THE
SCIENCE
BEHIND THE PREDICTIVE INDEX®

How our revolutionary methodology works wonders

Built for business

The Predictive Index®, or PI®, is a proven methodology that allows businesses to understand the factors driving their workforce. Scientific validation and a 60-year proven track record shows that business challenges large and small are no match for our unique approach to client education and knowledge transfer, which ensures swift adoption, direct ROI, and high impact on performance metrics.

We adhere to professional guidelines and government compliance.

Our assessments and recommended practices have been developed in a manner consistent with all critical standards and guidelines. They were designed to provide a framework for determining the proper use of assessments and other selection procedures, as well as preventing discriminatory employment practices.

The Predictive Index assessments and recommended practices comply with:

- Equal Employment Opportunity Commission (EEOC)
- Uniform Guidelines for the Development and Use of Personnel Selection Procedures (1978)
- American Psychological Association (APA)
- Society for Industrial and Organizational Psychology (SIOP)
- International Test Commission (ITC)

It all started with our founder, the late Arnold S. Daniels.

Arnold S. Daniels, creator of the PI Behavioral Assessment and founder of The Predictive Index, was introduced to assessments in the 1940's while serving in the United States Army Air Corps. After flying over 30 missions, Daniels was assigned to partner with a psychologist who had been tasked with understanding the make-up of successful teams. Daniels was introduced to the subject of tests and measurements and this is where his obsession with psychometric testing began.

After his discharge, Daniels educated himself in the area of workplace psychology, while briefly attending Harvard Business School and multiple management consulting firms. Solving business challenges through the lens of people became Daniels' sole mission in life. This led to the creation and initial release of the first PI Behavioral Assessment in 1955.

During this time, The Predictive Index was used with thousands of clients and nearly 500 validation studies in practically every job and industry in the known work universe. As the assessment gained more use in business, it received continual updates and today represents a well-established, business-relevant, and scientifically sound measure of behavioral tendencies in the workplace.

All of our assessments are scientifically validated against populations large enough to be used for any job, in any industry, in any location worldwide.

How the PI Behavioral Assessment™ works

## We focus on the person, not the population.

The Predictive Index Behavioral Assessment™ was created through a normative sample of thousands of people. Data collected from this sample is used to identify a normal range of behavioral factor levels for the adult working population (e.g., what is high, average, and low). Typically, benchmarked samples only allow you to see how someone falls on a spectrum relative to others in the working population. While the PI Behavioral Assessment leverages this benchmarking methodology, it also reaches beyond typical people-to-people differences to provide a lens into people's distinct drives and needs by a comparison of behavioral factors.

For example, even though two people may have equal levels of dominance as compared to each other, one person may have a high level of extraversion relative to their level of dominance while the other is low in comparison. The relational difference between each person's dominance level and extraversion level represents a very different set of drives and needs, and these differences impact how each individual will function at their best in the workplace. Unlike many assessments, The PI Behavioral Assessment provides an especially advanced layer of insight and analysis.

The insight provided allows for a true understanding of what people need to function at their best — what uniquely motivates, drives or even excites them — in comparison to the needs of others. This allows the identification of what makes a candidate or employee "tick" before you manage them and recognize the things that will keep them motivated and working toward your overall business objectives.

Behavioral Drives

The PI Behavioral Assessment predicts four primary personality constructs (see below) and two secondary constructs (Factors E — Decision Making, and M — Response Level). These are "normal" (non-clinical) characteristics that describe, explain and predict day-to-day workplace behaviors.
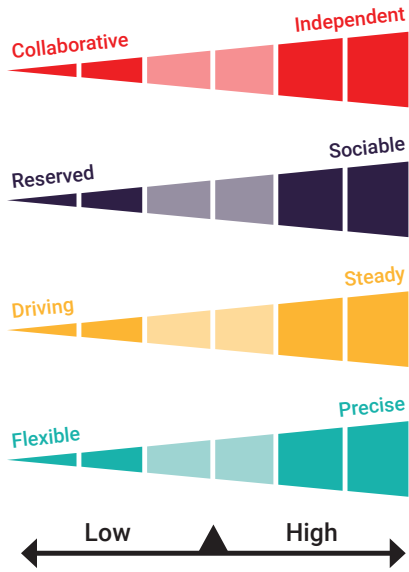
Dominance
HIGH: Independent, assertive and self-confident
LOW: Agreeable, cooperative and accommodating

