

Introduction

The effect of aging on susceptibility to interference on Stroop-like tasks is not clearly understood. Some previous studies have suggested slowed reaction time explains age-related diminution on Stroop performance, while more recent meta-analyses suggest that disproportionate interference effects are seen with aging, regardless of slower reaction times. In addition, other variables such as education and IQ have been suggested to mediate Stroop-like effects in older participants

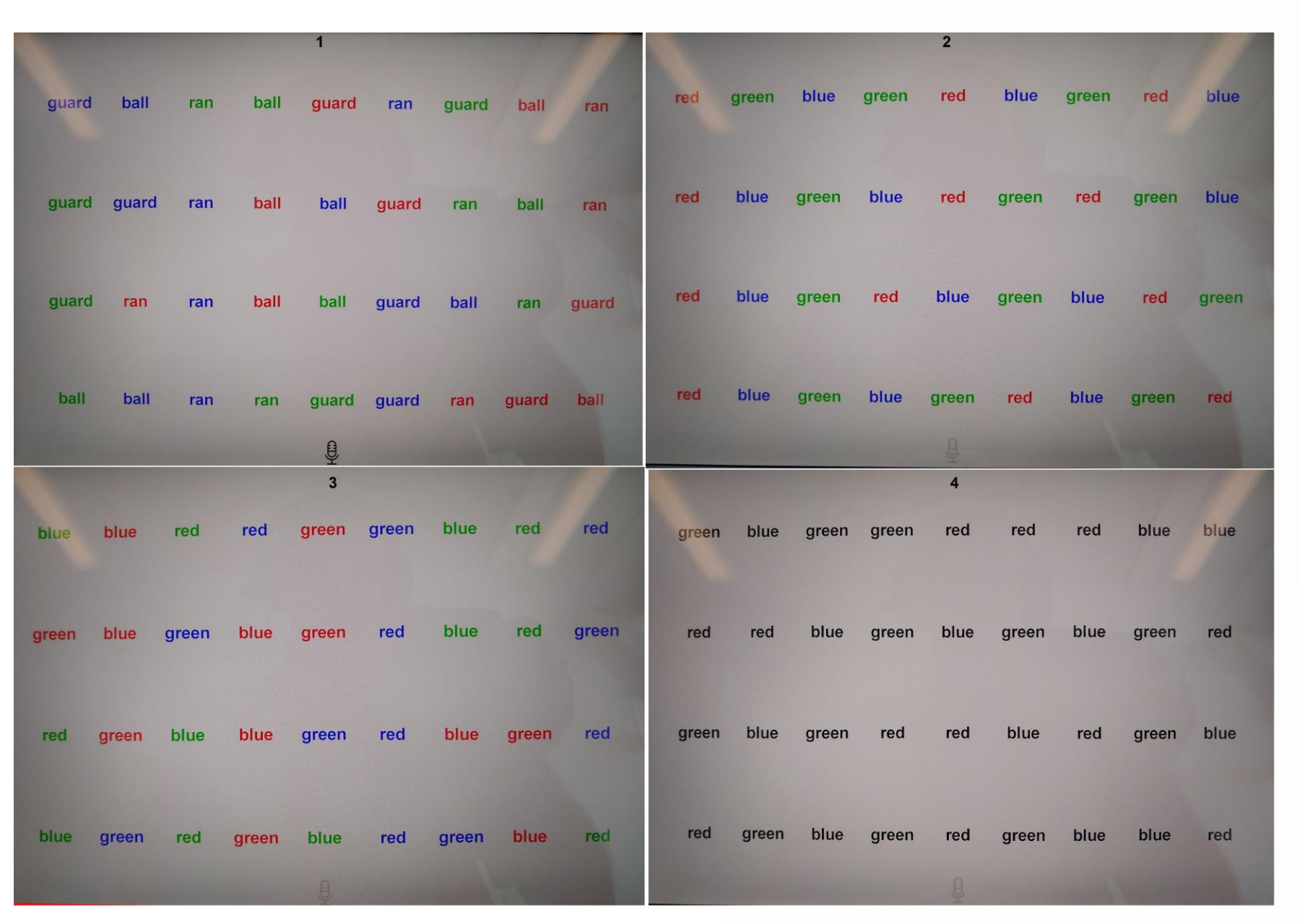
Participants

- n = 392 healthy older adults, 39% female
- Mean age: 70.8 (SD = 6.5), range 60-89
- Mean education: 15.7 (SD = 2.2), range: 7-20
- Ethnicity: 11% Black, 11% Asian, 8% other/mixed race, 7% Hispanic / Latinx

