

## Resolution of ambiguous relative clauses of Turkish L2 speakers of Japanese

Chunhua Bai & Yuki Hirose (The University of Tokyo)

chunhuabai@cgcs.c.u-tokyo.ac.jp

Dingtopal-Deniz (2010) found Turkish learners of English showed high attachment (HA) preference compared to two L1 groups (Turkish and English) which showed low attachment (LA) preference. However, little is discussed regarding the influence of different syntactic feature on sentence processing. Turkish is a head final language which differs from the head initial language structurally such as English as shown in sentence (1)

(1) *Birisi [RC balkon-da dur-an] [NP<sub>low</sub> aktris-in] [NP<sub>high</sub> hizmetçi-si-ni] vur-du.*

*Someone balcony-loc stand-part actress-gen servant-3sg.poss-acc shoot-past*

First, the RC precedes the two possible candidates for its head noun (i.e., RC + NP1-GEN + NP2). Second, when the first noun is read, it is the only candidate available for the RC head at this point. The head of the entire NP becomes available only after the second NP is read which indicates that the order of the input presumably requires reanalysis to achieve the HA interpretation. The present study has two goals. The first goal is to investigate the processing bias in the RC ambiguous association in Japanese and Turkish by using a set of cross-translated sentences. This is the first cross-linguistic study that tests RC-modification ambiguities in two different languages with prenominal RCs, using a common set of items. Our second goal is to examine whether any differences we find in L2 processing can be explained by differences in the comprehenders' L1 processing biases, thus supporting the idea of transfer of L1 processing bias. The results of the questionnaire studies for the two L1 native speaker (NS) groups (JNS and TNS) showed that JNSs have a high attachment preference (80%), while TNSs were found to have a low attachment preference (14%). The results of the questionnaire study on L2 reading of Japanese (28%) showed that TJL (Turkish learners of Japanese) were more likely to choose low attachment analysis compared to JNSs ( $\beta=3.43$ ,  $SE=0.52$ ,  $Z=6.59$ ,  $P<.01$ ), as like as TNSs when reading the Turkish examples (Fig1.), suggesting the attachment preference in L2 learners was influenced by learner's L1 of Turkish. The self-paced reading experiments consisted of three conditions: NP1-only, NP2-only, (globally) Ambiguous, as shown in Table 1. The difference among the conditions was in the semantic compatibility between the RC and each of the two NPs. Either interpretation is semantically plausible in the Ambiguous condition. The NP1only interpretation rules out the NP2 (e.g., 'sister') as a plausible head noun (e.g., it is not possible for someone's sister to become a father). NP2only condition rules out the NP1 ('male teacher') as a plausible head (e.g., a male-teacher cannot become a mother). Readers should experience difficulty interpreting the NP1only condition at NP2 region (if NP2 is ever considered as a possible RC head), resulting in a longer reading time compared to other conditions. On the other hand, reading time for the NP1region would be longer in the NP2only condition compared to the other conditions. The results on L1 Japanese and Turkish both revealed, the reading time in NP1region was significantly longer in the NP2only condition than in the NP1only condition ( $\beta= -191$ ,  $t = 2.87$ ,  $p < .01$ ) (Fig2. & 3.). In the NP2region, the reading time was significantly longer in the NP2only condition than in the Ambiguous condition ( $\beta= 234.07$ ,  $t = 2.1$ ,  $p < .01$ ) and NP1only condition ( $\beta= -187.8$ ,  $t = 1.68$ ,  $p = .09$ ) (Fig2. & 3.). In the region5 (an adverb) (Fig3) for JNS only (but not in the reading by TNS), the reading time in the Ambiguous condition was significantly longer than the NP2only ( $\beta= -44.53$ ,  $t = 1.79$ ,  $p = .07$ ) and NP1only conditions ( $\beta= -42.74$ ,  $t = 1.74$ ,  $p = .08$ ), respectively (Fig4.). The observed processing cost associated with globally ambiguous sentences suggests that readers do not simply finalize the initial low attachment analysis when they encounter the first NP following the RC. The results of the self-paced reading on L2 Japanese processing by TJL indicated an initial low attachment preference (Fig5.). The ambiguity disadvantage, however, observed in native Japanese (but not in L1 reading by TNS) was found in TJL as well, suggesting that the mechanism whereby L2 learners cope with global ambiguities may be different from that for L1, but similar to L2 (Fig6.). We will discuss the reason of the lack of consistency between the results from two tasks in JNSs and propose theoretical implications to various models of sentence processing of L2 learners in the discussion.

