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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Permalink

<https://escholarship.org/uc/item/8m44j7q7>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 26(26)

ISSN

1069-7977

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Publication Date

2004

Peer reviewed

Perceiving Narrated Events

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Introduction

The perception of events, such as viewing a baseball game, is typically studied using movies of real-world events (e.g., Zacks, Tversky, & Iyer, 2001). However, people frequently perceive events by reading, hearing, or talking about events. Current models of text comprehension suggest that the process of perceiving events in narrated activity may be driven in part by changes in various dimensions of the narrated situation (e.g., Zwaan, Radvansky, Hilliard, & Curiel, 1998). Four experiments were conducted to determine a) whether people are able to reliably perceive event structure in narratives using a paradigm employed to study event structure in real-world activities, and b) which dimensions of the narrated situation are relevant to the perception of event structure in narratives.

Materials & Method

The stories used in all current studies were excerpts from *One Boy's Day* (Barker & Wright, 1951). Written in the style of a narrative, this book provides a detailed record of the activities of a 7-year old boy (Raymond) during a single day in the 1940's. The four stories used in these studies described Raymond waking up, playing in the schoolyard, working on an English lesson, and attending a Music class.

Task Design

In the first experiment, 32 participants were asked to listen to each narrative twice: Once while identifying large units of activity (coarse segmentation), and once while identifying small units of activity (fine segmentation). In the second experiment 32 participants were asked to read the narratives twice on paper, and place a line between words to identify coarse and fine segments of activity in the same stories. In a third experiment, clause-by-clause reading times were collected from 32 participants. In a final experiment, 32 participants used a 7-point scale to rate the predictability of the activity described in each clause given prior information from the story.

Analysis

For each study, the data were analyzed at the level of clauses. In the first two studies, clauses were considered to be event boundaries if a participant segmented at least once during that clause. Each clause was coded for changes on one of six dimensions: temporal references, changes in the foregrounding of characters, their spatial locations, the objects with which they were interacting, their goals, and

the causal relations between their actions. The number of syllables (or the duration of the spoken clauses) and punctuation were also coded for each clause.

For each study, these variables were used to predict the patterns of large and small segmentation, reading time, or predictability ratings for each participant. The coefficients generated from these regressions were used to measure the influence of the independent variables in each study.

Results & Conclusions

Participants identified larger units of activity during coarse than fine segmentation, indicating that they were able to perceive structured activity in the narratives.

When identifying large units of activity, participants' patterns of segmentation were related to changes in the foregrounding of characters, their locations and goals, and the causal relations between their actions. In contrast, when identifying small units of activity, patterns of segmentation were more strongly related to changes in characters' interactions with objects. These results were consistent across presentation modalities, and suggest that fine-grained events are closely tied to physical interactions, whereas coarse-grained events are more tied to goals and plans.

Situational changes were also associated with slower reading times (see also Zwaan, et al., 1998) and lower ratings of predictability, suggesting a role for transient changes in predictability in the perception of event structure.

Acknowledgments

We thank Sherry Beaudreau, Brett Hyde, Ben Oberkfell, and Rolf Zwaan for their assistance in the construction and coding of the materials, as well as Sarah Berson, Rahal Kahanda, Jean Vettel, and Richard Zernickow for help with data collection. This research was supported by the National Science Foundation and the Office of Naval Research.

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