

Asymmetry of causal inference in reading

Yingyi Luo

Waseda University, Tokyo, JAPAN

Manami Sato

Okinawa International University, Ginowan, Okinawa, JAPAN

Yunzhu Wang

Hiroshima University, Higashi-Hiroshima, Hiroshima, JAPAN

Satoshi Ito

Hiroshima University, Higashi-Hiroshima, Hiroshima, JAPAN

Hiromu Sakai

Waseda University, Tokyo, JAPAN

Abstract: This study investigated how knowledge of causality representations affects the reading in Japanese. In Experiment 1, 24 participants read events presented in cause-to-effect or effect-to-cause order without causal conjunctions. The latter received longer reading times and more regressions than the former even when probability and predictability were balanced. Experiment 2 examined whether this reading order effect was derived from a default reasoning asymmetry (i.e., reasoning from cause to effect is favored over that from effect to cause). We utilized epistemic constructions to explicitly identify the reasoning direction. Self-paced reading results from 24 participants showed that readers were more efficient when reading cause-event as the evidence, effect-event as the conclusion vis-a-vis the counterpart, confirming the reasoning asymmetry. However, reading order effect remained robust, presumably reflecting that causal reasoning is temporally embodied.