

Impact of Interpersonal Conflict on Individuals High in Unmitigated Communion¹

KERRY A. REYNOLDS²,
VICKI S. HELGESON
Department of Psychology
Carnegie Mellon University

HOWARD SELTMAN
Department of Statistics
Carnegie Mellon University

DENISE JANICKI, ELIZABETH PAGE-GOULD, AND MARGARET WARDLE
Department of Psychology
Carnegie Mellon University

The current study examined the impact of interpersonal conflict on mood and physical symptoms for individuals who scored high on a personality characteristic called unmitigated communion (UC), as compared to individuals who did not score high in UC. UC is defined as a focus on others to the exclusion of the self. Forty-one undergraduate students participated in 7 consecutive nightly interviews. Participants described their social interactions, indicated whether the interaction involved interpersonal conflict, and indicated their distress and physical symptoms at the end of the day. Multilevel modeling analysis demonstrated that conflict adversely affected UC and non-UC individuals similarly on the same day, but had a more negative impact for UC individuals on the following day.

Unmitigated communion (UC) is a personality trait that is defined as a focus on others to the exclusion of the self (Helgeson, 1994; Helgeson & Fritz, 1998). UC is characterized by two primary components. First, the UC individual demonstrates an intense focus on others and relationships. Second, the UC person neglects the self and has difficulty asserting his or her needs, possibly as a result of overinvolvement in relationships.

UC individuals' overinvolvement in their relationships takes many forms. They report providing more social support to their friends than do other individuals (Helgeson & Fritz, 1998); and they also report that they are excessively nurturant, overprotective, and self-sacrificing in relationships

¹This study was supported in part by a faculty development award given to the second author by Carnegie Mellon University. Portions of the data were presented at the annual meeting of the American Psychosomatic Society, Monterey, CA, March 2001. The authors give special thanks to Deborah Polk for her assistance with data analyses.

²Correspondence concerning this article should be addressed to Kerry A. Reynolds, Department of Psychology, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213. E-mail: kerryr@andrew.cmu.edu

(Fritz & Helgeson, 1998). Additionally, UC is associated with ruminating about others' problems. Two studies by Fritz and Helgeson (1998) found that individuals who scored high in UC reported more intrusive thoughts than did other individuals 2 days after they were exposed to a problem that was disclosed by a friend in one study and a stranger in another study.

UC individuals may become overinvolved in their relationships because they derive their self-esteem from others' opinions of them. UC has been associated with an externalized self-perception (Fritz & Helgeson, 1998), which means that they base their views of themselves on how they are perceived by others. This is especially troublesome because they believe that others view them negatively. An externalized self-perception and a negative perceived regard by others are linked to the low self-esteem of UC individuals (Fritz & Helgeson, 1998). Providing help to others may be an attempt to enhance their worth in the eyes of others (Helgeson & Fritz, 1998).

Overinvolvement in relationships may lead to distress. Individuals who score high in UC report higher levels of anxiety and depression in both cross-sectional (Fritz & Helgeson, 1998) and longitudinal studies (Fritz, 2000, Helgeson, 1993; Helgeson & Fritz, 1996). There is some evidence that high levels of distress are a result of overinvolvement in relationships. A cross-sectional study found that overinvolvement in relationships mediated the relation of UC to depression (Fritz & Helgeson, 1998). A longitudinal study of adolescents with diabetes found that the intensity of relationship stressors mediated the relation of UC to increases in psychological distress over time (Helgeson & Fritz, 1996).

UC individuals also neglect the self. UC is associated with having difficulty disclosing information about the self to others, feeling uncomfortable receiving support from others, and having difficulty asserting one's needs (Fritz & Helgeson, 1998). This self-neglect can have physical health consequences. UC has been associated with poor compliance with health regimens and poor health behavior (Helgeson, 1993, 2003; Helgeson & Fritz, 2000). A study of adolescents with diabetes also demonstrated that UC was associated with poor metabolic control and predicted deterioration in metabolic control over time, possibly as a result of poor self-care behavior (Helgeson & Fritz, 1996).

All of the previous work examining how UC people behave in relationships has relied on individuals' retrospective reports of their usual behavior. As is typical in most correlational studies, participants are asked to describe how they usually behave or how they have behaved over the past several weeks. There are limitations to the accuracy of these retrospective reports. In the current study, we want to examine more proximal reports of relationship behavior for people who were high in UC. To this end, we

conducted evening interviews with participants for 7 consecutive days and asked about their daily social interactions. Our main goal was to determine whether certain aspects of daily social interactions would be linked more strongly to negative mood and physical symptoms for UC individuals than for non-UC individuals. We focus on the role of interpersonal conflict in social interactions.

We chose conflict because negative social interactions have a strong impact on people. In general, broad measures of negative social interactions that include conflict and other types of negative interactions have been linked with greater psychological distress and increases in distress over time (Lakey, Tardiff, & Drew, 1994; Pagel, Erdly, & Becker, 1987; Rook, 2001). Conflict measured as a distinct construct also has been linked with greater distress (Lepore, 1992; Schuster, Kessler, & Aseltine, 1990). Furthermore, interpersonal conflicts are more distressing than other types of stressors, including demands at work, overloads at home, financial problems, and transportation problems (Bolger, DeLongis, Kessler, & Schilling, 1989). In the laboratory, interpersonal stressors are more effective than other kinds of stressors at increasing cardiovascular reactivity (Linden, Rutledge, & Con, 1998).

We hypothesize that UC individuals will be especially vulnerable to the negative effects of interpersonal conflict because relationships are so important to them. Interpersonal conflict may be threatening to the UC person in two ways. First, conflict presents the possibility that the relationship could dissolve. Second, conflict presents the possibility that the other person will view the UC person negatively. This situation is threatening because the UC person derives self-esteem from others' perceptions of him or her. Previous research has confirmed that UC individuals report more distress in response to retrospective reports of relationship stressors than do other people, even though the two groups show similar levels of distress when faced with other kinds of stressors (Helgeson & Fritz, 1996). Furthermore, UC individuals tend to inhibit self-expression in order to avoid conflict (Fritz & Helgeson, 1998), which suggests that conflict is particularly aversive for UC individuals.

