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Hope, self-efficacy, optimism, and academic achievement: Distinguishing constructs and levels of specificity in predicting college grade-point average☆

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ABSTRACT

Research shows that Snyder's (1994) goal-directed hope construct predicts college GPA. However, studies have documented relatively weak relationships between these variables, possibly because hope was measured regarding goals *generally*, not academic-specific goals. Additionally, most studies have not compared variance accounted for in GPA by hope relative to other expectancy constructs. In a cross-sectional sample of 89 college students, we administer the Hope Scale, Domain Specific Hope Scale (academic subscale), General Self-Efficacy Scale, Academic Self-Efficacy Scale, Life Orientation Test-Revised (optimism), among others. We test a path-analytic model where academic-specific expectancies (e.g., academic hope, academic self-efficacy) have direct paths to GPA, and generalized expectancies (e.g., general hope, general self-efficacy) have paths to these academic-specific variables. A modified version of this hypothesized model demonstrated good fit. Generalized hope predicted academic-specific hope and academic self-efficacy, both of which then predicted GPA. Optimism and general self-efficacy did not predict academic-specific expectancy variables nor GPA.

Grade-point average (GPA) is one of the most important indicators of college success, potentially influencing both financial aid in the short term and career prospects in the long term. This study seeks to examine the relationship between hope and GPA in college students.

Two decades of research show that the cognitive, goal-directed conceptualization of hope developed by Snyder (1994) predicts a variety of outcomes in college students, including GPA. We detail this conceptualization of hope in the subsequent section. The notion that hope predicts academic achievement is not a new one. Research supporting this relationship has been both cross-sectional (Buckelew, Crittendon, Butkovic, Price, & Hurst, 2008; Davidson, Feldman, & Margalit, 2012) and prospective (Rand, Martin, & Shea, 2011; Snyder et al., 2002).

The present study augments this literature in two ways: First, the aforementioned studies have documented only relatively weak relationships between hope and GPA, even using cross-sectional data. Correlations ranged between .18 and .29. One explanation for the lack of a stronger relationship may be the very general way hope is typically measured. In most studies, hope was assessed using the Adult Hope Scale (AHS; Snyder et al., 1991), which measures hope regarding respondents' life goals *in general*, not necessarily their academic goals specifically. The present study measures hope both in this general way and an academic-specific way. Second, few past studies have examined hope's ability to account for variance in GPA relative to other related and widely used expectancy constructs. Namely, self-efficacy and optimism have both been shown to predict GPA (Chemers, Hu, & Garcia, 2001; Segerstrom & Nes, 2006). Though past studies have examined combinations of hope with one of these additional constructs at a time, to our knowledge no study has analyzed all three (i.e., hope, self-efficacy, and optimism) simultaneously in predicting GPA. When all three variables are modeled together, it is unknown to what degree they overlap or which are better predictors of GPA. Thus, we assess self-efficacy and optimism in addition to hope.

Before detailing the present study, it may be helpful to explain Hope Theory in greater detail, review past hope research, and discuss the relationships between hope and other expectancy constructs.

1. Hope Theory

The model of hope used throughout this article is based on Snyder's (1994) Hope Theory, probably the most researched conceptualization of hope during the past two decades. Accordingly, hope is the cognitive process allowing individuals to plan for and execute the pursuit of goals. Goals are anything that an individual desires to get, do, be, experience, or create. They can vary substantially in terms of scope as well as among people and life domains (i.e., academics, family, romantic life, etc.).

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According to Snyder et al. (1991), hope is "a cognitive set that is based on a reciprocally-derived sense of successful agency (goal-directed determination) and pathways (planning to meet goals)" (p. 571). The first of these components, agency, consists of "the thoughts that people have regarding their ability to begin and continue movement on selected pathways toward those goals" (Snyder, Michael, & Cheavens, 1999). As in Watty Piper's *The Little Engine That Could*, agency thoughts such as "I think I can," provide the motivation to initiate and sustain the goal-pursuit process (Piper, 1978; for empirical support, see Snyder, LaPointe, Crowson, & Early, 1998). The second component, pathways thinking, consists of cognitions regarding planning routes to reach goals. Because some plans may not succeed, hopeful people are theorized to produce multiple pathways in order to circumvent possible obstacles (Snyder, 2002). It is worth noting, however, that the subjective experience of hope does not depend on the existence of concrete pathways, but rather upon a belief or expectancy that such effective pathways exist (Snyder et al., 1991).

