

Indo-German Lab of LVPEI

Light or sound: which occurred first?

Stephanie Badde, Pia Ley, Siddhart S Rajendran, Idris Shareef, Ramesh Kekunnaya, and Brigitte Röder

Veridical stimulus: Sound and light are presented at the same time



Subjective report of how participants perceive them:

Normally sighted participants



sound earlier than light

Developmental cataract reversal participants



sound earlier than light

Bilateral congenital cataract reversal participants



Light earlier than sound

If we are exposed to synchronously presented light and sound, most of us perceive the sound as earlier than the light. The opposite is true for individuals who underwent delayed surgeries for bilateral congenital cataracts. Cataracts may delay the visual signal transmission, requiring a compensatory shift of visual temporal perception. This adaptation to the clouded lenses in childhood does not seem to be lost after cataract removal surgery. This finding suggests that crossmodal biases are set during early sensitive periods of development.