In sum, we hypothesized the following:

Hypothesis 1. Conflict will be associated with negative mood and increased physical symptoms.

Hypothesis 2. These relations will be stronger for UC individuals than for non-UC individuals.

Hypothesis 3. These relations will be more enduring for UC individuals than for non-UC individuals.

Method

Participants

Participants were forty-one undergraduate students (12 male, 29 female). These students were drawn from a group of 133 individuals who were participating in a study on adjustment to college. UC scores were calculated for each individual in the larger study, and these scores were divided into tertiles. Because the purpose of the present study is to compare individuals high in UC to other individuals, we oversampled the top tertile of scores. We randomly selected and invited students from the upper third (UC group) and bottom two thirds (non-UC group) to participate in the study until we had achieved sufficient sample sizes for each of the two groups. We invited 33 people from each group to participate, with the result that 21 from the top third (63.6%) and 20 from the other two thirds (60.6%) agreed.

On the 5-point unmitigated communion scale, the mean for the UC group was 3.95, and the mean for the non-UC group was 2.57. Males and females were distributed evenly between the UC group and the non-UC group.

Procedure

Training session. Participants came into the laboratory for a group orientation and training session that lasted approximately 1 hr. First, we explained the broad goals and general procedure for the study. We explained that participants would be interviewed by telephone on seven consecutive evenings. As the interviews focused on social interactions and conflict, we defined these terms for the participants.

Social interactions were defined as “a period of 10 minutes or longer in which you and another person are responding to one another,” which is consistent with Brissette and Cohen (2002). Examples of situations that were regarded as social interactions included chatting with a friend, having a real-time online conversation with someone, or talking to someone on the phone. Examples of situations that were not considered social interactions include silently studying in a room with another person, listening to a class lecture, or reading e-mail from a friend.

We defined conflict as “any tension or disagreement, which need not be expressed.” We also informed participants that we would ask them a few brief questions about conflict interactions that were less than 10 min in length. This is not a procedure that has been employed in previous research.

We did this for two reasons. First, we recognized that the base rate of conflict is low. Second, we recognized that even brief conflicts can have a large impact on mood and physical symptoms. At the end of the training session, we reviewed each question that would be asked during the evening interviews to ensure that all participants understood each question and the response scales. When participants' questions about the procedure had been answered, they were asked to provide their informed consent.

Interviews. Interviews generally began 1 or 2 days after the training session, and were conducted by one of four interviewers. The same interviewer conducted all seven consecutive interviews for each participant, with a few 1-day exceptions as a result of scheduling difficulties. During each interview, the experimenter asked the participant to recall social interactions sequentially by dividing the day into segments. First, participants described interactions that occurred on the previous evening; then interactions from the morning, afternoon, and evening of the current day. The specific questions that were asked are described in the Measures section. After reviewing participants' social interactions, the experimenter administered an end-of-day questionnaire, which assessed physical symptoms and mood.

Post-interview. After completing the seven daily interviews, participants came to the laboratory to receive their compensation. Students were paid \$20 for their participation, and were compensated with an additional \$10 bonus if they completed all seven interviews on the appropriate evenings. All participants completed all seven consecutive interviews; thus, all participants received the bonus.

At this time, participants were asked to rate their accuracy in recalling their social interactions on a scale ranging from 1 (*not at all accurate*) to 7 (*very accurate*). This form was administered by an office assistant who had not administered interviews, thus encouraging participants to be honest in their responses. Overall, participants rated themselves as fairly accurate ($M = 5.63$). At the end of the seven interviews, the participant's interviewer completed a brief questionnaire that assessed the participant's cooperativeness. Interviewers rated each participant on a 5-point scale ranging from 1 (*not at all*) to 5 (*very much*) on the adjectives *enjoyable*, *cooperative*, *antagonistic* (reverse-scored), and *reliable* ($\alpha = .80$). Interviewers rated the participants as quite cooperative ($M = 4.37$).

Participants from the UC and non-UC groups were distributed evenly across interviewers, as indicated by a chi-square test. We also tested for differences between interviewers on participants' reported levels of conflict, mood, physical symptoms, and cooperativeness. The results of these ANOVAs indicated that there were no significant differences between interviewers on any of these variables.

Measures

Unmitigated communion. The nine-item UC scale assesses the extent to which an individual reports focusing on others to the exclusion of the self (Helgeson & Fritz, 1998). Sample items include “I always place the needs of others above my own” and “Even when exhausted, I will always help other people.” Participants rated items on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The alpha for this scale was .75.

Interaction questionnaire. Information collected about social interactions included duration of the interaction and who participated in the interaction. Participants also reported whether or not there was tension or disagreement (conflict) during the interaction. If there was conflict, participants indicated whether or not the situation was resolved (*Yes* or *No*). Participants rated their mood following both conflict and non-conflict interactions on scales ranging from 1 (*very unhappy*) to 5 (*very happy*) and from 1 (*very anxious*) to 5 (*very calm*). We reverse-scored these items so that higher numbers represent more depressed mood and more anxiety, respectively. Participants also rated how they felt about themselves after the interaction on a scale ranging from 1 (*felt very bad about self*) to 5 (*felt very good about self*). For brief interactions (less than 10 min) that involved conflict, we only asked whether the conflict was resolved (*Yes* or *No*).

