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The Role of Optimism in Social Network Development, Coping, and Psychological Adjustment During a Life Transition

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The authors investigated the extent to which social support and coping account for the association between greater optimism and better adjustment to stressful life events. College students of both genders completed measures of perceived stress, depression, friendship network size, and perceived social support at the beginning and end of their 1st semester of college. Coping was assessed at the end of the 1st semester. Greater optimism, assessed at the beginning of the 1st semester of college, was prospectively associated with smaller increases in stress and depression and greater increases in perceived social support (but not in friendship network size) over the course of the 1st semester of college. Mediational analyses were consistent with a model in which increases in social support and greater use of positive reinterpretation and growth contributed to the superior adjustment that optimists experienced.

Individual differences in optimism play an important role in the adjustment to stressful life events (reviewed in Scheier, Carver, & Bridges, 2001). Greater optimism has been found to be associated with less mood disturbance in response to a variety of stressors, including adjustment to law school (Segerstrom, Taylor, Kemeny, & Fahey, 1998), breast cancer and coronary bypass surgery (Carver et al., 1993; Scheier et al., 1989), and exposure to SCUD missile attacks (Zeidner & Hammer, 1992).

One explanation for the associations that have been found is that optimists cope more effectively with their stressors than do pessimists. There is substantial evidence that optimists use different strategies to cope than do pessimists and that these coping differences contribute to the positive association between optimism and better adjustment (Carver, Scheier, & Weintraub, 1989; Scheier, Weintraub, & Carver, 1986; Stanton & Snider, 1993; for a review, see Scheier et al., 2001, or Carver & Scheier, 1999). Studies also indicate, however, that differences in coping can account for only part of the association between optimism and better adjustment (e.g., Aspinwall & Taylor, 1992; Carver et al., 1993; Scheier et al., 1989; Segerstrom et al., 1998). This raises questions about other psychological and behavioral pathways that may underlie the relationships that have been observed. In the present study, we evaluate the possibility that optimists adjust to stressful life circumstances more successfully because they also possess more extensive and supportive social networks than do pessimists.

The idea that social networks play an important role in mental health maintenance is well established (Cobb, 1976; Cohen & Syme, 1985; House, 1981). There is considerable evidence that both *qualitative* aspects of social networks, such as the extent to which they can be relied on to provide social support, and *structural* aspects of social networks, such as their size, can influence psychological well-being (Cohen & Wills, 1985; Lin, Dean, & Ensel, 1986). Qualitative dimensions of social networks generally influence psychological well-being by operating as a stress buffer (Cohen & Wills, 1985). Individuals who report that members of their social networks would provide them with emotional, instrumental, and informational resources if and when needed display lower levels of distress and depressive symptoms in response to stressful life events than those who do not (Cohen & Wills, 1985; Lin et al., 1986; Thoits, 1995). On the other hand, structural features of people's social networks, such as their size, generally exert a main effect on psychological well-being. Individuals who possess a greater number of relationships with friends, family members, coworkers, and neighbors report less distress and greater positive affect, regardless of their levels of stress, than those who possess fewer of these relationships (Cohen & Wills, 1985).

Given the evidence regarding the benefits of possessing extensive and supportive social networks, one would anticipate that having personal attributes that foster the development of these network features would in turn promote psychological well-being. Several studies indicate that attributes such as physical attractive-

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ness (Sarason, Sarason, Hacker, & Basham, 1985) and social skills such as the ability to self-disclose (Cohen, Sherrod, & Clark, 1986) and social competence (Lakey, 1989) are instrumental in developing social support and promoting psychological adjustment (Cohen et al., 1986; Lakey, 1989). Because an optimistic outlook would seem to be attractive to potential relationship partners and useful for initiating social ties, we reasoned that greater optimism might also be instrumental in the development of extensive and supportive social networks.

Accumulating evidence from a wide variety of sources is consistent with this proposal. As compared with pessimists, optimists are liked more (Carver, Kus, & Scheier, 1994), report longer friendships (Geers, Reilly, & Dember, 1998), have fewer negative social interactions (Lepore & Ituarte, 1999; Räikkönen, Matthews, Flory, Owens, & Gump, 1999), possess greater levels of social support (Park & Folkman, 1997), and report greater increases in social support during stress (Dougall, Hyman, Hayward, McFeeley, & Baum, 2001). Also consistent with this proposal are recent data indicating that people anticipate social interactions with individuals who display more positive emotions to be more rewarding (Harker & Keltner, 2001). Finally, there is evidence that differences in social networks may account for why optimists adjust better to stressful life events than do pessimists. For example, Dougall et al. (2001) found that the perceived availability of emotional support partially mediated relations between greater optimism and improved psychological adjustment in a sample of rescue and recovery workers who observed the crash site of a commercial airplane.

The studies reviewed suggest that optimists' ability to attract greater social support may account for their superior adjustment to stressful life events. However, these studies also raise questions about the relations among optimism, social networks, and adjustment. One question is whether greater optimism is associated with the development of more supportive social networks or whether an optimistic disposition results from being in a supportive social network. Because the findings just reviewed either were based on cross-sectional analyses (Aspinwall & Taylor, 1992; Park & Folkman, 1997) or examined changes in perceived support from social network ties that were already established (Dougall et al., 2001), they do not address whether optimism is instrumental in developing new social networks and social support.

