A filled-gap effect without gaps in Japanese

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The Active Filler Hypothesis successfully accounts for various aspects of the processing of fronted wh-phrases, including the filled-gap effect (FGE for short; Frazier & Clifton, 1989, and references therein). But this and other similar approaches (e.g. de Vincenzi, 1991) cannot explain constructions without an empty position. For example, in-situ wh-phrases in East-Asian languages would have to be explained by a separate mechanism. In this talk, in contrast, the processing of wh-phrases both in English and in Japanese is claimed to obey a general preference to minimize the length of dependencies in a sentence (along the lines of Gibson, 1998). The critical observation is that wh-phrases in English require a gap, whereas wh-phrases in Japanese require a question particle (QP; Nishigauchi, 1990). The required constituent (a gap or a QP) is expected to occur in the earliest position allowed by the grammar. When that position is filled (e.g. with an overt NP in the English FGE), speakers slow down. Within this approach, gaps do not require a special processing mechanism and are treated like other constituents. Moreover, an in-situ gapless counterpart of the FGE, which we call the typing mismatch effect (TME), naturally follows.

In the Japanese sentence (1a), “what type of computer” requires a QP. The earliest point the QP can occur is after the embedded verb “using-is”. However, this position is filled with the complementizer “to” whose affirmative typing contradicts readers’ expectations, giving rise to the TME. Thus, we predict a slow-down at this point similar to the FGE. (The wh-phrase in this sentence is licensed by the QP in the matrix complementizer position.) In (1b), the lexical NP “new computer” does not require a QP.

In a non-cumulative moving-window self-paced reading experiment (segmentation indicated with spaces in the examples), native speakers of Japanese were slower to read the third region in the Wh/Aff-C condition than in the NP/Aff-C condition, as predicted. In (1cd), “to” was replaced with the QP “ka”, and the third region of the Wh/QP condition was read faster than in the NP/QP condition (interaction Wh/NP and Aff-C/QP: F1(1,24) = 5.39, P < 0.05; F2(1,23) = 5.36, P < 0.05).

(1) a. Wh/Aff-C:

senmu-ga donna-pasokon-o TUKATTEIRU-TO kakarichoo-ga itta-no? director-NOM wh-computer-ACC using-is-comp(Aff) supervisor-NOM said-QP

“What type of computer did the supervisor say the director is using?”

b. NP/Aff-C:

senmu-ga atarasi-pasokon-o TUKATTEIRU-TO kakarichoo-ga itta. new-computer-ACC

“The supervisor said that the director is using the new computer.”

c. Wh/QP:

senmu-ga donna-pasokon-o TUKATTEIRU-KA kakarichoo-ga kiita-no? using-is-QP

“Did the supervisor ask what type of computer the director is using?”

d. NP/QP:

senmu-ga atarasi-pasokon-o TUKATTEIRU-KA kakarichoo-ga kiita.

“The supervisor asked whether the director is using the new computer.”

The preliminary results of an on-going experiment suggest that the TME depends on the structural relation between the wh-phrase and the complementizer. Thus, the TME is not observed in (2) because the embedded complementizer is not a potential licensor for the matrix wh-phrase.

(2) dono-kakarichoo-ga senmu-ga atarasi-pasokon-o tukatteiru-to itta-no?

wh-supervisor-NOM

“Which supervisor said that the director is using the new computer?”

References