End-of-day questionnaire. We assessed daily anxiety, depressed mood, and self-esteem by having participants rate the extent to which several adjectives described their feelings over the course of the day. Each adjective was rated on a scale ranging from 1 (*not at all*) to 5 (*a lot*). To measure anxiety, we asked participants to rate the extent to which they felt tense, calm (reverse-scored), and anxious. The alphas for this scale were .84 for Day 1 and .90 when the items were averaged across the 7 days. To measure depressed mood, we asked participants to rate the extent to which they felt sad, depressed, and happy (reverse-scored). The alphas for the scale were .83 for Day 1 and .90 when the items were averaged across the 7 days. To measure self-esteem, we asked participants to rate the extent to which they felt satisfied with themselves.

We also assessed participants' physical symptoms. We asked participants to identify physical symptoms they had experienced throughout the day by indicating whether they had experienced any of the following: headache, nausea or upset stomach, cold symptoms, aches and pains, and low energy. This scale is a summary measure of physical symptoms that captures a variety of mild ailments. Because we do not expect all physical symptoms to occur simultaneously, it is not useful to calculate internal consistency of the scale.

Statistical Analyses

Multilevel statistical models. The goal of our analysis is to determine the relation of conflict to mood and physical symptoms, and to examine whether this relation differs for the UC and non-UC groups. We were interested in both the immediate (social interaction level) and comparatively longer term (day level) effects of conflict. We expected that the relation of conflict to mood and symptoms will be stronger for the UC group than for the non-UC group.

Because daily diary data are hierarchical in nature (see Figure 1), we used a multilevel model, which accounts for a lack of independence between observations at the lower levels of the model. Additionally, individuals may have different baseline values for outcomes, and different relations between conflict and outcomes. Multilevel modeling allows us to specify a random intercept (different baseline levels of outcomes). It also allows us to calculate the relation between conflict and outcomes for each individual and then aggregate this relation across individuals. Aggregating data across individuals before modeling often does not capture the relations between variables accurately.

To examine the relation of conflict to outcomes, we used three types of models. First, we examined the relation between conflict on one day and outcomes on that same day using a two-level model (days were nested within participant). Next, we examined the prospective relation between conflict on one day and outcomes on the following day, controlling for the current day's outcomes. This model also had two levels (days were nested within participant). Third, we examined the relation between conflict in a social interaction and the psychological outcomes associated with that social

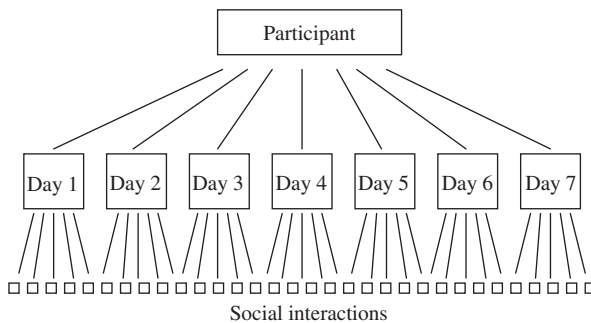


Figure 1. The hierarchical structure of the data: Social interactions are nested within each day, and days are nested within each participant.

interaction using a three-level model (social interactions nested within days; days nested within participant).

We did not examine the prospective relation between conflict in one social interaction and outcomes in the following social interaction for a number of reasons. First, the number of social interactions and the length of time between social interactions varied greatly between days and between people. In the prospective day analyses, each participant had the same number of observations (7 days), and the length of time between observations was uniform (1 day between observations). Additionally, information specific to social interactions was recalled retrospectively at the end of the day, meaning that analyses examining the relation between one social interaction and the next interaction would not be truly prospective. For all of our analyses, we used SAS Proc Mixed. The basic formulas for the models, and the specifications that we used are presented for each type of analysis.

Within-day analyses. The within-day analyses examine the relation between conflict and outcomes on the same day. Because we are interested in determining individuals' reactivity to conflict, we used *person-centered conflict*—that is, the amount that an individual deviates from his or her normal level of conflict—as our predictor variable. Person-centered conflict is calculated by subtracting the average number of daily conflicts from the number of conflicts a person encountered on a given day. This produces seven scores that indicate how much conflict deviated from normal on each day, with higher scores indicating more conflict than usual. A main effect for person-centered conflict would indicate that mood or symptoms change when individuals have more or less conflict than usual. For our purposes, it is more appropriate to use person-centered conflict than the number of conflicts experienced in a given day because individuals differ in their average number of conflicts. The relation between the number of conflicts and outcomes would mainly demonstrate differences between conflict-prone individuals and other individuals. The model used to examine the relation between person-centered conflict and outcomes on the same day is as follows:

$$O_n = b_0 + b_1C_n + b_2U + b_3(U \times C_n) + \varepsilon$$

where O_n is the outcome at the end of the day (physical symptoms, anxiety, depressed mood, or self-esteem), C_n is the person-centered conflict score for each day, and U is the individual's UC grouping (UC group or non-UC group). $U \times C_n$ represents the interaction between UC grouping and conflict, and ε represents error. The coefficient b_0 is the regression intercept, and the coefficients b_1 through b_3 are the effects of the independent variables. Because participants vary in their baseline reports of outcomes,

we included a random effect for participant. This specification allows each participant to have his or her own intercept.

The data were collected across a period of consecutive days, so we expect that the residual for an outcome on Day 1 is correlated more closely with the residual for the outcome on Day 2 than the residual for the outcome on Day 3. Stated differently, we expect the residuals to exhibit autoregressive tendencies. In this model, we accounted for the repeated effect of day and autoregressive residuals associated with this repeated effect by setting the type to 'ar(1)' in the model syntax. Failure to account for the autoregressive nature of residuals can result in increased risk of Type I errors (for further details, see Schwartz & Stone, 1998). Additionally, we specified full maximum likelihood (ML) estimation for the model. ML is preferable to restricted maximum likelihood (REML) in cases where regression coefficients are the primary focus of analysis (Longford, 1993), which is the case for the current analyses. As a check, we ran models with both ML and REML, and the results were nearly identical.

