



## Brief Report

# Hope uniquely predicts objective academic achievement above intelligence, personality, and previous academic achievement

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## ABSTRACT

A 3-year longitudinal study explored whether the two-dimensional model of trait hope predicted degree scores after considering intelligence, personality, and previous academic achievement. A sample of 129 respondents (52 males, 77 females) completed measures of trait hope, general intelligence, the five factor model of personality, divergent thinking, as well as objective measures of their academic performance before university ('A' level grades) and final degree scores. The findings suggest that hope uniquely predicts objective academic achievement above intelligence, personality, and previous academic achievement. The findings are discussed within the context of how it may be fruitful for researchers to explore how hope is related to everyday academic practice.

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## 1. Introduction

Trait hope has been described as a cognitive personality trait around motivations towards goals that comprise two particular orientations to thinking around achieving those chosen goals; *agency*, which reflects an individual's determination that those goals can be achieved, and *pathways*, which reflects an individual's belief that successful plans and strategies can be generated, or are available, to reach those goals (Snyder et al., 1991). Theoretically, hope should be positively related to academic achievement because, if academic achievement is assumed to be a goal, hope is conceptualized as creating adaptive goal-specific expectancies and behaviors, which leads to a positive outcome of that goal. A number of studies have supported these theoretical predictions (e.g., Curry, Snyder, Cook, Ruby, & Rehm, 1997; Snyder et al., 2002), however it is not clear from these studies whether: (a) the relationship between hope and achievement is unique or simply due to third variables, and (b) which facet of hope is responsible for this effect.

Snyder et al. (2002) conducted a 6-year longitudinal study into the impact of hope on academic achievement. Participants were subdivided into high, medium, and low hope groups using the Dispositional Hope Scale (Snyder et al., 1991). Hope was correlated with mean grade point average (GPA) scores ( $r = .21$ ), and led to a higher GPA 6 years later after controlling for baseline scores.

Curry et al. (1997) compared hope scores amongst American college athletes and found that trait hope significantly predicted end of semester GPA scores ( $R^2 = .08$ ). However, it is not clear from this research whether it was hope leading to improved academic performance, or whether these findings were simply a reflection of the effects of general intelligence or other personality traits such as conscientiousness. Finally, Ciarrochi, Heaven, and Davies (2007), Leeson, Ciarrochi, and Heaven (2008) and Rand (2009) have found that trait hope predicted academic achievement, both when considered as part of a 'positive thinking' second order personality factor (alongside either optimism or self-esteem and attributional style) or as a distinct variable (independent of measures verbal and numerical intelligence).

This latter study brings forward a first consideration to make when comparing hope with academic achievement. The literature suggests that intelligence and personality variables are related to both hope and academic achievement, thus testing the theoretical role of hope requires demonstrating incremental variance beyond these third variables. General intelligence is strongly related to academic achievement. For example, Jencks (1979) reported correlations between general intelligence and academic achievement ranging from  $r = .40$  to  $r = .63$  for six longitudinal studies in the USA, and Kaufman and Lichtenberger (2005) provide a review of key papers examining general intelligence and school attainment and achievement and conclude that the average correlation between general intelligence and a number of school indicators is around  $r = .50$ . In addition, there is a descriptive resemblance between one of the hope traits, pathways (belief in the ability to

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generate creative ideas by exploring many possible solutions), and a specific intelligence, *divergent thinking* (the ability to generate creative ideas by exploring many possible solutions). Consequently, hope pathways traits may simply reflect aspects of divergent thinking. Additionally, research suggests there is a significant positive correlation between divergent thinking and academic achievement (Feldhusen, Treffinger, Van Mondfrans, & Ferris, 1971). Given the actual and possible shared variance between hope, academic achievement, and intelligence, be it general intelligence or divergent thinking, it is not clear whether hope *per se* leads to higher academic achievement, or whether more hopeful people do better academically simply because they are more intelligent. Therefore, it is important to control for both general intelligence and divergent thinking when examining the relationship between hope and academic achievement.

Regarding personality, conscientiousness has emerged as a particular predictor of academic achievement, with the other Big Five traits implicated to a lesser degree. O'Connor and Paunonen's (2007) review of major studies in the area found that academic achievement was consistently significantly correlated with conscientiousness (average  $r = .22$ ), but inconsistently related with openness to experience, extraversion, agreeableness, and neuroticism (average  $r$ s for each trait ranged from  $|.05|$  to  $|.06|$ ). Hope has also been found to load on a conscientiousness factor (Cartwright & Peckar, 1993). As with the intelligence variables, it is possible that hope only appears to lead to greater academic achievement due to more hopeful people also being more conscientious. Therefore, it is also important to control for conscientiousness when examining the relationship between hope and academic achievement.

