Cross Modal Cue Compensation in Size and Pitch

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Abstract

When attempting to correctly interpret signals from noise, many sources of noise are not random, only unwanted. These can be discounted by observing cues that predict the noise and canceling or adjusting accordingly. We trained participants to classify artificial bird calls of different pitches. Pitch was affected by the intended message or word the bird was communicating, as well as the size of the bird (larger birds were given lower pitch overall). Participants could hear the call and also see an image indicating the size of the bird, allowing them to predict and counteract the effect of size, which served as noise when trying to interpret communication. At test, we probed many pitches and sizes outside the range of training stimuli, and we analyze the patterns by which participants not only compensate for noise, but extrapolate and generalize their compensation to new situations.