Prospective-day analyses. The prospective-day analyses examine the relation between conflict on one day and outcomes on the following day, controlling for outcomes on the first day. Because we conducted seven consecutive daily interviews, only Days 1 through 6 have a follow-up day in which an interview was conducted. Therefore, these six days are used as predictor days in the prospective analyses. Days 2 through 7 are used as the outcome days, and each is paired with its predictor day. For example, variables on Day 1 are used to predict outcomes on Day 2; variables on Day 2 are used to predict outcomes on Day 3, and so on. In these analyses, Days 1 through 6 will be labeled *Day n*, signifying their status as the predictor day. Days 2 through 7 will be labeled as *Day n + 1*, signifying their status as the follow-up day. As these analyses examine the relation between conflict on one day and outcomes on the following day, controlling for the appropriate outcome on the first day, they examine changes in the outcome. The model is as follows:

$$O_{n+1} = b_0 + b_1O_n + b_2C_n + b_3U + b_4(U \times C_n) + \varepsilon$$

where O_{n+1} is the outcome on the following day (physical symptoms, anxiety, depressed mood, or self-esteem), O_n is the outcome on the first day, C_n is the person-centered conflict score on the first day, and U is the individual's UC grouping (UC group or non-UC group). $U \times C_n$ represents the interaction between UC grouping and conflict, and ε represents error. The coefficient b_0 is the regression intercept, coefficient b_1 is the effect of the covariate, and the coefficients b_2 through b_4 are the effects of the independent variables. Like the previous model, we included a random effect

for participant and a repeated-measures effect for day, accounting for autoregressive residuals associated with repeated days by setting the type to 'ar(1).' Like the first model, we report ML estimation. However, we did test both ML and REML, and the results for the two models were highly similar.

Within-interaction analyses. The within-interaction analyses examine the relation between conflict in a social interaction and mood reported for that interaction. The model is as follows:

$$M_i = b_0 + b_1C_i + b_2U + b_3(U \times C_i) + \varepsilon$$

where M_i is the mood associated with a social interaction (anxiety, depressed mood, or self-esteem), C_i is whether or not a conflict occurred during the interaction (Yes or No), and U is the individual's UC grouping (UC group or non-UC group). $U \times C_i$ represents the interaction between UC grouping and conflict, and ε represents error. In this model, we included a random effect for participant and a random effect for day. We also included a repeated-measures effect for social interaction that accounted for autoregressive tendencies between the residuals of social interactions that are temporally close to one another by setting the type to ar(1).

Results

Overall, participants averaged approximately 5.15 social interactions per day ($SD = 2.71$) and spent an average of 5.67 hours ($SD = 4.34$) in those interactions. Neither the number of social interactions reported nor the duration of interactions changed over the course of the 7 days of interviews.

Participants reported an average of 0.86 conflicts per day ($SD = 1.12$), approximately two thirds of which were reported as resolved. Approximately 20% of the reported conflicts were brief (i.e., lasting less than 10 min). There were no differences between the UC and non-UC groups on any of the social interaction variables. The UC and non-UC groups also did not differ in mean levels of physical symptoms ($M = 1.22$), anxiety ($M = 2.51$), or depressed mood ($M = 1.90$) reported at the end of the day. The two groups did report different levels of self-esteem at the end of the day, with the UC group reporting higher levels of self-esteem ($M = 4.05$) than the non-UC group ($M = 3.86$), $t(285) = -1.96$, $p = .05$.

Within-day analyses. The results of the multilevel model testing the relation between person-centered conflict and outcomes on the same day reveal main effects of conflict on physical symptoms, $F(1, 244) = 8.52$, $p < .01$; anxiety, $F(1, 244) = 6.28$, $p = .01$; and depressed mood, $F(1, 244) = 6.89$, $p < .01$, such that experiencing more conflict than usual on a given day was

associated with poorer outcomes at the end of that day. There were no main effects of conflict on self-esteem. Also, there were no main effects for UC group in any of these analyses. Furthermore, there were no significant interactions between UC group and conflict: The relation between number of conflicts and outcomes did not differ for the UC and non-UC groups.

Prospective-day analyses. The prospective-day analyses tested the relation between person-centered conflict on one day (Day n) and outcomes on the following day (Day n + 1), controlling for the respective Day n outcome. More conflict on Day n was marginally associated with worse self-esteem, $F(1, 202) = 2.70, p = .10$; and more anxiety, $F(1, 202) = 2.74, p = .10$, on the following day. No main effects for UC group emerged on any of the outcomes, but there were interactions between person-centered conflict on Day n and UC group for physical symptoms, $F(1, 202) = 10.03, p < .01$; anxiety, $F(1, 202) = 4.10, p < .05$; depressed mood, $F(1, 202) = 4.09, p < .05$; and self-esteem, $F(1, 202) = 3.99, p < .05$, on the following day. Figure 2 shows the interaction between conflict and UC group on the following day's physical symptoms. The vertical axis depicts change in physical symptoms, while the horizontal axis represents conflict. We picked two meaningful values of conflict for this plot: +1 signifies one more conflict than usual, and -1 signifies one less conflict than usual. As conflict on Day n increases, the UC group exhibits more physical symptoms and the non-UC group exhibits fewer physical symptoms on the following day.

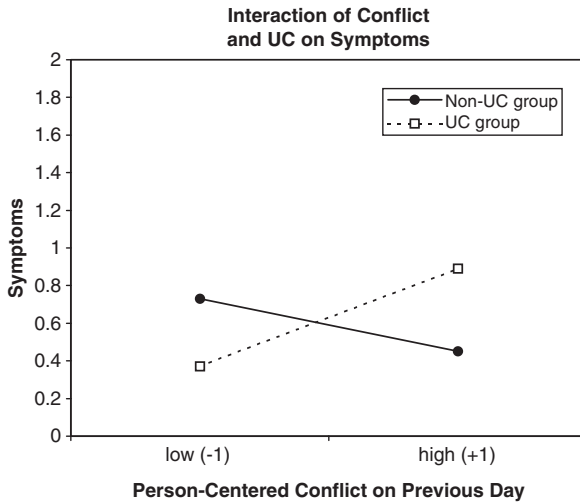


Figure 2. The interaction of the unmitigated communion group and person-centered conflict (Day n) on physical symptoms for Day n + 1.

