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The costs and benefits of practical and emotional support on adjustment: A daily diary study of couples experiencing acute stress

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Abstract

Emotional support from intimate partners has been shown to have both costs and benefits for daily anxious and depressed moods (N. Bolger, A. Zuckerman, & R. C. Kessler, 2000). We examine whether similar costs and benefits are found for practical support, and when fatigue, vigor, and anger are outcomes. Results are based on daily diary reports from 68 recent law school graduates and their intimate partners during the month before the New York State bar examination. Partners' reports of practical support provision to the examinee were beneficial in that they were associated with decreased examinee fatigue and increased examinee vigor. In contrast, examinees' recognition of emotional support receipt was costly in that it was associated with increases in anger, as well as anxious and depressed mood. Results highlight the distinction between emotional and practical support and are consistent with findings that suggest that invisible (provided but not recognized) support leads to the best outcomes.

Decades of research have established that social support can buffer the effects of stress on mental health (Cohen & Wills, 1985; Thoits, 1982). Social support is also known to be associated with better outcomes following physical illness (e.g., Manne & Zautra, 1989), injury (e.g., Beedie & Kennedy, 2002), and bereavement (e.g., Schwarzer, 1992). Although it has been long known that persons who have strong social support networks appear to avoid some of the noxious effects of stress and illness, the mechanism for this buffering effect is still not understood. To address this need, Barrera (1986) recommended that social support researchers attend to the basic processes involved in social support and collect data on specific acts of support provision and receipt.

In the years that followed Barrera's recommendation, a number of researchers studied patterns of supportive acts (Cutrona, 1996) and specific supportive behaviors that were offered in response to stress and illness (Martin, Davis, Baron, Suls, Blanchard, 1994). Much to the surprise of many researchers, individuals who reported receiving specific supportive acts often did not experience the benefits that had been previously attributed to support. Although a few studies showed positive effects of support receipt (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Feldman, Downey, & Schaffer-Neitz, 1999), in the majority of studies the effects of support receipt appeared to be harmful (Barrera, 1986; Bolger, Foster, Vinokur, & Ng, 1996; Brown, 1978; Dunkel-Schetter & Skokan, 1990; Eckenrode & Wethington, 1990; Lieberman, 1986; Wethington & Kessler, 1986). These

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findings of harmful effects appeared to fly in the face of the buffering hypothesis and clinical practice (Brugha, Wing, Brewin, MacCarthy, & LeSage, 1993). It has now become clear that most of the findings of the benefits of support were based on studies that regarded participants as supported if they reported a network of helpers, listed persons who were available to them in times of need, or simply had a general sense that they had the friends they needed (Iida, 2002; Rafaeli & Gleason, 2003; Rook & Underwood, 2000).

Bolger, Zuckerman, and Kessler (2000) suggested a possible explanation for why research based on actual daily support transactions between intimate others does not show the beneficial effects of support. Using couples as participants and obtaining independent reports from each partner, the authors were able to separate the benefits and costs of support by distinguishing between support provision and support receipt. They found that during a period of acute stress, a partner's report of provision of emotional support was associated with decreased levels of depressed mood in the recipient on the next day. Reports of *received* emotional support, on the other hand, were associated with increased anxious and depressed mood in the recipient. These findings were studied using multivariate models that distinguished the unique contributions of both provided and received support. Because the greatest reduction in depressed mood was obtained when the partner reported emotional support provision but the recipient did not acknowledge receipt, Bolger et al. (2000) suggested that the most effective support transaction was one of "invisible support." When support was visible, the costs of support receipt appeared to cancel out the benefits of support provision. Although these authors emphasized the combination of provision and no receipt, they did not claim that these two events interacted statistically but rather had additive effects.

Costs and benefits of support

There are many reasons why the awareness of support receipt may be costly. It is well known that social exchanges can be aversive (Rook, 1984), and sometimes a supportive act can be accompanied by a blatantly aversive message. Amarel (2001), however, reviewed five mechanisms that could lead to negative outcomes even if the support transaction is well intended and pleasantly delivered. First, support receipt can challenge recipients' sense of competence, induce them to make upward social comparisons, and thereby take a toll on their self-esteem. Such effects have been demonstrated in laboratory studies (Fisher, Nadler, & Whitcher-Alagna, 1982). Second, the supportive activity may draw attention to the problem the support is intended to resolve, leading to cognitive appraisal costs (Dunkel-Schetter, Folkman, & Lazarus, 1987; Lazarus, 1991). Third, the supportive activity can challenge the recipient's sense of autonomy and agency (Ryan & Solky, 1996). Fourth, it may make the recipient feel indebted to the provider (Walster, Berscheid, & Walster, 1973). Finally, if support is being provided in conjunction with some concrete performance challenge, performance anxiety itself could be heightened (Amarel, 2001).

The awareness of support receipt can involve multiple kinds of costs, but support provision can also involve many kinds of benefits. These have been discussed extensively in the literature on social networks and available support (Sarason, Sarason, & Gurung, 1997). Emotionally supportive activities can increase the recipient's sense of social connection, self-worth, and competence, and they can also help the recipient cognitively reframe the experience to make it less stressful. These appraisals and emotions can help buffer the deleterious effects of stressors (Cohen, Gottlieb, & Underwood, 2000; Gore, 1981). Emotionally supportive actions can also distract the recipient from worries associated with the stressful experience, facilitate physical relaxation, and reinforce other coping strategies, such as turning to prayer (Heller & Rook, 2001).

Although the theoretical rationale for support transactions to lead to both costs and benefits is clear, the empirical evidence for these dual effects is limited. Bolger et al. (2000) examined these costs and benefits together in a single multivariate model. Their investigation, however, was limited to emotional support and its effects on depressed and anxious

mood. Little is known about the specificity of the costs and benefits for other forms of support and affective states. In particular, we turn our attention to practical support and to important affective states of anger, fatigue, and vigor.

Practical support

Practical support is a major class of supportive events that is distinct from emotional support, even if they often co-occur (Wills & Shinar, 2000). It involves tangible acts, such as shopping, housecleaning, and running errands, which are intended to be helpful. The acts are usually assumed to increase the recipients' time for event-focused strategic coping, as well as for rest and leisure (Wills & Shinar, 2000). Practical supportive acts are often explicitly encouraged in behavioral intervention programs for people under stress (Gottlieb, 2000), but they are rarely singled out for study in published reports. To the contrary, they are often ignored when investigators limit their attention to emotional supportive acts.

In principle, the mechanisms that explain the costs and benefits of emotional support during periods of high stress apply to practical support as well. In terms of the costs, awareness of the receipt of practical support would appear to activate the same cognitions and emotions that are activated by the acknowledgment of emotional support. Practical supportive acts can be interpreted by recipients as negative comments on their competence, comments on the importance of the stressor itself, threats to their autonomy, and cause for social indebtedness. On the other hand, practical support can literally reduce the strength of the stressor insofar as the recipient is able to prepare more successfully to meet the challenge of the stressful situation. It can also provide the recipient with more time to relax and sleep, thereby providing important physiological and psychological resources even if the stressor itself is undiminished in strength. Symbolically, the practical support events can indicate the affection and esteem felt by the provider for the recipient and can represent an affirmation of self-worth and esteem.

