



The differential impact of agency and pathway thinking on goal pursuit and university exam performance



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ABSTRACT

The present study examines the interaction between agency and pathway thinking on performance outcomes. The study used a repeated-measures design to examine the role of agency and pathway thinking on goal pursuit emotions (e.g., determination), secondary appraisal, and final exam performance in a group of university psychology students. Consistent with previous mental health research (Arnaud, Rosen, Finch, Rhudy, & Fortunato, 2007; Cramer & Dyrkacz, 1998), the present findings suggest a dominant role for agency thinking in performance. Moreover, there was a reliable interaction between pathway and agency thinking in the prediction of goal pursuit and performance. The interactions consistently revealed that when agency thinking was high, pathway thinking was generally irrelevant to our various measures of goal pursuit. These findings challenge the additive role of agency and pathway thinking suggested by hope theory (Snyder, 2002).

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1. Introduction

Dispositional hope has been identified as an important predictor of academic success and goals pursuit (Snyder et al., 2002). Hope is defined as, “the perceived capability to derive pathways to desired goals, and motivate oneself via agency thinking to use those pathways” (Snyder, 2002, p. 249). As the definition implies, hope integrates *agency* and *pathway thinking*. Agency is the motivation to pursue goals and the belief in one’s capacity to achieve desired goals (Snyder, 2002; Snyder et al., 2002). Pathway thinking is the development of routes to goal achievement.

According to hope theory, the most hopeful individuals are those high on both pathway and agency thinking, both measured in the Dispositional Hope Scale (DHS; Snyder et al., 1991). Those high in hope are anticipated to be the most directed toward goal pursuit and goal success (Snyder et al., 1991). However, research examining the independent roles of agency and pathway thinking demonstrates findings somewhat inconsistent with the predictions outlined by hope theory (Snyder, 2002). In particular, hope theory anticipates that the best outcomes in terms of mental health and goal attainment would be for individuals with both high agency and pathway thinking; that make an *additive* contribution to overall dispositional hope. In contrast, to the proposed additive role of agency and pathway thinking previous research finds that pathway thinking plays a minimal role in predicting mental health outcomes (e.g., Arnau et al., 2007; Cramer & Dyrkacz, 1998). Empirical work suggests a principle role for agency over pathway thinking in

terms of mental health outcomes. The present study, sought to add further clarity to this debate by examining the independent and interactive role of pathway and agency thinking in relation to goal pursuit and goal achievement (i.e., university exam performance).

1.1. The role of agency and pathway thinking on performance and goal attainment

To date, most studies of performance have been restricted to an analysis of overall hope. Previous work demonstrates that dispositional hope is positively related to students’ goal setting and attainment, as well as appraisals of future attainment (Snyder et al., 1991) educational and sporting achievement (Curry, Snyder, Cook, Ruby, & Rehm, 1997; Gilman, Dooley, & Florell, 2006; Snyder et al., 2002), and task performance (Peterson, Gerhardt, & Rode, 2006). A single study examines the independent roles of agency and pathway thinking in goal attainment. Feldman, Rand, and Kahle-Wroblewski (2009) found that *goal-specific* agency thinking, not pathway thinking, predicted goal attainment. Thus, akin to studies examining mental health, agency cognitions were more critical to goal attainment than the perception of goal pathways.

1.2. A possible interaction between pathway and agency thinking

The above analysis of previous work has identified the possibly unique roles of agency and pathway thinking in predicting mental health and performance outcomes. Consistent with this idea, hope theorists have identified the possible unique independent roles of agency and pathway thinking (Snyder, 2002). Given the independence of agency and pathway thinking it is plausible for an individual

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to be high in agency, but low in pathway thinking and vice versa (Snyder, 2002). An individual with high agency, but low pathway thinking may be motivated toward goal achievement, but fail to identify a clear strategy and thus motivation remains uncultivated (Snyder, 2002). Conversely, an individual with low agency and high pathway thinking may perceive a clear route to goal achievement, but lack sufficient self-belief and personal drive to motivate goal pursuit (Snyder, 2002). The various combinations of agency and pathway levels may have varying impacts on goal pursuit and performance. Hope theory does not specify how goal pursuit and attainment are impacted by mismatched agency and pathway thinking. However, it is implicit in hope theory that being high on either agency or pathway thinking is more beneficial than being low on both.

Initially, hope theory implies no interaction between agency and pathway thinking. Snyder (2002) suggests that agency and pathway thinking have an equally antagonistic role when there is a mismatch in their use. However, the antagonism resulting from mismatched agency and pathway thinking has never been formally investigated. Moreover, given previous research demonstrating the principal independent effect of agency, a case can be made that when agency thinking is high, pathway thinking may be less crucial to performance outcomes.