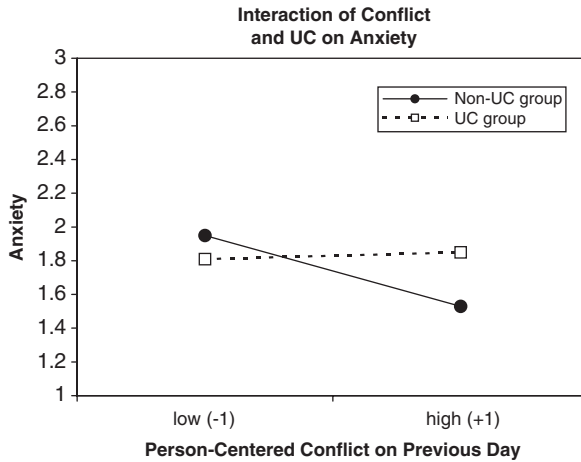


Figure 3. The interaction of the unmitigated communion group and person-centered conflict (Day n) on anxiety for Day n + 1.

The interactions for anxiety and depressed mood show a similar pattern (see Figures 3 and 4). As conflict on Day n increases, the UC group shows more distress, while the non-UC group shows less distress. For self-esteem (see Figure 5), which is a positive outcome, the UC group shows a fairly

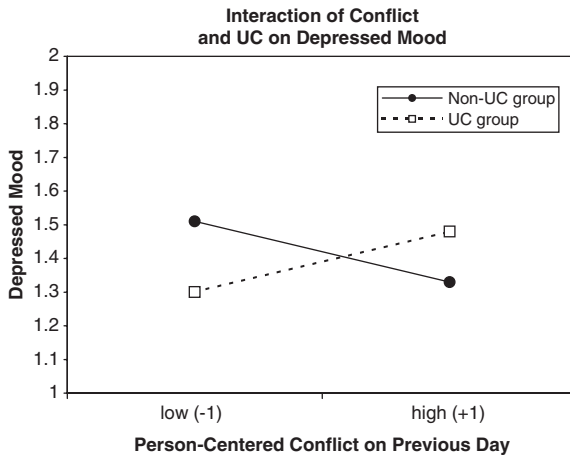


Figure 4. The interaction of the unmitigated communion group and person-centered conflict (Day n) on depressed mood for Day n + 1.

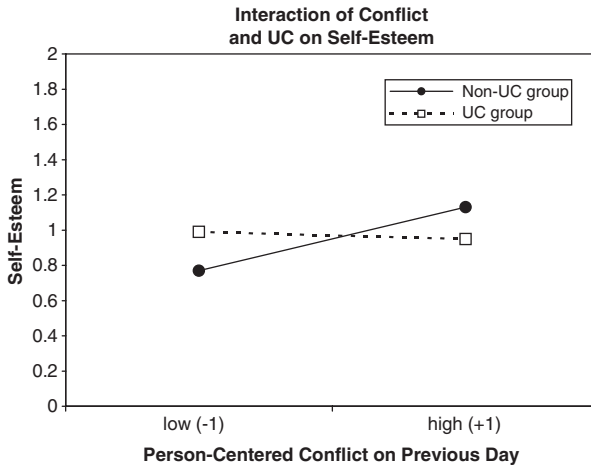


Figure 5. The interaction of the unmitigated communion group and person-centered conflict (Day n) on self-esteem for Day $n + 1$.

stable level of self-esteem or a slight deterioration as conflict on Day n increases, whereas the non-UC group shows improved self-esteem on Day $n + 1$ as the level of conflict on Day n increases. All of these findings suggest that the UC group sustains a prolonged negative impact of conflict on symptoms and mood. That is, conflict continued to have a negative impact on the following day's symptoms and mood for the UC group, whereas the non-UC group rebounds with fewer symptoms and more positive mood on the day following conflict.

We conducted some follow-up analyses to further explore these interactions. First, we conducted a median split on conflict, such that each day was categorized as high or low conflict. Using least squares means, we then calculated the reported level of physical symptoms on Day n and Day $n + 1$ for the UC and non-UC groups when conflict was high and low.

Figure 6 depicts the level of physical symptoms on Day n and Day $n + 1$ as a function of high or low conflict on Day n for the UC and non-UC groups. One of our goals in conducting these follow-up analyses was to determine differences in outcomes on Day n and Day $n + 1$. For example, we would like to examine how the level of physical symptoms differed between Day n and Day $n + 1$ for the UC and non-UC groups when there was a high level of conflict on Day n . Because mood and symptoms on Day n and Day $n + 1$ are outcome variables in our analyses, we cannot test for

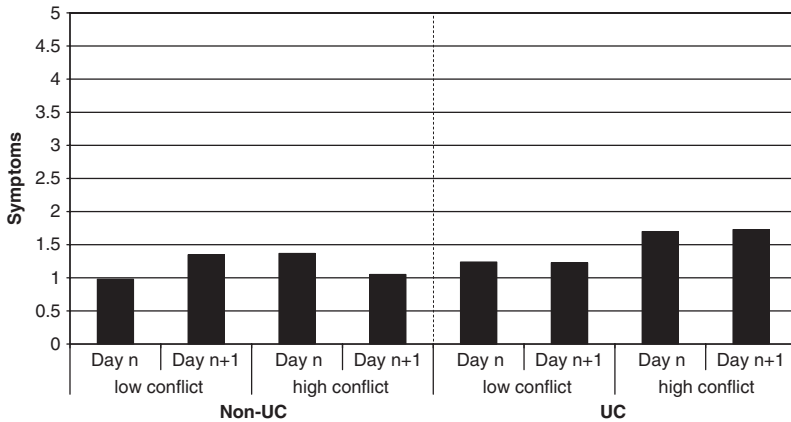


Figure 6. Mean physical symptoms on Day n and Day $n + 1$ as a function of high- or low-conflict and unmitigated communion group.

