Alexia and Agraphia

Tanya Ibarra, Laura Litzenberg, Courtney Ciulla, Samantha Kirby
Alexia: a deficit in *reading* ability, occurs in most forms of aphasia, especially in those forms involving significant auditory comprehension deficits such as Wernicke’s aphasia or Transcortical Sensory Aphasia (TSA). Can occur with or without agraphia.

Agraphia: deficit in *writing* ability.
Disproportionate impairment of sound-to-letter conversion, with relative sparing of lexical-semantic procedures.

Inability to use sublexical processes to derive the appropriate sound for a given letter (decoding).

- Visual or orthographic similarity to the target word (e.g., *flewen* for flower), morphological errors (e.g., *walking* for *walked*)

Phonological treatment may serve to strengthen sound-letter correspondences so that spelling can be derived phonologically.
Deep Alexia and Agraphia

- Combined profile of semantic errors and poor sound-to-letter conversion ability.
- Phonological and deep alexia and agraphia are points along a continuum of increasingly severe phonological and lexical-semantic impairment.
Treatments for Alexia

1. Cross-Modality Cueing (Kinesthetic approach)
2. Multiple Oral Rereading
3. Brief Orthographic Exposure
4. Reading with overreliance on letter-to-sound conversion
Cross-Modality Cueing to Enhance Letter Identification Approach

- Letter identification is facilitated when info regarding the letter shape is provided via another modality. (e.g., tracing a letter on a patient’s hand)
- These are compensatory strategies that can be used by the patient without assistance.
- Kinesthetic information about spelling provides access to the orthographic input lexicon.
Letter-To-Sound Conversion Approach

● This is suitable for those with **surface alexia**: PWA that has the ability to sound out words.

● Reading may be accomplished by means of the letter-to-sound conversion procedure.

● Word length and irregularly spelled words (e.g., yacht) may have a negative effect on reading accuracy.
Multiple Oral Rereading Approach

- Repeatedly reading aloud the same text to facilitate whole word rather than letter by letter reading.
- It increases the reading rate in letter by letter readers.
- Facilitates a shift to whole word reading due to the support provided from sentence context and text familiarity.
Brief Orthographic Exposure Approach

- Presentation of written words for brief exposure so that letter by letter reading is not possible.
- Came from observation that people with alexia may retain an ability to derive some meaning from words that they cannot explicitly name.
now moving on to agraphia..
- Depending on impairment, treatments can focus on sound-to-letter correspondences, semantics, and lexical spelling
LEXICAL SPELLING TREATMENTS

- For individuals who orthographic representations are damaged, and sublexical strategy is not feasible, goal of treatment is to rebuild specific representations in the orthographic output lexicon.

- Anagram and Copy Treatment - task hierarchy to elicit correct spelling of the target words through the arrangement of anagram letters, followed by repeated copying of the word.
  - goal = strengthen the orthographic representations of specific words; help develop a functional written vocabulary that can augment, or substitute for spoken language.
  - for individuals who have severe aphasia and limited spoken language.
Surface (Lexical) Agraphia

- surface agraphia: writing how it sounds (example: *knight* spelt *nite*)
- lexical agraphia: the damaged lexicon for writing
- treatment: teach correct spellings for irregularly spelled words and homophones

The lexical spelling treatment, ACT, may be appropriate for individuals with damage to orthographic representations in order to retrain spellings for specific lexical items.
Training a Problem-Solving Approach to Spelling

- individuals learn to self-correct spelling errors by evaluating their written attempts relative to their lexical knowledge
- training in the use of an electronic speller that accepts plausible misspellings to help resolve spelling difficulties
  - example: an individual might use a sublexical strategy to generate an initial spelling (e.g., *sepost* for “supposed”), then evaluate this spelling relative to residual lexical knowledge for the target (resulting in a closer approximation such as *suposed*)
  - use electronic speller to check or correct spelling