A Closer Look at the Test of Personal Intelligence

Presentation

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Overview
Personal intelligence is the capacity to reason about personality and personality-related information. To understand more about the structure of the mental abilities involved in personal intelligence, we fit several factor models to an ability-based test of personal intelligence. A two-factor oblique simple structure model fit the data well. The findings inform us about the nature of abilities people use to understand personality in themselves and others.

Introduction
Personal Intelligence (PI): Quick Background
A number of theories in psychology identify key aspects of understanding personality in oneself and others.

a. Psychological mindedness is an ability exhibited by some psychotherapy patients to learn about themselves and others (Appelbaum, 1973).

b. Intra- and interpersonal intelligences include skills for building a coherent identity and understanding other people (Gardner, 1983).

c. The good judge can perceive the personality of other people more accurately than can an average person (Funder, 2001).

Such concepts share a common focus on the capacity to reason about personality and personality-related information. Mayer (2006; 2014) developed a theory of personal intelligence (parallel to social and emotional intelligences) to synthesize these viewpoints.

General and Broad Intelligences
In the Cattell-Horn-Carroll model of intelligences, g (general intelligence), is at the top of a three-tiered hierarchy, with broad intelligences in the middle level and specific skills at the bottom. Figure 1 depicts a schematic illustration.

Figure 1. The General Form of the Cattell-Horn-Carroll Model

Personal Intelligence as a Broad Intelligence
We regard personal intelligence as a broad intelligence parallel in many respects to verbal, spatial, and perceptual-organizational intelligences. The theory of personal intelligence divides it into four problem-solving areas:

a. to recognize personality-relevant information
b. to form accurate models of personalities
c. to guide oneself and others’ choices using personality
d. to systematize one’s plans so as to achieve one’s aims

Results
Could a Factor Model be Fit to the Test?
We began fitting models by conducting a series of exploratory factor analyses. The 2-factor model exhibited the best fit in the exploratory analysis (Table 1) and appeared interpretable.

Overview of the TOPI Test
The Test of Personal Intelligence Version 1.4 (TOPI 1.4) is an ability-based test developed to measure individuals’ levels of personal intelligence (Mayer, Panter & Caruso, 2012; Mayer & Skimmyhorn, 2017). The test items fall within one of four areas of problem solving just described. A sample item asks:

If a person wants to be with one or more people, talk to them, go out with them, and have a good time, the person is likely going to:

a. be in love
b. express warmth toward someone
c. meet a goal of excellence
d. socialize

The test-taker who answers this item correctly (alternative “c”) must assess the given behaviors and extract from them the most likely motive.

Overview of Studies
We tested several factor models of PI by examining item-level responses to the 93-item TOPI 1.4 from two independent samples (Studies 1 and 2), and then created factor-based scales to represent them. We also reanalyzed data from an earlier study (Mayer, Panter & Caruso, 2012) to assess the new tests correlations with criteria (Study 3).

Hypotheses
Our key hypotheses were that:

1. We could fit a factor model to the test.
2. The factors would be interpretable.
3. The resulting factor scales would be reliable.
4. The scales and their composite would correlate with important criteria.

Methods
Participants
Participants were drawn from three archival samples:

Study 1. 10,318 test-takers drawn from seven samples, mostly from the United States Military, divided into Exploratory (odd-numbered) and Cross-Check (even-numbered) participant subsamples

Study 2. An independent sample of 8,459 military personnel


Measures

The 93-item Test of Personal Intelligence (Version 1.4) described earlier

Assorted criteria scales in Study 3, including:

a. A measure of the Big Five
b. Psychological mindedness
c. Psychopathological symptom checklists

d. The Mayer-Salovey-Caruso Emotional Intelligence Test

The Reading the Mind in the Eyes Test (a measure of interpersonal sensitivity), and

An estimate of g (a vocabulary measure)

Would the New Scales Predictive of Criteria?
In a further analysis, the two factor scales and their composite exhibited significant relations with g (as a broad intelligences ought to) as well as other relations with criteria comparative to those of the original scale (Table 3).

Discussion and Conclusions
The present research enhances our understanding of the mental abilities underlying personal intelligence. The theory already had specified four key areas of problem solving that help to identify relevant test items to use in measurement:

a. recognizing personality-relevant information
b. forming models of personality
c. guiding choices with such information, and
d. systematizing plans and goals

Using that division to develop our test-items, we then fit a factor model. We concluded that there existed two mental abilities people used to solve such problems: one focused on recognizing the consistencies in personality, and the other more focused on analyzing dynamic and sometimes inconsistent information about a person and making sense of it. The two classifications are depicted together in Figure 2.

Key Sources

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Key Sources


Are you ready to get started with your research?