Researchers have generated a sizable literature demonstrating relationships between hope and such variables as athletic performance (Curry & Snyder, 2000; Curry, Snyder, Cook, Ruby, & Rehm, 1997), psychological adjustment (Chang & DeSimone, 2001; Feldman & Snyder, 2005), coping with physical illness (Irving, Snyder, & Crowson, 1998), life meaning (Feldman & Snyder, 2005), finding benefit in adversity (Tennen & Affleck, 1999), and general goal achievement (Feldman, Rand, & Kahle-Wrobleski, 2009), among others.

It is not difficult to see why hope may be related to GPA. School is a goal-directed activity (Alkharusi, 2010). To succeed likely requires setting goals (e.g., getting an A on a test, giving an excellent presentation), determining pathways for achieving those goals (e.g., attending class, reading course material, studying), and generating agency to move the process forward.

2. Hope, self-efficacy, and optimism

Hope is a cousin of other expectancy constructs like self-efficacy and optimism. All three of these constructs concern expectancies regarding the attainment of future positive states. As such, there have been calls for theoretically and empirically distinguishing hope (Aspinwall & Leaf, 2002; Tennen, Affleck, & Tennen, 2002).

Contrasting hope with self-efficacy, Snyder (1995, 2002) has written that self-efficacy is concerned principally with the expectancy that one can perform *behaviors*, whereas hope is concerned with expectancies that one can attain *goals*. Consistent with this assertion, Bandura (1977) has contrasted self-efficacy with expectancies of goal outcomes in the following way: "Outcome and efficacy expectations are differentiated, because individuals can believe that a particular course of action will produce certain outcomes, but if they entertain serious doubts about whether they can perform the necessary activities, such information does not influence their behavior." (p. 193). Self-efficacy is largely agnostic regarding whether an action will lead to goal outcomes, whereas hope concerns expectancies that one can achieve goals through the combination of goal-directed planning (pathways) and motivation (agency).

Optimism, on the other hand, is a type of outcome expectancy. Contrasting hope with optimism, Snyder (1995, 2002) has written that optimism is primarily concerned with the expectancy that positive outcomes will occur without regard to one's actions, whereas hope is explicitly concerned with expectancies that attainment of positive outcomes will occur through one's own planning (pathways) and motivation (agency). Scheier, Carver, and Bridges (2001) define optimism as "expectancies that are generalized—expectancies that pertain more or less to the individual's entire life space" (p. 190). This difference in the necessity of one's personal involvement in bringing about goals has led Rand et al. (2011) to suggest that, in highly-controllable situations like school, hope may be a stronger predictor of performance and well-being than optimism.

Empirically, research has shown that hope accounts for variance over and above these variables in pain tolerance (Snyder et al., 2005), problem-focused coping (Snyder et al., 1991), and mental illness symptoms (Snyder et al., 1991) in college students, academic effort in children (Lackaye & Margalit, 2006), and quality of life in substance-abusing homeless veterans (Irving, Seidner, Burling, Pagliarini, & Robbins-Sisco, 1998), among others. Moreover, measures of hope have been shown to load on different factors than optimism (Bryant & Cvengros, 2004; Gallagher & Lopez, 2009; Magalleta & Oliver, 1999) and self-efficacy (Magalleta & Oliver, 1999).

With regard to GPA, Rand et al. (2011) assessed both hope and optimism at the beginning of students' first semester in law school. Path analysis showed that hope but not optimism predicted first-semester GPA. In another study, Rand (2009) demonstrated that the shared variance between hope and optimism predicted grades in undergraduates. In addition, hope maintained a unique, indirect effect on grades through grade expectancy, whereas optimism did not. Levi, Einav, Ziv, Raskind, and Margalit (2013) similarly found that hope indirectly predicted grades through grade expectancies in tenth graders. They further found that hope contributed to grade expectancies, whereas self-efficacy did not. No research to date models the comparative contributions of all three expectancy constructs (optimism, self-efficacy, and hope) together in predicting GPA. Given the past findings just cited demonstrating that hope often accounts for variance in outcomes (particularly GPA) over and above both optimism and self-efficacy, we expected hope to be the best predictor of GPA in the present study.