significant differences between them. There has been little work addressing comparisons of multivariate outcomes in the context of multilevel models, and there is currently no support for this type of analysis in any standard software packages. The side-by-side plots help to illustrate whether our interpretation of the interactions is accurate. Figure 6 shows that physical symptoms declined between Day n and Day $n + 1$ for the non-UC group when conflict on Day n was high, whereas physical symptoms did not decline between Day n and Day $n + 1$ for the UC group when conflict on Day n was high. We were able to conduct contrasts as part of the least-squares means test to determine significant differences between UC and non-UC groups on low- and high-conflict days. Both the UC group and the non-UC group reported more physical symptoms on days with high levels of conflict as compared to days with low levels of conflict, $F(1, 175) = 6.77, p = .01$; and $F(1, 175) = 4.79, p < .05$, for high and low levels of conflict, respectively. Contrasts indicate that there was no difference in physical symptoms between the UC and non-UC groups on Day n when conflict was low or when conflict was high. However, on the following day (Day $n + 1$), the UC group reported more physical symptoms than did the non-UC group when there was a high level of conflict on Day n , $F(1, 175) = 4.70, p < .05$; but there was no difference between the UC and non-UC groups when there was a low level of conflict on Day n . On Day $n + 1$, the UC group reported more physical symptoms following high rather than low conflict, $F(1, 175) = 7.46, p < .01$, whereas there was a trend for the non-UC group to report fewer physical symptoms following high- rather than low-conflict

days, $F(1, 175) = 2.70$, $p = .10$. This general pattern of findings was observed for the other outcomes (anxiety, depressed mood, and self-esteem) from plots and contrast analyses, supporting our initial interpretation of the data: that non-UC individuals are rebounding on the day following conflict, whereas UC people are maintaining or increasing their level of distress.³

We were concerned that conflict might be correlated on sequential days, and that this relation might differ between the UC and non-UC groups. Specifically, perhaps UC individuals experience more distress on the day following conflict because the subsequent day also is characterized by conflict. First, we examined whether person-centered conflict on Day n predicted person-centered conflict on Day $n + 1$, and whether this relation differed for the UC and non-UC groups. Person-centered conflict on Day n was associated with greater conflict on Day $n + 1$, $F(1, 203) = 4.46$, $p < .05$. However, the interaction between person-centered conflict on Day n and UC group was not significant, suggesting that conflict on Day n and Day $n + 1$ were related equally for the two groups. Second, we added person-centered conflict on Day $n + 1$ to the prospective analyses. The interactions between UC group and conflict on Day n did not disappear when this term was added to the model, suggesting that Day $n + 1$ conflict could not account for the UC group's poorer outcomes relative to the non-UC group on Day $n + 1$.⁴ To examine further the causal direction of the association between conflict and outcomes, we conducted analyses to determine whether outcomes on one day predicted person-centered conflict on the following day. We found that none of the outcomes predicted conflict on the following day, with one exception. There was an interaction between previous day's physical symptoms and UC on person-centered conflict, such that the UC group was *less* likely to experience conflict on a day following a high level of physical symptoms, $F(1, 203) = 3.86$, $p = .05$.

Within-interaction analyses. The within-interaction analyses tested the relation between conflict in a social interaction and the psychological outcomes associated with that interaction. There were main effects for conflict on each of the social interaction outcome variables. The presence of conflict was associated with more depressed mood, $F(1, 1197) = 167.9$, $p < .01$; more anxiety, $F(1, 1195) = 114.53$, $p < .01$; and lower self-esteem, $F(1, 1197) = 127.64$, $p < .01$, following the interaction. Additionally, there were marginal main effects for UC group on depressed mood, $F(1, 1197) = 2.93$,

³These data, plots, and contrast analyses are available upon request from the first author.

⁴These analyses also included a term for the interaction of UC group with conflict on Day $n + 1$, which was not significant in the model.

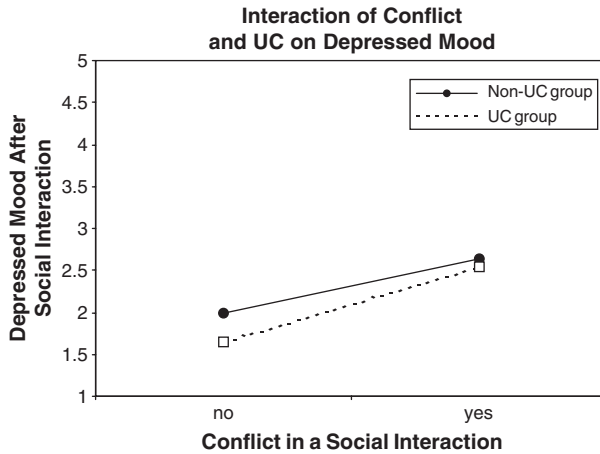


Figure 7. Interaction of unmitigated communion group and conflict on depressed mood at the end of a social interaction.

$p = .08$; and anxiety, $F(1, 1195) = 3.28$, $p = .07$, such that the UC group reported less anxiety and less depressed mood after social interactions in general than did the non-UC group. There was also an interaction between conflict and UC group on depressed mood, $F(1, 1197) = 4.47$, $p < .05$. The UC and non-UC groups experienced similar levels of depressed mood following conflict interactions, but the UC group experienced less depressed mood (greater happiness) than did non-UC individuals following non-conflict interactions (see Figure 7).