1.3. The present study

To date, no studies have examined the possible differential impact of dispositional agency and pathway thinking on performance. Curry et al. (1997) point to the importance of both goal related cognitions and emotions to goal success. Thus, in order to examine performance holistically this study examined objective performance outcomes (i.e., exam results), but also related secondary appraisals of goal attainment (i.e., perceived control over exam performance). Chang and DeSimone (2001) found that the hope construct was related to secondary appraisals, but not primary appraisal of exams. Moreover, the present study will examine positive approach emotions related to goal achievement (e.g., determined). Hope theory suggests that people high in hope, approach goals with a positive emotional state (Snyder, 1995). Research examining performance goals demonstrates that positive affectivity functions to increase goal directed behaviour promoting achievement of goals (Bagozzi & Pieters, 1998).

The present study has two core aims. The first is to investigate the independent roles of agency and pathway thinking in predicting goal pursuit. The second is to examine the interaction between agency and pathway thinking in relation to the measures of goal pursuit. In particular, this paper seeks to explore whether agency and pathway thinking are additive in facilitating performance and to explore whether incongruent agency and pathway cognitions result in decreased performance.

The following tentative hypotheses are made:

H1. Agency thinking will moderate the relationship between pathway thinking and exam performance. When agency is high, pathway thinking will be unrelated to exam performance. In contrast, when agency is low there will be a positive relationship between pathway thinking and exam performance.

H2. Agency thinking is anticipated to moderate the relationship between pathway thinking and positive approach emotions (e.g., determined). When agency is high, pathway thinking will be unrelated to the experience of positive approach emotions. In contrast, when agency is low there will be a positive relationship between positive approach emotions and pathway thinking.

H3. Agency thinking is expected to moderate the relationship between pathway thinking and control over exam performance. When agency is high, pathway thinking will be unrelated to the experience of perceived control over exam performance. In contrast, when agency is low there will be a positive relationship between perceived control over exam performance and pathway thinking.

2. Method

2.1. Participants and design

A convenience sample of Introduction to Psychology students was used. Of the 654 students enrolled, 481 students (28.9% male; 71.1% female; $M_{age} = 20.42$; $SD_{age} = 5.33$) attempted the Time 1 survey. Of these students, 306 gave permission to access their final exam grades, but 29 of these did not complete the exam. Thus, 277 participants were included in the analysis of exam performance (28% male; 72% female; $M_{age} = 20.42$; $SD_{age} = 5.33$). The Time 2 survey was completed the week of the final exam. Only 98 students (20.4%) attempted this survey (22.2% male; 77.8% female; $M_{age} = 20.95$; $SD_{age} = 6.01$). A chi-square confirmed that the Time 1 and Time 2 gender ratio was not statistically different ($\chi^2(1) = 2.401, p = .156$).

2.2. Materials and procedure

Time 1 data was collected as part of 26 tutorial classes. Time 2 data was collected via email invitation within the week of the final exam. All self-report measures except for gender, age, conscientiousness and neuroticism were measured at both time points. These measures were included as covariates, in the model of performance, because of their relationship to exam performance or dispositional hope (e.g., Chapell et al., 2005; Duff, Boyle, Dunleavy, & Ferguson, 2008).

Dispositional hope was measured using the DHS (Snyder et al., 1991) a 12-item measure of hope consisting of four agency and pathway items, and four distracter items. Respondents were asked to indicate on a scale from 1(definitely false) to 4(definitely true) the degree to which these statements describe them across time and situations. The internal reliability of the pathway and agency sub-constructs was satisfactory ($\alpha = .69$ and $\alpha = .70$, respectively).

Studies examining the factor structure of the DHS have yielded mixed results regarding whether a one or two-factor structure is most appropriate (Snyder et al., 1991). Having noted this, analyses on student populations appear to consistently suggest that a two-factor model comprised of the agency and pathway sub-constructs is a better fit to the data than a one-factor model (Babyak, Snyder, & Yoshinobu, 1993; Snyder et al., 1991; Roesch & Vaughn, 2006). A confirmatory factor analysis was carried out to confirm the two-factor structure of the scale.

Conscientiousness and neuroticism were measured using the two item conscientiousness and neuroticism sub-scales from the Ten Item Personality Index (TIPI; Gosling, Rentfrow, & Swann, 2003). This measure consists of adjectives (e.g., disorganised) and the participant is required to indicate the degree to which these attributes describe themselves on a scale from 1(strongly disagree) to 7(strongly agree). The neuroticism scale demonstrated satisfactory internal reliability ($\alpha = .70$); however, the internal reliability for the conscientiousness scale was below the satisfactory level ($\alpha = .62$). The low alpha's are expected given that only two items are used per dimension (Ehrhart et al., 2009).

Positive approach emotions were measured using four positive approach emotions from the Positive and Negative Affect Scale (PANAS; Tellegen, Watson, & Clark, 1988): determined, excited, active, and attentive. Participants rated the extent that they had felt these emotions in the last week in relation to the psychology final exam. Ratings were made on a five-point response scale 1(very slightly or not at all) to 5(extremely). These items demonstrated satisfactory internal reliability (Time 1 $\alpha = .73$ and Time 2 $\alpha = .76$).

Perceived control of exam performance (secondary appraisal) was designed for the purpose of this study. Four items measured perceived control of psychology exam performance (e.g., "I control

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