

# An Event Memory for an Embodied Cooperative Virtual Guide

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Past events influence all of our actions. Yet the artificial agent Max lacks the ability to remember his actions and experiences. This is to be changed! In the project "May I guide you?" we build an event memory for an embodied cooperative system that assists and guides novice users in a complex virtual environment [1]. Our scenario is guiding a nonlocal person discovering a virtual city. The guide, Max, employs knowledge about points of interest and cooperates in the discovery.

But how can Max structure his experience into events? And how could he compare a situation with memorized events?

To attack these questions we incorporate findings from psychology. Zacks and Tversky [2] looked at how humans perceive and structure events and found a) that events are defined by their boundaries and b) that events can be viewed as being organized into partonomic hierarchies. Zwaan et al. [3] found that events are connected in memory along five dimensions: time, space, protagonists, causality, and intentionality. These findings about event structure and event indexing shall help Max to get an event memory and become a better guide.

## References

- [1] Rabe, F. and Wachsmuth, I. 2010. May I Guide You? – Context-Aware Embodied Cooperative Systems in Virtual Environments. In *Proceedings of Kog-Wis 2010* (pp. 71–72). Potsdam, Germany: Universittsverlag Potsdam.
- [2] Zacks, J. M., and Tversky, B. 2001. Event Structure in Perception and Conception. *Psychological Bulletin*, **127**(1):3–21.
- [3] Zwaan, R. A., Langston, M. C., and Graesser, A. C. 1995. The Construction of Situation Models in Narrative Comprehension: An Event-Indexing Model. *Psychological Science* **6**(5):292–297.