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An analysis of hope as a psychological strength

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Abstract

Psychologists have placed an increased emphasis on identifying psychological strengths that foster healthy development. Hope, as operationalized in Snyder's hope theory [Snyder, C. R., Hoza, B., Pelham, W. E., Rapoff, M., Ware, L., & Danovsky, M., et al. (1997). The development and validation of the children's hope scale. *Journal of Pediatric Psychology*, 22, 399–421], is one such cognitive-motivational construct that has received recent attention as a potential psychological strength that may serve as a protective factor for adolescents in the face of adverse life events. This longitudinal study, involving middle and high school students, provided evidence of (1) stability of hope reports of adolescents over a 1-year period, (2) predictive validity of adolescent hope reports, and (3) hope's functional role as a moderator in the relationship between stressful life events and adolescent well-being. Taken together, the results provide support for consideration of hope as a key psychological strength in youth. The findings are consistent with theories of motivation in which individual differences in hopeful thinking are conceptualized to play a functional role in linking life events and psychological well being.

Keywords: Hope; Stressors; Life satisfaction; Behavior problems; Adolescence

The field of psychology has been dominated throughout its history by a focus on identifying, eliminating, and preventing psychopathology. Until recently, the examination of personal strengths and adaptive behaviors has been limited. This trend has changed as

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researchers and clinicians realized the value in studying not only the weaknesses in people, but also their strengths that foster healthy development. The emerging movement, termed positive psychology, has called for an examination of psychological strengths and competency, rather than just pathology (Seligman & Csikszmentihalyi, 2000).

The further development of positive psychology requires an expanded perspective in psychological assessment, including the identification and classification of key psychological strengths. One major tenet of positive psychology is that measurable positive traits can serve as buffers, protecting individuals from the adverse affects of risk factors, such as stressful life events (Masten & Coatsworth, 1998; Rutter, 1994). Thus, increased interest has been directed to investigating positive qualities of individuals who meet such a criterion (cf. Suldo & Huebner, 2004). One promising candidate is hope, a cognitive-motivational construct, which has received recent research attention with children (see Snyder, Lopez, & Shorey, 2003).

Decades of research have demonstrated the importance of motivational factors in adolescents' academic and behavioral development (Anderman & Maehr, 1994; Stipek, 2002). Numerous studies have been conducted using a variety of cognitive-motivational constructs, such as causal attributions, self-efficacy, optimism, and so forth. For example, studies of academic motivation have consistently revealed that youth who believe that good grades are caused by internal and controllable causes (Weiner, 2000) and who believe that they can produce the needed behavioral response (Bandura, 1997) attain higher levels of academic success. Similar explanations apply to adaptive social–emotional behaviors and outcomes (Seligman, 1995). For example, Weiner's (2000) attribution theory of intrapersonal motivation postulates a complex mediation model that begins with the occurrence of a life event (e.g., stressful life event) and terminates with a behavioral reaction (e.g., externalizing coping behavior). The mediators are motivational in nature, including attributional inferences (e.g., Why did this occur?) and cognitive and affective expectancies (e.g., hopeful expectations for success). Overall, this approach is guided by the metaphor of individuals as scientists, who are continuously attempting to understand their life experiences, especially negative events and are motivated to act on the basis of their understandings.

Snyder, Cheavens, and Sympson (1997) and Snyder, Hoza et al. (1997) have developed a theory of motivation, which focuses on the cognitive-motivational variable of hope. Snyder (2000) differentiates hope from similar cognitive-motivational variables, including those mentioned above (e.g., optimism, self-efficacy). In Snyder's theory, hope is conceptualized as an individual difference variable reflecting relatively enduring, cross-situational subjective appraisals of goal-related capabilities (Snyder, 2000). Although dispositional in nature, it is thought that changes in levels of hope can occur over time through sustained interventions, such as counseling and education.

