How can we use electronic devices to support speakers with limited verbal language during interaction?: A preliminary conversation analysis study

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INTRODUCTION AND AIMS

Group therapy is a widespread service delivery model within the field of adult communication rehabilitation (National Aphasia Association, 2018). Given that word finding difficulty (anomia) is a very common symptom of aphasia (Darley, 1982), most conversations that occur during group therapy will feature **extended repair sequences (ERS)** (Laakso & Klippi, 1999), or relatively lengthy segments of conversation in which participants collaboratively attempt to help a speaker retrieve a lexical item (Goodwin, 2006; Laakso & Klippi, 1999).

One strategy for overcoming word finding difficulty is to **use pictures as supplements to verbal speech** (Kagan, 1998; Simmons-Mackie & Kagan, 1999); typically, if a person with aphasia (PWA) is struggling to produce a given word, he/she can point at the relevant pictures to convey his/her message without having to negotiate the process of saying the word. Aphasia centers may keep collections of pictures related to a range of conversational topics on hand for use in these situations. Another approach that has been observed in aphasia groups involves the use of electronic devices; in these cases, a group member or co-facilitator uses a device such as an iPad to retrieve the images from a search engine and displays them on a screen, from which the PWA selects the relevant item (Archer, 2016).

The aims of this study were:

- To provide preliminary findings on the differences between these two approaches, which we label **low-tech (use of picture collections) & high-tech (use of tablets, search engines and display screens)**
- We oriented to the **impact that each of these configurations** has on **unstructured conversational interaction** as it occurs with aphasia groups.

METHODS

In pursuit of this aim, we conducted **conversation analysis (CA).**

Video data for this poster were collected from two aphasia centers in North America which that hosted facilitated conversations for PWA. Site 1 routinely used picture collections to help PWA resolve anomic moments, while groups that met at Site 2 used a tablet, flat screen and search engine. Five sessions from each site were reviewed and analyzed. The Site 1 sessions were facilitated by Elwin and the Site 2 sessions were facilitated by Pearl (pseudonyms).Details about the facilitators appear in Table 1.

Sessions were reviewed multiple times and moments with ERS were identified. Patterns of behavior were observed. A series of memoranda were written to develop an understanding of the differences between the two sites and the understandings were compared with the data multiple times. Where appropriate, transcripts of the ERS were prepared and consulted in the analytical process.

Table 1: Facilitator details

Facilitator	Facilitating experience	ERS elements	Training
Site 1: Elwin	12 years	Picture collections, paper, pencil	Supported Conversation for Aphasia (SCA) workshops
Site 2: Pearl	3 years	Co-facilitator, tablet, flat screen, search engine	ASHA CCC-SLP

RESULTS

Site 1: Elwin would strategically offer **pages with pictures** to group members during episodes of word retrieval difficulty.
Site 2: Pearl enlisted the support of a co-facilitator who used an iPad to display images retrieved from **Google images** on a flat screen. Distinct differences in the ways in which ERSs were constructed by participants at the two sites were observed.

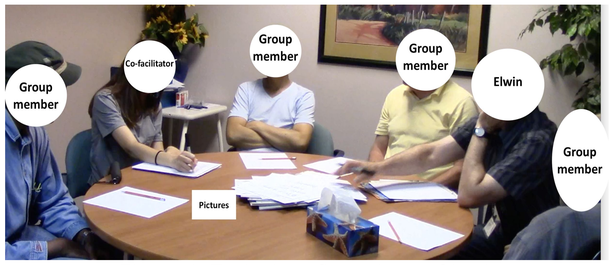

Figure 1: Typical configuration at Site 1

While we did not keep exact data on the amount of time ERSs, our distinct impression was that **ERSs extended over longer periods of time at the low tech site**.

