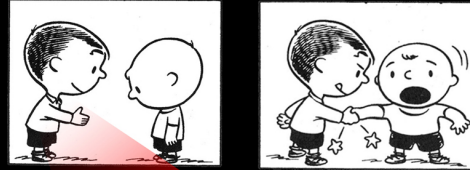


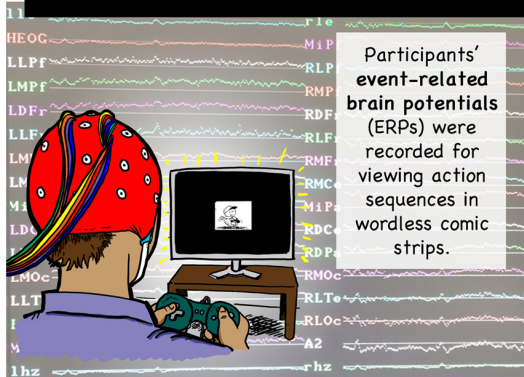
ACTION EXPECTANCY GENERATION DURING EVENT COMPREHENSION IN SEQUENTIAL IMAGES

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Research has shown *anticipatory neural activation* associated with viewing action events *before* they actually happen (1).

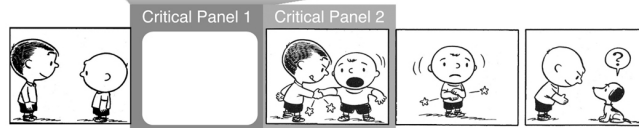


We hypothesized (2) that such pre-activation indexes expectancies generated for discrete actions from viewing *preparatory postures* in the *agents* of actions leading to the culminating action.



Participants' event-related brain potentials (ERPs) were recorded for viewing action sequences in wordless comic strips.

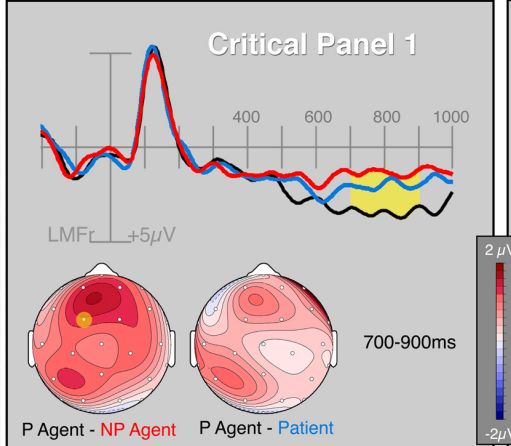
In contrast to *non-preparatory agents* and *patients* (receiver of actions) *preparatory agents* provide cues for initiating an event, and therefore were predicted to show differential activity suggestive of *pre-processing* of event structures.



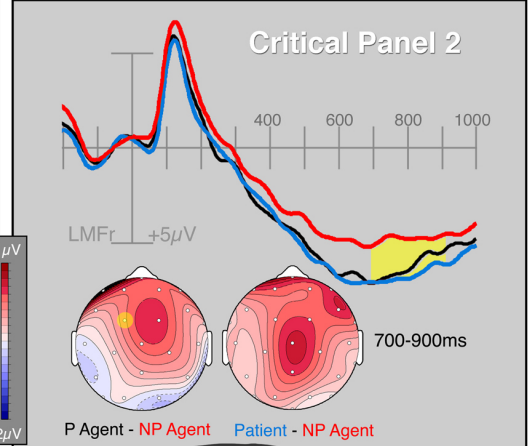
We expected the inverse costs for processing *completed action* panels (ex. agent grabbing *patient*).

36 comic readers (13 male, 23 female, mean age: 20.3)

In *Experiment 1*, preparatory agents elicited a greater late frontal positivity than either *non-preparatory agents* or *patients*...

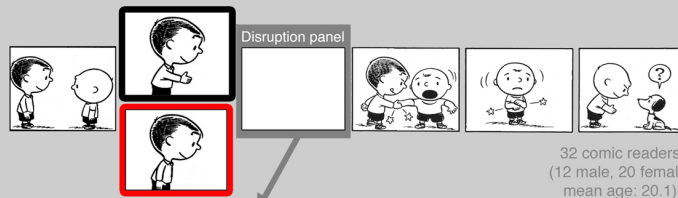


...whereas completed actions following *preparatory agents* elicited an attenuated frontal positivity, compared to those after *non-preparatory agents*.

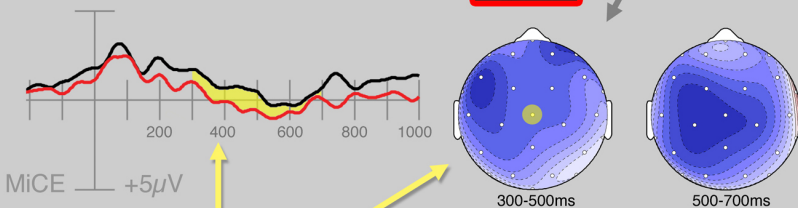


1350ms Duration, 300ms ISI

Experiment 2 inserted a *blank panel* just prior to the completed action, aimed at *disrupting* the action expectancy generation.



32 comic readers (12 male, 20 female, mean age: 20.1)



A left central negativity was elicited by blank images in strips with *preparatory agents* compared to those with *non-preparatory agents*.

As this negativity *preceded* the completed action, we take it to reflect the disruption of an *action expectancy* generated by *preparatory postures*.

Taken together, these results indicate that preparatory postures initiate expectancies about subsequent events consistent with previous behavioral findings (2).

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REFERENCES

- (1) Zacks, et al. *Nat. Neuro* 2001.
- (2) Cohn & Paczynski. *Cog Psych*. 2013.