3. Generalized versus specific expectancies

In the Rand (2009) study just mentioned, neither hope nor optimism directly predicted students' grades. However, hope uniquely predicted grade expectancies, which, in turn, predicted grades. This points to the potential importance of assessing expectancies at the appropriate level —general vs. academic domain-specific.

Hope can be assessed at both the general as well as the domain-specific levels. The Adult Hope Scale (AHS; Snyder et al., 1991) assesses hope for goals in general, without reference to a particular life domain. In contrast, the Domain-Specific Hope Scale (DSHS; Sympson, 1999, 2000) measures hope in six domains: social, academic, family–home, romantic, work, and leisure.

Historically, many researchers have assessed self-efficacy for particular domains or behaviors. Bandura (1997) has advocated this approach, writing that "efficacy beliefs should be measured in terms of particularized judgments of capability that may vary across realms of activity, under different levels of task demands within a given activity domain, and under different situational circumstances" (p. 42). With regard to academics, the Academic Self-Efficacy Scale (ASES) assesses such domain-specific self-efficacy. However, research suggests that self-efficacy beliefs also can be generalized across domains (e.g., Scholz, Doña, Sud, & Schwarzer, 2002). Thus, researchers have developed instruments such as the General Self-Efficacy Scale (GSES; Schwarzer & Jerusalem, 1995) to assess individuals' perceptions of their ability to perform overall, across situations. Of note, there is disagreement among self-efficacy researchers regarding the utility of the general self-efficacy construct, with some asserting that self-efficacy in principle should always be measured in a more specific manner.

Optimism, by definition, is the *generalized* expectancy of positive outcomes (Carver & Scheier, 2002). Thus, no domain-specific measure has been widely used. Scheier and Carver (1985) write, "Optimists often appear to be optimistic 'in general,' in that their positive expectations are not limited to a particular behavioral domain." (p. 220). The Life Orientation Test, Revised (LOT-R, Scheier, Carver, & Bridges, 1994) is the most frequently used measure of general optimism.

4. Present study

As mentioned previously, the present study augments past research in two ways: First, past studies have not examined hope's ability to account for variance in GPA simultaneously with optimism and self-efficacy. Given that these are related constructs, but nonetheless emphasize different aspects of positive expectancy, such an analysis would be useful. Second, most past work has documented relatively weak relationships between GPA and hope, possibly because hope has been measured in a general way rather than a way specific to academic goals. Thus, we utilize both the AHS and academic subscale of the DSHS to measure hope. We similarly measure self-efficacy at both the general level (using the GSES) as well as the academic-specific level (using the ASES). Because optimism has been conceptualized primarily at the general level, only a generalized measure was used (the LOT-R).

Using path analysis, we test a model with the following characteristics: Academic-specific expectancy variables (academic hope, academic self-efficacy) were hypothesized to predict GPA directly, whereas generalized expectancy variables (general hope, general self-efficacy) were hypothesized to predict their academic-specific counterparts. General optimism was hypothesized to directly predict GPA. Though expectancy variables at each level (general and academic-specific) were expected to correlate with one another, it was expected that the best predictor of GPA would be academic hope.

5. Method

5.1. Participants

Participants were 89 college students (27 males, 62 females) from a Northern California university who took part in the study as one means of fulfilling the requirements of their introductory psychology courses. The mean age was 19.35 ($SD = 2.25$). Most participants were freshmen (62%), with 30% sophomores, 6% juniors, and 2% seniors. The sample was primarily Caucasian (60%), with fewer participants identifying as Asian or Asian American (12%), Latino (9%), African American (2%), mixed ethnicity (12%), or "other" (5%).

5.2. Procedure

Data were collected as part of a larger study examining the relationship between hope and non-conscious goals. The full procedure is reported here, though results related to much of the full study will be reported elsewhere.

