

Changing from a Planned Action to an Alternate Action Reveals the Structure of Action Plans

Katie Lawless

We examined the effect of changing from an internally planned hand action to an alternate action, which potentially differed from the planned action along two dimensions: wrist orientation (horizontal or vertical) and left/right hand. Participants were instructed to prepare a particular hand grasp action and then were cued either to execute that action or an alternate action. In an additional experiment, instead of performing an alternate action, participants named a manipulable object. In all experiments, if the change from the prepared action to an alternate response implied an action different from the prepared one, there was a slowing in response time. Moreover, if there was a change, maintaining the originally planned wrist orientation produced faster responses than changing orientation, but only if the response hand remained constant between planned and alternate actions. This result provides evidence for a hierarchical coding of hand-action plans.