



# Analytical, creative, and practical intelligence as predictors of self-reported adaptive functioning: a case study in Russia

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## Abstract

A study was done to test the efficacy of the triarchic theory of intelligence as a basis for predicting self-reported adaptive functioning in a rapidly changing society, that of Russia. Measures of analytical, creative, and practical intelligence were administered to 452 women and 293 men between the ages of 26 and 60 years. Participants also answered questions about their physical health as well as questions about their mental health. These latter questions were divided into ones about depression, anxiety, and self-efficacy. With men and women combined, mixed general linear modeling showed consistent strong effects of practical intelligence on the various kinds of self-reported adaptive functioning. Analytical intelligence also showed effects, although less consistently and strongly. Creative intelligence showed marginal effects. Age and gender were consistent predictors of self-reported adaptive functioning education less so. With men and women separated, creative intelligence showed some significant effects — in particular, predicting poorer physical health in men but predicting lower anxiety in women. Thus, there was some relation of creativity to poorer physical health but better mental health. We conclude that analytical, practical, and creative intelligence all relate in some degree to self-reported everyday adaptive functioning. © 2001 Elsevier Science Inc. All rights reserved.

*Keywords:* Analytical intelligence; Practical intelligence; Creative intelligence; Adaptive functioning

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## 1. Introduction

Virtually all theorists of intelligence agree that intelligence involves the ability to adapt to the environment (“Intelligence and its measurement,” 1921; Sternberg & Detterman, 1986). These theorists also agree that intelligence comprises multiple aspects (see Sternberg, 1994,

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2000). Even theorists who emphasize the importance of general intelligence (e.g., Carroll, 1993; Horn, 1994; Jensen, 1998; Spearman, 1904) have viewed intelligence hierarchically, positing group and/or specific factors that fall under general intelligence (*g*).

Theorists of intelligence have not reached a consensus as to just what the abilities are that constitute intelligence. For example, Spearman (1904) suggested general ability plus specific abilities, whereas Thurstone (1938) suggested seven mental abilities, including verbal comprehension, verbal fluency, number, space, perceptual speed, memory, and inductive reasoning. Thurstone viewed general ability as epiphenomenal. Carroll (1993) posited three strata or levels of abilities with general ability at the top, and Cattell (1971) suggested that intelligence comprises general ability at the top of a hierarchy, followed by fluid and crystallized abilities at the next level.

In recent years, some theorists of intelligence have expanded the range of abilities that they view as constituting intelligence. For example, Gardner (1983, 1999) has proposed eight multiple intelligences without any general ability to unify them. These intelligences include linguistic, logical–mathematical, spatial, musical, bodily–kinesthetic, naturalist, interpersonal, and intrapersonal intelligences. Sternberg (1985, 1997) has proposed that intelligence can be best understood in terms of analytical, creative, and practical abilities, and in various studies cited in these works and elsewhere has suggested the relative independence of these three abilities (see, e.g., Sternberg, Grigorenko, Ferrari, & Clinkenbeard, 1999; Sternberg & Lubart, 1996; Sternberg, Wagner, Williams, & Horvath, 1995). The work described here was motivated by this triarchic theory.

Others have also claimed that academic and practical intelligence are relatively distinct (e.g., Neisser, 1976). In a set of studies (see Ceci & Roazzi, 1994; Nuñez, 1994), Brazilian street children were found to be effective in everyday mathematics but not in the kind of mathematics emphasized in school classrooms and on tests of academic mathematical achievement. Lave (1988) similarly found that the ability of housewives in a supermarket to compute which of several products is the best buy is unrelated to effectiveness in doing similar operations in the context of a paper-and-pencil test.

In the previous work cited above, Sternberg and his colleagues have shown with some success the relative independence of the three proposed aspects of intelligence. For example, a confirmatory factor analysis of a research-based instrument, the Sternberg Triarchic Abilities Test, revealed three distinct and relatively independent factors corresponding to the analytical, creative, and practical aspects of intelligence (as indicated by the latent variables correlation matrix, Sternberg et al., 1999). Other work on creative intelligence (Sternberg & Lubart, 1996) and practical intelligence (Sternberg et al., 1995) has shown the relative independence of the three proposed aspects of intelligence.

The case for a relation between analytical intelligence and various kinds of real-world adaptation has been made so strongly that we believe it is rock solid. Formal meta-analyses (Hunter & Hunter, 1984; Schmidt & Hunter, 1998) as well as other analyses (Herrnstein & Murray, 1994; Hunt, 1995; Jensen, 1998) have shown relations between analytical intelligence (which some investigators equate with “general intelligence”) and a variety of school, job, and personal outcomes, such as school grades, salary, performance ratings, and even marital success. Although this relationship might not hold in all cultures under all circumstances, it has proven to be fairly consistent.

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