**NSW Speech Pathology**
**Evidence Based Practice Interest Group**

**Critically Appraised Topic (CAT)**

**CLINICAL BOTTOM LINE:**
Semantic Feature Analysis (SFA) appears to be a clinically feasible intervention for people with mild-moderate aphasia. It appears to improve naming of treated items and reduce perseveration. Smaller improvements have also been reported on untreated items, suggesting generalisation of skills. In the short term, treatment using SFA at the single word level appears to improve discourse, with modest improvements in spontaneous speech reported in some individuals.

It remains unclear whether SFA is superior to alternative therapeutic techniques. It may be possible to combine SFA with phrase/sentence level therapy which may generate and maintain functional communication improvements.

Further research investigating SFA versus other techniques, SFA in a group versus individual setting and maintenance and generalisation post SFA therapy would be helpful to determine the extent and nature of the therapy benefits reported in the literature to date.

**Background and Objectives:**
Semantic Feature Analysis is a technique that underpins the general philosophy behind many treatments for semantic impairments. The group identified that Semantic Feature Analysis was a therapy approach frequently used for clients with aphasia in the clinical setting, however knowledge of the evidence for the approach was limited.

The group identified that although semantic feature analysis therapy is provided at word level, long-term therapeutic goals are often discourse based. Therefore, the group identified a 3 part clinical question, investigating the use of SFA at single word level and generalisation to connected speech.

**Clinical Question [patient/problem, intervention, (comparison), outcome]:**
In what circumstances does semantic feature analysis improve:
   a) naming of treated items
   b) naming of untreated items
   c) generalization to spontaneous speech for people with aphasia?

**Search Terms/Systems:**
Group members individually searched for articles using online search methods.

Databases used for searching included AMED, Aphasiology Online, Cinahl, Comisdom, CSA Linguistics, Embase, Google Scholar, Medline, OvidSP, Proquest, PsychInfo, Pubmed and SpeechBite.

Search terms used were “Semantic feature analysis” and “aphasia”. The group searched for articles published from 1990 to 2012.

**Selection Criteria:**
Initial searches identified a total of 70 articles. When duplicates were excluded, a total of 30 articles were identified.

16/30 articles were excluded because treatment data was not available, treatment was not applicable, the group was unable to access a full text copy of the article, they were not written in English or the article did not address the clinical question.

14 articles were CAPped.
Results:
The CAPped articles were single case experimental design studies or case series. Although these have a low level of evidence on the NHMRC evidence hierarchy, they were considered clinically applicable and representative of the group’s clinical caseload.

Variability in study designs, SFA approach, participant characteristics and outcome measures made it difficult to directly compare studies.

Participants
There was no obvious pattern between treatment efficacy and
- type of aphasia
- time post-onset
- aetiology (type of stroke or traumatic brain injury)

There appeared to be a link between severity of aphasia, with clients with mild-moderate aphasia tending to make greater improvements when compared to those with severe aphasia. However, methodological weaknesses made it difficult to confidently draw conclusions about best practice.

Intervention
Variability was noted in:
- treatment schedules
- therapy duration
- individual versus group based therapy

Therapy administration was also not consistent across studies. This included variability in:
- cueing hierarchies, prompts and responses to errors
- added components of discourse (putting the target word into a phrase)

Measures included:
- confrontational naming (typically naming of treated and untreated items)
- standardised assessments
- generalisation measures, primarily at the discourse level (such as correct information unit [CIU], word and error production rates)
- participation measures (a social validity questionnaire)

Outcomes
All studies CAPped reported positive outcomes for the person with aphasia on naming of treated items and/or modest gains in discourse measures.

Generally:
- Treated items using SFA were increased and maintained
- Untrained items showed the same trend, but less strongly
- Small improvements to overall scores on standardised measures were reported
- Modest improvements in discourse based measures were maintained over time.