Discussion

In the present paper, we addressed three main questions about conflict in individuals' daily social interactions. First, is conflict associated with physical symptoms and distress on a daily basis for all people?; second, are these relations stronger for UC individuals than for non-UC individuals?; and third, does conflict have a more enduring impact on UC individuals, as compared to non-UC individuals? As anticipated, conflict was associated with increased end-of-day anxiety, depressed mood, and physical symptoms for all people in our sample. It was not associated with poor self-esteem at the end of the day. We did not find differences in the impact of conflict on mood or physical symptoms at the end of the day between UC and non-UC individuals.

When we examined mood and symptoms on the day following a conflict, differences between the UC and non-UC groups emerged. The results suggest that conflict may have a more enduring impact on UC individuals. Whereas non-UC individuals' outcomes improved on the day following conflict (i.e., returned to normal levels), UC individuals' outcomes either were unchanged or worsened on the day following conflict. Other work also has demonstrated that events or mood on a given day can influence outcomes on the following day. One study found that high levels of negative affect on one day were associated with lower levels of negative affect on the following day (Williams, Suls, Alliger, Learner & Wan, 1991). Two studies have demonstrated that mood improves for most people on the day after a stressful event (Bolger et al., 1989; DeLongis, Folkman, & Lazarus, 1988). However, previous work also indicates that certain characteristics are associated with negative mood that is sustained from one day to the next. One study demonstrated that the relation of hassles to physical symptoms and mood was moderated by self-esteem and emotional support (DeLongis et al., 1988). Individuals with low self-esteem were more likely to experience physical symptoms on the day of the hassles and on the following day when compared to individuals with higher self-esteem. Hassles were related more strongly to mood for individuals with low levels of emotional support than for individuals with high levels of emotional support, and were related marginally to worse mood on the following day. These findings are interesting because UC individuals often lack self-esteem and report that they are uncomfortable receiving emotional support (Fritz & Helgeson, 1998).

Other work also indicates that neuroticism, or negative affectivity, is associated with prolonged effects of stressful events. One study found that individuals high in neuroticism had higher levels of negative mood following high-stress days than they did on days that followed low-stress days (Marco & Suls, 1993). For individuals low in neuroticism, negative mood stayed stable, regardless of the previous day's stress level. These findings are also relevant to the current study. While UC and neuroticism are distinct concepts, both empirically and theoretically (Helgeson & Fritz, 1998), they are correlated. It is possible that the mechanism linking UC with prolonged negative outcomes is similar to the one linking neuroticism with negative outcomes. Another study suggests that the reason neuroticism is linked with poor outcomes may be related to choice or effectiveness of coping style (Bolger & Zuckerman, 1995). While we did not investigate coping with conflicts in the current study, it would be an interesting avenue for future work.

There are two other possible explanations for the link between UC and prolonged negative effects of conflict. UC individuals may internalize

their friends' feelings of ill will, as they derive their sense of self from others' opinions of them. This internalization may cause the negative effect of conflict to spill over into the following day as the UC individual continues to think about his or her transgression. Non-UC individuals are less likely to internalize their friends' negative feelings, thus their mood would improve after the initial unpleasantness of the conflict had passed. It is also possible that UC individuals are more likely than non-UC individuals to view conflict as a threat to the relationship's continued existence. Because they highly value relationships, this may make the conflict more aversive, causing prolonged distress and physical symptoms. For non-UC individuals, conflict is less likely to be viewed as a threat to the relationship's existence. Thus, non-UC individuals would demonstrate an improvement in mood after the initial unpleasantness of the conflict had passed.

Although conflict is particularly harmful for UC individuals, social interactions without conflict seem to have a positive impact on mood, at least in the short term. The UC group reported less depressed mood (or more happiness) than did the non-UC group after social interactions without conflict. We suspect that this may reflect the importance of social interactions for UC individuals. UC individuals may experience social interactions without conflict as particularly positive events.

One unexpected finding in the current study is the lack of difference between UC and non-UC groups on end-of-day physical symptoms, anxiety, depressed mood, or self-esteem. Previous research has suggested that the UC group should report more distress, more physical symptoms, and lower self-esteem than the non-UC group at the end of the day. However, the methodology employed in the present study differs from that employed in past research in that we asked participants to report symptoms and mood on the current day, rather than asking individuals to retrospectively report symptoms and mood over days or weeks. To test whether these surprising results were a result of our sample or our methodology, we conducted a few analyses on the retrospective data collected from participants as part of a larger study. Our participants completed retrospective reports of physical symptoms (Cohen & Hoberman, 1983) and self-esteem (Rosenberg, 1965) several months prior to the interviews. On these scales, we found trends showing that the UC group reported *lower* self-esteem ($M = 3.89$) than did the non-UC group ($M = 4.22$), $t(39) = 1.65$, $p = .11$; and *higher* levels of physical symptoms ($M = 1.86$) than did the non-UC group ($M = 1.59$), $t(37) = 1.66$, $p = .11$, which is consistent with previous research.

There are at least two explanations for the discrepancies between the daily interview data and the retrospective data. First, our daily

self-esteem scale was composed of only one item, and our symptom scale was composed of only five items, making them less reliable than the multi-item scales used in the larger study. Second, the larger study asked people to report general tendencies, while we asked participants to report their self-esteem and physical symptoms for the current day, just after reviewing all of their social interactions. For UC individuals, who define their self-esteem through their relationships, talking about social interactions may temporarily boost self-esteem and ameliorate physical symptoms. One limitation of the current study is reduced statistical power. The study employed a small sample that may have been drawn from a group with a restricted range of UC scores. We would expect fewer individuals with extremely high UC scores to be present in an achievement-oriented university setting, as this environment requires some degree of self-focus. The combination of small sample size and restricted range of UC scores reduces the power to detect significant differences. Therefore, the impact of conflict on UC individuals may be understated by the current study.