Based on these considerations, we predict that practical support will activate many, if not most, of the cost and benefit processes associated with emotional support and that results similar to those reported by Bolger et al. (2000) will be found. However, we believe that practical support will extend benefits beyond anxious and depressed mood for persons experiencing extreme acute stress. Because effective practical support has the potential to free time for busy persons under stress, we expect that practical support will reduce fatigue in the following day, and conversely, increase vigor. For this reason, we propose expanding the scope of mood experiences in our analyses beyond the two moods considered by Bolger et al.

Moods and stress

Bolger et al. (2000) considered anxious and depressed moods when evaluating the costs and benefits of emotional support transactions. These are well considered in the stress literature and are linked directly to processes that can lead to episodes of psychopathology (e.g., Dohrenwend & Dohrenwend, 1974). However, feelings of anger and exhaustion are also increased by severe stress (de Rijk, Schreurs, & Bensing, 1999; Scott, Brandberg, & Oehman, 2001), and threats to self-esteem are often associated with increases in negative affect, specifically anger and hostility (Kernis, Grannemann, & Barclay, 1989). It is plausible that the severity of these feelings might be affected by the provision of support and by awareness of the provision (i.e., receipt). The pattern of results for anger and exhaustion in relation to both provision and receipt of support is expected to be similar to that found by Bolger et al. for depressed and anxious mood. We would expect that provision of support would decrease anger/frustration and exhaustion/fatigue and that receipt would be associated with increases in both of these negative moods.

Given that the same pattern of results is expected for all negative moods, one might wonder if a more global measure of negative mood would be preferable to measures that emphasize qualitative distinctions between kinds of moods (see Watson & Tellegen, 2002). The argument for keeping the negative

moods distinct in studies of moods in relationships is that the distinctions between anger, fatigue, anxiety, and depression are experienced quite differently by partners in the relationship context. However, it will be important to determine whether the patterns of costs and benefits of support appear to be empirically redundant, such that those individuals who experience increased anxious and depressed mood in reaction to receiving support are the same individuals who experience increased anger and fatigue.

The current study

We undertook an examination of the same data set used by Bolger et al. (2000). This data set consisted of 68 couples, where 1 member was preparing to take the New York State bar examination. This professional examination is very difficult, and the participants were recruited from schools where the failure rate ranged from 20% to almost 50%. Although the bar exam is an uncommon stressor, it shares many features of job-related stress that arise out of excessive work demands (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Examples of these might be starting a new business, completing an important work project, or responding to an emergency condition.

We carried out analyses to determine if the provision and receipt of practical support events had the same costs and benefits as did emotional support. Specifically, we expected that examinees who recognized practical support by their partners would experience more negative mood and less positive mood on the following day than those who do not believe they were supported. Among examinees whose partners reported providing support, we expected to see a reduction in negative mood and an increase in positive mood on the next day. We were especially interested in the impact of practical support on moods related to fatigue and vigor, which we expected to be structurally related to practical support in persons who are overloaded with work/study demands. For completeness, we extended the original analyses of Bolger et al. (2000) to the additional measures of mood, and we incorporated some refinements in the analysis to account for factors that could have led to biases in their original analysis. In particular, we were concerned that both support events and level of affect might vary from weekday to weekend when couples spend more time together. Similarly, if partners provided more support as the exam drew near (and as the examinees' negative affect increased), then the estimates of costs and benefits of support could be over or understated. Our study takes these factors into account explicitly. Finally, to gain insight into how the five measures of mood (anxious, depressed, anger, fatigue, and vigor) differ during an acute stress experience, we examine their trajectories over the diary period, as well as the trajectories of support events.

In sum, our central hypotheses for this study are

- Received practical support (noticed by the examinee) will be associated with increased depressed mood, anxious mood, anger, fatigue, and reduced vigor.
- Provided practical support (reported by the partner) will be associated with decreased depressed mood, anxious mood, anger, fatigue, and increased vigor.

Method

Design and sample

The sample and design was first described by Bolger et al. (2000). Officials at 15 New York State law schools were asked to distribute recruitment letters to their graduating students, and 9 schools agreed to do so. The recruitment letters sought examinees who were in romantic relationships with partners of the opposite sex for at least the past 6 months and who expected to be living with their partners in the weeks before the bar exam. We excluded couples if both partners were preparing for the bar exam. Couples were paid $50 for completing the study.

Information about which graduating law students were in intimate relationships was not available from law schools, and so all final-year students were sent recruitment

material. We sent preaddressed postcards that interested students could return for more information. Of the 2,700 letters sent, 140 postcards were returned. Of these, 99 couples agreed to participate after they were contacted by phone.[1]

Two months before the examination, participants (both examinees and their partners) provided information about demographic, social, and personality characteristics in a background questionnaire, which took approximately 1 hr to complete. One month before the examination, participants were sent booklets of seven daily diaries. The daily diary forms for the examinee and partner were identical and were printed on a double-sided sheet of paper. The entire form was designed to be completed in less than 5 min, and participants were instructed to complete a diary form each day at bedtime. At the end of each week, the participants were asked to mail the completed diaries in a preaddressed, prestamped envelope. At the end of the first week, all participants were called and reminded to mail their weekly packet. In subsequent weeks, participants were only called if their packets were not received in the mail. The diary period ran from 32 days before the examination to 3 days after the examination.

Of the 99 couples who initially agreed to participate, a final sample of 68 couples (69%) completed all of the materials in a timely fashion. We eliminated couples ($N = 31$) in which either partner missed one or more diary day or reported that they completed the diary retrospectively the next day or later.[2] In 45 couples (66%), the examinee was male. Examinee mean age was 29.4 years ($SD = 5.1$), and partner mean age was 29.5 ($SD = 5.9$). Two thirds of the couples were married, and couples had been living together for an average of 3.3 years ($SD = 3.8$). The quality of their relationships was generally high. The mean value of the global Dyadic Adjustment Scale (Spanier, 1976) was 103.0 and the standard deviation was 14.0. This mean is somewhat lower than Spanier's sample of married persons (*M* 114.8, *SD* 17.8) but higher than his sample of divorced persons (*M* 70.7, *SD* 23.8). Eighty-one percent of partners had at least a Bachelor of Arts-level education. More than 90% of both the examinees and their partners were White.

Like Bolger et al. (2000), we analyzed the 32 diary days leading up to and including the examination; we did not analyze data from the 3 days following the event because the major stressor was no longer applicable at that point. To further clarify our analyses, we divided the 32 days leading up to the exam into two phases. Phase 1 encompasses the first 24 days, whereas phase 2 includes the week leading up to and including the examination. Consistent with Bolger et al., our analysis focused on the high-stress phase (Phase 2), but we included the low-stress phase in the analysis to obtain more stable estimates of underlying variability.

Measures

Examinee mood. A shortened version of the Profile of Mood States (POMS) (Lorr & McNair, 1971) was used to measure the five target moods. Each mood was represented by three or four items as follows: Anxious mood (on edge, uneasy, anxious, nervous), Depressed mood (sad, discouraged, hopeless, worthless), Anger (resentful, angry, annoyed, peeved), Fatigue (worn out, exhausted, fatigued), and Vigor (cheerful, vigorous, lively). Respondents rated the extent to which they had experienced the feelings in the past 24 hr on a 5-point scale ranging from *not at all* (0) to *extremely* (4). Daily scores for each affect were obtained by averaging the ratings of the relevant items. The average internal consistency of the five scales over days (within person) was .78 or better for all five scales, and the median internal consistency was .86.