Snyder's theory incorporates three major components of hope: goals, agency, and pathways. Conscious goals are the cornerstone of the theory. Goals can be short- or long-term, and they may vary significantly with respect to their importance and probability of attainment (Snyder, 2000). Pathways represent a person's perceived ability to generate workable routes to goals (Snyder, Rand, & Sigmon, 2002). Pathways thinking is illustrated by internal speech, such as "I'll find a way to get this done" (Snyder, Lapointe, Crowson, & Early, 1998). Although such thinking requires only one route to a goal, people with high

hope often imagine multiple routes. These alternate routes become crucial when an individual encounters barriers to their goals (Irving, Snyder, & Crowson, 1998). Agency is the motivational component that ensures a person will be able to begin and sustain the effort necessary to follow a particular pathway. Agency is characterized by internal speech, such as "I am not going to be stopped" (Snyder et al., 1998). In hope theory, successful goal pursuit elicits positive emotions, and the failure to attain a goal results in negative emotions and coping behavior.

Studies over the past decade have supported the importance of hope among adults. Higher hope adults report increased self-esteem (Curry, Snyder, Cook, Ruby, & Rehm, 1997), college grades (Chang, 1998), athletic performance (Curry, Maniar, Sondag, & Sandstedt, 1999), and commitment to good health practices (Harney, 1990). Horton and Wallander (2001) demonstrated that high levels of hope served as a buffer for women facing stress caused by caring for a chronically ill child. Low levels of hope in adults have been associated with depression and externalizing behaviors (see Snyder et al., 2003).

Researchers have recently begun to investigate the importance of hope in children and adolescents. For example, Snyder, Cheavens et al. (1997), Snyder, Hoza et al. (1997) found that high hope scores in school-age students correlated with positive social interactions, self-esteem, optimism, and academic achievement. For another example, Valle, Huebner, and Suldo (2004) found that hope was positively correlated with adolescents' global life satisfaction and inversely correlated with internalizing and externalizing behaviors. Additional research is needed, however, to clarify the meaningfulness and functional role of hope in the development of adaptive and maladaptive outcomes in childhood and adolescence. If hope is to be considered a psychological strength, several conditions may be evaluated as a first step (Suldo & Huebner, 2004). First, hope must demonstrate a reasonable degree of stability across time. Previous studies have examined short-term test–retest reliability (Snyder, Cheavens et al., 1997; Snyder, Hoza et al., 1997), specifically at intervals of 2 and 4 weeks; however, no published work has reported the stability of scores over a more extended time period. Second, levels of hopeful thinking should predict important adaptive and maladaptive outcomes. Based on Snyder's hope theory and previous cross-sectional studies, it would be expected that higher levels of hope would predict increased life satisfaction and decreased psychopathology (i.e., internalizing and externalizing behaviors). Furthermore, hope should serve as a buffer (i.e., moderator) when adolescents are faced with stressful life events. A demonstration that a high level of hope reduces the adverse effects of stressful life events would provide relatively rigorous support for hope as a psychological strength.

The following research questions were thus examined in the current longitudinal study:

(1) What is the test–retest reliability of adolescent's hope scores over a 1-year period?
(2) Do initial levels of hope predict later levels of adolescent global life satisfaction and psychopathology, controlling for the initial levels of these outcome variables?
(3) Do initial levels of hope moderate the relationship between later experiences of stressful life events and subsequent levels of adolescent global life satisfaction and psychopathology, controlling for the initial levels of these outcomes variables?

Method

Participants

The participants at Time 1 (Fall 2001) consisted of students from three public middle schools and two public high schools from a rural school district in a southeastern state. All students enrolled in the participating schools were invited to participate in the study through a letter that described the research and requested permission for student participation. The rate of students returning parent consent forms varied from 28% to 32% by school, a proportion typical in studies that have employed similar active consent procedures with children. The demographic characteristics (i.e., race, age, SES) of the students who returned consent forms were comparable to the demographic characteristics of the entire school populations, according to information listed on the school district's website. Complete data were collected from 860 participants. These students ranged in age from 10 to 18 (M=13.74, SD=1.81), and were enrolled in grades 6 (20%), 7 (17%), 8 (15%), 9 (14%), 10 (17%), and 11 (17%), respectively. An estimate of a participant's socioeconomic status (SES) was gathered by examining her or his qualification for a free or reduced rate lunch, with 60% of the students qualifying for a free or reduced lunch (low SES), and 40% not qualifying (average or above average SES).

