Greater IIV also appreas to be associated with greater vulnerability to EF depletion after behavioral inhibition (DesRuisseaux, Suchy, & Franchow, 2021), which could represent a mechanism whereby vulnerability to EF depletion could be a precursor of offense. However, given that poor performance on measures of inhibition seem to have different underlying mechanisms for PCM and N-PCM, it is unclear whether both groups would exhibit greater IIV compared to non-sexual offenders. **Participants and Methods:** Participants were PCM (n = 76, M age = 33.61(7.74), Range = 19-47; 92.1% White, 2.6% Hispanic/Latino, 2.6% Native American, 1.3% Black, 1.3% Other), N-PCM (n = 52, M age = 30-88(6.37), Range = 20-45; 73.1% White, 13.5% Hispanic/Latino, 7.7% Other, 3.8% Native American, 1.9% Black), and non-sexual offenders (n = 25, M age = 29.96(8.16), Range = 22-45; 80% White, 8% Hispanic/Latino, 8% Other, 8% Asian) recruited as part of two larger studies examining cognition in sex offenders. IIV was assessed using the Push-Turn-Tap-Tap (PTT) task, an experimental computerized measure of EF from which IIV can be calculated (DesRuisseaux et al., 2021). **Results:** Independent samples t-tests found that both PCM and N-PCM had greater IIV than non-sexual offenders ($t(99) = 2.13$, $p = .04$; $t(75) = 2.23$, $p = .03$, respectively). Even on their fastest responses, PCM had greater time elapsed between correct sequences (i.e., slower response style; $t(126) = 2.23$, $p = .03$) than N-PCM. There were no significant differences in error rates between any groups ($p > .05$). **Conclusions:** These results suggest that IIV varies between sexual and non-sexual offenders but does not vary between PCM and N-PCM. This is consistent with prior research suggesting that both PCM and N-PCM have poorer EF than non-sexual offenders. Additionally, consistent with prior research, PCM had a slower response style than N-PCM and non-sexual offenders. Unlike prior research that has found significant differences in accuracy rates between PCM and N-PCM, the present results did not find a significant difference. Since IIV has been associated with increased likelihood of EF depletion (likely increasing risk of lapses), future research could examine whether CM with greater IIV have an increased likelihood of reoffending.

Categories: Forensic Neuropsychology/Malingering/Noncredible Presentations
Keyword 1: executive functions
Keyword 2: forensic neuropsychology
Keyword 3: computerized neuropsychological testing
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92 Validation of Coin-in-Hand Procedure in a Veteran Population

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Objective: Performance validity tests (PVTs) provide a methodological approach to detecting credible neurocognitive performances. This proves invaluable to the diagnostic process, as it allows neuropsychologists to objectively determine if an evaluation reflects a patient's true neurocognitive abilities or if external factors are impacting the results. However, their addition to a testing battery can increase an already lengthy evaluation. As such, there is a need for sensitive but less time intensive PVTs. The purpose of this study is to validate the Coin-in-Hand (CIH) procedure as a quick and effective PVT within a veteran population. **Participants and Methods:** 68 English-speaking patients were identified from an outpatient neuropsychological assessment dataset. Performances were correlated to the well- validated Reliable Digit Span (RDS), and several other soft indicators of task engagement including expanded COWAT, BVMT-False Alarms (FA), WCST Failure to Maintain Set (FTM), TOMM, and the RBANS Effort Index (EI). All participants attempted CIH and RDS, testing was discontinued if 2 or more PVTs were invalid. An AUC analysis was conducted to determine how well the CIH discriminated between valid and invalid performance and determine the tests optimal cut-off score (sensitivity > 0.90 while maintaining the highest possible specificity). Logistic Regression was conducted to determine how well the CIH predicted performance validity. **Results:** Subject mean(SD) age and education were 55.25 (16.06) and 13.41 (2.55) years, respectively. 17% female, 60% Caucasian, and 32% Black. Descriptive statistics for each of the

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other performance validity tests were gathered. The CIH demonstrated low diagnostic accuracy (AUC = .66; p >.05; CI = .51 -.81); a cut score of <8 resulted in a sensitivity of .96 and a specificty of .64. Logistic Regression showed that CIH performance significantly predicted performance validity (X2 = -0.93; df = 1; N = 68; p < .05), accounting for 18-28% of the variance in performance classification (Cox & Snell R2 = .18; Nagelkerke R2 = .28). It correctly classified 96% of valid performers, but only correctly classified 35% of invalid performers, with an overall correct prediction rate of 83%. A predicted chase in log odds (B= -.93) and odd ratio [Exp (B) =.40] indicated that every unit increase in CIH score was associated with a decrease probability of performance invalidity. Logistic regression was also used to calculate the probability of performance invalidity at each possible CIH score (Table 1).
Conclusions: Results suggests that poor performance on CIH does not necessarily equate to invalid performances, but instead, should act as a screener to cue neuropsychologists working with Veterans that additional PVTs should be considered. Overall, it was determined that CIH was able to correctly predict 35% of invalid performers and 96% of valid performers, with an overall correct prediction rate of 83%, suggesting the procedure may be too simple to be an effective standalone PVT for clinical use. These results also highlight that every correct response on the CIH was associated with a decreased probability of performance invalidity. Additionally, an AUC analysis determined the tests optimal cut off score to be <8, suggesting that shortening the procedure may be as effective as giving the full 10 trials.

Categories: Other
Keyword 1: performance validity
Keyword 2: neuropsychological assessment
Keyword 3: validity (performance or symptom)
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Poster Symposium: Leveraging Digital Technology to Capture Highly Nuanced Neuropsychological Behavior: Realizing the Vision of the Boston Process Approach to Neuropsychological Assessment

Chair

Anna MacKay - Brandt
Nathan Kline Institute for Psychiatric Research, Orangeburg, USA

Discussant

Rhoda Au
Boston Univeristy, Boston, USA

Summary Abstract:
Neuropsychological test scores tap a number of underlying cognitive abilities. Examining the means by which omnibus scores are achieved provides considerable information regarding brain – behavior relationships and a richer context for clinical interpretation. This examination is the core tenant of the Boston Process Approach. Nonetheless, quantification of errors and process can be time consuming. However, the development of digital assessment technology is able to meet this challenge. For example, using a digital clock drawing test, previously unappreciated behaviors are now easily quantified and can dissociate between dementia and MCI subtypes. Research presented in this paper session provides additional insight into how digital technology can be leveraged as a powerful tool to capture behavior that, until recently, was either impractical or impossible to measure.
The assessment of graphomotor behavior can be challenging. In the context of a large-scale normative neuroimaging study, Colcombe and colleagues have engineered a digital Archimedes Spiral Test that includes measures of speed variability, rotational smoothness, and goodness of fit to the model. The temporal and spatial precision of these metrics is impressive. This research shows that, age predicted greater variable drawing speed, greater tracing errors, reduced rotational smoothness, and increasing drawing speed variability.
MacKay-Brandt and colleagues present data using a digital version of the Trail Making Tests (TMT), one of the most commonly administered neuropsychological tests. This research provides a panel of new parameters to evaluate TMT performance, including detailed speed

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