A second question is whether the relations between greater optimism and greater perceived social support result from actual structural differences in social networks, such as their size. Past studies indicate that greater optimism is associated with both greater perceived support at a given time (Park & Folkman, 1997) and greater increases in perceived support during times of stress (Dougall et al., 2001). However, because these studies have not included measures of social network size, it is unclear whether these differences in perceived social support reflect actual differences and changes in social networks.

A third question is whether differences in structural features of social networks, such as network size, play a role in linking greater optimism to better adjustment. Dougall et al.'s (2001) findings suggest that differences in perceived support are responsible for the association between greater optimism and better adjustment. However, because Dougall et al. did not assess social network size, it is unclear whether differences in network size contributed to this association.

To assess whether optimism is associated with the development of new social networks and social support and to assess the relations between social network development and perceived social support, it is desirable to study individuals who are making a transition into new social networks. For this study, we examined young adults entering their first semester of college. Because 1st-year college students do not typically possess established social networks on campus when they arrive, they were appropriate for studying the development of social networks and social support. Moreover, because the first semester of college is typically stressful (e.g., Feldman & Newcomb, 1994), studying first-semester college students enabled us to assess whether differences in the development of social networks and social support might account for why greater optimism is associated with better adjustment to stressful life events.

We hypothesized that greater optimism would be prospectively associated with better psychological adjustment and the development of more extensive and more supportive social networks during the first semester of college. In addition, we anticipated that the association between greater optimism and better adjustment would be mediated by differences in social network characteristics. We did not make any differential predictions regarding the effects of network size versus network support. This was the case because network size and network support are presumed to have differential effects on well-being only in situations that are low in stress and we assumed that the first semester of college would be stressful for most participants in the study.

Although we presented social networks as operating independently of individuals' coping efforts, it is conceivable that there are links between individuals' social networks and the coping strategies they use (Parkes, 1986; Thoits, 1986). For example, a more supportive social network would seem to better afford the use of certain coping strategies, such as the seeking of emotional or informational support, than a less supportive social network. Alternatively, the strategies individuals use to cope with life stressors could influence the amount of support available from their social networks. For example, those who seek out social support as a means of coping may induce support from others, whereas those who make use of strategies such as avoidance and the venting of emotions may discourage others from providing support (Bolger, Foster, Vinokur, & Ng, 1996).

These considerations raise questions regarding the relations among optimism, coping, social networks, and psychological adjustment. One possibility is that social support and coping are independent paths linking optimism to adjustment. However, a second possibility is that there are links between people's social networks and the coping strategies they use. In this study, we examined the extent to which social support and coping represent independent pathways linking greater optimism to superior adjustment to the first semester of college.

In sum, the study had three purposes. The first was to test the hypothesis that greater optimism is associated with the development of more extensive and supportive friendship networks during the first semester of college. A second, related purpose was to examine whether optimists display better psychological adjustment to the first semester of college than do pessimists and to assess the extent to which these differences in adjustment are mediated by differences in the quality and quantity of their social network ties. Finally, a third purpose was to examine the extent to

which coping and social support represent independent pathways through which optimism is linked to better psychological adjustment during a stressful life event.

Method

Procedure

Before the start of a fall semester, 1st-year college students who were enrolled at a residential college were recruited to participate in a longitudinal study on adjustment to college. Students were informed they would complete a battery of questionnaires at the beginning of the semester and then again at the semester's end and that their participation was voluntary. The initial battery of questionnaires was administered to groups of students during the first 3 weeks of the fall semester. Follow-up questionnaires were administered during the last week of November or the first 2 weeks of December of that same semester (approximately 12 to 16 weeks after the initial assessment). A total of 89 students (46 women and 43 men) completed both the baseline and follow-up questionnaires. Ten additional participants completed only the baseline questionnaires. The average age of the sample of 89 students who completed the study was 17.9 years (range = 17–20). This sample did not differ from the sample that completed only the baseline questionnaires on any variables reported in this article.

Measures

All measures were administered twice (except optimism, self-esteem, and coping), once at baseline (Time 1 [T1]) and once again during the follow-up (T2). Optimism and self-esteem were assessed at T1, and coping was assessed at follow-up (T2).

Optimism. Optimism was assessed using the Life Orientation Test (LOT; Scheier & Carver, 1985). The LOT is an eight-item self-report measure (along with four filler items) assessing generalized expectancies for positive versus negative outcomes. Four of the eight scored items are worded in a positive direction (e.g., "In uncertain times, I usually expect the best"), and four items are worded in a negative direction (e.g., "I hardly ever expect things to go my way"). Participants were asked to rate the extent to which they agreed with each statement on a 5-point scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). After reversing the scoring for the negatively worded items, item scores were totaled to yield an overall optimism score with higher scores representing higher optimism. In this sample, scores ranged from 4 to 32. Cronbach's alpha was .78.

