

Topic 3: Crossmodal Working Memory

Working memory is a short-term memory storage for later action and manipulation. It is fundamental for higher cognitive functions, like memory, attention, and so on. Crossmodal association is the fundamental way of learning the outside world for human beings, which combines information from different modalities.

Although the sensory stages of perceptual decisions have attracted attention since the early days of cognitive neuroscience, a more recent focus has been on processes that bridge sensation and action. Working memory serves as an important role of this.

During working memory processes, sensory information of different modalities is first combined through different primary brain parts and then to higher level brain areas like PPC and PFC. Then the sensory information is stored and manipulated for further action. After the decision has been made, the motor plan is formed and carried out through PMC and MI.

This process would be affected by different modalities, for we usually recite things better if we combine different modalities' information together. We are interested with how crossmodal association would affect working memory properties.