EXPERIMENT: REACTION TIME POSITION DIGITS

1. Implicit motor skill learning: revised SRT task, positions (var. locations), digits (at fixation)
   1. 2 sessions (position vs. digit), 20 blocks each of 24 trials: stimuli shown -> response (digits 1-4, dot in box) using keys C, V, B, N
   2. Fixed blocks: repeat sequence, every fifth block random
   3. Hypotheses: RTfixed lower than RTrandom (motor skill learning of sequence: procedural memory, repetition priming), RTposition lower than RTdigit (Simon effect)
2. Figure 1: mean RT across blocks (sequential learning determined by RT)
   1. Main effect, stimulus: RTposition sig. lower than RTdigit, consistent w. hypothesis
   2. Main effect, block: increased RTrandom compared to RTfixed, consistent (implicit learning)
   3. Sig. interaction: differences in slopes, initial learning phase, digit more difficult
   4. Figure 3: individual level, position lower than digit, fixed lower than random for position condition, fixed not lower than random for digit condition (don’t overestimate)
3. Whether order of sessions matter, figure 3: interaction between stimulus and order found
   1. Main effect, stimulus: RTposition lower regardless of order
   2. Interaction evident in plot: position first -> lower RT for digit than digit first (vice versa), practice effect, skill learning, fixed implicitly learned -> relative advantage in 2nd
4. Testing learning across random trials: repeated measures ANOVA (four random blocks only)
   1. Main effect, stimulus: lower RT for position; main effect, block: RT varied between blocks
   2. Figure 1: precise RT for random, main effect reflect RT *increase* (random demand inhibition of fixed)
   3. No interaction unless first fixed included as novel, confirming initial learning difference
5. Accuracy, figure 4: main effects of stimulus and sequence types on accuracy
   1. Main effect, stimulus: ACC for position higher, main effect, sequence: ACC for fixed higher (consistent w. implicit learning)
6. Conclusion: implicit motor learning possible (various stimuli), modally valid targets (congruent to motor response) facilitate lower RT
   1. Issues: questionnaire -> awareness, making task declarative -> skewed data: specific advantage for 2nd session digit (subverbal rehearsal, simultaneous to task, Baddeley)
7. Broad perspective: SNARC effect, basal ganglia (activity during implicit), impairment: Parkinsons (basal ganglia), intact: H.M., classical conditioning, Tower of London