At Time 2 (Fall 2002), participation was sought from all original participants. Questionnaires were completed by 699 of these students, yielding a return sample of 81%. The mean age of the Time 2 participants was 14.78 (SD=1.82). Females comprised 64% of the sample. The ethnicity of the longitudinal sample was consistent with demographic characteristics of the surrounding community. Similar to the racial representation at Time 1, the majority of students in the longitudinal sample were African American (58%), followed by Caucasian (36%), Asian American (2%), Hispanic (1%), and students of other ethnic backgrounds (3%). Fifty-seven percent were low SES.

A series of chi-square tests between the longitudinal sample (i.e., students who participated at both Times 1 and 2) and the participants lost to attrition (i.e., students who participated at Time 1 only) were conducted to assess effects of sample attrition. None of the chi-square tests comparing demographic characteristics (i.e., race, gender, SES) were significant, thus, students who remained in the study were no more likely to be a member of any specific race, gender, or SES group. *T*-tests also were conducted to compare mean scores on the variables of global life satisfaction, stressful life events, externalizing and internalizing behavior problems, and hope between students who participated in Time 2 data collection and those students lost to attrition. Mean score comparisons indicated no significant differences between the two groups across all variables of interest.

Procedures

A letter was sent to all parents of potential participants prior to Time 1 data collection. The longitudinal nature of the project was explained and parents were

asked to give permission for participation in both waves of data collection. Small incentives (e.g., entry into a lottery for small cash prizes and free pizzas, candy) were offered to increase participation. All students who obtained parent consent at Time 1 also gave their assent. At Time 2, student assent was re-obtained from all participants.

Survey administration procedures were the same at both Time 1 and Time 2. Each student with parental consent and assent to participate was administered each of the measures described below in groups of 20–100 students. The size of the group was dependent upon the space available within each school, as well as the amount of adult assistance present to promote the full understanding of instructions and confidential completion of all measures. The measures were presented in counterbalanced order. Prior to the completion of the measures, participants completed a demographic questionnaire that contained brief questions regarding gender, age, race, grade, family structure, and SES (free or reduced rate lunch). Research assistants were available during all administration sessions in order to answer questions and ensure the confidentiality of all measures.

Measures

Students' Life Satisfaction Scale (Huebner, 1991a)

The Students' Life Satisfaction Scale (SLSS) is a 7-item self-report measure that assesses a child's global life satisfaction. Students respond to each item using a 6-point response format (1=strongly disagree, 2=moderately disagree, 3=mildly disagree, 4=mildly agree, 5=moderately agree, 6=strongly agree). Items 3 and 4 are reverse scored; higher scores thus indicate higher life satisfaction.

Internal consistency of the SLSS has been reported to be above 0.80 for samples of children ranging from grades 4 to 12 (Gilman & Huebner, 1997; Huebner, 1991a). Test–retest reliability has also been demonstrated. Huebner (1991b) found a test–retest correlation coefficient of 0.74 after a 2-week period and a coefficient of 0.64 after 4 weeks. The SLSS also has received support for its unidimensional factor structure (Gilman & Huebner, 1997). Convergent validity of the SLSS has been demonstrated by significant correlations with parent reports and measures of related constructs (Gilman & Huebner, 1997; Huebner, 1991a,1991b). Discriminant validity for the SLSS has been demonstrated by weak relationships with intelligence and academic performance (Huebner, 1991b) and social desirability responding (Huebner, 1991a).

The Youth Self-Report form of the Child Behavior Checklist (Achenbach & Edelbrock, 1991)

The Youth Self-Report (YSR) is a 118-item behavior rating scale that assesses children's behavior in multiple problem areas. The measure allows for composite score indexes of internalizing behavior, externalizing behavior, and total problems. Students are asked to rate each item on a 3-point scale based on how true an item describes their behavior presently or in the past 6 months (0=not true, 1=somewhat or sometimes true, 2=very true or often true). For the purposes of the present study, only the 61 items corresponding to the internalizing index subscales (withdrawn, somatic complaints, and

anxious/depressed) and the externalizing index subscales (delinquent behavior and aggressiveness) were administered to the participants.