Test Materials

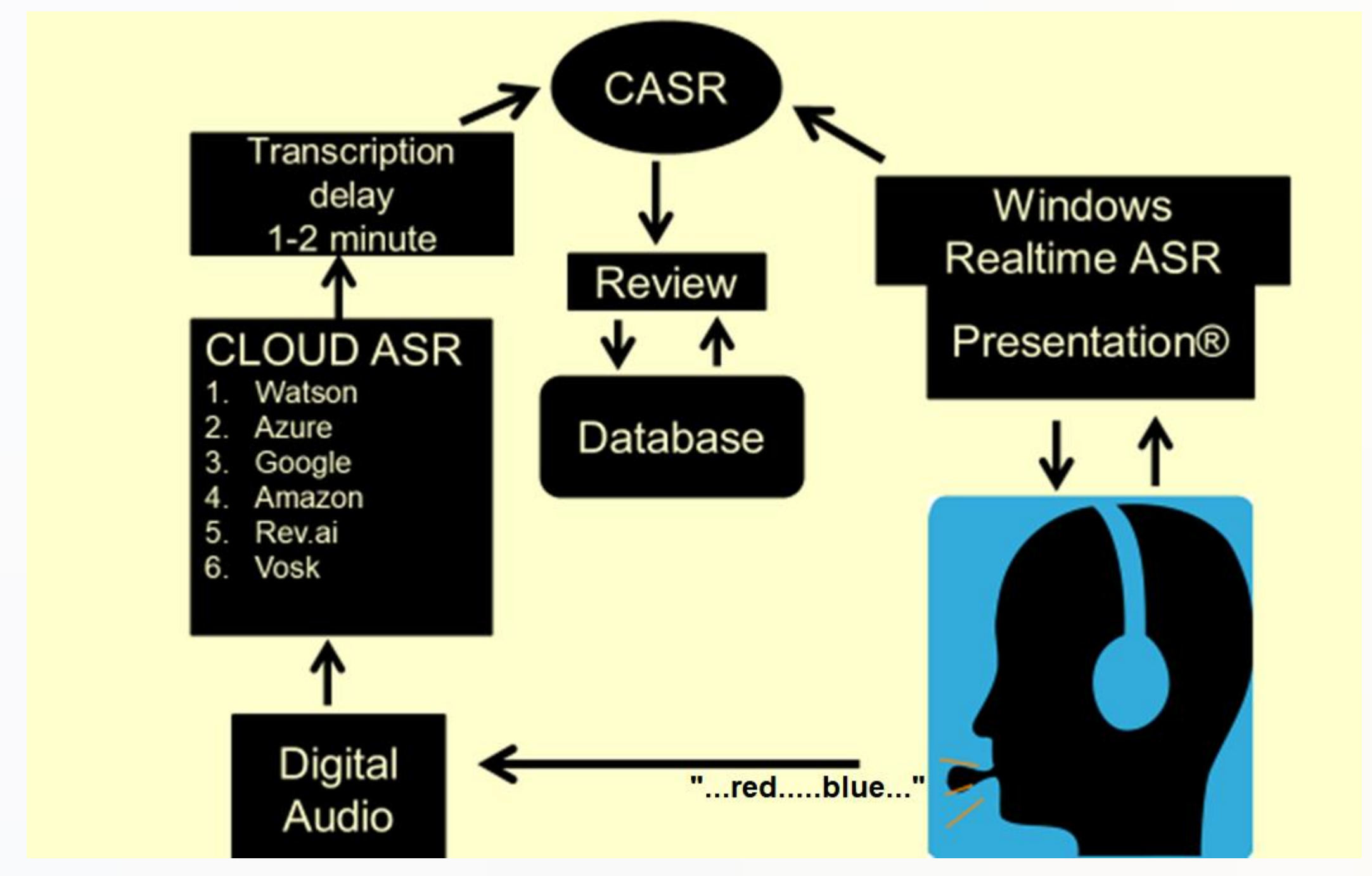
- California Cognitive Assessment Battery (CCAB)
 - automated battery administered remotely at-home
 - versions in English and Spanish available
 - includes cognitive tests & psychological questionnaires
- 4 types of Stroop-like pages:
 - Naming colors of unrelated words (ran, guard, ball)
 - Compatible colored words (red, green, blue)
 - Incompatible colored words (red, green, blue)
 - Reading uncolored words (red, green, blue)