Participants reported to lab rooms one at a time. After signing the informed consent form, they completed a scrambled word task in which they made sentences from 30 sets of words. This was an experimental manipulation unrelated to the hypotheses in the present article. For participants in the experimental condition, some of these scrambled sentences contained words related to academics, whereas for participants in the control condition, these sentences were composed of neutral words. The manipulation was designed to prime the goal of academic achievement in half of participants. To determine whether condition had any effect on study measures, a series of between-subjects one-way ANOVAs were performed with condition serving as the independent variable and each of the study measures serving as the dependent variables (i.e., AHS, DSHS, GSES, ASES, LOT-R, and GPA). All analyses were non-significant; thus, for the hypotheses being tested in the present article, there were no effects of condition.

Next, all participants completed a computer-aided implicit attitude measure (Ferguson, 2008). Again, this portion of the procedure is unrelated to the hypotheses being tested here. Participants viewed a number of words and indicated their personal evaluation of each word by pressing keys marked "good" or "bad" as quickly as possible.

Last, participants completed a packet of questionnaires. These questionnaires are the source of data for the hypotheses being tested in the present article (see Section 5.3).

5.3. Measures

5.3.1. Adult Hope Scale (AHS)

The AHS (Snyder et al., 1991) is a measure of hope for goals *in general*, rather than for a specific goal or domain. It contains 4 items tapping pathways thinking, 4 tapping agency thinking, and 4 distracters. Respondents rate each item on a 1 (*definitely false*) to 8 (*definitely true*) scale. Sample pathways and agency items, respectively, are "There are lots of ways around any problem," and "I energetically pursue my goals." Researchers have provided evidence supporting the reliability and validity of the AHS (Snyder et al., 1991). In the present sample, the AHS had a Cronbach's alpha of .79.

5.3.2. Domain-Specific Hope Scale (DSHS)

The DSHS (Sympson, 1999) is a measure of hope in different life domains. This 48-item measure contains 6 domain scales: social, academic, family-home, romantic, work, and leisure (Snyder, Cheavens, & Sympson, 1997). Only the 8-item scale for the academic domain was used in the present study. Respondents rate each item on a 1 (*definitely false*) to 8 (*definitely true*) scale. Sample academic pathways and agency items, respectively, are "There are lots of ways to meet the challenges of any class," and "I energetically pursue my school work." Researchers have provided evidence supporting the reliability and validity of the DSHS (Sympson, 1999; see Magyar-Moe, 2009). In the present sample, the academic hope scale had a Cronbach's alpha of .85.

5.3.3. General Self-Efficacy Scale (GSES)

The GSES (Scholz et al., 2002; Schwarzer & Jerusalem, 1995) is a measure of general self-efficacy. It consists of 10 items. Respondents rate each item on a 1 (*not true at all*) to 4 (*exactly true*) scale. Sample items include "I am confident that I could deal efficiently with unexpected events," and "I can usually handle whatever comes my way." Researchers have provided evidence supporting the reliability and validity of the GSES (Scholz et al., 2002). In the present sample, the GSES had a Cronbach's alpha of .82.

5.3.4. Academic Self-Efficacy Scale (ASES)

The ASES (Chemers et al., 2001) is an 8-item measure of self-efficacy in the domain of academics, reflecting students' confidence in their ability to perform well in school. Respondents rate each item on a 1 (*very untrue*) to 7 (*very true*) scale. Sample items include "I am good at research and writing papers," and "I usually do very well in school and at academic tasks." Researchers have provided evidence supporting the reliability and validity of the ASES (Chemers et al., 2001). In the present sample, the ASES had a Cronbach's alpha of .83.

5.3.5. Life Orientation Test-Revised (LOT-R)

The LOT-R (Scheier et al., 1994) is a 10-item scale of optimism, 4 items of which are "fillers" and not scored. Respondents answer each item on a Likert-type scale ranging from 1 (strongly agree) to 5 (strongly disagree). Sample items include "In uncertain times, I usually expect the best," and "I hardly ever expect things to go my way" (reverse scored). Researchers have provided evidence of the reliability and validity of the LOT-R (Scheier et al., 1994). In the present sample, the LOT-R had a Cronbach's alpha of .85.

