

# Constructional Meanings Affect Preferred Word Orders of Japanese Sentences

Psycholinguistic experiments on caused motion and caused possession constructions

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We report on the results of two psycholinguistic experiments that investigated into two construction effects in Japanese, namely Cause Possession and Caused Motion Constructions. The first experiment showed that, other thing being equal, sentences of the “NP-*ga* NP-*ni* NP-*wo* V” form correlate with Vs whose meaning is compatible with “caused possession” reading (to be defined later), and that sentences of the “NP-*ga* NP-*wo* NP-*ni* V” form correlate with Vs whose meaning is compatible with “caused motion” reading (to be defined later). This suggests that two constructional meanings are encoded by “NP-*ga* NP-*ni* NP-*wo*” and “NP-*ga* NP-*wo* NP-*ni*” orders, respectively, independently of the meaning of each verb..

Previous studies (Mazuka, et al., 2002; Tamaoka, et al., 2005) revealed that there is a preferred word order, “NP-*ga* NP-*ni* NP-*wo* V”, in Japanese, but its determinants are still unclear. This study reports on two experimental results that suggest that “constructional” meanings are one of them. By constructional meaning, we mean a superlexical meaning emerging from a lexical combination that are irreducible to the meanings of any lexical items.

In our study, two experiments were conducted to compare two groups of sentences with different constructional meanings, with respect to the different configurations of case-markers, *-ga*, *-ni* and *-wo*. One group is made up of sentences like *Taroo-ga Hanako-ni omiyage-wo ageta* (“Taroo gave a souvenir to Hanako” or “Taroo gave Hanako a souvenir”) with the sense of “caused possession” in that a *ga*-marked nominal (e.g., *Taroo*) is understood to cause the possession of an *o*-marked nominal (e.g., *omiyage* ‘souvenir’) by a *ni*-marked nominal (e.g., *Hanako*). The NP marked by *-ni* is thus understood to be a “(caused) possessor”. Another group is made up of sentences like *Taroo-ga omiyage-wo kamidana-ni ageta* (“Taroo placed {a; the; his} souvenir on the household altar,” with connotation that “Taroo dedicated {a; the; his} souvenir for Gods”). The latter class of sentences share the sense of “caused motion,” in that a *ga*-marked nominal (e.g., *Taroo*) is understood to cause the displacement of an *o*-marked nominal (e.g., *omiyage*) to a *ni*-marked nominal (e.g., *kamidana* ‘altar’), which can not be understood as a “(caused) possessor” but as a mere “location” that serves as the “goal” of the caused motion of an NP marked by *-wo*.

In both of the two experiments we ran, participants, all native Japanese speakers, were presented phrases in a random order (e.g., *rebaa-wo*, *ugokashita*, *temae-ni*, *Kazuko-ga*), which make up a complete sentence when arranged properly. The participants were asked to recall and rearrange the presented phrases after a short delay in the order most natural to them. In most cases, phrases were rearranged to result in forms like *Kazuko-ga rebaa-wo temae-ni ugokashita*, *Kazuko-ga temae-ni rebaa-wo ugokashita* (“Kazuko moved the lever towards herself”). This examined which realizations were preferred for what lexical configurations.

In Experiment 1, 20 caused-possession sentences and 20 caused-motion sentences were

used. All sentences contained nominals marked by *-ga*, *-ni* and *-wo*. The nouns and verbs in the total of 40 sentences were all different. The different verbs and the nominals were contained in the two groups. In Experiment 2, 16 sentences were prepared for each of the two groups. At this time, the pairs of sentences which had a same verb but had different constructional meanings were prepared. Examples of the materials were shown in Table 1.

Table 1. Examples of experimental materials

	Caused possession	Caused motion
Exp 1	Yoshio- <i>ga</i> nakama- <i>ni</i> wakemae- <i>o</i> bunpaishita (Yoshio distributed income to the members.)	Kenji- <i>ga</i> kizai- <i>o</i> souko- <i>ni</i> hanyuushita (Kenji carried equipments into the warehouse.)
Exp 2	Masaki- <i>ga</i> kanja- <i>ni</i> shohousen- <i>o</i> watashita (Masaki brought a drig prescription to the patient.)	Kenji- <i>ga</i> booto- <i>o</i> mukougishi- <i>ni</i> watashita (Kenji brought a boat to the far side of the river.)

The results of the two experiments were shown in Figure 1. As the figure clearly shows, the mean proportion of F2 “NP-*ga* NP-*o* NP-*ni* V” responses were higher for caused motion sentences than for caused possession sentences in both experiments. These differences were statistically significant ( $t(14) = 4.77, p < .001$  and  $t(13) = 9.13, p < .001$ , respectively). These results suggest that, while there is an overall tendency for Japanese speakers to prefer F1 “NP-*ga* NP-*ni* NP-*wo* V” order over F2 “NP-*ga* NP-*wo* NP-*ni* V” order, there is a systematic exception to this tendency: the preference is not absolute but is likely to be “construction-specific.” These results suggest that surface syntactic patterns should be treated as “constructional,” in that each of them has a specific motivation.

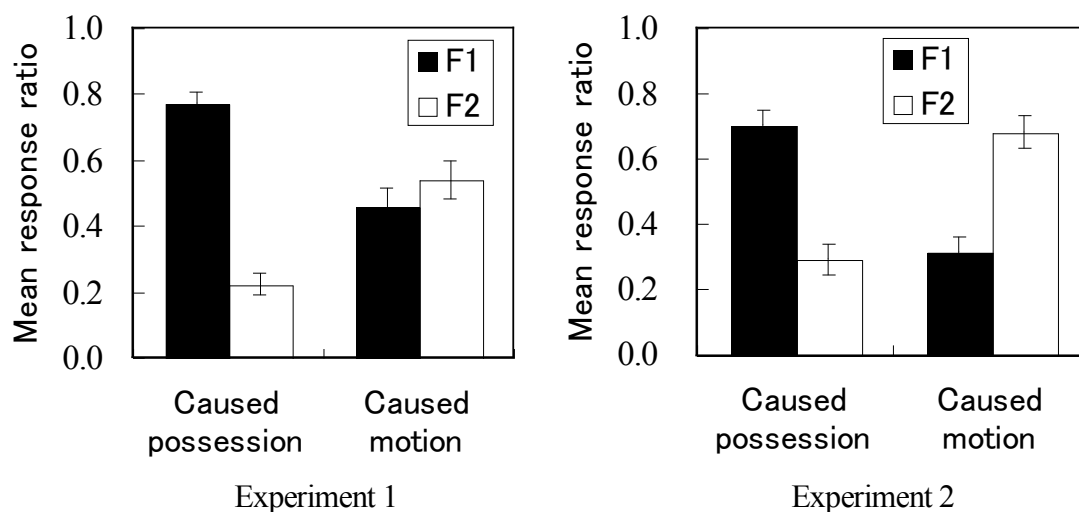


Figure 1. Mean response proportion of the word order F1: NP-*ga* NP-*ni* NP-*o* V and F2: NP-*ga* NP-*o* NP-*ni* V. Error bars shows SEs.

### References

- Mazuka, R., Itoh, K., & Kondo, T. (2002). Costs of scrambling in Japanese sentence processing. In M. Nakayama (Ed.), *Sentence Processing in East Asian Languages* (pp.131-166), Stanford, A: CSLI Publications.
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