Comparing the suitability of 6 implicit measures for individual use

*Deviations from pre-registration*

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**Added exclusions for incorrect number of trials**

After running the analyses on the testing dataset we realised that the processing script did not include exclusions for an incorrect number of trials present in the data. Instances of both too few trials (e.g., incomplete study completion) and too many (duplicate data, database errors, other unknown sources) were present in the data. Their confidence intervals were inappropriately wide or narrow, respectively, not because of their performance on the task as it is typically presented but because they did not complete it or had additional trials for some reason. We excluded participants who did not have the prespecified number of trials for each task. A code chunk preceded by the heading “retain only session\_ids with the correct number of trials” was added to processing.Rmd:

```{r}

session\_with\_complete\_n\_trials <- critical\_trials\_df |>

count(SESSION\_ID, domain, measure) |>

filter((measure == "amp" & n == 48) |

(measure == "iat" & n == 120) |

(measure == "biat" & n == 128) |

(measure == "siat" & n == 192) |

(measure == "gnat" & n == 160) |

(measure == "ept" & n == 180))

critical\_trials\_complete\_tasks <- critical\_trials\_df |>

semi\_join(session\_with\_complete\_n\_trials, by = "SESSION\_ID")

```

**Change from logit transformed logistic models to linear models**

In our original preregistration, we stated that we would logit transform the proportion of participants different from zero, and enter them into linear mixed effects models. Firstly, our preregistration stated our original analysis plan incorrectly: our original plan was to enter these models into logistic mixed models, not linear mixed models. Our rationale for this was that the bounded nature of our proportion data meant that using a simple linear model on the proportions would have been inappropriate. However, in the course of conducting this research, we read a paper by Kubinec (2023) on modelling continuous, bounded data. In his simulations, Kubinec demonstrated that ordered beta regression is most appropriate for modelling this type of data, followed closely by standard linear models. He also demonstrated that fractional logit approaches (similar to the approach we had originally preregistered) tend to fare worse in this regard. With all of this in mind, we opted to change our analytic approach to instead use linear mixed-effects models on the untransformed proportion data. In this manner we use an analytic model which is better suited to the data than the logit transformed approach, while also harnessing the interpretability of the simple linear model (given that the parameters in the ordered beta distribution are much more difficult to translate into interpretable inferences). We report the results of the original preregistered analyses in our supplementary materials for transparency; it is worth noting that the ranking among the measures is robust to the analytic strategy employed and that our conclusions remain unaltered.