Psycholinguistic Studies on Japanese Sentence Processing

Speaker: **TAMAOKA, Katsuo** (玉岡　賀津雄)

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Place: Hunan University, Changsha, China
Time and Date: 14:30 - 16:30, September 24, 2019

Backgrounds:

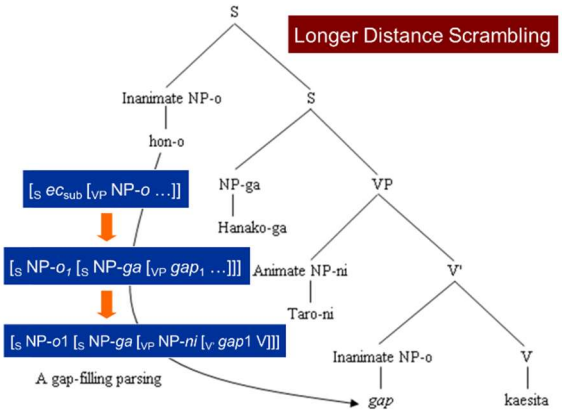
TAMAOKA, Katsuo is a full professor at the Graduate School of Humanities, Nagoya University, Japan. He has received his Ph.D. in 1990 at the University of Saskatchewan, Canada under the supervision of professor Che Ken Leong. He is a psycholinguist whose research focuses on a wide range of issues in language processing-from words and orthography to phrasal and sentence-level topics. He has (co-)authored several articles in prestigious journals including *Journal of Neurolinguistics*, *Journal of Psycholinguistic Research*, *Psychonomic Bulletin and Review*, *PLoS ONE*, and *Journal of Experimental Psychology: Learning, Memory, and Cognition*, as well as in renowned linguistics journals such as *Language*, *Lingua*, *Linguistic Inquiry*, *Journal of Japanese Linguistics*, and *Journal of Quantitative Linguistics*.

Summary of the Talk:

The talk consists of two parts. The first part discusses the role of canonical word order in a sentence and how that order is identified in scrambling languages (Tamaoka, Sakai, Kawahara, Miyaoka, Lim & Koizumi, 2005). The second part is concerned with phrasal processing, specifically, the processing of filler-gap parsing and clause boundaries (Tamaoka & Mansbridge, 2019).

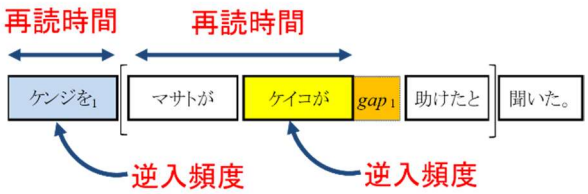
Part 1: English, whose constituent order determines the syntactic structure, other languages allow flexible word orders. Yet, even these languages seem to use their canonical (or unmarked) word order as the base structure for sentence processing. Scrambling, originally proposed by Ross (1967), refers to a variety of different marked word orders derived from a canonical order. Psycholinguistic studies on Japanese (e.g., Mazuka, Itoh & Kondo, 2002; Miyamoto & Takahashi, 2004; Tamaoka, Sakai, Kawahara, Miyaoka, Lim & Koizumi, 2005) provide evidence that sentences with scrambled orders require longer processing times compared to equivalent sentences with canonical word order. This suggests that an extra cognitive load is required to process scrambled sentences. Using this concept of scrambling, Tamaoka et al. (2005) applied this fact to determine the base order of three priority

information cues in Japanese: thematic roles, case particles, and grammatical function. By conducting experiments on three different types of sentences (i.e., active, passive and potential), they found that Japanese native speakers use grammatical functions as a criterion for determining the canonical word order in all four sentence types.



Tamaoka, K., Sakai, H., Kawahara, J., Miyaoka, Y., Lim, H., & Koizumi, M. (2005). Priority information used for the processing of Japanese sentences: Thematic roles, case particles or grammatical functions? *Journal of Psycholinguistic Research, 34(3),* 281-332.

Part 2: New eye-tracking devices and techniques (the EyeLink 1000 for this talk) can measure saccades and fixations. This has made it possible to depict the details of phrasal processing during natural sentence reading. I, in collaboration with Michael Mansbridge, conducted two experiments comparing a scrambled sentence with a simple transitive two-place predicate (and animate proper noun arguments) with a corresponding canonical sentence. Experiment 1 showed that scrambled sentences were associated with longer go-past times (showing unanticipated phrasal processing), longer re-reading times (showing gap-filling resolution) of NP-NOM, regression-out from NP-NOM, and regression-in to NP-ACC (eye-movements from the NP-NOM just before the verb to the NP-ACC in the sentence-initial position). Experiment 2 compared a set of three sentences with canonical, short-distance and long-distance scrambling. The results of Experiment 2 depicted the detection of the clause boundary at the second nominative NP (the complementizer *–to* in Japanese comes at the end of a subordinate sentence), gap-filling parsing in both short- and long-distance scrambling, and the scrambling gap. The details are discussed in the talk.



Tamaoka, K., & Mansbridge, M. P. (2019). An Eye-tracking Investigation of Pre-head and Head-driven Processing for Scrambled Japanese Sentences. *Gengo kenkyu (言語研究), 155,* 35-63.

Note: This talk is based on the following two papers indicated above. These papers are downloadable from http://tamaoka.org/scholarly/index.html#containerCover.