1. These numbers cannot be used to calculate formal recruitment response rates because we do not know which of the 2,700 students were eligible.
2. Participants were asked to report when they completed the diary, and they were assured that they would be paid even if they did not complete the diary on time. Although it was not possible to guarantee that participants were honest in these reports, and that they followed instructions not to share their reports with their partners, the low to modest level of association between examinee and partner reports suggested that individual daily reports were made rather than concocted reports. See Green, Rafaeli, Bolger, Shrout, and Reis (2005) for more discussion of the quality of paper diary reports.

Support provision and receipt. Both the examinee and the partner reported on a daily basis whether they provided emotional and practical support to their mate and whether their mate provided them with emotional and practical support. Although not analyzed here, participants were also asked to report support transactions with siblings, children, other family members, friends, neighbors, and persons in their workplace. For each type of support, the report was binary, 1 if support had occurred at any time during the past 24 hr and 0 otherwise. For support receipt, daily diary instructions asked participants to "indicate any help you received with a worry, problem, or difficulty from the following people in the past 24 hours. Help can be emotional (e.g., listening, comforting) or practical (e.g., doing something concrete)." For support provision, participants were asked to "indicate any help you gave to the following people with a worry, problem, or difficulty in the past 24 hours. Help can be emotional (e.g., listening, comforting) or practical (e.g., doing something concrete)." Following these instructions was the checklist of possible providers/recipients of support.

For the present analyses, we consider four daily support variables: (a) examinee reports of emotional support receipt (emotional receipt) from partner, (b) partner reports of providing emotional support (emotional provision) to examinee, (c) examinee reports of practical support receipt (practical receipt) from partner, and (d) partner reports of providing support (practical provision) to examinee.[3]

Statistical methods

The diary design led to sequences of 32 daily observations on each of the 68 participants and their partners. There were no missing data in the subset of couples analyzed by Bolger et al. (2000) and us. We used multilevel models[4] to represent the stress-support process within each couples and to summarize these processes over all couples. We estimated the multilevel models using the MIXED procedure of SAS (SAS Institute, 2001).

Our analysis contained two refinements to the Bolger et al. (2000) model. First, we included day and weekend terms to account for mood variation as a function of time. Second, although not explicit in the equation, we did not assume that the residual terms e_t and e_{t+1} were uncorrelated across days. Instead, we assumed that the residuals could have a first-order autoregression pattern (Khattree & Naik, 2000), meaning that residuals from adjacent days were more similar than residuals from distal days.[5] Allowing residuals to be correlated adjusted for predictors that were important for the model but not measured (Singer & Willett, 2003). Below, we describe the model using the two-level formation used in the text by Raudenbush and Bryk (2002).

The first level of the model describes the examinee's mood from one day to the next (D_{t+1}) as a function of previous day mood (D_t), support provision by the partner (P_t) and support receipt perceived by the examinee (R_t), as well as temporal variables (S_{t+1}, T_{t+1}, W_{t+1}). Adapting the notation of Bolger et al. (2000), we write

$$\begin{aligned} D_{t+1} = {} & b_0 + b_1 D_t + b_2 S_{t+1} + b_3 T_{t+1} \\ & + b_4 W_{t+1} + b_5 P_t + b_6 R_t + b_7 (SP)_t \\ & + b_8 (SR)_t + e_{t+1}. \end{aligned} \quad (1)$$

The model shows the mood outcome measured on Day ($t + 1$), while being adjusted for mood on the previous day, Day t. That previous day mood, D_t, is centered by subtracting the examinee's mean of the mood across all days. Early stress phase, S_{t+1}, is coded zero for the 7 days

3. Unlike other daily diary studies that examined perceived social support during the past 24 hr (Feldman et al., 1999), we choose only to focus on partners and the examinees' perception of support provision and receipt. Additional sources of support (i.e., neighbor, friend, relative, etc.) did not influence our analyses and are therefore not included within the model.

4. Also called hierarchical linear models and random regression models.

5. Our model also differs from that of Bolger et al. (2000) in that we use (0, 1) dummy codes for phase rather than effect (−.5, .5) codes, and we define the outcome as daily mood rather than a change in mood from one day to the next. Finally, following advice in Raudenbush and Bryk (2002), we centered mood and support indicators around participant means rather than the sample means.

before the exam and is coded 1 for the 24 days before then. The model allows distress to increase steadily with T_{t+1}, an indicator of diary day number. It increases by 1 for each new day and is centered with $T = 0$ defined for Day 25, which is the first day of the final week before the exam. Weekends are specified by W_{t+1}, which is coded 1 for Saturday and Sunday and coded 0 for weekdays.

In Equation 1, P_t is an indicator of partner's provided support on Day t, and it has been person centered (Raudenbush & Bryk, 2002) by coding supported days as $1-\overline{p}$ and by coding unsupported days as $-\overline{p}$, where $\overline{p}$ is the proportion of days supported for the participant. Similarly, R_t is an indicator of examinee's received support on Day t (coded $1-\overline{r}$ for supported day, $-\overline{r}$ otherwise, where $\overline{r}$ is the proportion of days supported for the participant); and *SP* and *SR* are interaction terms between stress phase, and partner's provided and examinee's received support, respectively. The residual, e_{t+1}, captures the discrepancy between the observed $t+1$ distress score and that predicted by the model. As mentioned above, we assume that the residuals might be serially correlated with a lag-one autoregressive pattern.

With this coding pattern, the intercept b_0 in Equation 1 can be interpreted as the expected distress on Day 25 (which is a weekday), assuming average support and average mood levels for that participant. Variables were centered in order to make the value 0 meaningful. Dummy codes did not need to be centered due to 0 equaling no support. The interpretation of coefficients b_1, b_3, and b_4 are not complicated by interactions with other effects. Coefficient (b_1) reflects the differences in mood on Day $t+1$ associated with a one-point difference in mood on Day t. Coefficient (b_3) reflects the change in mood corresponding to each passing day toward the bar exam. Day was centered on Day 25, the first day of the stressor week, so the intercept can be interpreted for the high-stress period. Coefficient (b_4) reflects the difference in mood associated with weekend days[6] compared to weekdays. The interpretation of coefficients b_2, b_5, and b_6 is qualified by interaction terms. Coefficient b_2 reflects the difference in mood between the early versus late phase of exam preparation, on days when neither support provision nor receipt occurs. Coefficients b_5 and b_6 reflect, respectively, the effects of support provision and receipt during the final phase of preparation. Finally, the interaction effects, b_7 and b_8 are interpreted as the difference in the effects of support provision and receipt during the early phase of exam preparation compared to the later phase of the exam preparation.

