Lexical Constraints on Stuttering in Adults
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ABSTRACT
This study examined the effect of lexical variables on stuttered disfluencies in adults who stutter (AWS). Main findings revealed that part-word repetitions were influenced by word frequency and single-syllable word repetitions by imageability. These findings support the notion that different disfluency types may originate from disruptions at different levels of processing.

INTRODUCTION
- Children who stutter tend to stutter on words that are lower in word frequency and neighborhood frequency (mean frequency of a word’s phonological neighbors) than their fluently produced words (Anderson, 2007).
- Variables influence part-word repetitions (PWR) and sound prolongations (SP), but not single-syllable word repetitions (SSWR).
- Suggest that PWR and SP may originate in disruption at the word-form level, while SSWR may result from difficulty at another level of processing.
- Neighborhood density (number of words phonologically similar to a target word) does not influence stuttering or disfluency type (Anderson, 2007).
- High word frequency values may have interfered with neighborhood density effects (see Storkel, 2004).
- If so, then AWS, with their lower frequency lexicons, should be more susceptible to its effects.
- Imageability (ease with which the mental image of a word can be formed) influences speech errors, presumably at the level of semantic processing (Harley & MacAndrew, 2001).
- If SSWR originate early in lexicalization, then they should be vulnerable to its effects, but not PWR or SP.

RESEARCH QUESTIONS
- Do word frequency, imageability, and neighborhood variables have an effect on the production of speech disfluencies in AWS (Analysis 1)?
- Do these variables also influence the type of stuttered disfluency produced (Analysis 2)?

METHODS
Participants
- 18 AWS between 19 and 62 years (M = 34 years), scoring 13+ on the Stuttering Severity Instrument-3 (Riley, 1994).

Procedure
- 200+ word speech samples transcribed using Systematic Analysis of Language Transcripts (Miller & Chapman, 1998).
- Stuttered words paired with the first fluent (control) word that matched it in length, grammatical class, and familiarity.
- Frequency and neighborhood values obtained from the Hoosier Mental Lexicon (Luce & Pisoni, 1998); imageability values obtained from the MRC Psycholinguistic Database (Wilson, 1988).

RESULTS

Analysis 1
- Stuttered words lower in frequency than control words (p = .02; Figure 1).
- No difference in neighborhood density (p = .22; Figure 2) and frequency (p = .33; Figure 3), or imageability (p = .15; Figure 4).

Analysis 2
- PWR lower in frequency than controls (p = .008), but not SSWR (p = .10) or SP (p = .81; Figure 5).

RESULTS (continued…)
- Neighborhood density and frequency did not influence disfluency type (p = .35 to .81; Figures 6 & 7).
- SSWR higher in imageability than controls (p = .006), but not PWR (p = .09) and SP (p = .77; Figure 8).

CONCLUSION
- Findings support and extend those of Anderson (2007).
- Stuttered words were significantly lower than fluent words in word frequency and, although not statistically significant, lower in neighborhood frequency.
- Stuttered and fluent words did not differ in neighborhood density.
- The notion that word frequency may have interfered with the effects of neighborhood density in Anderson (2007) was not supported.
- PWR were significantly lower in frequency and SSWR significantly higher in imageability than fluent words.
- High imageability words may have more close semantic neighbors, making them susceptible to competition (Harley & MacAndrew, 2001).
- PWR (and possibly SP) may originate in disruptions at the word-form level and SSWR originate from difficulty in lemma retrieval (cf. Anderson, 2007).

SELECTED REFERENCES