Procedures



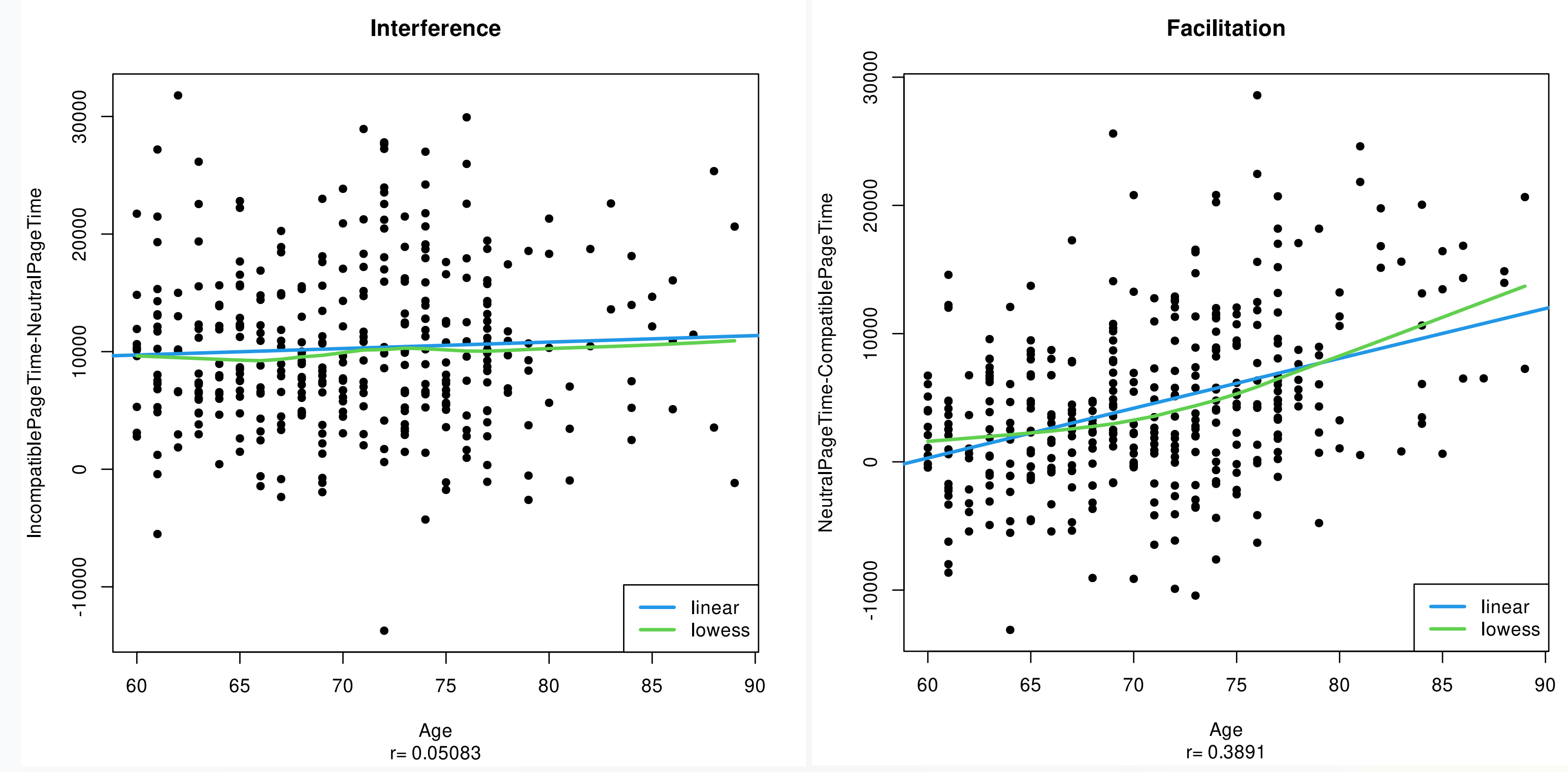
- Name colors or read words as fast as possible
- Efficient, remote, at-home testing
- Web-based examiner interface & video monitoring
- Automated instructions, training & verbal transcription