Self-esteem. In recent years, there has been increased effort to discriminate optimism from related constructs that might account for its associations with relevant outcomes (e.g., Scheier, Carver, & Bridges, 1994; Smith, Pope, Rhodewalt, & Poulton, 1989). Self-esteem shares some conceptual similarities to optimism. Like optimism, self-esteem implies an expectation for positive outcomes. Self-esteem represents a sense of self-worth and carries the implication that one will be accepted, as opposed to rejected by others. Therefore, self-esteem may also influence the development of social networks and social support and adjustment to college. What appears to differentiate self-esteem from optimism is that whereas self-esteem implicates the self as being responsible for positive outcomes, optimism does not.

We assessed self-esteem in an effort to demonstrate that the expected associations among optimism, social network development, and adjustment during the first semester of college were independent of differences in self-esteem. Rosenberg's (1965) 10-item Self-Esteem Scale was used to assess self-esteem. This scale consists of 5 positively worded items (e.g., "I feel I have a number of good qualities") and 5 negatively worded items (e.g., "At times, I think I am no good at all"). Participants indicated their agreement with these items on a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). This scale has displayed good validity and reliability (Crandall, 1973; Rosenberg, 1965). In our sample, Cronbach's alpha was .87.

Coping. Coping was assessed using a modified version of the Cope (Carver et al., 1989). The Cope is a 60-item multidimensional coping instrument designed to assess 15 conceptually distinct methods of coping: active coping, positive reinterpretation and growth, seeking emotional support, seeking instrumental support, denial, acceptance, behavioral disengagement, alcohol and drug use, focus on venting emotions, humor, mental disengagement, planning, turning to religion, restraint coping, and suppression of competing activities. The version of the Cope used in the present study consisted of 45 items (3 items for each of the 15 coping dimensions), selected because they loaded most highly on the factors identified in a previous factor analysis of the Cope (Carver et al., 1989). Coping was assessed with respect to the strategies that participants used to help them adjust to their new school environment. Specifically, participants were instructed to rate how often they engaged in the strategy described by each item when they encountered difficulties during the past semester on a 4-point Likert-type scale ranging from 1 (*I usually don't do this at all*) to 4 (*I usually do this a lot*). Cronbach's alpha for the 15 scales ranged from .21 (mental disengagement) to .93 (seeking emotional support). With the exception of mental disengagement, the remainder of the alphas were above .60, with the majority (12) over .70. The average alpha across the 15 scales was .74.

Perceived social support. The perceived availability of social support was assessed using the Belonging, Appraisal, and Tangible Support subscales of the college student version of the Interpersonal Support Evaluation List (ISEL; Cohen & Hoberman, 1983).[1] A total of 36 items assessed the perceived availability of these three categories of support resources. The items on the ISEL are counterbalanced: Half are positive statements about social relationships (e.g., "I know someone at school who would bring my meals to my room or apartment if I were sick"), and half are negative statements about social relationships (e.g., "I don't know anyone at school who makes problems clearer and easier to understand"). Participants indicated whether each of the 36 statements was true of them using the response options *definitely false*, *probably false*, *probably true*, and *definitely true* (scored from 1 to 4). Cronbach's alpha was .91 at T1 and .90 at T2.

Friendship network size. Students rated the number of close friends they currently had at college at both T1 and T2 on a 5-point scale ranging from 0 (*none*) to 4 (*four or more*). A *close* friend was defined as a person whom respondents reported feeling close to and whom they believed they could confide in and turn to for help.

Depression. The Beck Depression Inventory (BDI) short form (Beck, Rial, & Rickels, 1974) was used to assess depression. The BDI assesses attitudes and symptoms derived from clinical observations that are typically observed in depressed psychiatric patients but not in nondepressed psychiatric patients (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The 13-item version used in the current study assessed attitudes and symptoms, including (but not limited to) mood, sense of failure, lack of satisfaction, social withdrawal, and indecisiveness. For each item, participants were asked to choose from a group of four statements (rated 0 to 3 in depressive symptomatology) the statement that best described the way they were feeling that day. Higher scores indicated greater depression. Cronbach's alpha was .90 at T1 and .84 at T2.

Perceived stress. Psychological stress was assessed using the 14-item Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). The PSS measures psychological stress experienced during the past month (e.g., "In the past month how often have you felt that difficulties were piling up so high that you could not overcome them?"). Participants rated each of 14

[1] Items assessing Esteem Support, the fourth subscale of the original student ISEL, were not included in the baseline or follow-up questionnaires.

items on a 5-point response scale ranging from 1 (*never*) to 5 (*very often*). Cronbach's alpha was .90 at T1 and .89 at T2.

Results

Table 1 contains the means and standard deviations of the social network and psychological adjustment outcomes assessed at T1 and T2. As indicated there, students reported greater social support, larger friendship networks, and greater levels of stress (but not depression) at the end of the semester than they did at the start of the semester. These data are consistent with the idea that the first semester of college is both a stressful period of time for adolescents and an active time with respect to social network development.

Do Optimists Develop More Extensive and Supportive Friendship Networks Than Pessimists?

