

Database: PsycARTICLES

Document Type: Journal Article

Citation

Livingstone, S. R., & Palmer, C. (2016). Head movements encode emotions during speech and song. *Emotion, 16*(3), 365-380.

<http://dx.doi.org/10.1037/emo0000106>

Abstract

When speaking or singing, vocalists often move their heads in an expressive fashion, yet the influence of emotion on vocalists' head motion is unknown. Using a comparative speech/song task, we examined whether vocalists' intended emotions influence head movements and whether those movements influence the perceived emotion. In Experiment 1, vocalists were recorded with motion capture while speaking and singing each statement with different emotional intentions (very happy, happy, neutral, sad, very sad). Functional data analyses showed that head movements differed in translational and rotational displacement across emotional intentions, yet were similar across speech and song, transcending differences in F0 (varied freely in speech, fixed in song) and lexical variability. Head motion specific to emotional state occurred before and after vocalizations, as well as during sound production, confirming that some aspects of movement were not simply a by-product of sound production. In Experiment 2, observers accurately identified vocalists' intended emotion on the basis of silent, face-occluded videos of head movements during speech and song. These results provide the first evidence that head movements encode a vocalist's emotional intent and that observers decode emotional information from these movements. We discuss implications for models of head motion during vocalizations and applied outcomes in social robotics and automated emotion recognition. (PsycINFO Database Record (c) 2016 APA, all rights reserved)