The YSR has received support for its reliability and validity. Studies have shown that adolescents referred for clinical services score significantly higher on all problem subscales compared to non-referred adolescents (Achenbach & Edelbrock, 1991). The YSR also shows moderate consistency with both parent and teacher ratings of problem behavior as measured by the PRF (Parent Report Form of the CBCL) and TRF (Teacher Report Form of the CBCL). Correlations between the YSR and the PRF have been reported between 0.38–0.42 for internalizing and 0.43–0.49 for externalizing behaviors. TSR and YSR correlations have been reported as 0.37–0.47 for internalizing and 0.56–0.59 for externalizing behaviors. The YSR yielded a one-week test–retest coefficient of 0.79.

Life Events Checklist (Johnson & McCutcheon, 1980)

The Life Events Checklist (LEC) is a 46-item measure in which students indicate the occurrence of major life events. In the first 18 items, students are asked whether or not an event that the child or adolescent could not control (e.g. death of a family member) had occurred within the past year. For the remaining 28 items, participants are asked about events he or she could possibly control (e.g. "joining a new club"). For the purposes of this study, only the first 18 items of the measure deemed uncontrollable were administered. Scores ranged from 0 to 18, with higher numbers indicating more frequent experiences of stressful life events.

The LEC has yielded 2-week test–retest correlations between 0.69 and 0.72 when administered to youth, ages 10–17 (Brand & Johnson, 1982). LEC scores have been related to a variety of youth outcomes, including depression and dysthymia (Tiet et al., 2001), poor physical health (Meade, Lumley, & Casey, 2001), and oppositional defiant and conduct disorders (Tiet et al., 2001).

Children's Hope Scale (Snyder, Hoza et al., 1997)

The Children's Hope Scale (CHS) was created to measure goal-related hopeful thinking in children and adolescents ages 8–16. The measure contains six items that are evenly split between the constructs of pathways and agency. Each item asks a participant to rate how accurately a statement describes him or her on a 6-point scale, with responses ranging from "none of the time" to "all of the time."

The CHS has been shown to have acceptable internal consistency and test–retest reliability. Valle et al. (2004) reported alpha coefficients of 0.83 and 0.84 for children ages 10–14 and 15–19 respectively. Item total correlations between each of the six items ranged from 0.51 to 0.69. The test–retest reliability of the CHS was demonstrated by Snyder, Cheavens et al. (1997) and Snyder, Hoza et al. (1997) and was supported over a 2-week interval ($r=0.73$) and after a 1-month interval ($r=0.71$).

Evidence for the construct validity of the CHS has also been provided. Using confirmatory factor analysis procedures, Valle et al. (2004) found support for the correlated two-factor model. They also found significant correlations with life satisfaction ($r=0.49$), perceived social support ($r=0.59$), externalizing behaviors ($r=-0.33$), and internalizing behaviors ($r=-0.32$). Discriminant validity has been demonstrated through non-significant correlations with intelligence test scores.

Results

Descriptive statistics

Table 1 presents the means, standard deviations, and internal consistency coefficients of all variables assessed at Time 1 and 1 year later at Time 2. Means and standard deviations for CHS scores at both Time 1 and Time 2 of the current study were higher than the majority of the eight samples reported in the initial validation studies (M=25.41–27.03; SD=3.01–6.11) (Snyder, Cheavens et al., 1997; Snyder, Hoza et al., 1997).

T-tests were employed to determine the significance of the differences between hope scores across the following demographic variables: gender, race (African American vs. Caucasian) and SES. Alpha was set at 0.01 to control for multiple comparisons. No differences in mean scores of hope were found with respect to SES at Time 1, $t(697)=-0.66$, nor Time 2, $t(697)=-1.49$, and gender at Time 1, $t(697)=-2.29$; $t(397)=-0.62$. Significant differences were found for race at Time 1, $t(453)=3.72$, and Time 2, $t(451)=5.04$, with African-American students reporting higher levels of hope at Time 1 (M=29.48, SD=4.82) and Time 2 (M=29.37, SD=5.05) than Caucasians at Time 1 (M=27.82, SD=6.01) and Time 2 (M=27.00, SD=6.32). These differences yielded effect sizes of 0.15 and 0.19, both of which are traditionally considered small in magnitude (Cohen, 1988). A small negative correlation ($r=-0.12$, $p<0.05$) was found between Time 1 hope and age; the correlation between Time 2 hope and age ($r=-0.02$) was not significant. Finally, the possibility of race × SES interactions for hope at Time 1 and Time 2 were testing using two-way ANOVAs; neither interaction term was significant.