The second level of the multilevel models describes how the coefficients in Equation 1 vary over characteristics of the individual. This level can be conceived as a set of models in which b_0, b_1, …, b_8 are outcomes and between-person variables are explanatory factors. For example, for a given examinee, b_6 is the amount of change in mood on the day following receipt of support. One examinee might react negatively to support from the partner, while another examinee might benefit from the support. Explaining variation in these effects is the goal of the second level of the model. Gender is one candidate for explaining variation in the overall level of mood (e.g., Leibenluft, 1999; Nolen Hoeksema, 2001), and we included it in the model we report below. In addition to the possible systematic variation of the Level 1 effects due to gender, we considered the possibility that there was unexplained random variation in the Level 1 effects. The multilevel methodology allows the between-person variation to be estimated as so-called random effects.

For simplicity, we present Level 2 models that are restricted to an overall mean, a main effect for gender, and a random effect, where applicable. We specify three effects to be random, the intercept (b_0), the effect of yesterday's mood (b_1), and the effects of today's support provision.[7] The Level 2 models for

6. We checked other possible codings for weekend days and found that the inclusion of Saturday and Sunday only (our first hypothesis) was empirically superior to the alternatives.

7. These were the three random effects used by Bolger et al. (2000). We examined the possibility that support receipt effects might also vary with participants, but the amount of variation was too small to warrant inclusion in the model.

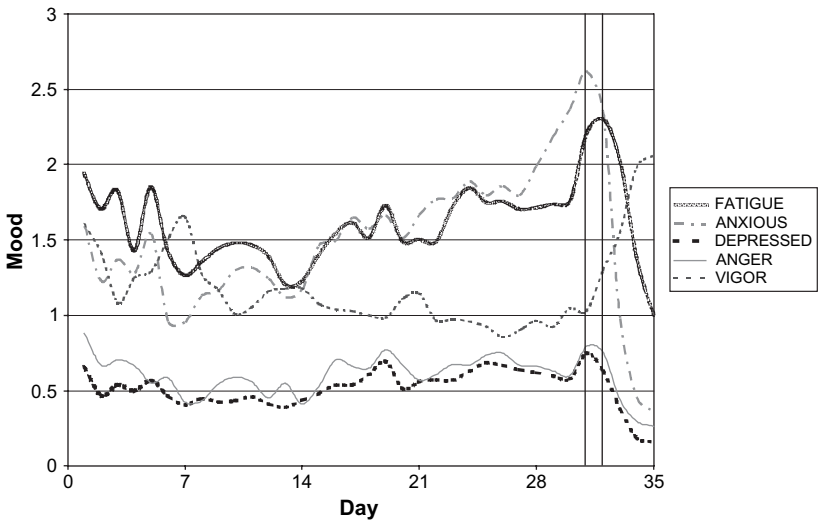

Figure 1. Smoothed pattern of reported anxious, depressed, angry, fatigued, and vigorous mood over 35 days.

these three effects have one part that is common across participants (e.g., the mean and overall gender effect) and one part that is unique to the participant (U_i). This is shown formally in Equation 2 for the intercept:

$$b_{0i} = (\gamma_0 + \gamma_1 G) + U_i. \qquad (2)$$

If G is coded 0 for males and 1 for females, then γ_0 is the average of the intercepts for males, and γ_1 is the difference in the average male and female intercepts. U_i is the amount by which the intercept for person i differs from the average for his/her gender group. The Level 2 models for effects that are not considered to be random are simpler versions of Equation 2. They include only the part included in parentheses and not the random component U_i.

Beyond the random effects associated with repeated measurements, and correlations among serially ordered residuals, we did not have to consider additional adjustments for dependencies in the couple data (e.g., as in Kennedy, Bolger, & Shrout, 2002) because our analyses focused on the examinee's moods only. The partner's reports were used only as explanatory variables in this analysis and were not modeled directly.

Results

Descriptive results of mood and support during stress

Figure 1 shows how the five POMS moods vary over the 35-day diary period.[8] The double vertical lines on Days 31 and 32 show the days of the bar exam. Anxious mood and fatigue show the most striking patterns as the exam approaches, with anxious mood spiking on the first day of the exam and fatigue spiking on the second day. The pattern for anger is similar to that for depressed mood: Both settle into low levels by Week 2 but increase as the bar exam approaches. The single positive mood, vigor, shows a pattern that is complementary to the negative moods, going down when the negative moods go up. Also apparent in Figure 1 are the average effects of weekends. Days 6 and 7 are Saturday and Sunday, and one can observe a decrease of negative moods and an increase of vigor on these days and subsequent weekend days. The figure includes Days 33, 34, and 35, which are the

8. The pattern has been smoothed using the algorithm built into the Excel software (Microsoft Excel 2000).

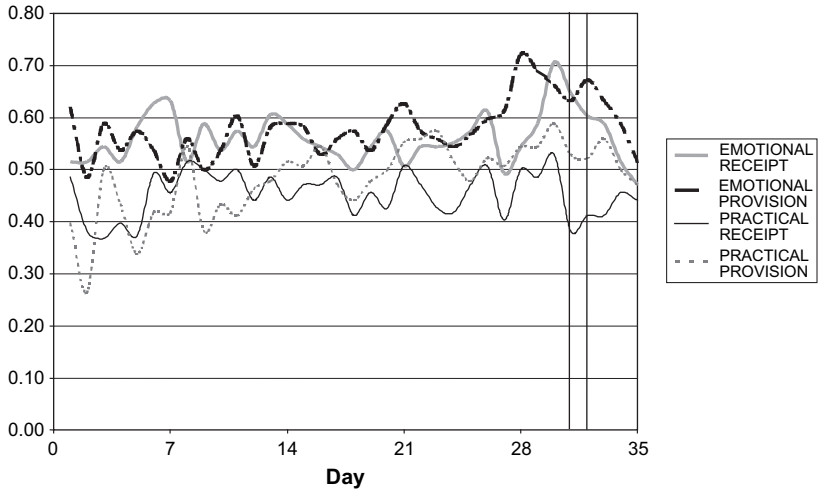

Figure 2. Smoothed proportion of reported provided support (partners) and receiving support (examinees) over 35 days.

Friday, Saturday, and Sunday following the exam. Although these postexam days are not included in the random regression analyses of the next section, the reduction of negative affect and the increase in vigor that appears after the event is noteworthy.

Figure 2 shows the proportion of the examinees who report receiving emotional and practical support over the 35 days and the proportion who were provided emotional and practical support according to their partners. For both receipt and provision, emotional support was more common than practical support throughout the 4-week period. More than 50% of the participants reported receipt and provision of emotional support on typical days, whereas less than 50% of the sample typically reported receipt of practical support. Receipt of practical support appears to be the only report that does not increase as the bar exam approaches, whereas increases in emotional support transactions are noticeable during the final week of exam preparation.

Whereas Figures 1 and 2 show the patterns of mean mood and support over days, Table 1 shows the pattern of correlations of moods and support within couples over days. Correlations were computed over days after subtracting the averages of each participant from their daily reports, and thus these can be considered to be average within-person correlations. As shown in the top section of the table, the correlations among the POMS scales are modest in magnitude but reflect the distinction of positive versus negative moods. The negative moods (anxious, depressed, angry, and fatigued) have a median correlation of .43, and all four of these were inversely related to reports of vigorous mood (median correlation is −.34).

