Title will go here: Something with a colon maybe

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Abstract

Abstract will go here. . .

*Keywords:* Keyword1; Keyword2; Keyword3; Keyword4

[INSERT TITLE HERE]

Task switching is commonly used by researchers to empirically investigate cognitive control. In this paradigm, participants are presented with a pair of simple yet contrasting tasks and must alternate between completing them (i.e., performing an addition task on trial one but a subtraction task on trial two). [SENTENCE HERE?] Previous research has found that when individuals are forced to alternate between tasks, their reaction times are slower, and they typically commit more errors relative to completing each task separately [CITE].

[PARAGRAPH HERE ON VARIOUS TASK SWITCHING PARADIGMS?]

[STROOP]

While several task-switching paradigms have been made available (see XXXX for a review), for the present study we chose to focus on paradigms which allow for a direct comparison of local and global switch costs [CITE HERE]. These tasks present participants with blocks containing switch and non-switch trials interspersed within the same block (referred to as switch blocks) and pure blocks in which all trials use only one set of task instructions [CITE]. [EXPAND] The *global switch cost* refers to…[LOCAL SWITCH COSTS]

[EXPLAINATIONS OF SWITCH COSTS]

[SEWIT AND OTHERS?]

The Consonant-Vowel Odd-Even task (CVOE; Minear & Shah, 2008) is a simple task-switching paradigm that allows the measurement of both local and global task switching costs. In switch tasks such as the CVOE, individuals with mild cognitive impairment perform worse relative to younger and non-impaired adults on switch trials relative to a set of pure trials in which the task does not change. Additionally, work by Huff et al. (2015) has shown that global switch costs (switch trials compared to pure trials) increase as a function of age and AD, suggesting that…[EXPAND]. [ADD A SENTENCE OR TWO HERE ON WHY THE CVOE IS USEFUL]

Previous work on task switching using the CVOE paradigm has traditionally presented trials using an *alternating runs* pattern. In this presentation sequence, subjects complete the same type of trial twice before the instructions switch participants to the second task (i.e., the pattern of trials would be CV, CV, OE, OE, CV, CV). The result of this pattern is that every other trial (following the initial trial) is a switch trial, as it occurs following a change in the task set. [POTENTIAL PROBLEMS WITH THIS – PREDICTABILITY!]

**Distributional Analyses of RTs**

[WORDS HERE – DISCUSS EX-GAUSS AND VINCENTILES]

[TRANSITION – SET UP HYPOTHESES SEGUE INTO METHODS] The present study expands on previous CVOE task switching studies by incorporating both an alternating runs switch task and a randomized switch task (i.e., CV, OE, OE, OE, CV, OE) in which no discernable pattern of task switching can be detected.

**Alternating Runs vs. Random Switching**

[WORDS HERE] Overall, we expected that mean error rates and RTs would be higher on the switch tasks, and specifically, participants would struggle more with the switch task when switching occurred at non-predictive intervals due to the lack of pattern. We expected that these difficulties would result in higher error rates and greater RTs for random switch trials relative to alternating runs switch trials. Further, we expected that local switch costs would be higher on the randomized task relative to the alternating runs. [WHY?] [GLOBAL COSTS PREDICTION]

**Method**

**Participants**

A total of 100 undergraduate students were recruited from the University of Southern Mississippi’s undergraduate research pool. Data from XX participants were removed due to excessive error rates in either the pure or switch trials (i.e., mean error rates for trial that were > 3 *sd*s above the respective trial type mean), which indicated that participants did not correctly follow task instructions. A sensitivity analysis conducted with *G\*Power* [CITE] indicated that our final sample of XX participants was sufficient to detect XX effects [STATS]. All participants were native English speakers who reported normal or corrected to normal vision.

**Materials**

[XX BIVALENT STIM PAIRS – SPELL OUT WHICH LETTERS EXACTLY WERE USED. HOW MANY PAIRS TOTAL?]

**Procedure**

[MENTION E-PRIME IN LAB, 4 BLOCK STRUCTURE, KEY PRESSES, INSTRUCTIONS FOR PURE AND SWITCH (AND THEIR PATTERNS) 10 PRACTICE TRIALS, FIGURE OUT HOW MANY TOTAL TRIALS PER BLOCK, TOTAL EX TOOK ABOUT 30 MINUTES TO COMPLETE]

*Pure Blocks.*

*Switch Blocks.*

**Results**

[TRIMMING, DATA SCREENING AND PBIC]

A *p* < .05 significance level was used for all analyses. Effect size estimates using partial-

eta squared (xx) and Cohen’s *d* were computed for all significant analyses of variance

(ANOVAs) and *t*-tests, respectively. To supplement standard null-hypothesis significance

testing, we include a Bayesian estimate of the strength of evidence supporting the null

hypothesis (Masson, 2011; Wagenmakers, 2007). This analysis compares a model that

assumes a significant effect to one that assumes a null effect. A probability estimate is computed

termed *p*BIC (Bayesian Information Criterion) which indicates the likelihood that the

null hypothesis is retained. Thus, null effects are supplemented with a *p*BIC estimate. [REF THE TABLES/FIGURES FOR ERROR RATES AND RTS] [APPENDIX?]

[ANOVAS]

[VINCENTILES]

[EX-GAUSS]

**General Discussion**

[SUMMARY PARAGRAPH – MAIN ANALYSES]

[SUMMARY PARAGRAPH – DISTRIBUTIONAL ANALYSES]

[SOMETHING HERE]

[AGING IMPLICATIONS]

[FUTURE DIRECTIONS]

**Summary and Conclusion**

[WORDS HERE]

References