What Do We Know When We Know an IQ Score?  
Ability-by-Personality Interactions Predict Intelligence Test Performance and Item Response Styles  
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**RESULTS**

- **Predicting full ability score from gender and linear and quadratic effects of personality**
- **Femaleness dashed line. Male: solid line.**

**METHODS**

- **Participants**
  - Demographics: Data were analyzed for 96,947 participants who had taken the SAPA battery between August 2010 and May 2013.
  - Gender: 66% female.
  - Age: 29.9 years; range = 14 to 90 years.
  - Ethnicity: White: 53%; African American: 30%; 18 others.
  - Education: Currently enrolled in college or university: 51%. Only 20% of participants had no university education.

**Procedure**

- **SAPA** is a web-based assessment technique that explores the structure of a sampling of personality and ability items. These items are ‘massively missing at random’, that is, although no one person takes all the ability or all the ability items, the data on each item are collected for approximately 10,000 subjects.

**The procedure begins by requesting test-takers to provide consent and demographic information.**

- **Next, 69 personality items are administered. Forty items assess the open-source International Personality Item Pool (IPFP) Big Five domains of Conscientiousness (C), Agreeableness (A), Neuroticism (N), Extraversion (E), and Intellect/Oxpeckers in Experience (EIPD) (DePaul, 1990; Goldberg, 1990). Of these, 10 items are randomly selected from each of the IPFP Big Five domains (Goldberg et al., 2000). The item pool from which the latter are drawn contains 100 items, with 25 items in each domain. Ten items are randomly selected from a set of ‘exploratory’ items; these assess constructs as intense and attitudes.**

- **Finally, each participant receives a set of between 12 and 16 ability items (the exact number varies by administration period). Ability items are also randomly drawn from a pool of either 80, 65, or 60 items. The 60 items currently being administered was constructed by eliminating from the original 80 items those 20 that possessed the worst psychometric properties.**

**Participants who complete the survey receive feedback regarding their performance in a number of achievement-related domains. They note that the same personality traits may enhance performance in some situations or on some tasks, and impair in others. They encourage other researchers to embark on systematic studies of such differentially effective constructs. The current study describes the results of one such study.**

**Intelligence and personality may interact in several different ways, on either their ‘latent’ or ‘observable’ levels. Evidence for such interactions strongly supports the common assumption that non-contrast variables affect test-taking style and other predictors of performance on intelligence tests.**

The present study utilized the Synthetic Aperture Personality Assessment (SAPA) Project’s personality and ability data to investigate the manner in which personality trait estimates interact with ability estimates and gender to produce four relevant dependent variables: namely, personality traits, scores on the full SAPA ability test, ability estimates, and gender with target item scores. A specific item response style (namely, willingness to answer using Internet search engines). A specific item response style (namely, willingness to answer using Internet search engines).