Experimental Psychology and Cognitive Neuroscience


During this developmental process visual information seems to play an important role during development for the calibration of senses (Gori et al., 2008). Hence, we are trying to understand if blind people, who rely a lot on more hearing and touch, can combine this information at an earlier age or if they cannot combine this information at all.

Method

Participants & Recruitment

<table>
<thead>
<tr>
<th>Adults (≥18years)</th>
<th>Children (7-14years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sighted</td>
<td>Blind/Visually impaired (early &amp; late onset)</td>
</tr>
<tr>
<td>48 (University of Bath, general public)</td>
<td>48 (Moorfields Eye Hospital, Sensory Support Service Bristol, general public)</td>
</tr>
<tr>
<td>48 (Local school, general public)</td>
<td>48 (Moorfields Eye Hospital, WESC Exeter, Sensory Support Service Bristol, general public)</td>
</tr>
</tbody>
</table>

Development

Our new method has been shown to successfully measure statistically optimal multisensory integration in sighted adults. It replicates and extends the findings from Petrini et al., 2014, despite using different psychophysical measures and participants.

Typically sighted adults integrate audio-haptic size information in a statistically optimal fashion, while children don’t integrate before adolescence.

Very preliminary data suggests that visually impaired/blind children express a stronger haptic dominance than sighted children, and that they don’t integrate non-visual information earlier. However, one (late) blind adult showed integration comparable to typically sighted individuals.

Conclusion and Outlook

Development of multisensory integration

In sighted and non-sighted individuals

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Supported by the University of Bath Alumni Fund

Crossmodal Cognition Laboratory

Brittish Academy

The Leverhulme Trust

Faculty of Humanities & Social Sciences

University of BATH