5.3.6. GPA

Cumulative grade point average was assessed through self-report. On the demographic survey, we asked students, "What is your GPA at Santa Clara University?" We did not think it necessary to access students' GPAs through the university registrar because research shows high correlations between self-reported GPA and GPA assessed through

student records (Cassady, 2001). In a recent meta-analysis of 29 studies including 56,265 college and high school students, Kuncel, Credé, and Thomas (2005) found a mean sample-size-weighted correlation of .84 between self-reported and registrar-reported GPA. The mean correlation for the 12 studies containing only college students (N = 12,089) was even higher, at .90.

5.4. Analyses

Path analysis was conducted using AMOS 21 (Arbuckle, 2012), which enables testing of theoretical causal models based on the observed pattern of relationships among variables. Consistent with accepted path-analytic practices (Byrne, 2011), our model contains two types of hypothesized paths: those symbolized by single-headed arrows on the path diagram, and those symbolized by two-headed arrows (see Fig. 1). We will use the terminology of "prediction" to refer to the single-headed-arrow paths and the terminology of "correlation" to refer to the double-headed-arrow paths. However, it should be noted that the design of the study is cross-sectional; these terms are used as a convention to refer to the types of modeled paths and do not imply a prospective study. We address this further in Section 7.

We used three goodness-of-fit statistics to evaluate the hypothesized model: chi-square, root mean square error of approximation (RMSEA), and comparative fit index (CFI). Chi-square measures the absolute fit between the hypothesized model and the observed pattern of relationships. Acceptable fit is indicated by a non-significant chi-square, which denotes no difference between the hypothesized and observed patterns of relationships. RMSEA adjusts the measure of absolute fit according to the complexity of the hypothesized model, with simpler models being favored. Lower values of RMSEA indicate better fit, with values of .06 or less representing acceptable fit (Hu & Bentler, 1999). Finally, the CFI is an index of incremental fit comparing the hypothesized model to a null model in which all variables are uncorrelated. Higher values of CFI indicate better fit, with values of .95 or greater representing acceptable fit (Hu & Bentler, 1999).

6. Results

6.1. Descriptive statistics and zero-order correlations

All study variables were correlated with one another. Means, standard deviations, and correlations are presented in Table 1. The variables most strongly correlated with GPA were academic hope (.69) and academic self-efficacy (.59), both of which are domain-specific expectancies. A Steiger's Z-test (Meng, Rosenthal, & Rubin, 1992) indicated that these two relatively large correlations are not significantly different from one another, $Z = 1.52$, $p > .05$. The correlations between the generalized expectancy variables and GPA, however, were somewhat smaller. Specifically, the correlation between general hope and GPA (.32) was significantly smaller than the correlation between academic hope and GPA (.69), $Z = 4.42$, $p < .01$; as were the correlations between general self-efficacy and GPA (.31), $Z = 5.12$, $p < .01$, and between optimism and GPA (.18), $Z = 5.36$, $p < .01$.

Table 1
Correlations among study variables.

Variables	1	2	3	4	5	6	*M* (*SD*)
1. General hope (AHS)	–	.57**	.67**	.55**	.49**	.32**	50.52 (6.40)
2. Academic hope (DSHS)		–	.39**	.66**	.23*	.69**	50.20 (7.41)
3. General Self-Efficacy Scale (GSES)			–	.39**	.35**	.31**	31.36 (3.83)
4. Academic Self-Efficacy Scale (ASES)				–	.21*	.59**	43.48 (6.14)
5. Optimism (Life Orientation Test-Revised)					–	.18*	14.39 (4.66)
6. GPA						–	3.24 (.47)

Note.
** $p < .01$.
* $p < .05$.

6.2. Hypothesized model

Using path analysis, we tested a model with the following characteristics (see Fig. 1): Academic-specific expectancy variables (academic hope, academic self-efficacy) were given direct paths to GPA, whereas generalized expectancy variables (general hope, general self-efficacy) were given paths to each of their academic-specific counterpart variables. General optimism was given a direct path to GPA, because optimism is by definition a generalized expectancy. Consistent with common path analytic practices, all exogenous variables were allowed to correlate.

