Addressing cognitive skills in aphasia therapy? A primer for clinicians

**Aphasia and Cognition**

- Aphasia is defined as a language pathology.
- SLPs do not typically include cognitive goals in aphasia therapy.
- Subtle cognitive signs are typically associated with a patient’s performance.

**Attention**

- Individuals with aphasia have impaired attention skills (Murray, 2009).
- Decreased attentional capacity and/or a deficit in allocating attention resources.
- Sustained attention (vigilance) may be preserved (Korda & Douglas, 1997).
- Allocation deficit may explain the intra-patient variability.
- Individuals with mild aphasia may be impaired at selective and divided attention tasks.

**Consequences for Assessment**

- There is a progressively broader call among researchers and clinicians to assess attention (Helm-Estabrooks, 2002; Murray, 2009; Rape, et al., 2004).
- Use formal tests, questionnaires, or rely on observations while manipulating distraction or competing variables.
- Assessing in “ideal” situations (quiet room, no distractions, etc.) may quantify language competence, it does not assess language performance. Competing stimuli should be manipulated when using more functional or naturalistic assessments.

**Consequences for Therapy**

- Therapy for attention in stroke recovery trials has minimal impact on language (Murray, et al., 2006; Sinotte & Coelho, 2007).
- Murray (2009) recommended treating attention before focusing on language.
- Candidate individuals with milder aphasia when selective attention is a major barrier to communication.
- Possibly use available attention training programs (e.g., APT II).
- At some point, selective attention should be used as a variable in therapy to practice functional communicative situations and facilitate generalization.
- At least in the beginning, SLPs should focus on family training (coping slower, simple syntax, be redundant, etc.).

**Short Term Memory/Working Memory**

- Short term memory (STM) temporary storage of information (measured with digits forward task).
- Working memory (WM) manipulation, rehearsal, or processing of that information (measured with digits backward task).
- STM:WM impairment is common with all aphasia types (Martin & Ayuda, 2004; Martin & Sullivan, 2010; Wright, et al., 2007).
- The relationship between STM and comprehension is an important issue if related, then therapy could be directed at STM.
- Correlation between WM and language comprehension (Campos, et al., 1998) and between WM and the WAB scores (Wright, et al., 2003).
- STM may contribute to oral language comprehension aside of some aspect of sentence needs to be restored (e.g., syntax, semantics) using phonological (WAB; Friedman & Greene, 2003; Puglisi, et al., 2003).

**Consequences for Assessment**

- Patients with good comprehension and very high STM scores comprehended language by accessing the semantic system directly and lose the phonological content of the message (Wright, et al., 2009). This explains why those patients cannot repeat new words and show semantic paraphasias, which becomes semantic decoding (Wright, et al., 2008).

**Consequences for Therapy**

- STM should be screened in all patients and more carefully assessed in patients with repetition difficulties. The stimuli should include digits and words, and the response modality should be verbal and nonverbal (e.g., the pointing task of Martin, et al., 1992).
- Working memory tasks can be assessed using n-back tasks (Wright, et al., 2003). Phonological: rhyme/no rhyme, Semantic: same/different semantic category, Syntactic: same/different (with/without passive sentence).

**Note:**

- These two disorders may represent two different severity levels of a similar underlying dysfunction. Martin, et al., (1996) described a patient with deep aphasia who improved in repetition conduction aphasia.

**References**

- Study
- N & Type
- Impairments
- Murray et al. (1997)
- 18 Chronic mild aph
- Attention & resource allocation
- Rape et al. (2004)
- 120 CV A: hsem & Imp
g
- Memory
- Hochstenbach et al. (1999)
- 129 CV A: Range of TPO
- Processing & working memory
- 17 Chronic aphasic
- Excessive functions

**Table 2:** co-occurrence of cognitive impairments and aphasia

**Table 3:** Disorders associated with phonological STM dysfunction

**Table 4:** Conduction Aphasia

**...in an attempt to repeat the sentence The piano cook was vilated, one of our patients with conduction aphasia responded, Something about a happy baker.” (Baldo, 2006, p. 135)**

**Conclusions**

- Cognitive difficulties often coexist with aphasia.
- We should understand their severity for clinical purposes.
- Targeting these cognitive skills in therapy does not seem to impact on language to a large extent, but they may be a necessary step before focusing on language. That is, improving memory and attention may be necessary but not sufficient for a subsequent improvement in language-related skills.
- This may also be the case in TB. Youse and Coelho (2009) attempted to improve conversation by focusing on attention therapy, but the results were disappointing.