To assess whether greater optimism was associated with the development of more extensive and supportive social networks during the first semester of college, we correlated students' levels of optimism with the size of their friendship networks and their levels of perceived support at T1. Then we assessed whether greater optimism was a prospective predictor of changes in perceived support and friendship network size over the course of the semester. To do this, we created variables representing residualized changes in perceived support and social network size by regressing the outcomes assessed at T2 onto the appropriate T1 measures, and then in separate models, we regressed these change scores on optimism (assessed at T1).

Greater optimism was associated with greater perceptions of support ($r = .28$, $p < .01$) and greater friendship network size, ($r = .24$, $p < .05$) at T1. Moreover, optimism was a prospective predictor of changes in perceived social support, $\beta = .30$, $t(87) = 3.03$, $p < .01$. Students higher in optimism reported greater increases in perceived social support over the course of the semester than their less optimistic counterparts. In contrast to our expectations, greater optimism was not a significant prospective predictor of greater increases in social network size across the semester, $\beta = .16$, $t(87) = 1.49$, $p = .13$. However, greater optimism was significantly associated with reports of greater friendship network size at the end of the semester ($r = .27$, $p < .05$).

The student ISEL contains items that assess the perceived availability of support from sources at college (e.g., "I don't know anyone at school who would loan me their car for a couple hours"), from specific sources away from college (e.g., "If I needed it, my family would provide me with an allowance and spending money"), and from sources that could presumably be either on or off campus (e.g., "I don't know anyone who would give me some old furniture if I moved into my own apartment"). To distinguish whether optimism was associated with changes in perceived support from on-campus sources, off-campus sources, or both, we created two measures of perceived support. The first consisted of the 20 items in the student ISEL that explicitly referred to on-campus sources of support. The second consisted of the 16 items that referred to sources of support that were either clearly from off campus (e.g., family) or could be interpreted as being off campus. Greater optimism was a prospective predictor of greater increases in social support from on-campus sources, $\beta = .40$, $t(87) = 4.01$, $p < .001$, but it was not significantly associated with changes in perceived availability of resources from off-campus sources, $\beta = .12$, $t(87) = 1.32$, $p = .26$. This indicates that greater optimism was associated primarily with changes in perceived support from on-campus relationships.

To begin to examine whether the associations between optimism and increased perceptions of support were independent of differences in self-esteem, we tested whether greater self-esteem was also associated with greater increases in friendship network size and perceived social support over the course of the semester. Then we controlled for self-esteem in our previous regression models demonstrating a positive association between optimism and changes in perceived social support. Students higher in optimism reported greater self-esteem ($r = .54$, $p < .01$). However, self-esteem was not a prospective predictor of changes in perceived social support, $\beta = .09$, $t(87) > 1$, *ns*, or social network size, $\beta = .15$, $t(87) = 1.43$, $p = .15$. Further, controlling for self-esteem did not alter the prospective relation between optimism and increases in perceived social support, $\beta = .39$, $t(86) = 3.22$, $p < .01$. In fact, removing the shared variance between optimism and self-esteem increased the beta coefficient representing the prospective association between optimism and changes in perceived support from .30 to .39. These results suggested that the associations between optimism and changes in social support were independent of differences in self-esteem.

Table 1
Adjustment and Relationship Outcomes at Time 1 and Time 2

	Time 1		Time 2		
Outcome	*M*	*SD*	*M*	*SD*	*t*(87)
Perceived stress	38.45	9.37	40.24	8.73	2.12*
Depression	5.23	5.92	5.71	6.03	1.23†
Perceived social support	74.65	18.02	80.20	16.95	3.61**
No. of close friends	3.28	1.52	4.12	1.13	5.97***

† $p > .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Do Social Networks Mediate the Relations Between Greater Optimism and Better Psychological Adjustment?

We then conducted a series of analyses to determine whether optimists' ability to develop more supportive social networks might contribute to their superior psychological adjustment to college as compared with pessimists. In these analyses, we determined whether optimism was associated with better psychological adjustment, whether increases in social support were associated with better psychological adjustment, and whether controlling for the relation between optimism and greater social support reduced the relation between optimism and psychological adjustment (Baron & Kenny, 1986).

To evaluate whether optimism was associated with better psychological adjustment to college, we created variables representing residualized changes in stress and depression and then in separate models regressed these change scores on optimism (assessed at T1). Greater optimism was associated with smaller increases in stress, $\beta = -.22$, $t(87) = 2.08$, $p < .05$, and depression $\beta = -.29$, $t(87) = 2.86$, $p < .01$, over the course of the semester. Controlling

for self-esteem did not significantly alter the prospective associations between optimism and smaller increases in stress $\beta = -.24$, $t(86) = 2.02$, $p < .05$ and depression, $\beta = -.29$, $t(86) = 2.54$, $p < .05$.

To determine whether the shifts in social support were associated with psychological adjustment, we correlated the observed shifts in stress and depression that occurred over the course of the semester with the observed shifts in social support (using residualized change scores). Individuals who reported greater increases in social support over the semester also reported smaller increases in depression ($r = -.46$, $p < .001$) and smaller increases in stress, ($r = -.31$, $p < .01$) during this time.