In order to evaluate the contribution of demographic effects further, a series of hierarchical multiple regression equations was conducted to determine whether subsequent analyses should be undertaken separately for different groups (e.g., race groups). Three types of interaction terms were tested to analyze the effects of each demographic variable on hope and stressful life events in relation to internalizing behaviors, externalizing behaviors, and life satisfaction. Specifically, three interaction terms were evaluated in each equation: demographic variable (e.g., race) × stressful life events, race × hope, and race × hope × stressful life events. Similar analyses were run for age, gender, and SES. Alpha was set at 0.01 to control for multiple comparisons. None of the interaction terms was significant, suggesting that the demographic variables could be employed as covariates given that the relationships between the predictor variables and criterion variables were uniform across race, age, gender, and SES levels.

Table 1
Descriptive statistics and internal consistency estimates for all variables at Time 1 and Time 2 (N=699)

Variable	Time 1			Time 2		
	M	SD	α	M	SD	α
Hope	28.86	5.41	0.82	28.43	5.73	0.87
Stressful life events	3.75	2.80	0.72	3.34	2.61	0.71
Internalizing behavior	12.80	8.86	0.89	11.47	9.36	0.91
Externalizing behavior	11.95	8.02	0.89	12.19	7.92	0.88
Life satisfaction	30.45	7.51	0.82	30.48	7.87	0.88

Correlations

Table 2 presents the intercorrelations among the variables at each time point, as well as correlations between the variables at Time 1 and Time 2. All correlations between hope and mental health outcomes were significant at the 0.01 level. Also, Time 1 hope scores correlated positively with Time 2 life satisfaction and negatively with Time 2 internalizing and externalizing behavior problems.

Reliability

The 1-year test–retest reliability coefficient for the CHS was 0.47. In addition, 1-year test–retest correlations were 0.46, 0.61, 0.60, and 0.68 for stressful life events, life satisfaction, internalizing behaviors, and externalizing behaviors, respectively.

Multiple regression analyses

Next, three sets of hierarchical multiple regression analyses were conducted to assess the potential of hope scores at Time 1 to predict life satisfaction, internalizing behaviors, and externalizing behaviors at Time 2. In each regression analysis, demographic variables (gender, race, age, and SES) were controlled and entered as an initial block. As shown in Table 3, hope scores at Time 1 significantly predicted Time 2 life satisfaction scores controlling for Time 1 life satisfaction, $\Delta F(1, 693) = 16.57$, $p < 0.01$, $\Delta R^2 = 0.02$, $R^2 = 0.40$. In addition, Time 1 hope scores significantly predicted Time 2 levels of internalizing behaviors when Time 1 levels of internalizing behaviors were controlled for, $\Delta F(1, 689) = 11.05$, $p < 0.01$, $\Delta R^2 = 0.01$, $R^2 = 0.39$. However, Time 1 hope scores did not account for a significant amount of variance in Time 2 externalizing behaviors after controlling for Time 1 externalizing behaviors, $\Delta F(1, 686) = 0.59$, $p > 0.05$, $\Delta R^2 = 0.00$, $R^2 = 0.48$. In sum, when initial levels of mental health variables were taken into account, CHS scores

Table 2
Intercorrelations between all variables at Time 1 and Time 2 (sample sizes in pairwise correlations range from 682 to 699)

Variable	1	2	3	4	5	6	7	8	9
1. T1 Hope									
2. T1 SLE	−0.07								
3. T1 Intern	−0.31**	0.27**							
4. T1 Extern	−0.35**	0.25**	0.54**						
5. T1 LS	0.50**	−0.21**	−0.50**	−0.36**					
6. T2 Hope	0.47**	−0.02	−0.26**	−0.23**	0.39**				
7. T2 SLE	−0.10**	0.46**	0.26**	0.21**	−0.19**	−0.06*			
8. T2 Intern	−0.28**	0.17**	0.60**	0.29**	−0.37**	−0.35**	0.26**		
9. T2 Extern	−0.26**	0.22**	0.37**	0.68**	−0.27**	−0.28**	0.27**	0.46**	
10. T2 LS	0.41**	−0.18**	−0.37**	−0.27**	0.61**	0.58**	−0.19**	−0.50**	−0.34**

SLE = Stressful Life Events; Intern = Internalizing; Extern = Externalizing; LS = Life Satisfaction; T1 = Time 1; T2 = Time.
**$p < 0.01$; *$p < 0.05$.

