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Construct validity of measures of goal orientation in the approach–avoidance network

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ABSTRACT

The current research examined the reflective, hierarchical measurement structure of approach–avoidance motivation using self-report measures drawn from multiple conceptualizations of approach–avoidance, with a specific focus on the validity of measures of goal orientation. Accordingly, the dominant conceptual status currently afforded goal orientation in the achievement motivation literature relative to competing approach–avoidance constructs can be evaluated. In a psychometric study of 1497 participants, only the approach constructs of Mastery Goal Orientation, Performance-Prove Goal Orientation and BAS Drive, and the avoidance constructs of Performance-Avoid Goal Orientation and Negative Affect, emerged as distinct factors, showed appropriate first order correlations, and were reflective of their predicted second order factor. Results demonstrate that goal orientation constructs are meaningful to individuals and distinct from other approach–avoidance constructs.

1. Introduction

Goal orientation, i.e., the goals individuals implicitly pursue while attaining performance outcomes, has been one of the most widely studied and evolving constructs among motivational researchers (Dweck & Leggett, 1988). Since its inception in the field of educational psychology, goal orientation research has proved useful in predicting various performance criteria in the classroom (e.g., Payne, Youngcourt, & Beaubien, 2007). Although goal orientation has been conceptualized as a chronic preference, and as a construct affected by context (cf. DeShon & Gillespie, 2005), goal orientation is viewed as a relatively stable motivational tendency to approach task competence and/or avoid task incompetence (Elliot, 1999).

There is a two-factor model (Button, Mathieu, & Zajac, 1996), a four-factor model (Elliot & McGregor, 2001), and a six-factor model (Elliot & Thrash, 2001), but the most widely researched model of goal orientation is the three-factor model (Elliot & Church, 1997; VandeWalle, 1997) that includes Mastery Goal Orientation (MGO), Performance-Prove Goal Orientation (PPGO) and Performance-Avoid Goal Orientation (PVGO). Three-factor goal orientation measures have been developed and empirically supported based on factor analyses and convergent/discriminant validity evidence (Elliot & Church, 1997; Horvath, Scheu, & DeShon, 2001; VandeWalle, 1997). Further psychometric research has examined self-reported goal orientation utilizing modern Rasch-model analyses (e.g., Muis, Winne, & Edwards, 2009). Moreover, researchers have examined the relationships between goal orientation assessments and hypothesized antecedents (e.g., cognitive ability, self-esteem) and outcomes (e.g., task-specific self-efficacy, feedback seeking; Payne et al., 2007).

Although goal orientation is embedded in the broader framework of approach–avoidance motivation (Elliot & McGregor, 2001), there is a dearth of research examining whether goal orientation self-reports are meaningful and distinct to individuals when presented alongside a full continuum of approach–avoidance constructs (given the limitations of introspective insights, it is unlikely that individuals can psychologically differentiate the multitude of approach–avoidance constructs using self-report methods; cf. John & Robins, 1994). Accordingly, researchers across domains have called for further psychometric analyses of goal orientation measures in the larger overall context of approach–avoidance (e.g., Hafsteinsson, Donovan, & Breland, 2007).

Many theories posit consistencies in human behavior as a result of individual propensities toward approaching reward and avoiding punishment (Gray & McNaughton, 2000; Tellegen, 1985). Approach and avoidance (which have evolved to promote the growth of organisms and protect them from harm respectively) have been theorized in terms of distal neurophysiological systems (e.g., Behavioral Activation/Inhibition; Gray, 1991), stable trait structures (e.g., Extraversion/Neuroticism; Costa & McCrae, 1992), and proximal social cognitive processes (e.g., Regulatory Focus, Goal Orientation; Elliot, 1999; Higgins, 1999). Elliot and Thrash (2002) have suggested "the approach–avoidance distinction is so conceptually central that it may be used to organize and integrate seemingly diverse approaches to personality" (p. 804).

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Much of the research on approach–avoidance conceptualizations utilizes an individual difference approach that relies on self-report measures. Self-report approach–avoidance items are assumed to be reflective (as opposed to formative; see Edwards, 2011) indicators of first order latent constructs, and the first order constructs represent factors of the second order approach–avoidance motivation construct space. The empirical requirements for reflective, hierarchical measurement models are straight forward: 1) each first order latent construct must demonstrate enough uniqueness to emerge as a distinct factor; 2) first order factors must be appropriately correlated; and 3) each first order factor must be reflective of its predicted second order factor.

1.1. Overview of the present study

The aim of this research is to examine three primary research questions: 1) Do first order goal orientation constructs emerge as distinct factors within the larger approach–avoidance framework? 2) Are the approach goal orientation factors (i.e., MGO and PPGO) positively correlated with other first order approach factors, and is the avoidance goal orientation factor (i.e., PVGO) positively correlated with other first order avoidance factors? and 3) Are the goal orientation factors appropriately reflective of approach and avoidance second order factors?