Part B of Table 1 shows that the examinee's and partner's reports of support were positively correlated but only at a modest level. Receipt and provision were correlated .22 and .21, respectively, for emotional and practical support. These modest correlations should not be taken as evidence of unreliability of the measure but rather that the perspectives of the examinees and partners are different.[9] Had the correlations been very high, it would have been difficult to find instances of invisible support, which are exemplified by situations

9. We did not attempt to measure reliability of reports of support directly. Because these are binary reports, it is not possible to compute internal consistency estimates. Because we ask participants to complete the diary at the end of the day before they go to bed, it is not possible to obtain test-retest estimates of reliability without risking participant burden and artificial levels of concordance due to memory effects. We infer that the measures are indeed reliable because they produce systematic results in analyses presented below.

Table 1. *Within-person correlations of short POMS mood ratings by examinee and within-couple correlations of support reports by examinee and partner*

Part A: Correlations among moods				
Mood	Anxious	Depressed	Angry	Fatigued
Anxious				
Depressed	0.55			
Angry	0.41	0.49		
Fatigued	0.45	0.36	0.29	
Vigorous	−0.35	−0.33	−0.22	−0.36

Part B: Correlations among reports of support			
Support	Emotional received	Emotional provided	Practical received
Emotional received			
Emotional provided	0.22		
Practical received	0.40	0.11	
Practical provided	0.15	0.36	0.21

Note. Received support is based on examinees' reports and provided support is based on partners' reports.

where the partner provided emotional or practical help, but did so in such a way that the examinee was unaware of it.

The within-participant correlations of practical and emotional receipt and of practical and emotional provision were higher than the correlation of each support type across members of the dyads. Examinees' reports of emotional support receipt were correlated .40 with their reports of practical report receipt, and the equivalent correlation for the partners' reports of provision was .44. We know from qualitative work with participants that these correlations can arise from actions that are viewed as both practically and emotionally supportive. For example, when a partner helps an examinee with a practice test, or when a partner brings the examinee a meal or a snack, these actions can be coded as both practically and emotionally supportive. The fact that the correlations are modest, however, indicates that there are many perceptions of support that fit in one but not the other category.

Emotional support and mood

Table 2 shows the results of the multilevel linear models for each of the five moods as a function of temporal variables (day, weekend, and phase), emotional support (provided and received), and interactions of phase with emotional support. The first part of the table shows the fixed effects, which are the estimates of the average coefficients from Equation 1 over all participants. These correspond to the γ coefficients in Equation 2. Below the fixed effects are estimates of the variance of the intercept, the lagged emotion variables, and received support. Finally, the table shows estimates of the autocorrelation among adjacent Level-1 residuals and an estimate of the variation of the residuals.

Verifying past results for anxiety and depression. The first two columns are variations of models that were the centerpiece of the Bolger et al. (2000) report. Our models take day-to-exam, weekend, and residual autocorrelation into account and hence are more rigorous than the previous analysis. We expected that the results would withstand this additional adjustment and that received support would increase anxious and depressed mood, whereas provided support would reduce depression.

Although the added components to the models all appear to be important, the basic pattern of results reported by Bolger et al. (2000) is maintained. During the high-stress phase (coded phase = 0), emotional support receipt

Table 2. *Multilevel regression analyses for emotional support (N = 68)*

	Anxiety	Depression	Anger	Fatigue	Vigor
Fixed effects	γ (*SE*)	γ (*SE*)	γ (*SE*)	γ (*SE*)	γ (*SE*)
Intercept	1.831 (.059)**	0.540 (.037)**	0.672 (.045)**	1.763 (.055)**	1.130 (.052)**
Lagged emotion	0.525 (.025)**	0.501 (.030)**	0.450 (.029)**	0.590 (.025)**	0.432 (.026)**
Phase	−0.132 (.047)**	0.007 (.028)	0.009 (.041)	−0.122 (.049)*	−0.070 (.040)†
Day (×10)[a]	0.171 (.022)**	0.040 (.012)**	0.043 (.029)*	0.061 (.023)**	−0.087 (.029)**
Weekend	−0.190 (.032)**	−0.052 (.019)**	−0.074 (.028)**	−0.206 (.034)**	0.117 (.028)**
Gender	0.151 (.087)†	0.105 (.055)†	−0.036 (0.064)	0.142 (.078)†	−0.163 (.079)*
RS[b]	0.201 (.088)*	0.176 (.051)**	0.176 (.077)*	0.136 (.093)	0.055 (.073)
PS[c]	−0.066 (.082)	−0.134 (.049)**	−0.056 (.072)	−0.143 (.089)	0.046 (.071)
RS × phase	−0.187 (.097)†	−0.208 (.058)**	−0.231 (.085)**	−0.026 (.104)	−0.073 (.083)
PS × phase	0.020 (.093)	0.144 (.056)*	0.092 (.082)	0.125 (.102)	0.005 (.081)
	Anxiety	Depression	Anger	Fatigue	Vigor
Random effects	Estimate (*SE*)	Estimate (*SE*)	Estimate (*SE*)	Estimate (*SE*)	Estimate (*SE*)
Intercept	0.099 (.026)**	0.040 (.011)**	0.051 (.014)**	0.073 (.022)**	0.082 (.021)**
Lagged emotion	0.015 (.006)**	0.028 (.009)**	0.023 (.009)**	0.017 (.007)**	0.017 (.007)**
RS	0.027 (.021)†	0.002 (.006)	0.032 (.018)*	0.019 (.023)	0.005 (.013)
Autocorrelation	−0.107 (.040)**	−0.129 (.042)**	−0.119 (.042)**	−0.193 (.035)**	−0.117 (.043)**
Residual	0.416 (.014)**	0.155 (.005)**	0.323 (.011)**	0.534 (.020)**	0.318 (.011)**

[a] *Day effect is shown for 10 days.*
[b] *Received support (RS) was reported by the examinee.*
[c] *Provided support (PS) was reported by the partner.*
†$p < .10$. *$p < .05$. **$p < .01$.

(reported by examinee) on one day is associated with increased anxious mood, $\gamma = .201$, $t(65) = 2.29$, $p < .05$, and depressed mood, $\gamma = .176$, $t(65) = 3.45$, $p < .01$, on the next day. Emotional support provision (reported by the partner), on the other hand, is associated with decreased depressed mood, $\gamma = -.134$, $t(65) = -2.71$, $p < .01$, but is not significantly related to anxiety, $\gamma = -.066$, $t(65) = -.80$, *ns*. The interaction of emotional support provision with phase of preparation for depressed mood is about the same size but opposite in sign to the effect in the last week, $\gamma = .144$, $t(65) = 2.57$, $p < .02$, suggesting that the benefits of emotional support provision are limited to the high-stress period, and not the first 3 weeks of bar preparation. The analogous interaction for anxious mood is not statistically significant, $\gamma = .020$, $t(65) = 0.20$, *ns*, but it is also consistent with a pattern of stronger effects in the last week than during the first 3 weeks.