Table 3
Hierarchical regression analysis for time 1 hope scores as a predictor of time 2 levels of life satisfaction, internalizing behaviors, and externalizing behaviors ($N=699$)

Criterion Variable	Predictor Variable	ΔR^2	Total R^2	ΔF
T2 Life Satisfaction	T1 Demographics	0.02	0.02	2.70*
	T1 Life Satisfaction	0.37	0.39	412.65**
	T1 Hope	0.02	0.40	16.57**
T2 Internalizing behavior	T1 Demographics	0.07	0.07	12.16**
	T1 Internalizing behavior	0.31	0.38	346.55**
	T1 Hope	0.01	0.39	11.05**
T2 Externalizing behavior	T1 Demographics	0.02	0.02	3.56**
	T1 Externalizing behavior	0.46	0.48	603.58**
	T1 Hope	0.00	0.48	0.59

All statistics for a given predictor variable were computed at the step that variable entered the equation. T1 Demographics = age, gender, race, and level of socioeconomic status. T1 = Time 1; T2 = Time 2.
**$p<0.01$; *$p<0.05$.

emerged as significant predictors of subsequent life satisfaction and internalizing behavior problems, but not externalizing behavior problems.

In order to further investigate whether hope acts as a psychological strength, tests of hope as a moderator variable were conducted via three separate hierarchical multiple regression analyses, procedures recommended by Baron and Kenny (1986). Specifically, the potential of hope to moderate the impact of stressful life events on Time 2 life satisfaction, internalizing behaviors, and externalizing behaviors was assessed.

The first multiple regression analysis involved predicting life satisfaction scores at Time 2 by entering centered predictor variables in the following order. First, demographic variables (i.e., age, gender, race, SES) were entered. Second, life satisfaction scores at Time 1 were entered. Third, stressful life events at Time 1 were entered. Fourth, stressful life events at Time 2 were entered. Fifth, individual hope scores at Time 1 were entered. Sixth, hope scores at Time 2 were entered. Finally, the interaction term of Time 1 hope and Time 1 stressful life events was entered into the regression equation. Results are presented in Table 4. The interaction term was significant, $b=-.36$, $\Delta F(1, 679)=6.08$, $p<0.05$, $\Delta R^2=0.01$, indicating that hope interacted with stressful life events to predict subsequent levels of life satisfaction.

To interpret the interaction effect, participants were divided into upper and lower quartiles based on their levels of the moderating variable (i.e., hope). Separate hierarchical regression analyses were then conducted for each group in order to predict Time 2 life satisfaction. Predictor variables were entered in the following blocks: (1) demographic variables (i.e. age, gender, race, and SES), (2) life satisfaction scores at Time 1, and (3) stressful life events at Time 1. The predictive utility of Time 1 stressful life events was significant for the low hope group ($b=-0.21$) but smaller and non-significant for the high hope group ($b=0.03$). The negative direction of the parameter estimate for the low hope group indicates that as the number of stressful life events increased, subsequent life satisfaction decreased. For the group of adolescents who reported above average levels of hope, however, stressful life events were not related to subsequent levels of life satisfaction, providing evidence that hopeful thinking buffered against the adverse effects of stressful life events.