We do not claim to have included all approach–avoidance motivation conceptualizations, and we appreciate that there are numerous approach–avoidance scales that were not included in the current study. Moreover, the purpose of this research is not to advocate for or against particular measures.

2. Method

2.1. Participants

1700 undergraduates enrolled at a large public university in the Mid-Atlantic U.S. participated in this study. This does not include 203 students who filled out informed consent, but provided no data. 176 participants were excluded from the analysis (via listwise deletion) due to missing data points. Because Little's (1988) MCAR test showed evidence that the data were missing completely at random (χ^2 (11,853) = 11,510.85, $p > .05$), and because less than 1% of data points (i.e., each individual item response from participants that provided data beyond informed consent) were missing, listwise deletion was deemed appropriate. Thus, all analyses were completed on a total sample of N = 1497. This total sample was randomly divided into two split-half samples. Sample 1 (n = 749) was used to determine the factor structure of the data using exploratory factor analysis (EFA), while sample 2 (n = 748) was used to confirm the factor structure using confirmatory factor analysis (CFA).

2.2. Procedure

A three-dimensional goal orientation scale and self-report questionnaires associated with various alternative conceptualizations of approach–avoidance were administered to a large sample of undergraduates. Items were administered in the same order to all participants.

2.3. Measures

2.3.1. Goal orientation

Goal orientation was measured using a 15-item scale developed by Horvath et al. (2001). While a variety of self-report instruments have been developed for the purpose of assessing chronic goal orientation (e.g., Button et al., 1996; Elliot & Church, 1997; VandeWalle, 1997), the Horvath et al. measure was chosen to measure goal orientation because it is a domain-general assessment that incorporates the psychometrically best performing items from other self-report goal orientation scales. The Horvath et al. scale consists of three five-item subscales: Mastery (MGO), Performance-Prove (PPGO) and Performance-Avoid (PVGO). Internal consistency (Cronbach's alpha) coefficients for MGO, PPGO and PVGO in this study were (.84), (.83) and (.78) respectively.

2.3.2. Reinforcement Sensitivity Theory

Reinforcement sensitivity was measured using the 48-item Sensitivity to Punishment and Sensitivity to Reward Questionnaire (SPSRQ) developed by Torrubia, Avila, Molto, and Caseras (2001). 24 items measured Sensitivity to Punishment (SP) while 24 items measured Sensitivity to Reward (SR). Internal consistency coefficients for SP and SR in this study were (.86) and (.81) respectively.

Additionally, reinforcement sensitivity was measured using the BIS/BAS scales developed by Carver and White (1994). The 13-item Behavioral Activation System (BAS) scale consists of three subscales: the Drive subscale (D; 4 items) involves a persistence in pursuing desired goals, the Fun Seeking subscale (FS; 4 items) reflects a desire for and willingness to approach potentially rewarding events, and the Reward Responsiveness subscale (RR; 5 items) focuses on positive responses to the occurrence or anticipation of reward. Internal consistency coefficients for D, FS and RR in this study were (.74), (.70) and (.72) respectively. The 7-item Behavioral Inhibition System (BIS) scale measures concerns over the possible occurrence of aversive events and one's sensitivity to such events. Due to the low internal consistency of the BIS scale in this study (.68), it was excluded from all analyses.

2.3.3. Trait approach

From the perspective of five-factor theory (McCrae & Costa, 1999), two factors in particular are especially relevant to the current research. Extraversion, which features positive emotional sensitivity, is the trait manifestation of approach orientation. On the other hand, Neuroticism, which features negative emotional sensitivity, is the trait manifestation of avoidance orientation (Smillie, 2008). The Extraversion (E; 10 items) and Neuroticism (N; 10 items) subscales from the IPIP Big-Five factor markers (Goldberg et al., 2006) were used. The E subscale reflects a tendency to be assertive and energetic, whereas the N subscale reflects a tendency to be anxious and moody. Internal consistency coefficients for E and N in this study were (.90) and (.89) respectively.

2.3.4. Self-regulatory focus

The Self-Regulatory Focus Questionnaire (RFQ) contains a 6-item promotion subscale (PRO) measuring approach motivational orientation, and a 5-item prevention subscale (PRE) measuring avoidance motivational orientation (Higgins et al., 2001). Internal consistency coefficients for PRE and PRO in this study were (.77) and (.62) respectively. Due to low internal consistency, the 6-item PRO subscale was excluded from all analyses.

2.4. Analysis plan

To examine our research questions, we proceeded with two types of analysis: (1) EFA was used to determine the underlying latent factor structure of the data. This allowed us to assess whether first order goal orientation constructs emerge as distinct factors within the larger approach–avoidance framework. Factor correlations were examined to determine whether the goal orientation factors appropriately correlated with other first order approach–avoidance factors. (2) CFA was used in order to confirm the proposed factor structure and examine fit with the overarching approach–avoidance measurement structure. Again, factor correlations were examined. Finally, we fit four second order confirmatory models to address the question of whether the first order factors were reflective of approach and avoidance second order factors.