A Model of the Reference Frame of the Ventriloquism Aftereffect using a priori bias with different weighting for different fixation point

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Abstract

The reference frame (RF) used by audio-visual (AV) spatial representation is likely to be head-centered or eye-centered, aligned with the RFs of either the unimodal auditory (head-centered) or visual (eye-centered) representations. Results of previous RFAV studies are inconsistent, suggesting that the RF is either mostly head-centered, when examined in the periphery, or a mixture of head-centered and eye-centered, when examined in the central field (Kopčo et al., 2009; Lokša & Kopčo, 2016). Here, a model is proposed, assuming a form of a priori bias is combined with the adaptation due to AV stimuli, but with different weight for different fixation point (FP). This model can potentially explain both no-shift data and ventriloquism data, but approximation in details is not very precisely fitted to data, mainly in periphery. Therefore, additional mechanisms are likely to determine the AV RF.

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