In addition to the hypothesized effects, Table 2 shows the relation of the other variables to the daily moods. For both anxious and depressed mood, level of mood on the previous day is associated with level of mood on the current day: anxious, $\gamma = .525$, $t(65) = 21.27$, $p < .01$; depressed, $\gamma = .501$, $t(65) = 16.48$, $p < .01$. Both anxious and depressed mood increase steadily, if subtly, with each passing day of bar exam preparation, but the effect for anxious mood is four times larger than for depressed mood: anxious, $\gamma = .171$, $t(65) = 7.68$, $p < .01$; depressed, $\gamma = .040$, $t(65) = 3.12$, $p < .01$; both effects are scaled to reflect passage of 10 days. Weekends have beneficial effects on both types of mood. Anxious mood is reduced by $-.190$, $t(65) = -5.93$, $p < .01$, and depressed mood is reduced by $-.052$ on weekend days, $t(65) = -2.72$, $p < .01$. These effects are consistent with the pattern shown in Figure 1. Although not statistically significant, women tend to have higher levels of anxious and depressed mood on the average: anxious, $\gamma = .151$, $t(65) = 1.74$, $p < .09$; depressed, $\gamma = .105$, $t(65) = 1.91$, $p < .06$.

New results for anger, fatigue, and vigor. Also shown in Table 2 are results for the POMS moods of anger, fatigue, and vigor. We hypothesized that received support would increase negative mood and decrease vigor and that provided support would decrease negative mood and increase vigor.

With regard to anger, we find that provided emotional support does not appear to benefit the examinee, $\gamma = -.056$, $t(65) = -.78$, *ns*, but received emotional support tends to have costs similar to those found for depressed and anxious mood, $\gamma = .176$, $t(65) = 2.28$, $p < .05$, during the last week of preparation. As before, the interaction with phase is both significant and opposite in sign to the support main effect, suggesting that these costs do not accrue during the initial 3 weeks of bar preparation, $\gamma = -.231$, $t(65) = -2.73$, $p < .01$. Anger today is related to anger yesterday, $\gamma = .450$, $t(65) = 15.76$, $p < .01$, and it steadily increases as the exam draws near, $\gamma = .043$, $t(65) = 2.28$, $p < .05$; scaled to reflect passage of 10 days, with some relief on weekend days, $\gamma = -.074$, $t(65) = -2.66$, $p < .01$.

Although the direction of the effects for fatigue follows the pattern of invisible support during the final week of preparation, neither is significant: provision, $\gamma = -.143$, $t(65) = -1.60$, *ns*; receipt, $\gamma = .136$, $t(65) = 1.46$, *ns*. Like the other moods, fatigue is related to previous day's fatigue, $\gamma = .590$, $t(65) = 23.99$, $p < .001$; day until the exam, $\gamma = .061$, $t(65) = 2.69$, $p < .01$; scaled to reflect passage of 10 days; weekend, $\gamma = -.206$, $t(65) = -6.01$, $p < .001$; as well as preparation phase, $\gamma = -.122$, $t(65) = -2.48$, $p < .05$. Gender was unrelated to anger, but women had significantly lower levels of vigor on the average, $\gamma = -.163$, $t(65) = -2.06$, $p < .05$, as well as a trend (not statistically significant) to be higher on fatigue, $\gamma = 0.142$, $t(65) = 1.82$, $p < .08$.

Vigor on one day was also not reliably associated with either emotional support provision, $\gamma = .046$, $t(65) = 0.64$, *ns*, or support receipt, $\gamma = .055$, $t(65) = 0.75$, *ns*, on the previous day, during the final week of bar preparation. Vigor was related to previous day's vigor, $\gamma = .432$, $t(65) = 16.55$, $p < .001$, day until the exam, $\gamma = -.087$, $t(65) = -4.00$, $p < .001$; scaled to reflect passage of 10 days, and weekend, $\gamma = .117$, $t(65) = 4.23$, $p < .001$.

The effects in the top portion of Table 2 can be interpreted as effects of emotional support on mood for the average examinee. Our analysis treated the intercept term (b_0 in Equation 1), the lagged emotion effect (b_1 in Equation 1), and the effect of received support (b_6 in Equation 1) as random effects, which means that different examinees could have different values for these effects. The bottom portion of Table 2 shows the estimates of the size of these random effects. For all mood outcomes, there was evidence that the intercept and the lagged mood effects varied across persons. For received support, there was evidence of between-couple variability in its effects on examinee anger and a trend for variability in the effects on anxious mood. For depressed mood, fatigue, and vigor, the variability associated with received support was estimated to be small, and it was not significantly different from zero. Although it is not shown in Table 2, we also explored whether the effects of provided support varied systematically across couples, and we found that none of the variance terms were different from zero.

When these random effects are significant, one can take the square root of the variance estimates shown in Table 2 to compute the standard deviation of the effects over couples. Assuming that the effects are normally distributed, plus or minus 1.96 times this standard deviation provides an estimate of an interval that contains 95% of the couples. For example, the random effect of received support on examinee anger is 0.032. The square root of this is approximately 0.179. Given that the average effect of received support on anger is 0.176, we can infer that 95% of the individual effects range from [−.175] to [.527]. Further, we can infer that at the positive extreme of the distribution, there are some who show three times the anger of the average person when they report receiving support. Finally, we can infer that 16% of examinees have no change or decreased anger when they receive support and that 84% have increased anger when they receive support.

Practical support and mood

Table 3 shows results of analyses of practical support provision and receipt on the five mood ratings. We had hypothesized that practical support would lead to increased negative moods when support was received but that it would lead to reduced negative mood when it was provided.

For depressed, anxious, and angry mood, our hypotheses were not confirmed. Table 3 reveals that anxious, depressed, or angry mood are not reliably related to practical support provision or receipt. For anxious mood, the pattern of coefficients is consistent with invisible support: provision, $\gamma = -.122$, $t(65) = -1.53$, *ns*; receipt $\gamma = .125$, $t(65) = 1.35$, *ns*), but this pattern is not significant. For depressed and angry mood, the coefficients for provided and received practical support are very small and are not even suggestive of the invisible support pattern.

We had hypothesized that practical support would be particularly important for fatigue and vigor. Consistent with that expectation, Table 3 suggests that practical support provision may reduce fatigue, $\gamma = -.182$, $t(65) = -2.11$, $p < .05$ and increase vigor, $\gamma = .138$, $t(65) = 2.03$, $p < .05$ among examinees in the final week of their bar exam preparation. Although only statistical trends, the interactions of practical support provision with phase of preparation with respect to fatigue, $\gamma = .181$, $t(65) = 1.83$, $p < .10$ and vigor, $\gamma = -.151$, $t(65) = -1.94$, $p < .10$ are consistent with the possibility that the benefits of practical support provision are limited to the high-stress period and not the first 3 weeks of bar preparation.

During the high-stress phase, there was no evidence that practical support receipt involved costs for fatigue, $\gamma = .046$, $t(65) = .44$, *ns* or vigor, $\gamma = .111$, $t(65) = 1.42$, *ns*, and the interactions with preparation phase did not suggest that the results were any different at the earlier phase: for fatigue, $\gamma = .051$, $t(65) = .45$, *ns* and for vigor, $\gamma = -.172$, $t(65) = 1.95$, $p < .10$).[10]

10. One reviewer noted that we interpreted a statistical trend for the phase interaction for received support but not for provided support with vigor as the outcome variable. We did this to be conservative. Because vigor appeared to be related to received support in the main effect, we thought it prudent to note that this association might not generalize to the preparation phase. For provided support, there was no need to qualify a statement, since there was no reliable effect in the high-stress phase.

