Audiovisual Integration directing Attention to the Temporal Dynamics of Biological Motion

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INTRODUCTION
People are adept at recognizing biological motion portrayed by a handful of dots (Johansson, 1973). Visual processing of biological motion is influenced by accompanying information from different sensory modalities (Arrighi et al., 2009; Saygin et al., 2008; Thomas & Shiffrar, 2010) or neighboring biological motion (Ikeda et al., 2013; Thornton et al., 2004).

RESEARCH QUESTION
In this study, we investigated the interaction between audio-visual information and surrounding biological motion by manipulating 1) the temporal synchrony between visual and auditory information of the biological walkers and 2) the congruency of gait direction between target and flanker walkers.

METHODS
PARTICIPANTS
24 (13 female, 11 male)

STIMULI
Point-light walker (4° x 2°)

TASK
2-AFC gait direction discrimination of target (right vs left)

CONDITIONS
Gait Direction Congruency Condition, Audio-Visual Condition

RESULTS
There was no flanker interference effect in the “no sound” condition between the two congruency conditions.

No effect from inverse point light walkers

An additional experiment was performed using inverted point-light walkers to examine whether the effect of bimodal integration was specific to the “feet” configuration of the biological motion stimuli.

CONCLUSION
These results suggest bimodal temporal integration directs attention to temporal dynamics of biological motion, mitigating the interference of spatially proximal neighboring motion.

REFERENCES
Thornton, I. M., & Vuong, Q. C. (2004). Incidental processing of biological motion. Current Biology, 14(12), 1084-1089

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