The hypothesized model displayed inadequate fit to the data, $\chi^2(6) = 26.29$ ($p < .001$), RMSEA = .20, CFI = .90. In Amos, modification indices can be requested, suggesting the addition of paths to improve fit. One path was suggested from general hope to academic self-efficacy, leading to the following fit: $\chi^2(5) = 7.90$ ($p = .16$), RMSEA = .08, CFI = .99. We conducted a nested model chi-square test, which showed a significant decrease in chi-square over the hypothesized model, indicating improved fit, $\chi^2_{diff}(1) = 18.39$, $p < .001$. Nonetheless, the value of RMSEA was still inadequate, though modification indices did not suggest additional paths.

RMSEA favors simpler models, so eliminating unnecessary paths can increase this fit index. In Amos, the "specification search" procedure can be used to estimate fit indices if paths are fixed at zero (i.e., dropped from the model). Because two paths displayed non-significant beta weights near zero (.01 from general optimism to GPA, and .03 from general self-efficacy to academic self-efficacy), we requested fit indices if either or both were removed. The best fit was achieved by removing both of these paths.

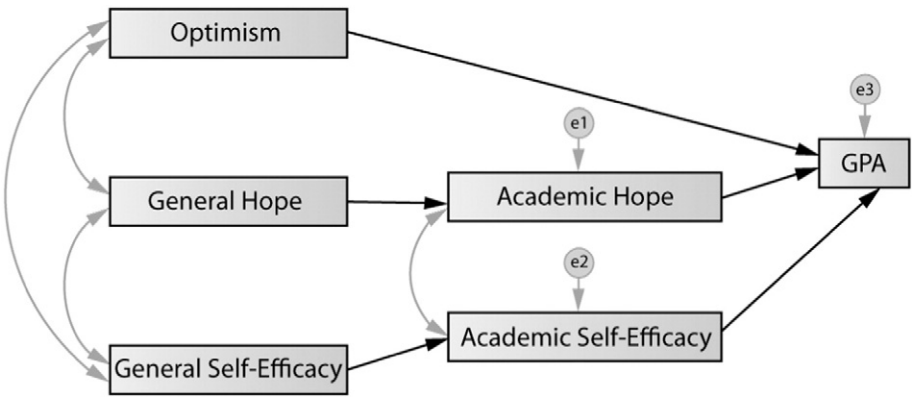

Fig. 1. Hypothesized path model. Single-headed arrows represent "causal" paths. Double-headed arrows represent correlations. Circles represent error variances.

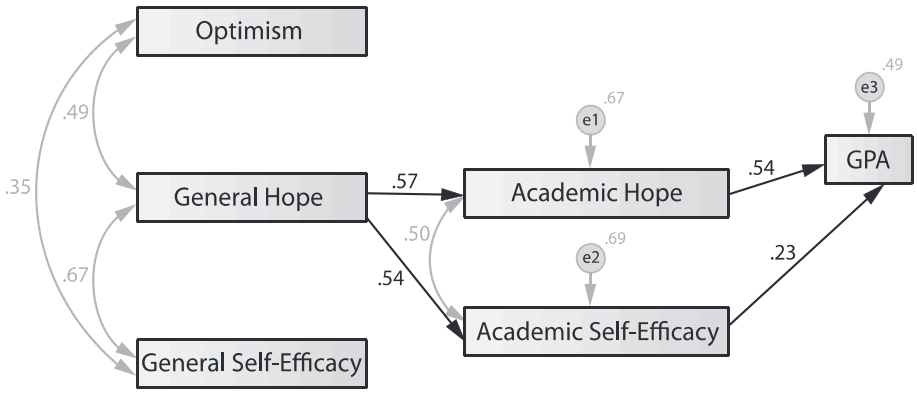

Fig. 2. Final modified path model. Single-headed arrows represent "causal" paths, for which standardized regression coefficients (β) are presented. Double-headed arrows represent correlations. Circles represent standardized error variances. All coefficients are significant at $p < .05$.