Extraversion
HIGH: Outgoing, persuasive and socially-poised
LOW: Serious, introspective and task-oriented

Patience
HIGH: Patient, consistent and deliberate
LOW: Fast-paced, urgent and intense

Formality
HIGH: Organized, precise and self-disciplined
LOW: informal, casual and uninhibited

## The PI Behavioral Assessment provides two patterns of an individual's workplace behavior:

1. SELF

The Self pattern is a reflection of an individual's natural drives and needs and how they will naturally react in an environment or in situations.

2. SELF-CONCEPT

The Self-Concept pattern reflects how an individual may be adapting their natural behaviors to the expectations of their current work environment.

Comparing the Self to the Self-Concept pattern can reveal tension or synergy between an individual and their current workplace. This can be used to identify the root of observed behaviors and aid in managing individuals through the hire-to-retire lifecycle.
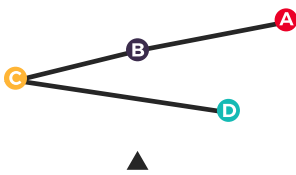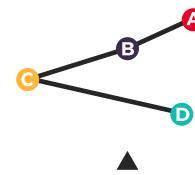

Self
Native Drives — "What comes naturally" in a person's behavior.

Self Concept
How they believe they need to adapt to their work environment.

Synthesis
How the person usually behaves in the work environment.
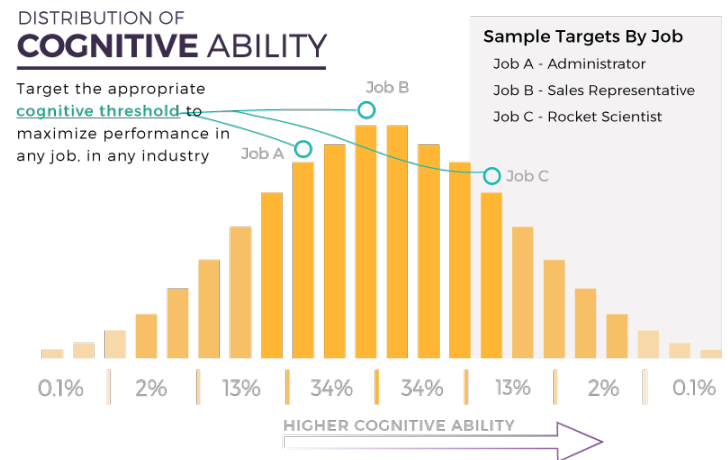
How the PI Cognitive Assessment™ works

The PI Learning indicator is a general, 12-minute timed cognitive ability assessment that measures an individual's capacity to learn quickly, grasp new concepts, adapt to changing circumstances, and understand complexity in the work place. Cognitive ability is considered to be one of the best predictors of training success and job performance.

Conclusive research finds that when measured, specific cognitive abilities are so highly-rated that they represent a single underlying factor known as 'g' – general cognitive ability. This means that when a person scores highly on a 'g' measure like this one, they are likely to be strong in the area of specific cognitive abilities, demonstrating capabilities of performing at higher levels for workplace tasks. Assessment-takers are tasked with completing as many correct answers as possible to a set of 50 questions of varying difficulty that cover:
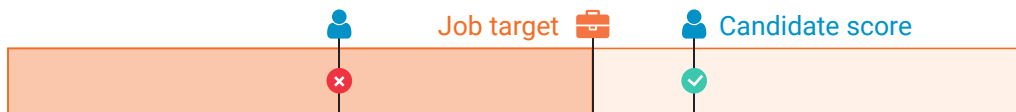
1. **Numerical –** 3 people fail the test. 2 people do not. How many took the test?
2. **Abstract** - A square is split in half diagonally. Which shape results?
3. **Verbal –** Sally laughs when the bell rings. The bell rang twice yesterday. Which of the following is true?

The test-engine builds each assessment so that each candidate experiences a unique set of questions, minimizing the risk of cheating and creating the possibility for a second assessment.