We evaluated whether social support reduced the relations between optimism and better psychological adjustment by entering a term reflecting shifts in social support (along with optimism) into regression models predicting residualized changes in stress and depression. This reduced the relation between optimism and changes in depression from $\beta = -.29$, $p < .01$, partial $r^2 = 8.6\%$, to $\beta = -.16$, *ns*, partial $r^2 = 2.5\%$. This also reduced the inverse relation between optimism and increases in stress from $\beta = -.21$, $p < .05$, partial $r^2 = 3.7\%$, to $\beta = -.13$, *ns*, partial $r^2 = 1.6\%$. Greater increases in social support continued to be associated with smaller increases in stress, $\beta = -.26$, $t(86) = 2.23$, $p < .05$, and depression, $\beta = -.36$, $t(86) = 3.36$, $p = .001$, independent of optimism and the shifts in social network size. However, the shifts in friendship network size were not associated with the residual changes in depression, $\beta = -.10$, $t(84) < 1$, *ns*, and stress, $\beta = -.02$, $t(84) < 1$, *ns*, independent of optimism and the shifts in social support.

We used a formula recommended by Baron and Kenny (1986), a modification of Sobel's (1982) test, to assess whether the indirect effects of optimism on depression and stress through social support were significant. Both the paths indicating the indirect effect of optimism through changes in social support on changes in depression ($z = 2.72$, $p < .01$) and in stress ($z = 1.99$, $p < .05$) were significant. To estimate the extent to which the shifts in support reduced the relations between optimism and our adjustment outcomes, we calculated the change in the amount of variance optimism accounted for in the psychological adjustment outcomes after we statistically controlled for the shifts in perceived support. The shifts in perceived social support accounted for 71% of the variability (8.6% − 2.5%/8.6%) in the relation between optimism and changes in depression and 67% of the variability (4.8% − 1.6%/4.8%) in the relation between optimism and stress. These analyses were consistent with the interpretation that optimists' ability to develop more supportive social relationships accounted, at least in part, for why they demonstrated better psychological adjustment during the first semester of college than did pessimists.

Do Social Support and Coping Represent Independent Paths Linking Optimism to Adjustment?

Previous empirical and theoretical work suggesting that there might be links between individuals' social networks and their coping behaviors led us to evaluate the extent to which social support and coping represent independent pathways through which optimism is linked with adjustment. To begin to address this question, we evaluated whether any of the coping behaviors we assessed could also be considered plausible mediators of the relation between optimism and better psychological adjustment to college.

First we examined whether optimism was associated with coping by correlating optimism with students' retrospective reports regarding the coping strategies they used during their first semesters of college. Table 2 contains these correlations. As indicated there, greater optimism was associated with greater use of active coping, planning, and positive reinterpretation and growth (PRG) and with less use of denial and behavioral disengagement.

Next we evaluated whether the coping strategies associated with optimism were related to the shifts in depression and stress by correlating students' self-reports regarding the use of these strategies with residualized changes in stress and depression. Greater planning ($r = -.22$, $p < .05$), active coping ($r = -.34$, $p < .01$), and PRG ($r = -.38$, $p < .001$) were associated with smaller increases in depressive symptoms across the semester. In addition, greater use of PRG was associated with smaller increases in stress ($r = -.32$, $p < .01$).

Finally, for each coping behavior that satisfied the first two conditions for mediation, we used multiple regression to assess the extent to which controlling for the relation between optimism and use of that strategy reduced the amount of variance that optimism accounted for in that adjustment outcome. Because different coping behaviors were associated with different markers of adjustment, we conducted separate analyses for stress and depression.[2] Greater PRG was identified as a potential mediator of the relation between optimism and the shifts in stress and depression. When use of PRG was controlled, the relation between optimism and shifts in stress was reduced from $\beta = -.22$, partial $r^2 = 4.8\%$, to $\beta = -.09$, partial $r^2 = 0.9\%$, and the relation between optimism and shifts in depression was reduced from $\beta = -.29$, partial $r^2 = 8.6\%$, to $\beta = -.17$, partial $r^2 = 2.7\%$. Greater use of PRG remained a significant predictor of shifts in depression ($\beta = .33$, $p < .01$) and stress ($\beta = .29$, $p < .01$) independent of optimism.[3] We used a modification of Sobel's (1982) test to assess whether the indirect effects of optimism on depression and stress through PRG were significant. The paths indicating the indirect effect of optimism through use of PRG on changes in either depression ($z = 2.13$, $p < .05$) or stress ($z = 2.13$, $p < .05$) were significant.

[2] We used partial correlations to determine whether the coping behaviors were independently associated with changes in stress independent of changes in depression and vice versa. Greater use of active coping was associated with smaller increases in depression (partial $r = -.29$, $p < .01$) independent of changes in stress. Greater use of PRG was associated with smaller increases in stress (partial $r = -.22$, $p < .05$) independent of changes in depression and smaller increases in depression (partial $r = -.30$, $p < .01$) independent of changes in stress. Greater use of planning was marginally associated with smaller increases in depression (partial $r = -.20$, $p = .06$) independent of shifts in stress. Because the greater use of these coping strategies was independently associated with these markers of adjustment, we treated stress and depression as separate markers of adjustment in our subsequent analyses.