The modified model showed very good fit to the data, χ^2 (7) = 8.00 ($p = .33$), RMSEA = .04, CFI = .995 (see Fig. 2). We again conducted a nested model chi-square test, which showed no significant difference in chi-square values between the current model and the previous one, χ^2_{diff} (2) = .10, $p = .95$. Lack of significant difference is generally taken to indicate that the more parsimonious model should be favored over the more complex one (Schermelleh-Engel, Moosebrugger, & Müller, 2003). The current model is the more parsimonious one (i.e., fewer estimated paths).

All paths in this model were significant. Generalized hope predicted academic-specific hope ($\beta = .57$, $p < .001$) and academic self-efficacy ($\beta = .55$, $p < .001$). In turn, academic-specific hope predicted GPA ($\beta = .54$, $p < .001$), as did academic self-efficacy ($\beta = .23$, $p = .02$). The combination of academic-specific hope and academic-specific self-efficacy accounted for 51% of the variance in GPA. The total indirect effect of general hope on GPA, through academic-specific hope and academic self-efficacy, was .43.[1] As mentioned, general self-efficacy failed to predict academic-specific self-efficacy, and thus this path was eliminated from the model. Also as mentioned, general optimism failed to predict GPA, and thus this path was eliminated.

To test whether the beta weight of the path between academic-specific hope and GPA was significantly different than the beta weight between academic self-efficacy and GPA, we performed a nested model chi-square test in which our final modified model was compared to an identical model where these two paths were constrained to be equal. The resulting model also had good fit to the data, χ^2 (8) = 9.57 ($p < .30$), RMSEA = .05, CFI = .99. There was no significant difference between the chi-square values of this model and the one in which both paths were estimated separately, indicating that these two paths are not statistically different from one another, $\chi^2_{diff}(1) = 1.57, p = .21$.

7. Discussion

The results largely support our hypotheses, showing that generalized hope predicted academic hope, and academic hope in turn directly predicted GPA. However, the findings failed to show similar results for self-efficacy. Namely, there was no significant path between general self-efficacy and academic self-efficacy. Instead, general hope was found to predict academic self-efficacy, and academic self-efficacy in turn predicted GPA. Lastly, consistent with past research (Rand et al., 2011), optimism was not found to predict GPA.

As mentioned earlier, there has been a call in the literature (Snyder, 1995, 2002) to clarify relationships and differences among hope, self-efficacy, and optimism. The current study has shed further light on this issue, particularly with reference to GPA. Overall, we found hope to be the most consistent predictor of GPA across the generalized and domain-specific levels. That is, general hope predicted GPA through academic-specific hope.

One possible explanation for why optimism may not have predicted GPA pertains to its generalized nature. Recall that we hypothesized that domain-specific expectancies, in contrast to general expectancies, should be better predictors of domain-specific outcomes like grades. Optimism was the only construct in the study for which an academic-specific measure was not used, given the generally accepted definition of optimism as a generalized expectancy (Scheier et al., 2001). Additionally, optimism is an expectancy of positive outcomes irrespective of one's actions. This fact has led some theorists to suggest that, in highly behaviorally controllable situations such as college, hope may be a stronger predictor of performance than optimism (Rand et al., 2011).

Next, we turn our discussion to self-efficacy. Because the Academic Self-Efficacy Scale (ASES; Chemers et al., 2001) assesses expectancies regarding specific behaviors in the domain of academics, it makes sense that it predicted GPA. It is curious, however, that general self-efficacy did not predict academic self-efficacy in the path model. Instead, general hope predicted academic self-efficacy, which in turn predicted GPA. This may, of course, be a measurement artifact of the two scales used to measure general and academic-specific self-efficacy (GSES and ASES). These particular scales rarely have been used in studies together. However, it is worth noting that some self-efficacy researchers have criticized the construct of generalized self-efficacy on the basis that it is theoretically inconsistent with the notion of self-efficacy itself. Self-efficacy was originally defined as a behavior- or domain-specific expectancy (Bandura, 1977). As mentioned previously, Bandura (1997) has written that self-efficacy should be measured only within a given domain or with reference to a particular behavior. The results from this study seem to confirm Bandura's thoughts.

