A Revised Version of the German Author Recognition Test

Geraldine Müller (Universität des Saarlandes), Katja I. Haeuser (Universität des Saarlandes)

s9grmuel@stud.uni-saarland.de

Print Exposure reflects the extent of an individual's reading habits and has been shown to be a relevant predictor for verbal and cognitive abilities that involve language processing [1 - 3]. Since their inception in the late 1980s, author recognition tests (ARTs) have been used successfully to measure print exposure [4]. In ARTs, participants are tasked with discriminating authors from non-authors. A German version of the ART was first introduced and tested by Grolig and colleagues in 2020. Even though their test measured print exposure reliably (split half reliability of r = .95), it also included two problematic aspects. First, distractors were used that, in some cases, were not clearly distinguishable from the test items, as the names for the distractors were picked from the editorial boards of scientific papers and publications, making their status regarding authorship unclear. Second, the test was piloted on a sample composed largely of academics and visitors to the Frankfurt Book Fair, two groups for whom a higher level of print exposure can be expected compared to the general population. This aspect is clearly problematic as we know that author recognition tests may vary in their suitability for different target groups, providing more reliable results for individuals with higher educational backgrounds [6 - 7].

Here, we introduce a new, improved version of the German ART. We developed more appropriate distractors for the test and thoroughly verified their potential authorship through extensive research. Additionally, the test results were analyzed separately for target groups with and without an academic degree. Furthermore, we compared the impact of two test-formats: the forced-choice format vs check-all. Previous research has demonstrated that the response format of a psychometric test can significantly influence participants' response behavior [5]. Earlier versions, including the specific predecessor by Grolig and colleagues, were primarily published in the check-all format. Finally, we correlated ART performance against two other normed measures of verbal abilities, the LexTale vocabulary test and a verbal fluency test, both testing for important components underlying effective communication. The moderate correlations we found align with prior research demonstrating ART's links to verbal abilities and highlight the relevance of print exposure for cognitive abilities related to language and communication.

The new test version comprises 120 items (80 authors, 40 non-authors). Participants completed the ART in either the traditional check-all format or the forced-choice format, which version was specifically devised to test the effects of test format. Results show that the improved version of the German ART exhibits robust reliability for both the check-all version (Cronbach's alpha $\alpha = 0.92$, split-half reliability $r = 0.93$) and the forced-choice version ($\alpha = 0.95$, $r = 0.89$). Additionally, as expected, significant performance differences were found between groups with and without a university degree, with subjects holding a university degree outperforming those without. The comparison of test formats revealed higher hit rates and false alarm rates for the forced-choice vs check-all format. In sum, our results indicate that both education level and response format play a crucial role in shaping test performance for ART, underlining the need for their careful consideration in future test designs.

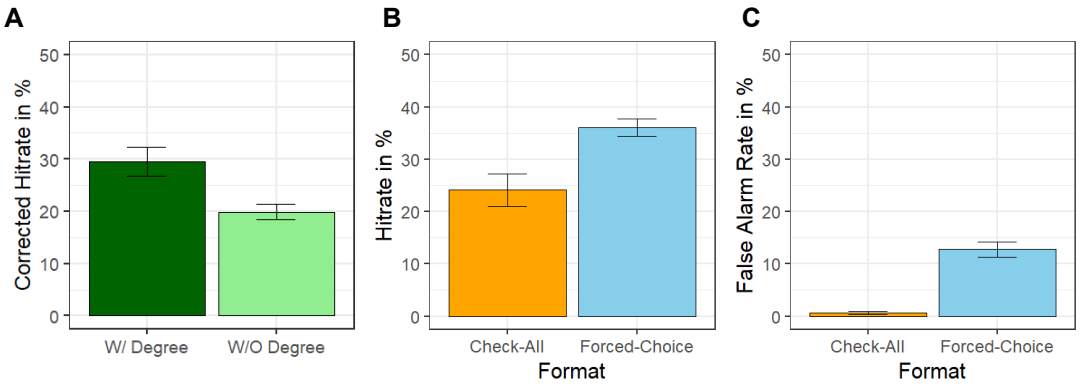

Figure 1. A: Barplots showing the ART performance (Hits-False Alarms) for participants with and without academic degree. **B-C:** Barplots showing the differences in Hit (B) and False-Alarm rates (C) between Check All and Forced Choice format.

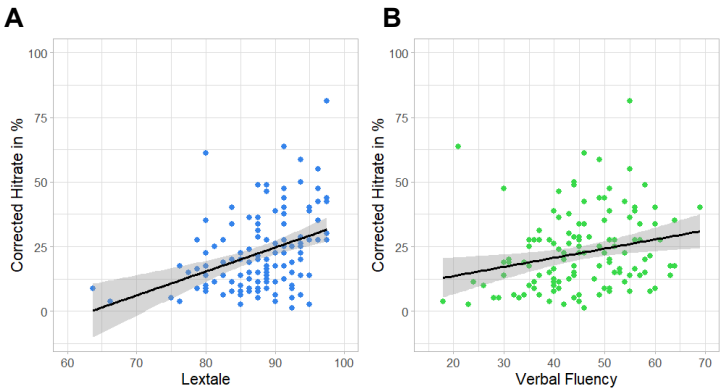

Figure 2. A-B: Scatterplots showing the correlations between ART performance and Lextale ($r = 0.34$, $p < .001$) and Verbal Fluency ($r = 0.24$, $p = .013$) performance.

References:

[1] Cunningham, A. E., & Stanovich, K. E. (1998b). What reading does for the mind. *The American Educator*, *22*(3), 8–15.

[2] Martin-Chang, S., & Gould, O. N. (2008). Revisiting print exposure: exploring differential links to vocabulary, comprehension and reading rate. *Journal of Research in Reading*, *31*(3), 273–284.

[3] Mol, S. E., & Bus, A. G. (2011). To read or not to read: A meta-analysis of print exposure from infancy to early adulthood. *Psychological Bulletin*, *137*(2), 267–296.

[4] Acheson, D. J., Wells, J. B., & MacDonald, M. C. (2008). New and updated tests of print exposure and reading abilities in college students. *Behavior Research Methods*, *40*(1), 278–289.

[5] Smyth, J. D., Dillman, D. A., Christian, L. M., & Stern, M. J. (2006). Comparing Check-All and Forced-Choice Question Formats in Web Surveys. *Public Opinion Quarterly*, *70*(1), 66–77.

[6] Brysbaert, M., Sui, L., Dirix, N., & Hintz, F. (2020). Dutch Author Recognition Test. *Journal of Cognition*, *3*(1), 6.

[7] Grolig, L., Tiffin-Richards, S. P., & Schroeder, S. (2020). Print exposure across the reading life span. *Reading and Writing*, *33*(6), 1423–1441.