**Introduction**

**GESTURE IN BLINDNESS**

Blind and severely visually impaired children and adolescents gesture at a rate similar to that of their seeing peers (1).

We considered two hypotheses regarding the reasons behind gesture production (2):
- gestures serve a communicative purpose
- gestures support the process of inferencing and aid speech production

And two levels of hypothesised gesture origin:
- spontaneous
- learned (culturally transferred).

**Method**

**Participants**

Interviews conducted in Polish with 12 blind and 26 severely impaired children and young adults:
- two age groups (10-18 and 7-11 years old)
- 7 females, 5 males
- no known other cognitive deficiencies

**Conditions analysis**:
- monologue (participant is asked to reflect on a concept and to use a computer)
- dialogue (computer asks the participant for additional information, for instance “show me what it’s like,” “show me where to find it”)

**Stimuli**

Concrete and abstract concepts tested for understanding, frequency and saliency in the course of a previous study (3):
- 21 abstract concepts
- 21 concrete concepts

Two lists of concepts (containing both types of concepts) were created, one per each condition. For both conditions the participants received lists of words from the talker for the participant to explain.

**Procedure**

A Wimpy based programme was designed to interact with the participants on an audio only basis. No visuals were used to avoid confounding data due to varying visual sensitivity of the subjects (light perception, full blindness, partial blindness, etc.).

Participants were asked to “teach” the computer a number of concepts using words and gestures. The concepts were either abstract or concrete.

**Results**

Montague
dialogue:
- Gestures were used by the participants to explain concepts.
- There were 10 words/concept.

**Analysis**

Preliminary analysis:

**Annotations practice:**

For this experiment we chose to use an adapted version of the methodology put forward in McNeill Lab **(Annotation practice)**.

Speech transcription is followed by gesture annotation.

For the purpose of this study we assumed that gesture begins in the preparation stage and ends with the retraction phase, unless it ends before the beginning of the preparation stage for another gesture, nested or otherwise.

**Computer angle**

In order to ensure data redundancy, safeguard against data loss and facilitate accuracy of the analysis we used a two-camera setup.

The camera angles were set up to ensure participants’ anonymity, showing only their hands and torso.

**Hypothesis**

If the division between innate and learned gesture mirrors the division between gesture for inferencing and gesturing to improve communication we should see a decreased or unchanged gesture rate from the blind participants in the dialogue condition (gesturing for the interlocutor) as compared to the monologue condition (gesturing for inferencing).

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