**BACKGROUND**

"Bouba-Kiki" = tendency to match words to shapes based on acoustic properties

Likely related to multisensory integration [1]

Reduced in autism [2]; unexamined in individuals who have lost the autism diagnosis (LAD)

This project aims to:
1. Assess sound-image mapping in autistic, LAD, & neurotypical (NT) participants
2. Examine associations with autism & sensory symptoms

![Sensory Motor Scale Items](image)

**METHODS**

Autism = 16, LAD = 27, NT = 29 NT

- For 8 shape-nonword pairs, "which one do you think is [goga]?"

  - Differentiates autism from NT
  - Cronbach’s alpha (sub-scales): 0.8 - 0.93

<table>
<thead>
<tr>
<th>Group</th>
<th>Aut</th>
<th>LAD</th>
<th>NT</th>
<th>χ² or t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (F:M:Other)</td>
<td>6:10:0</td>
<td>7:19:1</td>
<td>18:11:0</td>
<td>8.88</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Age (years)</td>
<td>21(5)</td>
<td>23(3)</td>
<td>23(7)</td>
<td>1.47</td>
<td>.24</td>
</tr>
<tr>
<td>ADOS CSS*</td>
<td>7(2)</td>
<td>2(1)</td>
<td>1(1)</td>
<td>110.3</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>PMAT</td>
<td>75(21)</td>
<td>83(17)</td>
<td>82(13)</td>
<td>1.02</td>
<td>.37</td>
</tr>
<tr>
<td>PVRT</td>
<td>60(22)</td>
<td>69(15)</td>
<td>66(18)</td>
<td>1.00</td>
<td>.37</td>
</tr>
<tr>
<td>Sensory Hyposensitivity</td>
<td>1.6(5)</td>
<td>1.3(7)</td>
<td>1.1(4)</td>
<td>2.9</td>
<td>.06</td>
</tr>
<tr>
<td>Sensory Hypersensitivity</td>
<td>1.3(5)</td>
<td>1.1(6)</td>
<td>1.0(5)</td>
<td>1.9</td>
<td>.15</td>
</tr>
<tr>
<td>Sensory</td>
<td>2.0(6)</td>
<td>1.7(8)</td>
<td>1.3(7)</td>
<td>5.8</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Interests**</td>
<td>1(6)</td>
<td>.8(7)</td>
<td>.8(8)</td>
<td>.5</td>
<td>.55</td>
</tr>
</tbody>
</table>

**RESULTS**

LAD and NT: Shape/word matching above chance; NOT AUT

Failure to match = > sensory/motor scores in AUT & NT, but not LAD

- Corresponding image chosen 63% overall
  - Aut 56%: At chance
    - t(15) = .93, p = .37
  - LAD 68%: Above chance
    - t(26) = 4.57, p < .001
  - NT 65%: Above chance
    - t(28) = 3.27, p = .003

- No effect of vowel (open vs. closed)
- Negative association with sensory/motor symptoms for AUT, NT, but NOT LAD
- No association with autism symptoms or measures of sensory hypersensitivity, hyposensitivity, or interest

**SENSORY MOTOR SCALE ITEMS**

- Clumsiness in everyday situations
- Poor balance/bumping into things
- Difficulty coordinating movements
- Difficulty imitating movements

**DISCUSSION/FUTURE DIRECTIONS**

- Autism group did not show sound-image mapping above chance, whereas LAD and NT groups did
- Typical performance in LAD, but lack of association with sensory motor symptoms → compensation?
- Still collecting data – awaiting full autism sample
- Future work could include explicit measures of multisensory integration (i.e., temporal binding windows)

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References:


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