Fig1. Attachment biases for learners Fig3. Reading time for entire sentences of TNS

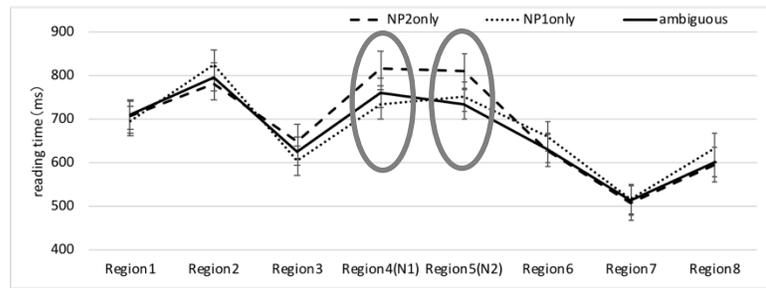
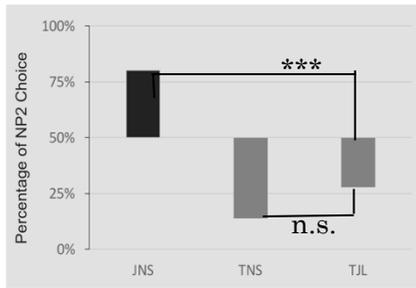


Table1. Material of self-paced reading (Critical regions: 3 & 4)

region	1	2	3 (NP1)	4 (NP2)	5	6	7
<b>NP1 only</b>	father	become	<b>maleteacher-gen</b>	sister-top	very	smart	seem to be
	The sister of the male-teacher who became a father seems to be very smart.						
<b>NP2 only</b>	mother	become	maleteacher-gen	<b>sister-top</b>	very	smart	seem to be
	The sister of the male-teacher who became a mother seems to be very smart.						
<b>Ambiguous</b>	famous	become	<b>maleteacher-gen</b>	<b>sister-top</b>	very	smart	seem to be
<b>s</b>	The sister of the male-teacher who became well-known seems to be very smart.						

Fig2. Reading time for entire sentences of JNS

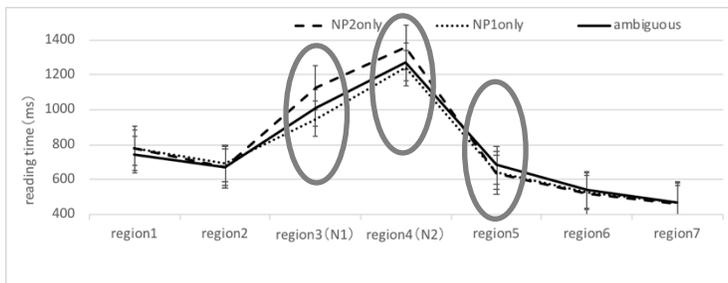


Fig4. Reading time at region5 of JNS

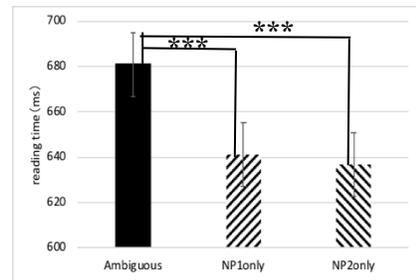


Fig5. Reading time for entire sentences of TJL

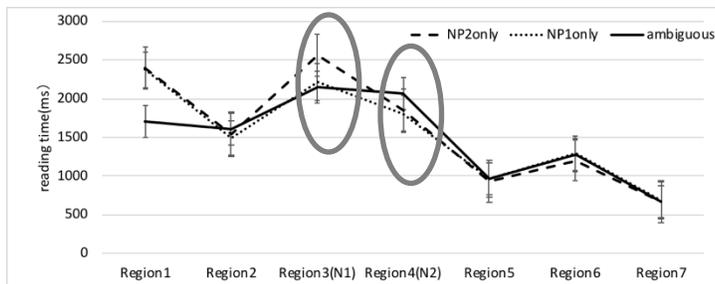
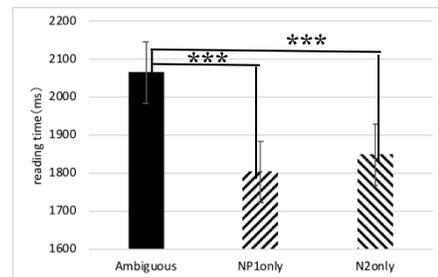


Fig6. Reading time at region4 of TJL



## Reference

Dinçtopal-Deniz, N. (2010). Relative clause attachment preferences of Turkish L2 speakers of English. *Research in Second Language Processing and Parsing*, 53, 27.