[3] The use of planning and active coping failed to satisfy this final requirement for mediation. Optimism remained a significant predictor of shifts in depression independent of both active coping and planning ($\beta = .24$, $p < .05$). Greater active coping was associated with shifts in depression independent of optimism ($\beta = .21$, $p < .05$), but greater planning ($\beta = .13$, *ns*) was not.

Table 2
Correlations Between Optimism and Dimensions of Situational Coping

Coping dimension	r (n = 89)
Acceptance	−.02
Active coping	.25*
Behavioral disengagement	−.43***
Denial	−.39***
Alcohol–drug disengagement	−.11
Focus on venting emotions	−.06
Humor	−.09
Mental disengagement	−.05
Planning	.35**
Positive reinterpretation and growth	.28**
Turning to religion	.14
Restraint coping	−.16
Suppression of competing activities	−.03
Seeking social support—instrumental	.04
Seeking social support—emotional	.02

* $p < .05$. ** $p < .01$. *** $p < .001$.

To investigate the links among optimism, the two potential mediational pathways identified, and adjustment, we correlated optimism with the use of PRG and with the variables reflecting changes in social support, stress, and depression. Table 3 contains this correlation matrix. As can be seen there, students reporting greater increases in social support reported greater use of PRG. However, that the two were only moderately correlated ($r = .36$, $p < .01$) suggested that they might have distinct associations with stress and depression.

Next we constructed two path models (with changes in stress and changes in depression as the outcomes). These models are depicted in Figure 1. As indicated there, greater optimism was independently associated with greater increases in social support and with the greater use of PRG. However, there were links between individuals' levels of social support and their use of PRG. Students who demonstrated greater increases in social support reported greater use of PRG. With regard to depression, both the greater use of PRG ($\beta = -.24$, $p < .05$) and greater increases in social support ($\beta = -.29$, $p < .05$) were independently associated with smaller increases in depressive symptoms. However, only the greater use of PRG was independently associated with the changes in stress that occurred across the semester, and the indirect path from optimism through PRG on stress was significant ($\beta = -.25$, $p < .05$). The changes in social support were not associated with the changes in stress (path not shown; $\beta = -.13$, *ns*) independent of the use of PRG.

Discussion

The present work replicated past studies indicating that optimists report more social support and extended these studies by demonstrating that greater optimism was associated with greater increases in social support during the first semester of college. Additional analyses indicated that the greater increases in perceived social support reported by students who were more optimistic were a reflection of changes in perceived support from on-campus sources and were independent of changes in perceived social support from off-campus sources. Greater optimism was also associated with having larger friendship networks after the first 2 weeks of college, but it did not predict greater increases in friendship network size over the course of the semester. Taken together, these results suggest that the associations between optimism and increased social support are a reflection of higher quality friendships, not more extensive friendship networks. The possibility remains, however, that differences or changes in the size or structure of other aspects of optimists' social networks contribute to the greater increases they report in perceived support from on-campus sources.

One explanation for our failure to find an association between greater optimism and greater increases in friendship network size could be that optimists developed more extensive networks during the first weeks of the semester and simply maintained these larger networks over the course of the semester. In keeping with this, we found that greater optimism was significantly associated with reports of greater friendship network size at both the beginning and end of the first semester of college. However, it is also possible that our measure of network size contributed to our inability to find a prospective association between optimism and greater increases in social network size. Because the measure we used limited social network size to "4 or more close friends," it may not have been sensitive enough to detect changes in friendship network size at the higher end of the distribution. Furthermore, because the initial assessment of friendship network size occurred after the students were on campus for 2 weeks, it may not have represented a true baseline from which to assess change.

These findings also replicated and extended studies indicating that social support represents a means through which optimism is linked with better adjustment to stressful life events. Optimists displayed smaller increases in stress and depression during their

Table 3
Correlations Among Optimism, Use of Positive Reinterpretation and Growth, and Changes in Social Support and Psychological Adjustment

Variable	1	2	3	4	5
1. Optimism	—	.31**	.28**	−.29**	−.22*
2. Change in perceived social support		—	.36**	−.46***	−.31**
3. Use of PRG			—	−.37***	−.31**
4. Change in depression				—	.42***
5. Change in perceived stress					—

Note. PRG = positive reinterpretation and growth.
* $p < .05$. ** $p < .01$. *** $p < .001$.