Table 3. *Multilevel regression analyses for practical support (N = 68)*

	Anxiety	Depression	Anger	Fatigue	Vigor
Fixed effects	γ (*SE*)	γ (*SE*)	γ (*SE*)	γ (*SE*)	γ (*SE*)
Intercept	1.831 (.058)**	0.543 (.036)**	0.668 (.045)**	1.767 (.055)**	1.124 (.052)**
Lagged emotion	0.529 (.025)**	0.511 (.031)**	0.450 (.029)**	0.584 (.025)**	0.437 (.025)**
Phase	−0.132 (.047)**	0.007 (.028)	0.012 (.041)	−0.132 (.050)**	−0.064 (.040)
Day (×10)[a]	0.179 (.022)**	0.042 (.013)**	0.040 (.019)*	0.058 (.023)**	−0.074 (.019)**
Weekend	−0.191 (.032)**	−0.058 (.019)**	−0.079 (.028)**	−0.208 (.034)*	0.116 (.028)**
Gender	0.151 (.086)†	0.106 (.054)†	−0.033 (.064)	0.145 (.078)†	−0.163 (.079)*
RS[b]	0.125 (.093)	−0.025 (.062)	0.069 (.083)	0.046 (.103)	0.111 (.078)
PS[c]	−0.122 (.080)	−0.028 (.047)	0.041 (.070)	−0.182 (.086)*	0.138 (.068)*
RS × phase	−0.143 (.103)	0.027 (.063)	−0.086 (.091)	0.051 (.112)	−0.172 (.088)†
PS × phase	0.147 (.091)	0.059 (.055)	−0.006 (.080)	0.181 (.099)†	−0.151 (.078)†
	Anxiety	Depression	Anger	Fatigue	Vigor
Random effects	Estimate (*SE*)	Estimate (*SE*)	Estimate (*SE*)	Estimate (*SE*)	Estimate (*SE*)
Intercept	0.096 (.025)**	0.038 (.010)**	0.050 (.014)**	0.074 (.022)**	0.082 (.021)**
Lagged emotion	0.015 (.006)**	0.030 (.009)**	0.022 (.009)**	0.019 (.007)**	0.016 (.007)*
RS	0.016 (.020)	0.040 (.015)**	0.022 (.018)	0.032 (.026)	0.002 (.013)
Autocorrelation	−0.110 (.039)**	−0.147 (.039)**	−0.110 (.043)*	−0.186 (.035)**	−0.113 (.045)*
Residual	0.420 (.014)**	0.151 (.005)**	0.326 (.011)**	0.530 (.020)**	0.317 (.011)**

[a] *Day effect is shown for 10 days.*
[b] *Received support (RS) was reported by the examinee.*
[c] *Provided support (PS) was reported by the partner.*
†$p < .10$. *$p < .05$. **$p < .01$.

Like the analyses shown in Table 2, lagged emotion, days to the exam, and weekends have significant effects on the outcomes in Table 3. Because the magnitudes of the effects are very similar to those discussed in the context of emotional support, they will not be reviewed further.

At the bottom of Table 3 is information about the variability of the effects for the intercept, lagged emotion, and received support effects. As in Table 2, there is evidence that the respondents varied in their intercepts and effects of lagged emotion. Only for depressed mood was there evidence of individual differences in the effects of received support. On average, the effect of receiving practical support on depressed mood was not different from zero, but for some persons the effect appeared to be systematically beneficial, while for others it appeared to be systematically costly.

Overlap of mood and support processes

We carried out exploratory analyses to determine the extent to which the results just presented can be shown to be unique effects, as opposed to general effects that account for the same overlapping variation in mood. In the first set of analyses, we included in the model for each mood the set of the four additional moods as covariates. For example, when analyzing anxiety on Day ($t+1$), we included as covariates depression, anger, fatigue, and vigor also measured on Day ($t+1$).

When the results for emotional support (reported in Table 2) were adjusted for the competing moods, only the effect for depressed mood remained significant.[11] This finding suggests that the effects of received and provided emotional support may be most important for depressed mood and that the other negative moods may be showing effects as a generalization of the effect of emotional support on depressed mood. When the results for practical support (reported in Table 3) were adjusted for the competing moods, both the effects on fatigue and vigor were reduced to values near zero. However, it appears that most of the overlap is between fatigue and vigor themselves. When just one of these was included in the analysis of the other, the effect was completely eliminated.[12] This suggests that the effect of practical support is on generalized mood, which is characterized primarily by decreased fatigue and increased vigor.

In the second set of exploratory analyses, we focused on each mood without adjusting for the others, but we considered both practical and emotional support simultaneously. These adjustments had little impact on the estimates reported in Tables 2 and 3.[13] These results suggest that the costs and benefits of practical and emotional support are distinct rather than reflecting some generalized social process.

Discussion

Although prior research has documented how individuals in couples adjust their housework burdens to compensate for the effects of work overload on their partners (e.g., Bolger, DeLongis, Kessler, & Wethington, 1989a, 1989b; Repetti, 1989, 1992), to our knowledge, this is the first to focus on the effects of such practical support provision and receipt

11. The association of received support with increased anxious mood [Table 2; effect, γ (*SE*): 0.201 (.088)] was reduced by a factor of 3 [adjusted received support γ (*SE*): 0.068 (.072)] after adjusting for the other moods. Similarly, the association of received support with increased anger [γ (*SE*) = 0.176 (.077)] was reduced by a factor of 10 [adjusted received support γ (*SE*): 0.018 (.068)]. However, the Table 2 effects for depressed mood [Table 2 received support, $\gamma = 0.176$ (.051); provided support (*SE*): -0.134 (.049)] were only reduced by a factor of 2, and they remained either statistically significant or a statistical trend [adjusted received support $\gamma = 0.076$ (.042) ($p < .09$); adjusted provided support, $\gamma = -0.094$ (.040) ($p < .02$)].

12. In contrast, when the fatigue effect was adjusted for anxiety, depressed mood, and anger (but not vigor), the effect remained a statistical trend [$\gamma = -.151$ (.082); $p < .07$]. When the vigor effect was adjusted for the three moods other than fatigue, the effect was $\gamma = 0.107$ (.066) ($p < .11$).

13. The estimates were similar to those presented in the tables, but the standard errors of the estimates increased slightly, and the two effects for benefits of practical support in Table 3 became statistical trends rather than statistically significant. The effect of provided practical support on fatigue was $\gamma = -0.168$ (0.093) ($p < .07$) after adjusting for emotion support transactions, and the effect of provided practical support on vigor was $\gamma = 0.141$ (.073) ($p < .06$).

on daily emotions. In a sample of intimate couples where one member was preparing to take a major examination, we were able to document associations of practical support provision with fatigue and vigor during the period of highest stress. Contrary to our predictions, and unlike results found for emotional support, we did not find evidence that receipt of practical support was associated with worse mood. Although practical support is typically viewed as less important than emotional support (Cohen et al., 2000), we found that its importance depends on which mood is monitored and whether the reports of the provider or the recipient are considered.

