

## “Gießener Abendgespräche Kognition und Gehirn“

Mittwochs, 18.00 bis 20.00 Uhr, Raum F009

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*”Lessons from Hollywood: What movies teach us about basic perceptual and cognitive processes in dynamic event cognition.”*

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Human observers segment the continuous stream of information into discrete events. When watching a Hollywood movie for example humans perceive a boundary between two discrete events when there is a change in the plot (e.g., when a new character enters the scene or when there is a location change). These event boundaries are important for perception and memory because the current representation in working memory has to be updated at exactly these time points. In this talk I am going to present results from experiments that examined processes of attention and perception at event boundaries as well as consequences for memory.

In the first set of experiments, we studied processes of working memory updating across event boundaries using two Sitcom episodes from Big Bang Theory and Two and a Half Men. In three experiments, we had participants watch the sitcom episodes and measured event boundary perception, recognition memory, and prediction performance. We found that observers perceived event boundaries when there was at least one change in the dimensions of the current event model (e.g., a new character enters the scene). Further, results showed a linear relationship: the more dimensions of the current event model changed, the higher was the recognition performance. At the same time, with increasing number of dimension changes participants’ predictions became less reliable.

In the second set of experiments, we explored how audio-visual integration in working memory interacts with event perception processes. Based on current event perception theories we hypothesized that dynamic scenes depicting a change (e.g., a new character enters the room) trigger updating processes in working memory finally leading to better long-term memory when compared to scenes without a change. We observed such an advantage for visual scenes, however, memory performance for audio-visual scenes was unaffected by changes in the event model. This suggests that additional auditory information influence basic event perception processes by presumably neutralizing effects of distinct visual event boundaries.

Taken together, these studies demonstrate that event boundaries are important for processes of visual attention and memory of dynamic events. Further, they demonstrate that Hollywood movies are a good tool to investigate basic perceptual and cognitive processes.