Data Analysis: (CASR) Consensus Automatic Speech Recognition of Stroop Responses

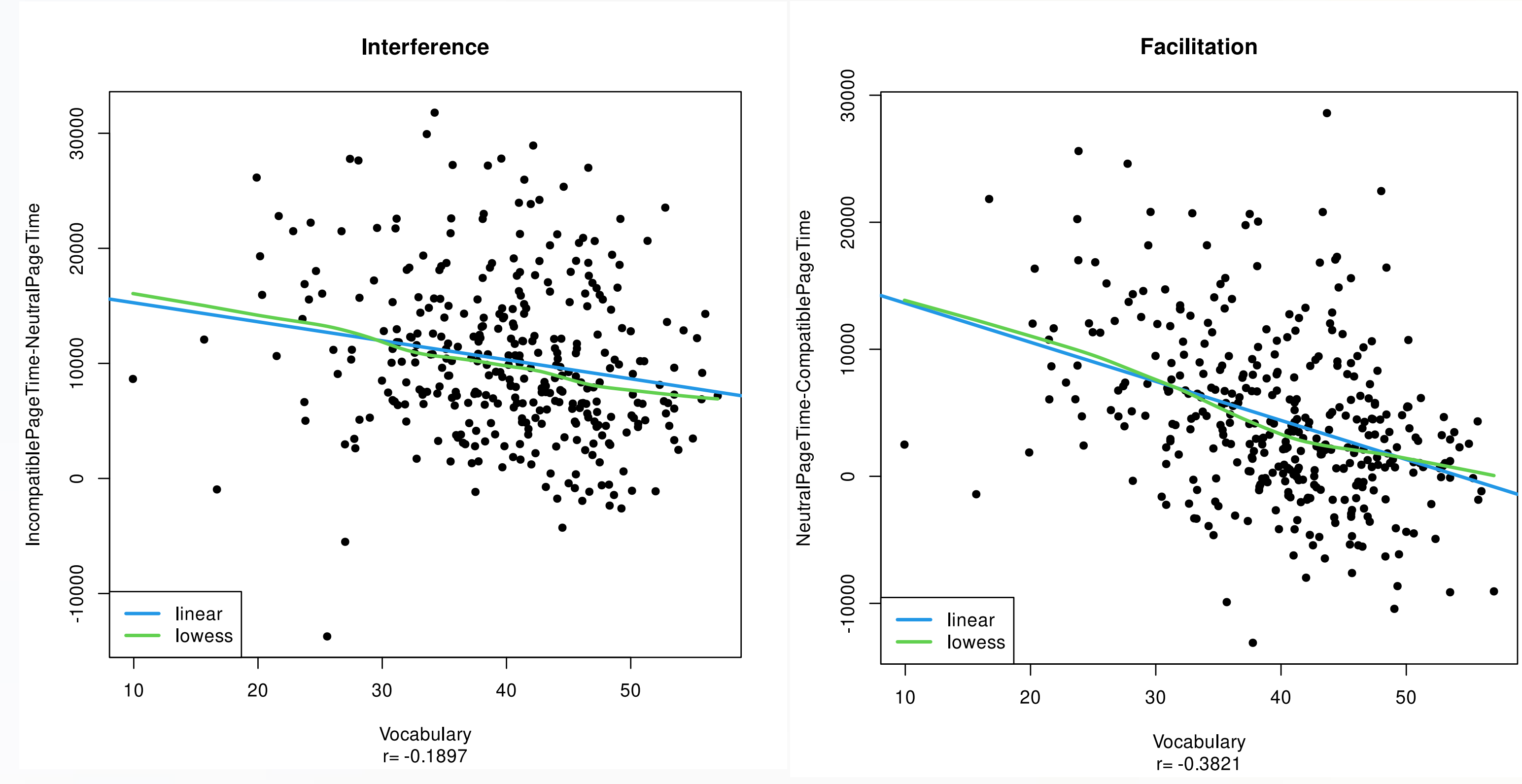


*7 ASR engines produce automatic transcriptions at greater than 99% accuracy in Stroop-like tasks.

Results: Stroop-like interference and facilitation associations with age.

