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# Constructing Creativity: Wisdom in Everyday Problem Solving

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# Constructing Creativity: Wisdom in Everyday Problem Solving

Audrey DeFrank, Nicholas J. Arreola, and Roni Reiter-Palmon



## Abstract

Creativity is conceptualized as an idea or product that is both original and high in quality (Amabile, 1996). Researchers have sought to better understand the creative process by examining predictors of creative outcomes. Wisdom may play a predictive role in this process. According to Webster (2003), wisdom is the competency in, and application of, critical life experiences to optimize development of the self, as well as others. Research has suggested that wisdom supports creativity at an implicit level (Sternberg, 1985, 1999), and contributes to creative achievements (Helson & Srivastava, 2002).

Process models of creativity have sought to demonstrate cognitive operations that contribute to creativity. Problem construction (PC) is the act of structuring and making sense out of an ill-defined problem and is a cognitive operation found to consistently predict creativity (Okuda, Runco, & Berger, 1991). How we interpret problems may draw on past experiences (Mumford, Reiter-Palmon, & Redmond, 1994), therefore PC may play a key role in explaining the relationship between wisdom and creativity.

## Introduction

Research on the characteristics of creative people include personality traits and cognitive skills

### **Problem Construction / Solution Creativity**

- PC is a consistent predictor of creativity and has been examined as an ability and process
- PC ability predicts quality and original solutions (Mumford, Baughman, Threlfall, Supinski, & Constanza, 1996)
- Active engagement in PC influences quality and originality of solutions (Reiter-Palmon, Mumford, O'Connor-Boes, & Runco, 1997)
- Creativity training has been linked to PC (Baer, 1988)

### **Wisdom**

- Wisdom is predictor of creative task performance (Avey, Luthans, Hannah, Sweetman, & Peterson, 2012)
- Personality traits tolerance for ambiguity and openness are antecedents to both wisdom and creativity (Helson & Srivastava, 2002)
- Sternberg (2003) argues that thinking wisely must have an element of creativity, but creative thinking does not require wisdom

## Hypothesis

- PC mediates the relationship between wisdom and solution creativity

## Method

### **Participants**

- 167 undergraduate students
- Mean Age = 24 ( $SD = 4.06$ )
- 113 females (67.7%), 52 males (31.1%), and 2 (.2%) undisclosed

### **Procedure**

- Completed questionnaires on SONA, UNO's online research tool
- Extra credit in a psychology course for participation was awarded

### **Measures**

- Creativity: Problem Construction and Solution
  - Participants were given a real-world problem and instructed to restate the problem in their own words and provide their most creative solution
  - Restated problems and solutions were evaluated by three raters using a modified version of Amabile's (1996) consensual assessment technique

- Each rating was averaged to create single scores for quality and originality and then multiplied to create a single score of creativity (Harrington, Block, & Block, 1983)
- Problem Construction
  - quality ( $r_{wg} = .81$ ,  $ICC = .88$ )
  - originality ( $r_{wg} = .65$ ,  $ICC = .67$ )
- Problem Solving
  - quality ( $r_{wg} = .82$ ,  $ICC = .87$ )
  - originality ( $r_{wg} = .78$ ,  $ICC = .83$ )
- Wisdom
  - 40 items from Self-Assessed Wisdom Scales (Webster, 2007)
  - Example item: *I have lived through many difficult life transitions*
  - $\alpha = .90$

## Analysis

- The hypothesis was tested using a hierarchical linear regression approach for testing mediated effects (Baron & Kenny, 1993)
- A Sobel test (Preacher & Leonardelli, 2011) was conducted to probe the results

## Model

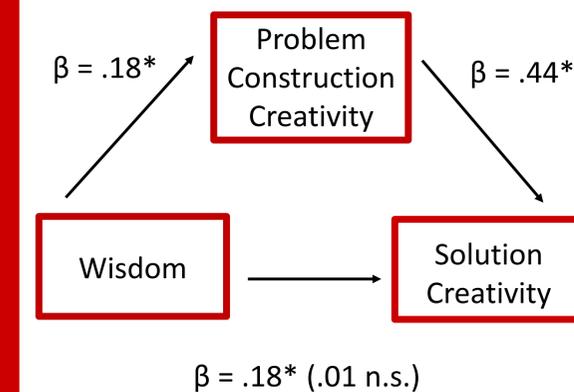


Figure 1. Mediated Regression model indicating  $\beta$  for each variable. In the final step, the effect of wisdom, controlling for PC creativity, dropped to non-significance,  $\beta = .01$

Note: \*  $p < .05$

## Results

- In block 1, wisdom significantly predicted solution creativity  $R^2 = .03$ ,  $F(1, 157) = 5.07$ ,  $p = .03$  [.05, .80]
- When PC Creativity ( $\beta = .44$ ,  $p = .00$ ) was added to the model in block 2, the effect of wisdom disappeared ( $\beta = .01$ ,  $p = .17$ ) and significant incremental validity was observed ( $\Delta R^2 = .17$ ,  $F = 34.08$ ,  $p = .00$ )
- The Sobel test returned  $p = .03$ , confirming the mediation

## Discussion

- Findings supported PC creativity as a mechanism through which wisdom affects solution creativity
- Previous research has shown that PC can be enhanced through targeted training (Hunter, Bedell, & Mumford, 2007), while acquiring wisdom may be a more holistic process. As a result, this study buttressed the notion that creativity is a trainable phenomenon
- Due to the correlational nature of the methodology, we cannot draw causal conclusions
- Sparse research and little agreement exists regarding the conceptual and operational definitions of wisdom, thus limiting generalization and warranting future research in this area