Finally, we turn to hope. The results of the present study are consistent with Rand's (2009) findings showing that general hope predicted grades in a college course indirectly through specific grade expectancies. In this case, general hope did so through domain-specific hope. Hope concerns the cognitive process of pursuing a goal through pathways (planning-related thoughts) and agency (motivation-related thoughts). It makes sense that being successful in the academic domain requires this combination of planning and motivation. School-related tasks such as writing research papers, taking notes, and scheduling time require putting plans in motion and motivating oneself.

Of note, the beta weight of the path between academic self-efficacy and GPA was not significantly different from the beta weight of the path between academic hope and GPA. As mentioned previously,

[1] Because research not assessing academic hope has demonstrated a correlation between general hope and GPA (Snyder et al., 2002), and because a zero-order correlation of .32 was found in the present study, we re-ran the final path model with a direct path from general hope to GPA. Although this path was not suggested by modification indices, it holds theoretical interest. Though this model manifested excellent fit to the data, χ^2 (6) = 4.28 ($p = .64$), RMSEA = .00, CFI = 1.00, the additional direct path, which had a beta weight of −.18, did not reach significance.

these two constructs are theoretically somewhat different, with self-efficacy emphasizing positive expectancies for the performance of instrumental behaviors, and hope emphasizing positive expectations regarding goal-directed planning and motivation. Nonetheless, what both academic self-efficacy and academic hope have in common is their domain-specific nature. This result again points to the importance of assessment at the domain-specific level.

It is important to note some limitations of the present study. First, the data were drawn from a larger study (detailed earlier). To help evaluate whether the experimental manipulation of that larger study affected the measures reported here, we tested for between-group differences, and no significant differences were noted. Thus, the manipulation did not differentially affect participants' answers to the present study measures. Nonetheless, it is impossible to know whether all participants were affected by the mere fact that they were completing other tasks and measures.

Secondly, the present study was cross-sectional, limiting our ability to determine causality or temporality. Although we utilized path analysis, a procedure that allows researchers to specify causal or predictive relationships among modeled variables even when data are collected cross-sectionally, lack of either a longitudinal or experimental design limits any strong ability to evaluate hope's causal or prospective relationship to GPA. Thus, it would be helpful for future studies to test the present model using causal or prospective designs.

A third limitation of this study concerns its sample, which consists of undergraduates from a private Northern California university. It is unknown to what degree these results would generalize to other groups such as graduate students or public university students. On a related note, the original hypothesized path model was modified based on fit indices. Although this is a common practice, whenever a model is adjusted post-hoc, there is a risk of modifying the model based on random error or the characteristics of the particular sample. As such, future research should test our revised model in additional samples. It also may be useful to replicate the present study in samples of primary and secondary school students. Past research (Gilman, Dooley, & Florell, 2006) has examined the relationship between hope and GPA among adolescents but has not modeled the relative contributions of hope, self-efficacy, and optimism simultaneously.

A last limitation is that we obtained GPA via self-report, a fact that potentially introduces social desirability bias. As mentioned previously, we chose not to access students' records because research shows high correlations between self-reported GPA and registrar-reported GPA (Cassady, 2001; Kuncel et al., 2005). It should be noted, however, that the meta-analysis conducted by Kuncel et al. (2005) found that self-reported GPA accurately reflects registrar GPA in most cases, but not all. Therefore, future studies should obtain GPA directly, if possible.

Even given these limitations, we believe that the present study offers useful evidence of the relationships among hope, self-efficacy, optimism, and academic achievement. It also highlights the importance of measuring expectancy variables at domain-specific levels in addition to the more usual generalized level.

Given the relatively strong relationship between hope and GPA, it may be beneficial to explore interventions to increase academic hope. Hope-based interventions have been shown to affect depressed mood and anxiety (Cheavens, Feldman, Gum, Michael, & Snyder, 2006; Klausner et al., 1998), life satisfaction (Green, Oades, & Grant, 2006), and goal achievement (Feldman & Dreher, 2012). But these interventions teach skills related to hope *in general*, rather than with reference to a particular domain such as academics. Given that the present study highlights the importance of conceptualizing hope at the academic-specific level for predicting GPA, interventions could be created to foster the development of academic hope in particular.

With continued work and a better understanding of how hope impacts GPA, perhaps new tools could be developed to help improve students' school performance and, ultimately, maximize their future opportunities.

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