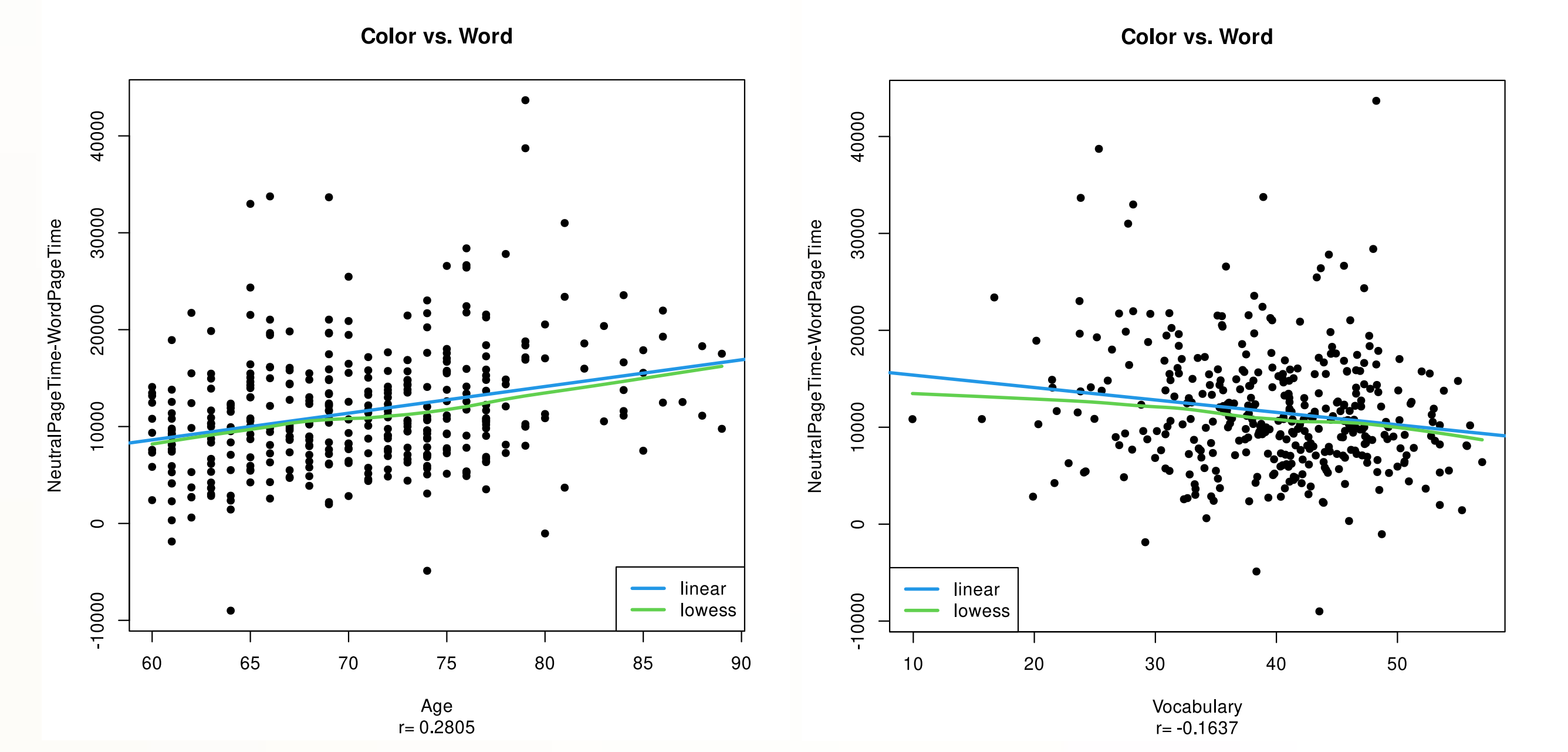


Results: Stroop-like effects related to Vocabulary

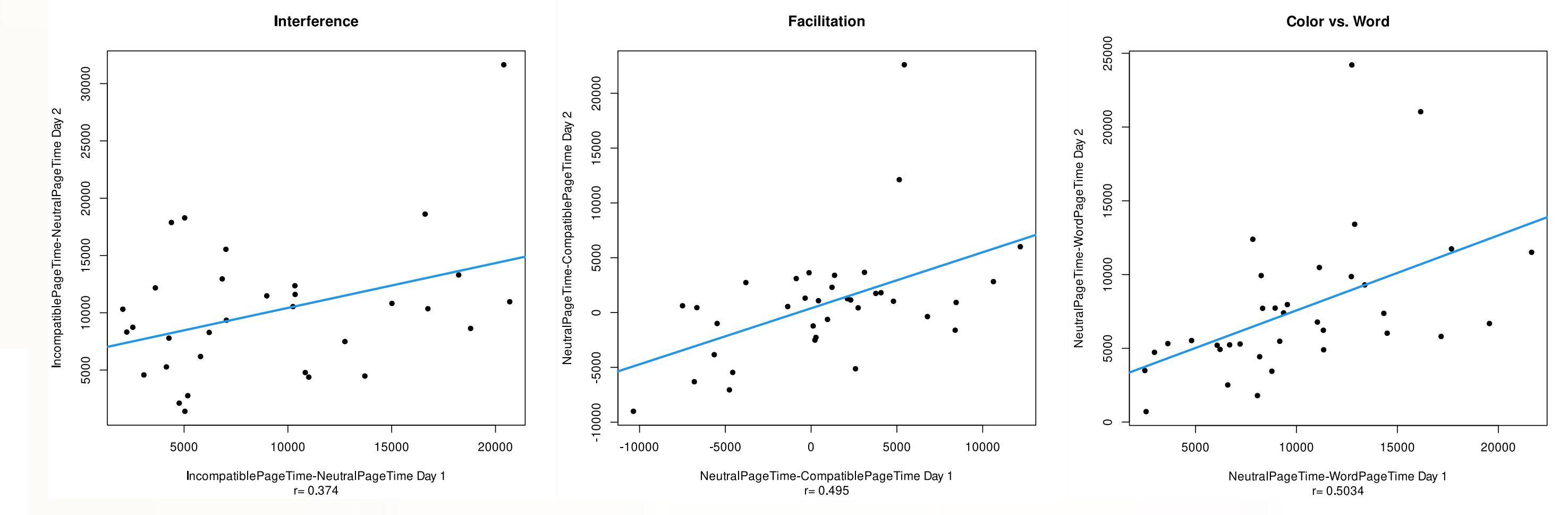


• Pearson $|r| > 0.12$ significant at $p < 0.01$ for $n = 389$

Results: Color Naming vs. Word Reading



Results: Test-Retest Sample



- N=39, 29F, age 70.5 (6.7), Education 16.8 (2.1)

Results: Summary

- Only 3 subjects failed to complete the Stroop test
- Multiple regression analysis showed that age independently predicted facilitation effects (neutral minus congruent response times). However, other variables including gender ($t = -2.8$ females) and vocabulary also independently predicted Stroop facilitation, while vocabulary also independently predicted Stroop interference (incongruent minus neutral RTs), but not gender ($t = -1.6$ females)
- Color naming vs. Word reading correlated with both Age and Vocabulary.

Discussion

- In summary, while aging has a significant impact on facilitation effects in Stroop-like tasks, additional variables such as gender and vocabulary (a proxy for IQ) also play a role in performance on these measures of selective attention.