LAN for classifier mismatches. On the basis of the existence of LAN, they argue that the agreement process is syntactic. However, there are at least two reasons why a follow-up research is required. First, the mismatching cases in Mueller et al. result from combinations of an animate-counting classifier and an animate host-NP (e.g., *ni-wa-no neko* “two-birdlike cats”). This must have weakened the impact of semantic anomalies on ERPs. Thus it is not clear whether the lack of N400 in their experiment truly “revealed” the absence of semantic processes. Second, Mueller et al. used prenominal genitive (-no) numeral classifiers incompatible with the immediately following nouns. However, Yoshida et al. (2004) convincingly argue that local mismatches between a genitive numeral classifier and a noun-head cause the parser to predict a relative clause structure, since the structure can resolve the mismatch by allowing an association of the classifier with the non-local relative head noun. The sustained-LAN observed in Mueller et al. might have been evoked by working-memory loads associated with the relative clause prediction.

Given these considerations, we decided to use stimulus sentences that involve (i) both animate and inanimate classifiers and their host-NPs, and (ii) postnominal (“floated”) numeral classifiers without genitive -no. Examples are given in (1): the control matching condition is satisfied in (1a); the matching condition is violated in (1b), where the classifier -wa “bird-like” is associated with hon “book”; the classifier-omission condition is exemplified by (1c).

(1)a. Kaori-ga hon-wo 4-satsu dokuhashi-ta.
   Kaori-NOM book-ACC 4-CLbook-like read-PAST
b. Kaori-ga hon-wo 4-wa dokuhashi-ta.
   Kaori-NOM book-ACC 4-CLbird-like read-PAST
c. Kaori-ga hon-wo 4-φ dokuha-shita.
   Kaori-NOM book-ACC 4-φ read-PAST
15 native Japanese speakers participated in the experiment and they were required to judge the correctness of the stimuli. The results showed that N400 was elicited under the classifier-NP mismatching condition. A three-way ANOVA (condition x hemisphere x anteriority) showed the main effect of condition (300-500ms: F(1,11)=11.3) but no interaction. This was because the N400 effect was observed broadly. In contrast, P600 was observed in classifier-omission condition. The three-way ANOVA showed a significant interaction between condition and hemisphere (500-700ms: F(1,11)=7.2), which means that the amplitude was more positive in the right hemisphere in the classifier-omission condition.

Summarizing these results we conclude that the agreement between Japanese classifiers and their host-NPs involves semantic processes, unlike the gender agreement involving morpho-syntactic processes. In addition, our finding supports the claim that the omission of classifiers is prohibited by a morphosyntax.

References