A second consideration in the literature is the consideration of which facet of hope is related to academic achievement. It seems incongruous that, given the theoretical distinction between hope agency and hope pathways, that previous studies look at the relationship between hope and academic achievement (Curry et al., 1997; Snyder et al., 2002) have simply aggregated the agency and pathways facets to a single total score. Furthermore, recent studies have suggested that the two facets have meaningfully different correlates and outcomes. Day and Maltby (2005) found that agency and pathways hope had different sized correlation with anticipated completion of academic goals. Creamer et al. (2009) investigated trait hope among injury survivors and found that agency and pathways hope had different sized correlations with a variable related to childhood trauma. Geraghty, Wood, and Hyland (2010) showed that the hope facets can be dissociated with both the facets predicting dropout from self-help interventions but in opposite directions. Theoretically, agency and pathways may have a positive impact on academic achievement, but in different ways. First, agency may predict future higher academic achievement via a determination that academic goals can be achieved. Second, pathways would predict future higher academic achievement via a belief that successful plans and strategies can be generated and are available to achieve academic goals.

This study aims to determine whether hope can provide incremental validity in predicting future academic achievement over general intelligence, divergent thinking, and conscientiousness, to test theoretical predictions that trait hope uniquely predicts academic achievement. In addition, this study explores whether a distinction can be made between which of the hope facets is responsible for this effect.

## 2. Method

### 2.1. Sample

One hundred and twenty-nine respondents (52 males, 77 females) were sampled from two university undergraduate student

cohorts in the United Kingdom. Ages ranged from 18 to 21 years at the start of the study ( $M = 18.56$ ,  $SD = .7$ ). Participants were predominantly White (82.9%), with the next highest represented ethnicities being Asian (10.9%) and Black (3.9%). Participants volunteered for the study after being approached for their potential participation in a first year class taught by one of the authors. Respondents were given full disclosure about the nature of the study and consented to being re-contacted at one subsequent time point.

### 2.2. Measures

Data collection corresponded to three time points in the students' undergraduate degree path. The first time point was the students' entry points into university derived from their 'A' level grades; the United Kingdom equivalent to USA college testing scores. Students provided written permission for this to be obtained from their academic records.

The second time point was during students' first year of undergraduate academic study. At this point the students completed the following measures.

### 2.3. Hope

The *Trait Hope Scale* (Snyder et al., 1991), comprising the 4-item Agency subscale (e.g., 'I energetically pursue my goals' [item 2]) and the 4-item Pathways subscale (e.g., 'There are lots of ways around any problem' [item 4]). Items are scored on an 8-point Likert scale, anchors ranging from '1 = Definitely False' to '8 = Definitely True'. Both subscales have adequate internal reliability, with Cronbach's alphas ranging from .70 to .84 for the Agency subscale, and from .63 to .86 for the Pathways subscale (Snyder et al., 1991).

### 2.4. Personality

The *Five Factor Model of Personality* was assessed via the 50-item International Item Personality Pool Five Factor Personality Measure of Extraversion, Neuroticism, Agreeableness, Conscientiousness, and Openness to Experience (Goldberg et al., 2006). These five subscales each comprise 10 items to measure the five main personality domains. Items are scored on 5-point Likert scale, anchors ranging from '1 = Very Inaccurate' to '5 = Very Accurate'. Internal reliability for the scales has been demonstrated to range from .77 to .86. Convergent validity for the scales has been demonstrated through correlations ranging from .85 to .92 with the NEO Personality Inventory (Goldberg et al., 2006).

### 2.5. General intelligence

The *Raven's Advanced Progressive Matrices* (Raven, Raven, & Court, 2000) was used to measure general intelligence. The advanced form of the matrices contains 48 items, presented as a set of 12 (set I), which familiarize people with the test, and then a set of 36 (set II) items, which can be computed to produce raw scores to measure general intelligence. Items become increasingly difficult as the participant progresses through set II. It is regarded as the best psychometric measure of general intelligence (Jensen, 1998).

### 2.6. Divergent thinking

Divergent thinking was assessed by three 5-min tests using Guildford's (1967) unusual uses for three inanimate objects that are presented as a stimulus. For this study we used three of the five suggestions of Hudson (1967), a brick, a blanket, and a paperclip

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