Table 4
Analyses of hope as a moderator variable ($N=699$)

Criterion variable	Predictor variable	ΔR^2	Total R^2	ΔF
T2 Life Satisfaction	T1 Demographics	0.02	0.02	2.55*
	T1 Life Satisfaction	0.37	0.38	408.27**
	T1 SLE	0.00	0.39	2.37
	T2 SLE	0.00	0.39	3.52
	T1 Hope	0.02	0.40	16.61**
	T2 Hope	0.12	0.52	169.16**
	T1 Hope × T1 SLE	0.01	0.53	6.08*
T2 Internalizing behavior	T1 Demographics	0.07	0.07	11.91**
	T1 Internalizing behavior	0.31	0.38	342.99**
	T1 SLE	0.00	0.38	.33
	T2 SLE	0.01	0.39	14.55**
	T1 Hope	0.01	0.40	10.90**
	T2 Hope	0.03	0.43	37.48**
	T1 Hope × T1 SLE	0.01	0.44	4.10*
T2 Externalizing behavior	T1 Demographics	0.02	0.02	3.72**
	T1 Externalizing behavior	0.46	0.48	602.10**
	T1 SLE	0.00	0.49	4.12*
	T2 SLE	0.02	0.50	20.50**
	T1 Hope	0.00	0.50	0.77
	T2 Hope	0.01	0.52	18.90**
	T1 Hope × T1 SLE	0.00	0.52	0.32

All statistics for a given predictor variable were computed at the step that variable entered the equation. T1 Demographics = age, gender, race, and socioeconomic status. T1 = Time 1; T2 = Time 2;SLE = Stressful Life Events.
**$p<0.01$; *$p<0.05$.

A similar hierarchical regression procedure was performed to assess the potential of hope to moderate the effects of stressful life events on later internalizing behavior problems. Centered predictor variables were entered in the following order: demographic variables, Time 1 internalizing scores, Time 1 stressful life events, Time 2 stressful life events, Time 1 hope scores, Time 2 hope scores, and finally, the interaction between Time 1 hope and Time 1 stressful life events. Results are presented in Table 4. The interaction term was significant, $b=0.327$, $\Delta F(1, 672)=4.10$, $p<0.05$, $\Delta R^2=0.003$, indicating that hope interacted with stressful life events to predict subsequent internalizing behavior problems.

Following procedures described earlier for interpreting interaction effects, separate hierarchical regression analyses predicting internalizing behaviors at Time 2 were completed for both the high and low quartile groups based upon individual hope scores. Predictor variables were entered in the following blocks: (1) demographic variables, (2) internalizing behavior scores at Time 1, and (3) stressful life events at Time 1. The strength of the prediction model for the lower hope group was significant ($b=0.15$), but smaller and non-significant for the high hope group ($b=0.08$). The positive direction of the parameter estimate for the very low hope group indicates that as the number of stressful life events increased, subsequent levels of internalizing behavior problems also increased. While stressful life events predicted increases in internalizing behaviors in the sub-sample

of participants with extremely low hope (i.e., within the bottom 25% of the total sample), there was no relationship between these variables within the sub-sample of very high hope youth, providing evidence for the effect of hope to buffer against negative or stressful life events.

Last, a hierarchical regression was conducted to assess the potential of hope to moderate the effect of stressful life events on the development of subsequent externalizing behaviors. The interaction term was not significant in this model, thus failing to provide support for a moderation effect in the case of *externalizing* behaviors.

Discussion

This study represents an analysis of the cognitive-motivational construct of hope as a psychological strength in adolescents. Three findings were most notable. First, adolescents' CHS scores showed moderate test–retest reliability over a 1-year period. This supports the theoretical premise that hope demonstrates some trait-like properties. The longitudinal design of this study, in which hope scores were reassessed after a 1-year period, is a significant increase in comparison to previous studies that have assessed test–retest reliability after a 1-month interval (Snyder, Cheavens et al., 1997; Synder, Hoza et al., 1997).

Second, this study demonstrated that hope scores predicted subsequent important adolescent outcomes. Although several previous cross-sectional studies have examined the correlates of hope, few studies have investigated predictive relationships related to individual differences in adolescents' hopeful thinking (Snyder et al., 2003). Consistent with expectations, the results of this study revealed that adolescents reporting higher initial levels of hope were more likely to report higher levels of global life satisfaction a year later, even after controlling for initial levels of life satisfaction.