Instead of "good" vs. "bad' scores, it is best to think of PI cognitive scores in terms of fit with the requirements of the role. A "good fit" shows an increased likelihood of success through training and job performance, while weaker fit may indicate difficulties in getting up-to-speed quickly, catching on or figuring things out. It is best to start by identifying a recommended target score based on the role and work environment. The level of job complexity and organizational factors such as the speed of business and structure impact help shape the cognitive demands of the job and are considered when identifying a recommended target score.

DISTRIBUTION OF
COGNITIVE ABILITY

Target the appropriate cognitive threshold to maximize performance in any job, in any industry

Sample Targets By Job
Job A - Administrator
Job B - Sales Representative
Job C - Rocket Scientist

Job A   Job B   Job C

0.1%   2%   13%   34%   34%   13%   2%   0.1%

HIGHER COGNITIVE ABILITY

Cognitive Target

Job target   Candidate score

You can rely on our assessments.

They are reliable.

Test-retest reliability for the PI Behavioral Assessment™ has been evaluated in multiple studies with results showing strong stability in intervals of two weeks to four years and adequate reliability from retest intervals of five to eight years. Internal consistency reliability has been evaluated recently in three studies with an average internal consistency reliability between .82 and .87. The PI Cognitive Assessment™ has been evaluated multiple times over the past four years for test-retest reliability as well with studies showing test-retest parallel form estimates between 0.71 and 0.81. All estimates for PI assessments exceed the lowest boundary of acceptability which is .70.

They are scientifically valid.

Multiple construct validation studies have been conducted through the years comparing behavioral assessment factors to relevant scales in well-established normal personality assessments like the 16PF and NEO PI-R. These studies have shown the strong convergent validity necessary to claim that the PI Behavioral Assessment is construct-valid. For example, the correlation between the assessment's Dominance (A) factor and the 16PF's Independence factor was .47 ($p < .01$) and the correlation between the Extroversion (B) factor and the NEO PI-R Extroversion scale is .63. Strong concurrent validation evidence with similar assessments (E.g., the Wonderlic, Raven's Progressive Matrices, and Cubix Logix) shows that the PI Cognitive Assessment provides a solid measure of cognitive ability.

They predict job performance.

The PI Behavioral Assessment has been investigated in nearly 500 criterion-related validity studies since September of 1976 across almost all jobs and countries. This body of evidence supports the fact that the assessment is indeed consistently related to important workplace outcomes such as tenure, turnover, sales and customer satisfaction. Two recent meta-analyses show that it predicts overall job performance, tenure, sales performance and counterproductive behavior.

The assessment is bias free. In every study in the last two decades, it has been shown that scores do not differ on the basis of age, gender or ethnicity. In addition, there is no evidence to indicate that its inclusion in a company's personnel selection system — either in a compensatory or "multiple-hurdle" selection model — results in adverse impact against any protected class when examining adverse impact via the four-fifths rule, Adverse Impact (AI) Rule or the "two Standard Deviations" rule. The PI Congitive Assessment was built following strict standards of the APA (American Psychological Association), SIOP (Society for Industrial and Organizational Psychologists) and the ITC (International Test Commission).

When paired together, the PI Behavioral Assessment and Cognitive Assessment can increase your chances of predicting on-the-job performance by eight times.

The experience is simple.

The PI Behavioral Assessment is a brief (6.5 minutes on average), untimed, free-choice (as opposed to forced-choice) assessment that presents respondents with a list of adjectives and asks them to identify which ones fit them and their current role. The assessment is available in multiple formats (paper, online, mobile) in more than 70 languages, including English Braille.

The PI Cognitive Assessment determines a general measure of cognitive ability through the delivery of a 12-minute timed assessment format that presents respondents the opportunity to respond to up to 50 multiple choice questions. The score of the PI Cognitive Assessment is calculated simply by the number of correct answers provided in the time allotted. The assessment is available online and can be taken in more than 70 languages.

Our science gets better with age.

The Predictive Index Science team and its solutions have continuously evolved since 1955. PI maintains a Science Advisory Board staffed with university professors, I/O psychologists, and other subject matter experts in psychometrics. The board regularly reviews and evaluates our science and methodology so we can continue to build on the well-established foundation and history that we have, as well as our future.

Learn more about The Predictive Index here:

www.predictiveindex.com

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