Our results indicate that a partner providing practical support leads to less fatigue and more vigor, but it leads to little change in other emotions associated with the exam preparation. Practical support could involve a variety of actions, ranging from direct help with exam preparation to taking care of daily household tasks. Given that most partners were not involved in the legal profession and were therefore unlikely to be of help with preparing for the examination itself, it seems likely that most of their practical support was to take care of daily tasks that the examinee would ordinarily have to do such as housework, child care, and other family activities. If partners are acting to reduce the burden of concrete daily tasks on the examinee, the examinee will experience less work overload and have more time to rest but will not necessarily feel less anxious or depressed about the examination. Unfortunately, because we did not have reliable reports of workload and of hours of rest and sleep, we were unable to test this explanation.

Consistent with our hypothesis, receipt of emotional support increased examinees' angry mood on the following day. One possible explanation for this is that the support receipt influenced individuals' feelings of competency, thus threatening their self-esteem, a mechanism that has been documented in the laboratory by Fisher et al. (1982). Threats to self-esteem, in turn, can lead to increases in negative affect (Kernis et al., 1989) and angry mood is a component of that negative affect. This explanation is consistent with our finding that when anxious and depressed mood were adjusted, there were no remaining costs of support that were unique to anger.

We have explicitly cast the interpretation of the effects of reported support transactions on moods in terms of costs and benefits of support. Insofar as received support is associated with higher levels of depressed, anxious, angry, and fatigued mood, we infer that such receipt has costs for the recipient. On the other hand, insofar as the support provided by the partner is associated with lower negative mood and more vigor, we infer that such provision has benefits for examinees. These patterns do not necessarily imply that receipt of support was subjectively appraised as costly or that support provision was experienced as beneficial. Because we did not ask participants for subjective evaluations of the aftermath of support transactions, we are unable to say definitively how the transactions were appraised. However, the negative and positive associations that we describe are likely to be perceived by at least some of the participants as subjective costs and benefits.

Magnitude of support effects relative to other effects

Our analyses provide an interesting benchmark for evaluating both the costs and benefits of support. For all the moods that we studied, we found that weekend days were associated with significant effects that ranged from $-.052$ for depressed mood to $-.208$ for fatigue. For fatigue and vigor, weekends have effects of a similar magnitude to those of practical support provision, but for depressed mood they have a substantially weaker effect than emotional support provision. On the other hand, the cost of received emotional support on anxiety is approximately the same as the benefit obtained from moving into a weekend. In this dynamic stress process, it is clear that a number of different factors come together in influencing examinees' mood on a given day.

Strengths of diary design

The results we report are based on longitudinal diary reports from both members of intimate couples, and hence they avoid many of the

retrospection errors and subjective contamination biases of cross-sectional or panel studies (see Bolger, Davis, & Rafaeli, 2003). These reports have been analyzed with multilevel statistical methods that take into account the form of the mood trajectories over the 4 weeks, explicit cyclic effects due to weekends, autoregression effects of yesterday's mood on today's outcome, as well as correlations among the residuals after all other aspects of the model have been taken into account. In addition, we centered the support indicators around each individual's level of support, thus avoiding contamination of the within-person effects by between person information (Raudenbush & Bryk, 2002). These statistical adjustments make it unlikely that the observed costs of support receipt are due to a spurious correlation between a progressively worsened emotional course and attempts by supporters to intervene.

Our results showed that in the weeks prior to an acute stressful experience, examinees' daily reports of anxious, depressed, angry, fatigued, and vigorous mood revealed a buildup of experienced stress. Provision of practical and emotional support by the intimate partners of bar examinees tended to increase during the bar exam preparation period, but the examinee did not always recognize the support. We found partner's reports of support provision to be beneficial for fatigue and vigor when the support was practical and for depressed mood when the support was emotional. Receiving emotional support, on the other hand, was associated with worsened examinee anxious, depressed, and angry mood. Like the benefits, these effects were only evident in the final week of bar exam preparation. This lack of recognition was beneficial to the examinee: When the costs of received support are considered simultaneously with the benefits of provided support, it is clear that the optimal support pattern is what Bolger et al. (2000) called *invisible support*, where the supporter provides assistance without making the provision obvious to the recipient. Like Bolger et al., our results suggest this optimal pattern based on a main effects model, rather than statistical interaction of receipt and provision.

Caveats

We emphasized effects in Tables 2 and 3 that attain statistical significance, but we note that nonsignificant results do not necessarily establish that support events are inconsequential. For example, we did not find that receiving practical support had costs in terms of any of the moods. However, the 95% confidence intervals on the effects for anxious mood (-0.057, 0.307), anger (-0.094, 0.232), as well as fatigue (-0.156, 0.248) have upper bounds that are consistent with the proposition that receiving support can be costly. Our results must be considered inconclusive with regard to these costs, and a study with a larger sample will be needed to obtain closure.

Our results are conclusive in another respect, however. With the exception of fatigue, the confidence bounds are inconsistent with the proposition that receiving practical support (from the examinee's perspective) is beneficial in an important way. This finding highlights the difference between findings for received support and provided support, which like perceived support tends to be beneficial (Cohen et al., 2000).

Despite the many features of the analysis that are designed to avoid bias, we acknowledge that the results are based on nonexperimental reports and may therefore be biased by some process not taken into account in our model. We formulated our model to be conservative in terms of causation. It is likely that the effects of support are experienced on the same day as the support reports, but it is also likely that support provision is related to the psychological state of the examinee. To avoid overinterpreting the concurrent association as causal, we chose to model support effects that last into the following day. This conservative approach might have been particularly limiting when considering the effects of support on our one positive mood, vigor. There are a number of reasons to believe that positive moods might not linger to the same extent as negative moods (e.g., Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001) and hence that effects on vigor might be dampened over time.

The most obvious limitation of our design and analysis is our focus on recent law school

graduates and their intimate partners who were willing to provide daily diary information for over a month during a time of acute stress. Our participants are not formally representative of professionals in general, or of couples who are experiencing work stress, to say nothing of persons who present for psychological treatment. Couples who were in conflict would not be eligible for our study if they were thinking of separating, and we know that those who volunteered reported close to average levels of adjustment on the Dyadic Adjustment Scale (Spanier, 1976). One might expect that these participants have better mental health, and would be more receptive to partner's support than a representative sample of stressed persons in intimate relationships.

We accepted this limitation in the design because we knew that students studying for the bar exam were indeed experiencing stress that was not due to their failure to cope, and that the quality of the daily diary reports was likely to be better than randomly chosen participants, and because sufficient numbers of this population are available each year to mount a study with adequate statistical power. Nonetheless, we can only speculate how the results we obtained would generalize to a more representative sample of stressed couples.

We believe that any bias that results from studying relatively happy, well-adjusted couples would be in the direction of overestimating the benefits and underestimating the costs of support transactions. It is striking to note that our participants indeed experienced significant increases in distress (especially in anxiety and fatigue) and that partners were providing more days of support than of nonsupport as the exam drew near. It is also striking that despite the generally close relationships, during the week of highest stress, increases of angry, anxious, and depressed mood were associated with perceptions of emotional support on the day before. In couples that are more defensive, less highly functioning, and more distant, one might guess that the costs of acknowledging support might be evident even in weeks of moderate stress, and for practical supportive as well as emotionally supportive actions. In these cases, one expects more occurrences of the kinds of negative interactions, which have been shown to be related to relationship dissatisfaction and distress (e.g., Rook, 1984), and of mismatched support efforts, which also are ineffective, if not harmful (Cutrona, 1996).

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