Title.
Glorp is plipping: verbal labels facilitate novel event learning

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Perceiving and understanding the activity happening in the world around us is something that we have to deal with constantly. Our brains segment this activity stream into meaningful units with beginnings and endings, which we call events, e.g., cooking dinner, smoking a cigarette and fishing (Radvansky & Zacks, 2017). We experience these events not only through perception and action, but also through language: we talk to our friends about our weekend plans, write about our day in a journal or read the latest news in the paper. Yet, we do not fully understand how language contributes to our event cognition. This study focuses on the role of language for how we learn about novel events, in this case, structured sequences of unfamiliar actions, that we encounter. A facilitating role of labelling for object (category) learning has been reported for infants and adults in experimental settings involving learning sessions (LaTourette & Waxman, 2020; Lupyan, Rakison & McClelland, 2007), evidencing as stronger categorical object representations measured in perceptual tasks and memory paradigms. Here, we expected to see a learning advantage for novel events: In particular, labelling novel events with a verbal label (e.g., plipping) was expected to lead to a more robust representation of the inner structure of the event, i.e., the temporal order of the actions involved, their sub- and end-goals. We report an experiment in which participants were trained on novel events involving an alien engaged in a sequence of activities, presented to them in short animations. During the learning phase (consisting of three different learning tasks), one group of participants received novel verb labels, such as plipping, greeling, whereas the other group received non-verbal labels (event 1, event 2). A day later, participants performed an oddball detection task in which they were presented with the same animations, but in some animations a sub-event appeared in the incorrect place in the overall sequence (hard oddball condition). In other cases a subevent from a completely different event (easy oddball condition) appeared. The hard oddball condition was designed to show a possible verbal labelling advantage as it tapped into people's representation of the events' inner temporal structure. Participants were instructed to press a button as soon as they spotted a subevent that was out of place, and their response times were measured. Results showed that the novel verb-label group overall had significantly faster reaction times in the oddball detection task, and that both groups were faster to detect easy than hard oddballs. There was also an interaction between group and condition: the difference between easy and hard oddballs was smaller for the novel verb-label group than for the non-label group, showing that verbal labelling had a specific benefit in relation to hard oddballs. We interpret these results as indicating that verbal labelling can play a facilitating role in event learning.

References

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