Readers build vivid mental simulations of narrative situations
Psychologists and neuroscientists are increasingly coming to the conclusion that when we read a story and really understand it, we create a mental simulation of the events described by the story.

Use functional magnetic resonance imaging (fMRI) to track real-time brain activity as study participants read and process individual words and short stories.
- reading is by no means a passive exercise.
- readers mentally simulate each new situation encountered in a narrative
- details about actions and sensation are captured from the text and integrated with personal knowledge from past experiences
- these data are then run through mental simulations using brain regions that closely mirror those involved when people perform, imagine, or observe similar real-world activities.
Problems

- researchers seldom have access to expensive scanning equipment for long periods of time
- participants must remain very still for the scans to be effective
Test

- participants are immobilized within the brain-scanning device and presented with text one-word-at-a-time on an adjacent computer screen
- researchers knew when important features of the story were changing
- some brain regions would increase at several different feature changes
- other brain regions would be selectively activated by only one feature change
Results

- Changes in the objects a character interacted with were associated with increases in a region in the frontal lobes known to be important for controlling grasping motions.
- Changes in characters locations were associated with increases in regions in the temporal lobes that are selectively activate when people view pictures of spatial scenes.
Links


- Human Brain Activity Time Locked to Narrative Event Boundaries - Nicole K. Speer, Jeffrey M. Zacks, and Jeremy R. Reynolds - Link
Links

- Pictures of a thousand words: Investigating the neural mechanisms of reading with extremely rapid event-related fMRI - Tal Yarkonia, Nicole K. Speerb, David A. Balotaa, Mark P. McAvoyd and Jeffrey M. Zacksa - Link

- Neural substrates of narrative comprehension and memory - Tal Yarkonia, Nicole K. Speerb and Jeffrey M. Zacks - Link