- A typical exemplar of this process as carried out by group members lasted for 14 minutes; a similar session from Site 2 lasted for approximately 2 minutes.
- Site 1 ERS's usually featured a large number of turns in which participants engaged in 'meta-talk', conversation in which speakers temporarily ceased generating turns related to a previously prevailing topic and instead talk about the process of navigating an ERS (Archer, 2016; Klippi, 2003).
- Further analysis of ERS time course across the sites is ongoing.

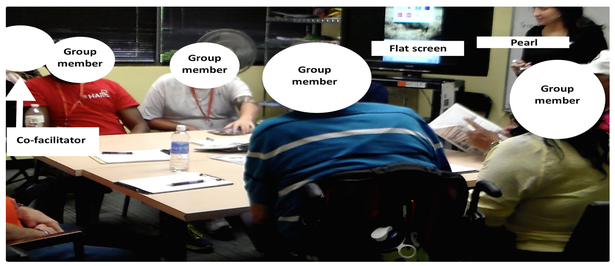

Figure 2: Typical configuration at Site 2

The **semantic specificity** of the terms accessed during ERSs **differed across the sites**.

- At Site 1, concepts usually produced or selected by the PWA tended to be more general & from higher levels in a semantic hierarchy.
- ERSs at Site 2 often more specific & from lower levels of a semantic hierarchy. For example participant with global aphasia was able to use an array of pictures retrieved from Google images to communicate the species of shark he caught while on vacation to group members

DISCUSSION & CONCLUSIONS

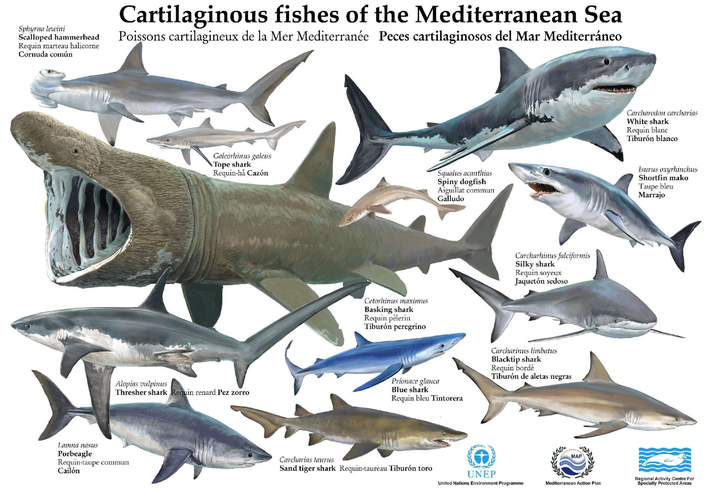

Figure 3: Example of a picture resource retrieved from Google

The ERS identified in this study appeared frequently throughout the data. Like previous authors (Laakso & Klippi, 1999), we found that **ERSs proceeded through a number of phases**.

- During the first phase, the participants mutually orient to the existence of a problem (a word retrieval difficulty).
- In the second 'hint and guess' phase, we observed interactants engaging in several rounds of interlocking, back-and-forth types of moves in the service of eventually arriving at the name of Patricia's team.
- Many ERSs ended with a confirmation phase, in which the PWA provided verbal or other forms of confirmation that they were satisfied with the term the group arrived at.

Preliminary findings highlight the **speed & specificity with which ERS were resolved in the high tech group**, Site 2.

- This group may have been able to resolve ERS so quickly and with such a high degree of specification because a resource like Google gives participants access to a vast array of terms, concepts and pictures (more than any single human participant could generate on her own).
- The number of suggestions Pearl (and other interlocutors) could offer to PWA for confirmation is similarly large.
- By contrast, while picture collections may provide some support, the number of items they provide for consideration is relatively small.
- One drawback of the high tech approach might be that it requires the help of a co-facilitator. In our data, Pearl was responsible for managing group interaction and likely did not have time or attentional resources needed to carry-out this task AND oversee picture retrieval and display.

Further research examining the time course & the semantic paths taken by groups during ERSs is underway.

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