Another important issue to consider is the impact of the method of data collection on UC and non-UC individuals. Social interactions, a positive experience for UC individuals, were reviewed before participants rated overall mood and symptoms. The current study, unlike previous work, did not find a difference between UC and non-UC individuals in overall reports of anxiety, depressed mood, or physical symptoms at the end of the day. Describing social interactions may be such a positive experience for UC individuals that their reflections on mood over the past day become positively biased.

Collecting data at the end of the day also may be problematic because of difficulty remembering social interactions. While our participants indicated that they remembered to report most of their social interactions, it is certainly possible that some interactions were not reported. It is also possible that the progression of social interactions over the course of a day could bias memories or reports of social interactions early in the day. Future work should explore ways to reduce the possibility of bias. For example, participants could be asked to take notes regarding their social interactions immediately following the interaction, or participants could use electronic diaries to enter information about social interactions periodically throughout the day.

Future work should examine features of conflict in greater depth. For example, the severity of a conflict may impact mood and symptoms. It is possible that UC individuals experience conflicts that are more severe than the conflicts experienced by non-UC individuals, thus accounting for the prolonged impact of conflict on mood and symptoms for UC individuals.

Future work will need to explore the effect of conflict severity on mood and symptoms for UC and non-UC individuals.

Brief conflicts also require further examination. In the present study, approximately one fifth of conflicts lasted less than 10 min. We examined these conflicts in an exploratory way in this study, but future work should examine more closely the nature of brief conflicts, as well as their effect on mood and symptoms.

In summary, our data suggest that conflict has a negative impact on symptoms and mood for both UC and non-UC individuals. Initially, this impact is not stronger for the UC group than the non-UC group. However, the UC group does not recover from conflict as quickly as does the non-UC group, but maintains a negative mood and physical symptoms on the day following conflict.

References

- Bolger, N., DeLongis, A., Kessler, R. C., & Schilling, E. A. (1989). Effects of daily stress on negative mood. *Journal of Personality and Social Psychology, 57*, 808-818.
- Bolger, N., & Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology, 69*, 890-902.
- Brisette, I. F., & Cohen, S. (2002). The contribution of individual differences in hostility to the associations between daily interpersonal conflict, affect, and sleep. *Personality and Social Psychology Bulletin, 28*, 1265-1274.
- Cohen, S., & Hoberman, H. (1983). Positive events and social supports as buffers of life change stress. *Journal of Applied Social Psychology, 13*, 99-125.
- DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. *Journal of Personality and Social Psychology, 54*, 486-495.
- Fritz, H. L. (2000). Gender-linked personality traits predict mental health and functional status following a first coronary event. *Health Psychology, 19*, 420-428.
- Fritz, H. L., & Helgeson, V. S. (1998). Distinctions of unmitigated communion from communion: Self-neglect and overinvolvement with others. *Journal of Personality and Social Psychology, 75*, 121-140.

- Helgeson, V. S. (1993). Implications of agency and communion for patient and spouse adjustment to a first coronary event. *Journal of Personality and Social Psychology*, *64*, 807-816.
- Helgeson, V. S. (1994). Relation of agency and communion to well-being: Evidence and potential explanations. *Psychological Bulletin*, *116*, 412-428.
- Helgeson, V. S. (2003). Gender-related traits and health. In J. Suls & K. Wallston (Eds.), *Social psychological foundations of health and illness*. Malden, MA: Blackwell Publishing.
- Helgeson, V. S., & Fritz, H. L. (1996). Implications of communion and unmitigated communion for adolescent adjustment to Type I diabetes. *Women's Health: Research on Gender, Behavior, and Policy*, *2*, 169-194.
- Helgeson, V. S., & Fritz, H. L. (1998). A theory of unmitigated communion. *Personality and Social Psychology Review*, *2*, 173-183.
- Helgeson, V. S., & Fritz, H. L. (2000). The implications of unmitigated agency and unmitigated communion for domains of problem behavior. *Journal of Personality*, *68*, 1031-1057.
- Lakey, B., Tardiff, T. A., & Drew, J. B. (1994). Negative social interactions: Assessment and relations to social support, cognition, and psychological distress. *Journal of Social and Clinical Psychology*, *13*, 42-62.
- Lepore, S. J. (1992). Social conflict, social support, and psychological distress: Evidence of cross-domain buffering effects. *Journal of Personality and Social Psychology*, *63*, 857-867.
- Linden, W., Rutledge, T., & Con, A. (1998). A case for the usefulness of laboratory social stressors. *Annals of Behavioral Medicine*, *20*, 310-316.
- Longford, N. T. (1993). *Random coefficient models*. Oxford, UK: Clarendon.
- Marco, C. A., & Suls, J. (1993). Daily stress and the trajectory of mood: Spillover, response assimilation, contrast, and chronic negative affectivity. *Journal of Personality and Social Psychology*, *64*, 1053-1063.
- Pagel, M. D., Erdly, W. W., & Becker, J. (1987). Social networks: We get by with (and in spite of) a little help from our friends. *Journal of Personality and Social Psychology*, *53*, 793-804.
- Rook, K. S. (2001). Emotional health and positive versus negative social exchanges: A daily diary analysis. *Applied Developmental Science*, *5*(2), 86-97.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Schuster, T. L., Kessler, R. C., & Aseltine, R. H. (1990). Supportive interactions, negative interactions, and depressed mood. *American Journal of Community Psychology*, *18*, 423-438.

- Schwartz, J. E., & Stone, A. A. (1998). Strategies for analyzing ecological momentary assessment data. *Health Psychology, 17*, 6-16.
- Williams, K. J., Suls, J., Alliger, J., Learner, S. M., & Wan, C. K. (1991). Multiple role juggling and daily mood states in working mothers: An experience sampling study. *Journal of Applied Psychology, 76*, 664-674.