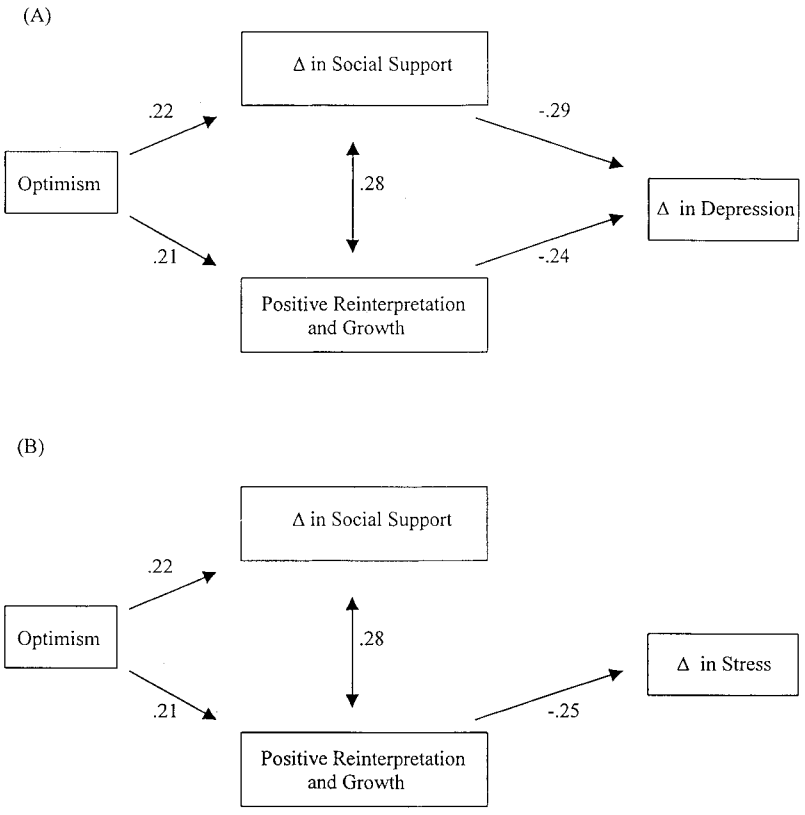

Figure 1. Path analyses of changes in (A) depression and (B) stress. Values depicted are standardized partial regression coefficients. All coefficients depicted are significant.

first semester of college than did pessimists. Our mediational analyses were consistent with the interpretation that the increases in social support associated with optimism played an instrumental role in explaining the association between optimism and better psychological adjustment. This replicates previous work indicating that a supportive social network promotes adjustment to stressful life events (e.g., Cohen & Wills, 1985) and raises the possibility that differences in the quality of social networks are critical in linking optimism to better adjustment in this context. One way in which greater social support may have promoted adaptation is by leading students to perceive their circumstances as less threatening. In addition, the available perceived social provisions may have directly influenced students' efforts to cope with both the obstacles they encountered during their first semester and their emotional responses to these obstacles (see Barrera, 1986, and Cohen & Wills, 1985, for additional models of social support and adaptation to life stress).

The absence of an association between friendship network size and better psychological adjustment to college (independent of social support) may reflect the possibility that a large friendship network increases exposure to social stressors for college students. For example, a larger friendship network may provide increased opportunity for social conflict, which has a negative impact on psychological well-being (Rook, 1984). Moreover, students who possess larger friendship networks are likely to be exposed to more social stressors indirectly, by virtue of their friends' experiences, than those who possess smaller friendship networks.

Because we studied college students during their first semester of college and our statistical models were based on shifts in social support, our results can be interpreted as indicating that more optimistic students display better adjustment because they develop greater social support on campus during their first semester. However, because we assessed optimism only at T1, we cannot address whether students' levels of optimism also changed over the course of the semester along with their friendship networks, perceptions of support, and levels of psychological adjustment. Rendering this possibility less plausible are data from previous studies indicating that mean levels of optimism remain stable over time and show high test–retest correlations (*r*s range from .74 to .84) in adult and college student samples (Dougall et al., 2001; Park & Folkman, 1997; Schulz, Tompkins, & Rau, 1988). For example, in a study of adult HIV caregivers, Park and Folkman (1997) found that mean levels of optimism remained quite stable despite increases in caregiver demand and bereavement. However, a definitive test of whether students' global outcome expectancies change in response to life transitions such as the first semester of college would require additional data collection.

We also replicated research documenting the mediational role of coping in producing the association between optimism and superior adjustment to stressful life events. More important, we extended this work by evaluating whether social support and coping represented independent paths linking greater optimism to better adjustment. We found that optimists reported greater use of PRG, active coping, and planning and less use of denial and behavioral

disengagement. Our mediational analyses were consistent with the interpretation that the greater use of PRG among optimists contributed to smaller increases in stress and depression across the semester. However, because these findings were based on cross-sectional analyses, we cannot rule out the influence of levels of adjustment on coping behaviors (Coyne & Racioppo, 2000).

The finding that the use of PRG partially mediated the relation between optimism and better adjustment is consistent with evidence indicating that the ability to remain positive and extract benefit from stressful life circumstances is an important factor in maintaining psychological and physical health. For example, Bower, Kemeny, Taylor, and Fahey (1998) found that the ability to find meaning was associated with lower CD4 (a protein marker whose decline indicates HIV/AIDS progression) decline and less AIDS-related mortality among bereaved HIV-seropositive men. Moreover, Cruess et al. (2000) reported that benefit finding mediated the association between a cognitive–behavioral stress management intervention enacted for women with breast cancer and cortisol, a stress hormone (see also Antoni et al., 2001). Our data are consistent with the idea that possessing an optimistic outlook enables students to reinterpret their current stressful life circumstances in a way that is more positive and less threatening.