Researchers have theorized that individuals higher in hope are better able to envision and undertake adaptive coping strategies when faced with significant life stress (Horton & Wallander, 2001; Lewis & Kliewer, 1996). The results of this study supported such claims in that hope scores predicted subsequent levels of internalizing behaviors. The findings are inconsistent with those of a previous study in which adolescents' hope levels were a weak predictor of internalizing behaviors, as reported by parents (Barnum, Snyder, Rapoff, Mani, & Thompson, 1998). This discrepancy might reflect differences between adolescent and parent reports.

In contrast to internalizing behaviors, hope scores did *not* predict later externalizing behaviors. It should be noted, however, that the zero-order correlation between Time 1 CHS scores and Time 2 externalizing scores was statistically significant. Perhaps the high stability of externalizing behaviors among these adolescents precluded the prediction of subsequent levels of externalizing behaviors.

The third major finding pertains to whether adolescent hope levels function as a moderator of the relationship between stressful or negative life events and mental health outcomes. The current study supported the hypothesized model of hope as a moderator with respect to global life satisfaction and internalizing behaviors. Specifically, the interaction between initial hope and stressful life events significantly predicted

participants' life satisfaction scores and levels of internalizing behaviors 1 year later. The interaction effects in both cases were consistent with protective-stabilizing models of buffering (Luthar, Cicchetti, & Becker, 2000), in which the major impact of the moderator occurs when the stressors are highest. Although the interaction effects may appear small, it should be noted that interaction effects are very difficult to detect in non-experimental studies. When such effects are detected, they are typically very small in magnitude (Chaplin, 1991; Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995). The notion that hopeful thinking may be more critical when multiple stressors have occurred is not inconsistent with Snyder's theory. Additionaly, the notion fits with Weiner's (2000) assertion that cognitive-motivational (e.g., attributional) processes are not likely to be generated in response to positive experiences (e.g., why concern oneself with coping abilities when positive experiences are being encountered?).

The model was *not* supported for externalizing behavior, however. The reasons for the divergent findings with respect to the differing problem behaviors are unclear. Of course, differences in levels of hopeful thinking simply may not act as a buffer in the case of adolescent externalizing behaviors. However, given that hopelessness is a central component of depression (Abramson, Metalsky, & Alloy, 1989), it may also be that hope levels should not be expected to relate as meaningfully to externalizing versus internalizing behavior problems.

Overall, the results support the notion that high hope serves as a psychological strength in adolescence in some contexts. Adolescents who report higher levels of hope appear to be less at risk for experiencing increases in internalizing behavior problems and reductions in life satisfaction when confronted with adverse life events. Although it will never be possible to shelter children and adolescents from all negative events in life, the current study suggests that parents and professionals may consider recommending programs to develop cognitive-motivational strengths, such as hopeful thinking, which may allow youth to more effectively cope with adverse circumstances when they occur. As one promising example, the Making Hope Happen for Kids Program (Edwards & Lopez, 2000), has been used successfully with middle school students to enhance their hope levels (Pedrotti, Lopez, & Krieshok, submitted for publication).

The current study has important limitations. Although the sample was more diverse than samples in previous studies, it was not nationally representative. Therefore, caution should be exercised in generalizing from the results. In addition, the data collected for this study were exclusively self-report. Multiple measures of constructs (e.g., self and non-self reports of hope) would be beneficial. Finally, Time 1 data were collected at a sensitive point in American history (specifically, a few weeks to months after the September 11th terrorist attacks). Even though this particular sample was geographically removed from the event, it is unknown if this circumstance effected the results in some unusual way.

Future research should replicate and extend these results by further examining hope's utility as a moderating variable in youth. Research is needed to explore the interactions between hope and different types of life experiences (e.g., chronic vs. acute, positive vs. negative) in order to fully understand the range of conditions under which hope is effective as a psychological strength. Also, studies of the antecedents of individual differences in hope are needed. Despite some theoretical discussion (Snyder, Cheavens et al., 1997),

research that examines expected antecedents (e.g., differences in parenting style, attachment relationships) is lacking.

Hope appears be a potentially key cognitive-motivational construct in the development of a positive psychology of youth. The current study provided preliminary evidence that hope reflects a psychological strength that can buffer against the affects of acute negative life events. In doing so, this study also contributed further evidence of the important functional role of motivational processes in the maintenance of adolescent well-being under stressful life circumstances.

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