Development, Reliability, and Construct Validity of a New Approach to Analyzing Qualitative Aspects of Speeded Lexical Retrieval

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Objective: We sought to capture additional qualitative aspects of lexical retrieval by expanding guidelines developed by Troyer and colleagues (1997) to assess within-category clusters and between-category switches on verbal fluency tasks. Our coding scheme was designed to capture additional associative relationships between successively-produced words. We assessed inter-rater reliability using intraclass correlation (ICC) to determine whether these guidelines could be implemented as consistently as those devised by Troyer et al. Finally, we examined the correlation of the ratings with demographic variables and neurocognitive test performance.

Participants and Methods: The productions of 13 healthy adults on letter (S and P) and semantic (animals and supermarket items) fluency tasks (one-minute duration) were scored by four raters using guidelines provided by Troyer and colleagues (1997) and those developed by our group. Each participant also completed a battery of other neurocognitive tests.

Results: We calculated ICCs for five measures derived from each scoring system: total correct words, number of clusters, number of switches, total cluster size, and mean cluster size. Raters consistently applied both sets of guidelines (all ICCs > 0.89). We also developed two measures (runs and total run size) that are unique to our scoring system. These yielded ICCs > 0.85. Correlations between verbal fluency measures and selected demographic and neurocognitive variables were generally of similar magnitude.

Conclusions: Raters can reliably implement a fluency scoring system that includes expanded phonemic, semantic, and associative guidelines. This new scoring system may better reflect the organization of lexical entries in semantic memory and better capture participant-generated strategies for accessing these representations.