Taxonomic and Thematic Semantic Organization of Adults with Cerebral Palsy

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Background and Aims

Background

- Augmentative and alternative communication devices often rely on taxonomic, rather than thematic, symbol organization, possibly due to researcher preferences (Fallon, Light, & Achenbach, 2003).
- Linguistic organisation can influence conceptual organisation (Lucy, 1997); the unique language background of AAC users might effect their semantic organizational preferences.
- Children (Fallon et al, 2003) and adults (Lin & Murphy, 2001) often prefer thematic organizations. What are the preferences of adult users of AAC?
- While their preferences may mirror those of typically developing adults (Balandin & Johnson, 2001), their unique linguistic experience might lead to different preferences.

Fig 1. Example stimulus set, crossing taxonomic and thematic organizational structures.

Fig 1 exemplifies the crossing of 2 organizational options. A Taxonomic organization (in rows) links items with similar functions and features. A Thematic organization (in columns) links items based on co-occurrence patterns.

Aims

To evaluate the strength and availability of taxonomic and thematic conceptual organizations, we asked participants to sort sets of 9 images into coherent groups of their choosing. Alternative sorting patterns were possible in each trial.

We ask:

- Which semantic organization is preferred by our participants.
- Do typical and atypical populations share organizational preferences?
- Is organizational preference influenced by literacy development or prior AAC experience?

Methods and Results

Methods

Participants - 9 non-speaking adults with Cerebral Palsy and 20 nondisabled university students.

Materials – 9 sets of 9 images designed to permit competing organizations were constructed.

- Thematic vs. Taxonomic
- Thematic vs. Phonological
- Taxonomic vs. Phonological

To ensure taxonomic and thematic relations were matched in strength, sets were assessed using 5pt Likert scale, Fig 2.

P's were free to sort as they liked, as long as they used at least 2 bins and each bin had at least 2 objects. Fig 3 (top) shows an example of a presentation slide and Fig 3 (bottom) shows what a completed trial might look like.

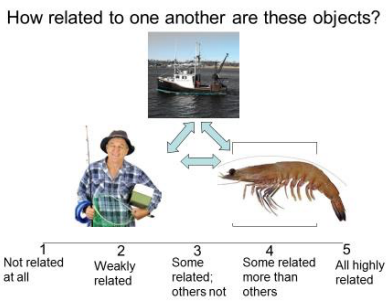

Fig 2.Example of Stimulus rating trial.

Scoring – Each pair of related objects grouped together was scored 1pt (6 pts were scored if 9 objects were organized taxonomically). Proportion of Taxonomic, Thematic, and Phonological pairs were calculated for each condition.

Results

Sorting patterns were similar across samples. But, people who use AAC were consistently more varied in their sorting.

- Both samples preferred Thematic sorts over Taxonomic; Semantic sorts were highly preferred over Phonological sorts.
- People who use AAC produced more Phonological pairs.
- Literacy did not appear to influence Phonological sorts.

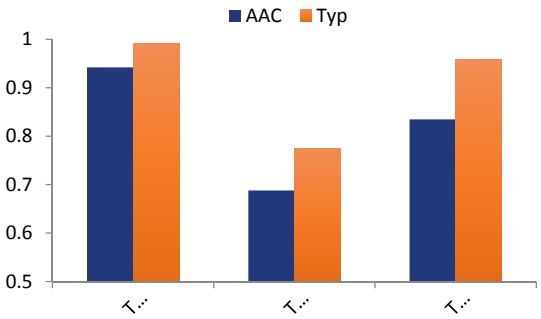

Fig 4. Proportion Taxonomic or Thematic pairs sorted in each condition.

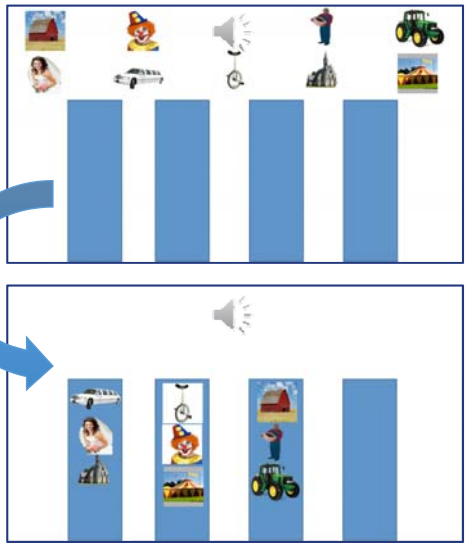

Fig 3. Object sorting trial before (top) and after (bottom) completion.

Discussion

- In line with prior research, we found consistency between our samples, both preferring Thematic organizations. Given this preference, the efficacy of Thematic organizations for AAC devices might be underappreciated.
- Our non-speaking sample was too small and varied to investigate influence of literacy or AAC experience. Further testing is needed.
- An on-line version of this test is under-development, for broader distribution.

References

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