

The Backward Inference Processing of Jokes: Evidence from Eye Movement

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All jokes contain incongruity between set-up sentences and punch lines. People who read jokes that require more inferences will spend more time resolving the incongruity by making connections between the set-up sentences and the punch line. The opposition-coherence theory of humor (Chen, Cheng, & Cho, 2001) proposes backward inference, defined as the inference directed to parts of text preceding the inference, as an important component of humor processes. The present study examined how backward inference processing affects humor comprehension in two eye-tracking experiments with participants reading jokes at difficult levels. In experiment 1, we examined effects of each of three difficulty levels on humor comprehension. We compared eye movements with provided inference, simple inference, and complex inference jokes with differing punch lines and of varying difficulty. The participants spent a longer time for total viewing and made more regressions for the complex condition than for the provided condition. Results are consistent with the prediction regarding backward inference, suggesting that readers literally revisit aspects of the prior context while apprehending jokes. In experiment 2, we examined effects of resolution on humor comprehension by investigating whether the punch line can resolve the incongruity in incongruity-resolution and incongruity-irresolution conditions. Results showed that participants made more regressions and needed longer total viewing time for the incongruity-irresolution condition than for the incongruity-resolution condition. This finding suggested that participants searched for and took 4 regressions before terminating comprehension. The results mentioned above support the process of backward inferences and provide information about eye movement patterns of joke comprehension.

Keywords: *opposition-coherence theory, regression, joke comprehension, backward inference process*