

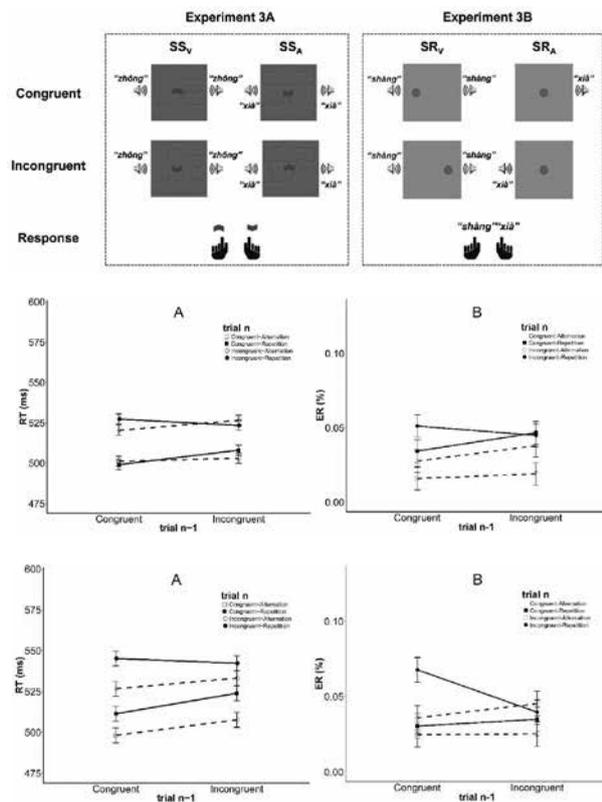
# Sensory Modality Matters in Attentional Control

Imagine how many times your attention is distracted by the surrounding sounds or sights irrelevant to your work or study. To maintain concentrated, you have to control yourself intentionally, which is called “attentional control” or “cognitive control” in psychology. An interesting question arises: when we successfully direct our attention away from one visual distractor, can we be immune to another auditory distractor? According to a recent study by LIU Xun and his team at the Institute of Psychology, Chinese Academy of Sciences, the answer is NO, unfortunately.

In this study, some college students were asked to judge certain characters or figures displayed along with visual or auditory distractors. For example, in an arrow judgment task, an up arrow may be displayed with a character *down* or a sound of “down” at the same time. To answer the question whether controlling visual distractors could help the control of auditory ones, the researchers examined a phenomenon called conflict adaptation (CA). The CA effect refers to that conflict resolution in a previous trial facilitates resolution of the ongoing conflict. The key idea was, if the conflict control for one modality would generalize to another, researchers should have observed the facilitation across two modalities. In other words, CA effects should be present across visual and auditory modalities.

However, this was not the case. The study found that no CA effect was observed when the subsequent conflict came from a different modality. Such results implied that the capacity of controlling distractors could not generalize from one modality to another.

According to LIU, one thing to learn from this study is that we should not overestimate our ability to adapt to the rapidly changing world with multi-modality information. It also indicates that any successful attention training should include the training over distractors from different modalities.



The design and results of Experiment 3.

In the future, LIU and his coworkers will go on to reveal how the brain represents and resolves conflicts rising from different modalities, and why cognitive control fails to generalize across different situations.

Their paper entitled “Distinct cognitive control mechanisms as revealed by modality-specific conflict adaptation effects” has been published in the *Journal of Experimental Psychology: Human Perception and Performance*.