Both social support and the use of PRG made small, independent contributions to the relations between greater optimism and better psychological adjustment. However, the majority of the variance in the relations between optimism and stress and optimism and depression was shared with both of the proposed mediators. These findings are consistent with previous theoretical and empirical work (Parkes, 1986; Thoits, 1986) indicating that individuals' social networks and coping behaviors represent distinct but related resources that can influence adaptation to life stress. Although our data indicate that greater use of PRG is associated with greater social support, the present study design does not enable us to draw any inferences about the direction of the relations among the use of PRG, the development of social support, and adjustment. Future studies using additional assessments of coping, social networks, and adjustment over time would be necessary to establish the temporal relations among these variables.

Perceived Social Support as Personality

We conceptualized students' perceptions of social support as being a characteristic of their social networks. However, there is a considerable body of research that treats perceived social support as a reflection of personality (Pierce, Lakey, Sarason & Sarason, 1997; Sarason, Sarason, & Shearin, 1986). Theorists who view perceived support in this manner contend that individuals develop stable expectations regarding the availability of support in relationships partly on the basis of their past realities. These expectancies presumably influence the perception of available support by influencing among other things how objective support from the environment is interpreted and the amount of support others provide (Lakey & Cassidy, 1990). Data indicating that perceptions of social support remain stable across time (despite changes in network composition), and studies suggesting that perceived support displays characteristics similar to other personality characteristics, provide support for the view that perceived support represents an underlying dimension of personality (see Pierce et al., 1997).

Because the mean levels of social support in this sample were greater at the end of the semester than at the beginning of the semester, it can be argued that our measure of perceived support captured more than just stable differences in personality. On the other hand, the fact that students' perceptions of social support at the beginning of the semester were highly correlated ($r = .63$, $p < .001$) with their perceptions of social support at the semester's end indicates some stability in perceived support over the semester as well. These findings suggest our measures of perceived social support captured both stable differences in perceived support and fluctuations in perceived support (presumably reflective of the development of new relationships at college).

Our previous analyses suggested the greater increases in perceived social support reported by students who were more optimistic contributed to the superior adjustment they experienced during their first semester of college. One question is whether optimism was also associated with the portion of perceived social support that remained stable over the course of the semester. A second, related question is whether these stable differences in perceived support also operate as a mediator of the associations between greater optimism and better adjustment. Optimism was positively correlated ($r = .34$, $p < .01$) with the portion of perceived social support that remained stable over the semester (represented by the covariance between T1 perceived support and T2 perceived support). However, the stable portion of our perceived support measures was not associated with the changes in stress ($r = .18$, $p > .10$) and depression ($r = -.11$, *ns*) observed over the course of the semester, and therefore could not have operated as a mediator of the associations between optimism and superior adjustment to college. Thus, our data suggest that it was the changes in perceived support over the course of the semester that was critical in explaining why greater optimism was related to superior adjustment to college in this sample.

The Contribution of Alternative Personality Characteristics

Another issue addressed in this research was the extent to which the effects of optimism were specific to optimism. We demonstrated that the associations among greater optimism, increased social support, and better adjustment to college were independent of individual differences in self-esteem. In fact, removing the shared variance between optimism and self-esteem appeared to strengthen the association between optimism and increases in perceived support. One explanation for this latter finding could be that excessive feelings of self-worth might be associated with interpersonal behaviors that inhibit the development of social support (Baumeister, Bushman, & Campbell, 2000). That our findings regarding optimism, social network development, and adjustment could not be attributed to differences in self-esteem provided further justification for discriminating optimism from this conceptually related construct.

One question that remains, however, is the extent to which our findings regarding optimism are independent of other related dimensions of personality, such as extraversion (Eysenck, 1967; McCrae & John, 1992). Extraversion shares conceptual ground with optimism, and greater extraversion has been demonstrated to be associated with greater perceived support from peers after the first 3 months of college (Asendorpf & Wilpers, 1998). Because

we did not assess extraversion in this study, we cannot empirically address the unique contribution of optimism to the findings reported. However, previous studies indicating weak to moderate associations (*r*s ranging from .29 to .43) between optimism and extraversion render the interpretation that our findings can be explained solely in terms of differences in extraversion somewhat less plausible (Marshall Wortman, Kusulas, Hervig, & Vickers, 1992; Mroczek, Spiro, Aldwin, Ozer, & Bosse, 1993).

To our knowledge, this is the first study to demonstrate associations among optimism, social support development, coping, and adjustment. Therefore, some caution should be taken in interpreting the findings until they are replicated. Because first-year college students possess few, if any, relationships when they first arrive on campus, they represent an ideal sample for examining questions about personality and social network development. However, first-year college students are relatively homogeneous. One way to examine whether our findings generalize to other populations would be to study other groups of people making a transition into new social networks. Useful populations for this purpose might include older adults moving into long-term community care facilities, younger children entering new schools, and adults moving into new (unfamiliar) neighborhoods.

In sum, the present research suggests that optimists exhibit improved psychological well-being and better adjustment to stressful life events both as a result of the coping strategies they use and because of their ability to generate more supportive social networks. It also suggests that there are relations between the coping strategies people use and their levels of social support. Taken together, the findings reported contribute to our understanding of the pathways through which optimism influences adjustment to stressful life events. In addition, they highlight the need for additional theoretical integration regarding how individuals' personalities, coping efforts, and social networks operate in concert to influence psychological adaptation to the stressful life events that are encountered.

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