

## The Effects of a Pragmatic Factor in the Processing of Japanese Benefactive Constructions

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It is argued [1–3] that a sentence like (1a) causes a stronger processing difficulty than a sentence like (1b).

- (1) a. Nakamura-ga [tyuuko-no pasokon-o katta toki] syuurisite-kureta  
‘When I bought a second hand PC, Nakamura repaired the PC for me.’  
b. [Nakamura-ga tyuuko-no pasokon-o katta toki] syuurisite-agera  
‘When Nakamura bought a second hand PC, I repaired the PC for him.’

The first NP *Nakamura-ga* is likely to be initially analyzed as the subject of the embedded clause because two consecutive items are likely to be analyzed as a part of the same clause unless there is a necessity to parse otherwise ([1], [2]). In (1a), however, this analysis turns out to be wrong when *-kureta* is reached because the embedded subject should refer to the speaker.

However, is *kureta* always harder than *agera*?<sup>1</sup> Note that both sentences in (1) involve two main verbs, *katte* and *syuurisite*, while there is only one nominative NP *Nakamura-ga*. Thus a null pronoun must fill in the missing subject position. Assuming that *Nakamura* is initially analyzed as the embedded subject, we can hypothesize that *pro* is inserted when *syuurisite* is encountered (before *kureru/ageru*) and is coindexed with *Nakamura* (we ignore object *pro* for simplicity):

- (1') [Nakamura<sub>i</sub>-ga tyuko-no pasokon-o katta toki] *pro*<sub>i</sub> syuurisite ...

This reanalysis turns out to be wrong in *both* (1a) and (1b). Nevertheless, (1a) is harder than (1b), probably because (1a) involves a “structural” reanalysis (changing the clause boundary), whereas in (1b), the preexisting *pro* is reinterpreted without a structural change. A question remains, however, as to whether the latter “interpretive” reanalysis is cost-free.

It should also be noted that what is driving the reanalysis in (1a) is the pragmatic relationship between the embedded event and the matrix event: the two events are pragmatically likely to be conducted by two different agents. That is to say, in (1a), *Nakamura* repaired the PC for *me*, so the reasonable inference is that the PC must be *mine*, and thus the person who bought the PC must be *I*, not *Nakamura*. We call this a “pragmatically biasing” factor. If we eliminate this factor, two events can be conducted by the same subject, and there would be no need for the structural reanalysis in (1a), while the interpretive reanalysis would still be needed in (1b). In other words, while *kureru* is harder to read than *ageru* under the biasing condition, *ageru* could be harder to read than

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<sup>1</sup> An anonymous reviewer pointed out that *kureru* and *ageru* may require different syntactic analyses. We do not exclude such a possibility, although our goal was not to test it. Our goal was to examine if the pragmatic factor interacts with *kureru* and with *ageru* in a different manner.

*kureru* under the neutral condition.

To test the costs of the two types of reanalysis (structural and interpretive) and the effects of the biasing factor, we conducted a self-paced reading experiment:

- (2) a. Biasing/Kureru (incurring a structural reanalysis)  
Otonarisan-ga [*pro*(I) ryoko-ni itta-toki] petto-o azukatte-kureta  
'When I went on a trip, the neighbor took care of the pet for me.'
- b. Biasing/Ageru (incurring an interpretive reanalysis)  
[Otonarisan-ga ryoko-ni itta-toki] *pro*(I) petto-o azukatte-agera  
'When the neighbor went on a trip, I took care of the pet for him/her.'
- c. Neutral/Kureru (no reanalysis)  
[Otonarisan<sub>i</sub>-ga ryoko-ni itta-toki] *pro*<sub>i</sub> dengon-o azukatte-kureta  
'When the neighbor went on a trip, he/she took a message for me.'
- d. Neutral/Ageru (incurring an interpretive reanalysis)  
[Otonarisan-ga ryoko-ni itta-toki] *pro*(I) dengon-o azukatte-agera  
'When the neighbor went on a trip, I took a message for him/her.'

Our predictions are as follows:

1. The interpretive reanalysis in (2b, d) should be costly.
2. In (2b), however, the pragmatic factor biasing for a disjoint subject reading would facilitate this reanalysis, nullifying the expected cost.
3. (2c) should be easy because there is no need for a reanalysis at all.
4. In (2a), in contrast, a structural reanalysis is forced by the biasing pragmatic factor. This reanalysis is *not* facilitated by the biasing factor, because there would have been no need for a reanalysis if it were not for this pragmatic bias in the first place.
5. A structural reanalysis is probably more costly than an interpretive reanalysis.

Thus we predict that (2a) is the hardest, (2d) is the second hardest, and (2b, c) are easy.

The results (n=41) overall supported our predictions. (i) In the critical region (*azukatte-kureta/agera*), we found an interaction between the two factors ( $F_1=3.93$ ,  $p=.054$ ;  $F_2=4.92$ ,  $p < .05$ ) in such a way that the pragmatic factor facilitated the Ageru sentences while slowing down the Kureru sentences. (ii) In the same region, under the Neutral context, (2d) was slower than (2c) ( $ps < .05$ ), indicating a cost for an interpretive reanalysis. (iii) In the spillover region, there was an interaction of the two factors ( $ps < .05$ ) such that (2a) was significantly slower than all the other conditions (all  $ps < .05$ ).

**Selected references:** [1] Mazuka, R., & Itoh, K. 1995. In R. Mazuka and N. Nagai, eds., *Japanese syntactic processing*, pp. 295-332; [2] Nagata, H. 1993. In *Journal of Psycholinguistic Research*, 22, pp. 365-381; [3] Tokimoto, S., & Nakanishi, K. 2000. In *Nihon Ninchikagakukai Taikai Happyou Ronbunshu* 17, pp. 58-59.