consistent structure in among WCST variables across varied normal and patient populations (Greve, Ingram, & Bianchini, in press). The present study was designed to determine if the three-factor structure reported by Greve et al. could be replicated in a relatively homogeneous sample of stroke patients. Further, the previous studies were extended in that the association of the observed WCST factors with functional indices of rehabilitation outcome and recovery was examined. This is particularly important given the increasing role of neuropsychological assessment in the rehabilitation of persons with brain injury.

Participants were 83 patients suffering from recent CVA’s being treated in a comprehensive hospital-based physical rehabilitation program. Eight WCST scores were submitted to a principal components analysis with an orthogonal (varimax) rotation: total correct (TC), total errors (TE), perseverative responses (PR), perseverative errors (PE), nonperseverative errors (NPE), percent conceptual level responses (CLR), categories completed (CAT), failure-to-maintain-set (FMS). A three factor solution accounting for 96.8% of the variance was produced. Factor 1 contained TE (-.96), CLR (.96), CAT (.95), PE (-.86), TC (.84), PR (-.83). Factor 2 contained only NPE (-.99) though both PE and PR loaded moderately (.46 and .50, respectively). FMS was the sole variable loading on Factor 3 though TC also loaded moderately (.42). A second principal components analysis to assess the construct validity of the WCST resulted in a five factor solution accounting for 74.4% of the observed variance. WCST Factor 1 was associated with measures of perceptual organization, planning, and construction. WCST Factor 2 was associated only with the WAIS-R verbal comprehension factor, while the WCST Factor 3 was the sole variable on the fifth factor. Finally, the WCST factor scores were related to the discharge scores from the Functional Independence Measure (FIM). The WCST scores alone accounted for only 7 to 18% of the variance in discharge FIMs. However, when admission FIMs were included in the analysis, between 40 and 74% of the variance was explained. The WCST factor scores’ residual contribution was minimal.

This study replicates the three factor structure for the WCST reported by Greve et al. (in press). This factor structure has been demonstrated in a range of normal and patient samples. Nonetheless, the construct validity of the factors remains less clear. In particular, Factor 3 (FMS) continues to defy association with other neuropsychological measures. Finally, while WCST performance is associated with functional status at discharge, its unique contribution to the relationship is minimal. It is possible that because of the difficulty of the WCST, its value in the stroke rehabilitation setting may be limited to higher functioning or younger individuals.

Griffin, S. L., & Rankin, E. J.
The present investigation obtained normative data for 195 subjects’ performance on a copy version of the WMS-R Visual Reproduction (VR) Subtest. Subjects were administered selected subtests of the WMS-R as part of a larger neuropsychological battery. Following the delayed recall portion of the WMS-R VR Subtest, subjects were asked to copy each of the four designs presented. Subjects included 23 non-neurological controls, 35 chronic pain patients, 96 traumatic brain injury (TBI) patients, 15 patients with a history of cerebral vascular accident (CVA), and 16 subjects with degenerative dementia. Analysis of variance revealed no significant differences between the performance of non-neurological controls, chronic pain patients, and TBI patients. However, the performance of individuals with a history of CVA and individuals with a degenerative dementia was significantly poorer than that of each of the other groups. In non-neurological controls, performance on the WMS-R VR was significantly correlated with dominant
hand manual dexterity, WAIS-R Full Scale IQ, WAIS-R Performance IQ, WAIS-R Freedom From Distractibility, and WMS-R VR Immediate Recall. Results suggest that this measure is related to performance on a variety of tasks of motor skills, attention, perceptual-organization, and visual memory, and can be used to distinguish individuals with CVA or dementia from other subject populations.

Heath, H., Rosenstein, L., Hemmy, L., Ferguson, A., Karantzoulis, N., & Woolley, K.  
Reliability and Validity of the Key Search Test.
The Key Search Test is a subtest of the Behavioral Assessment of the Dysexecutive Syndrome (BADS; Wilson et al., 1996). It was designed to measure executive functions including planning and self-monitoring. The purpose of this study was to assess the interrater reliability of both the scoring method presented in the BADS Manual and a simpler scoring method created by the present investigators. Test scores of 21 women and 19 men were gathered from patient files in a neuropsychology office. The patients ranged in age from 52 to 83 years (mean = 68, SD = 8.9). Intraclass correlations for the BADS and the simpler scoring method were .949 and .875, respectively. A second purpose of this study was to assess the validity of the Key Search Test by calculating the Spearman’s Rank Order correlation coefficients between the measure and other measures of fronto-executive functioning (e.g., FAS, WCST, Digit Symbol, Trails B, CVLT intrusive errors; Rey-Osterreith Copy, and a measure of affect perception). Correlations between the Key Search Test and tests not felt to measure fronto-executive functioning per se (e.g., BNT, CVLT Recognition, WAIS-R Comprehension, Warrington Recognition Test, Rey-Osterreith Recognition, WMS-R Digit Repetition, and the MAE Token Test) were also calculated for comparison purposes. All correlations were calculated partialling out the effects of age and education. There were significant correlations between the Key Search Test and each WAIS-R Digit Symbol, WAIS-R Comprehension, Trail Making Test Parts A and B, and the Token Test (p < .05). All correlations were small in magnitude with the exception of the correlation between WAIS-R Comprehension and the Key Search Test (pr = .450, p = .016). The current data provide additional support that the Key Search Test can be reliably scored. Moreover, in addition to having obvious face validity, there is some evidence that Key Search performance is related to fronto-executive functioning. However, it also appears that general reasoning has a strong influence on performance.

Hill, S. K., Lewis, M., & Dean, R. S.  
Factor Analysis of Sensory and Motor Functions.
The assessment of sensory and motor functions have long been an integral part of the neurological and neuropsychological examination. Because many of these measures are pathognomonic signs, the majority of measures designed to assess sensory and motor functions lack psychometric data. The Dean Woodcock Sensory-Motor Battery (DWSMB) was designed to standardize the administration and interpretation of sensory-motor functions and has been shown to have excellent reliability. The present study examined the underlying constructs of sensory and motor functions using this battery. It was hypothesized that at least two factors would emerge with representing sensory and motor functions, respectively. A third possible factor which would reflect subcortical functioning was also hypothesized. Principle components analysis on data from 617 participants supported a three factor solution. Although factor loadings revealed some dual loadings, the results provide empirical support for a three factor conceptualization of sensory-motor skills while incorporate subcortical abilities.