

SEEING SOUND MOVING: CONGRUENCE OF PITCH AND LOUDNESS WITH HUMAN MOVEMENT AND VISUAL SHAPE**D. Kohn**¹, Z. Eitan²¹Levinsky College of Education, Tel Aviv; ²School of Music, Tel Aviv University, Tel Aviv, Israel

We investigate listeners' evaluations of correspondence between pitch or loudness contours and human motion (Exp1) or visual shape (Exp2). In **Exp1** 32 adult nonmusicians watched 16 audiovisual stimuli (a videotaped dancer), which systematically combined bidirectional changes in pitch or loudness with bidirectional vertical or horizontal (opening and closing) human motion. Participants ranked how well the music and movement in each audiovisual stimulus matched. Significant correspondences were found between loudness change and both vertical and horizontal motion, while *pitch* changes corresponded with vertical motion only. Perceived correspondences were significantly stronger for loudness, as compared to pitch, and for vertical, as compared to horizontal movement. Congruence effects were also significantly higher for convex (inverted-U) as compared to concave (U-shaped) change contours, both musical (e.g., pitch rise-fall as compared to fall-rise) and motional (e.g., opening-closing vs. closing-opening). In **Exp2** the same participants were presented with the same music stimuli and with 4 static visual shapes, and selected the shape that best matched each stimulus. Most participants chose the "correct" shape for each musical stimulus. Results indicate that adult non-musicians strongly associate particular bodily movements and visual shapes with particular changes in musical parameters. Importantly, correspondences were affected not only by the local directions of motion (e.g., rise, fall), but by overall contours (in both music and motion), such that mappings involving convex contours were stronger than mappings involving concave contours. This suggests that cross-modal mappings may be affected by higher-level patterning, and specifically that convex (inverted-U) patterns may facilitate such mappings.