The influence of gender related information in visual attention during sentence comprehension: insights from eye-tracking.

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Abstract

Research on world knowledge during situated language comprehension has provided evidence for anticipatory looks to objects preceding their mention based on plausibility [1]. In addition, there seems to be a rapid activation of gender stereotypes in the visual world (looks to the "appropriate" character upon the encounter of role nouns, e.g. a man when hearing *chimney sweep* [2]). However, when depicted events are confronted with such knowledge (e.g. occupational stereotypes), the former are usually preferred during sentence comprehension [3].

Following up on this last evidence, the current study explored how gender cues shape people's expectations during language processing. More precisely, we studied how recent visual gender and action cues (i.e. male or female hands performing a stereotypically male or female actions) guide visual attention to agents during sentence comprehension. Participants inspected action videos and then listened to spoken OVS sentences while inspecting two photos (one of a man, one of a woman). In Experiment 1 we manipulated two factors. First, whether the videotaped action matched or mismatched the action described by the sentence (i.e. the verb phrase), and second, whether the *gender* of the agent in the video (conveyed only by his / her hands) matched or mismatched the gender-stereotype associated with the described action (e.g., congruous: female hands performed the action in the video and then the sentence was about a stereotypically female action; incongruous: female hands performed the action and then the sentence was about a stereotypically male action). In Experiment 2, instead of having action-verb (phrase) mismatches, we manipulated the match between the gender cued by the hands in the video and the gender of the sentential subject; the stereotype-match factor from Experiment 1 was retained. Results showed an overall inspection preference for the target agent (i.e. the character whose gender matched that of the hands seen in the previous video) during sentence comprehension, with more looks directed to it for video-sentence congruous compared with incongruous conditions. A slight modulation as a function of stereotypicality emerged in the second block of Experiment 2. These results suggest that gender information can be extracted from one visual cue (hands) and used to visually anticipate agents during sentence comprehension. Stereotypicality does not seem to exert a strong influence on visual attention as opposed to visually derived expectations. If any, it comes into play rather late, which seems to be more related to learning processes.

References:

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