

Concordance in the Face of a Stressful Event: When Do Members of a Dyad Agree That One Person Supported the Other?

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Students reported behaviors they expected from a primary support person in response to an upcoming exam. After the exam, students and support persons independently reported behaviors the supporter provided. There was only moderate agreement within dyads about the occurrence of supportive behaviors ($\kappa = .39$). Dyad intimacy, fulfilled expectancies, student and supporter social competence, and communal orientation all were associated with greater concordance. There was also greater agreement on behaviors rated by judges as helpful than harmful and in dyads that included a woman than in man-man dyads. Greater dyad intimacy and more fulfilled expectancies accounted for why there was greater concordance in dyads that included a woman, and more fulfilled expectancies accounted for why there was greater concordance on positive than negative behaviors.

Concordance refers to the agreement among persons about the occurrence of, meaning of, or motivation behind behavioral transactions that occur among them. In this article we address conditions that influence concordance between members of a dyad in regard to the occurrence of supportive and nonsupportive transactions in the face of a stressful event.

The extent to which dyad members have similar perceptions of a transaction has both theoretical and methodological importance. Theoretically, concordance is thought to be an important component of satisfying and enduring relationships (Antonucci & Israel, 1986) and possibly necessary for a behavior to be helpful in coping with a stressful event. For example, the awareness that another person has provided support can alter perceptions of a stressor or one's ability to cope with a stressor. Moreover, recognition of a supportive behavior by the recipient can be reinforcing for the supporter or can facilitate the exchange of information regarding support appropriateness. However, concordance could also be detrimental. For example, if the receiver of a "supportive" behavior feels obligated or patronized, it may be better if they were not aware that it occurred (e.g., Kessler, 1992). Methodologically, concordance provides an indication of the validity of social support instruments that are based on self-reports that supportive behaviors were provided by other parties

(e.g., Barrera, 1981; Mermelstein, Lichtenstein, & McIntyre, 1983; Vinokur, Schul, & Caplan, 1987). For years, people have questioned whether such reports are biased and particularly whether they are distorted by personality characteristics of respondents (S. Cohen, 1992; Heller, Swindle, & Dusenbury, 1986; Sarason, Sarason, & Shearin, 1986). A better understanding of the extent of agreement between providers and recipients of behaviors and conditions that influence when agreement will occur should help clarify the interpretation of studies that have used this self-report measurement strategy.

There is little theoretical or empirical work on characteristics that influence agreement between dyad members about their behavioral transactions. The questions we address are based primarily on the assumption that conditions that result in both participants paying more attention to transactions result in greater concordance. Such conditions include helpfulness or harmfulness of the behavior and gender composition of the dyad. In addition, we explore whether other variables could account for relations between gender composition of the dyad and concordance. Gender-related variables that might influence attention to behavioral transactions include relationship intimacy, social competence, communal orientation, and behavior expectancies of the supportee that are fulfilled by the supporter (which we call *fulfilled supportee expectancies*).

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Behavior Valence

Not everything supporters do in response to others' stressful events facilitates coping (Barrera, 1981; Coyne, Wortman, & Lehman, 1988; Harris, 1992; Manne & Zautra, 1989; Norris, Stephens, & Kinney, 1990; Wortman & Lehman, 1985). Even behaviors clearly intended to provide aid often harm successful adaptation to stressful events (S. Cohen, 1992; Mermelstein et al., 1983). Some characteristics of behaviors that make them helpful or harmful have been identified. For example, in studies of spousal support for people attempting to quit smoking, policing and nagging behaviors were found to be harmful, whereas reinforcing behaviors and active and cooperative participation

in quitting efforts were found to be helpful (Mermelstein et al., 1983). These data, however, are based entirely on the supportees' reports that behaviors occurred. We do not know whether the supporters agree that they performed the behaviors that are attributed to them or if agreement would be influenced by whether the behaviors were helpful or harmful. It is unclear whether we should expect greater agreement for helpful or harmful behaviors. On the one hand, one might expect more agreement on harmful behaviors (e.g., Melamed & Brenner, 1990). Harmful behaviors can be unexpected and salient at least to the recipient, especially when coming from primary support persons whom he or she expects to be helpful (Schuster, Kessler, & Aseltine, 1990; Stern, Marrs, Millar, & Cole, 1984). On the other hand, because we expect helpful behaviors from close members of our social networks, we may be more likely to attend to, encode, and consequently remember helpful behaviors (Posner, Snyder, & Davidson, 1980). Because this study focuses on primary supporters, we assume that they are trying to help supportees and that any harmful behaviors they deliver may be relatively subtle in nature. For example, supporters may provide harmful behaviors as subtle prompts in an ongoing, generally supportive interaction, and supportees may not attend to them. On the other hand, supporters themselves may not be aware they are providing the behaviors. The low salience of harmful behaviors would lead to them receiving less joint attention and, consequently, less agreement in regard to their occurrence. Thus, in this study, we expected that there would be many more helpful than harmful behaviors, and greater concordance on helpful than harmful behaviors. In addition, we predicted that supportee expectancies regarding helpful behaviors would be more accurate (more often fulfilled) than those regarding harmful ones.

Gender Composition of the Dyad

Within the categories of helpful and harmful behaviors, we also examined the role of gender composition of the dyad, expecting that dyads containing a woman would have greater agreement on transactions because women are more attentive to others than are men (e.g., Nezelek, Wheeler, & Reis, 1983; Reis, Senchak, & Solomon, 1985; Wheeler, Reis, & Nezelek, 1983; Zuckerman, Lipets, Koivumaki, & Rosenthal, 1975). Evidence for the attentiveness of women comes from literatures on relationship intimacy and interpersonal sensitivity. As argued earlier, increased attention should be associated with increased concordance.

Intimacy is a dynamic relational process involving individual interactions in which one person shares personally revealing feelings or information with another person and feels understood, validated, and cared for by the other (Reis & Shaver, 1988). Interactions and relationships that include women involve greater disclosure (Burda & Vaux, 1987; Komarovsky, 1974; Nezelek et al., 1983; Reis et al., 1985) and are reported by both men and women as more intimate than those that include only men (Nezelek et al., 1983; Reis et al., 1985; Wheeler et al., 1983). Because intimacy implies interpersonal attention and communication, it is likely that more intimate relationships would result in greater concordance than less intimate ones. In fact, a study of elderly adults and their network supporters pro-

vided evidence for an intimacy-concordance link (Antonucci & Israel, 1986). The study assessed agreement in regard to six types of support (i.e., confiding, reassurance, respect, sick care, talk when upset, or talk about their health). Concordance was associated with the closeness of the relationship between supporter and supportee. Spouses, who were designated by respondents as their closest network supporters, agreed most often about the types of support that were provided, followed by family members, and finally by friends.

Women are also more attuned to others and perhaps more able to respond in ways that enhance interactions and the awareness of interactions than men. Some would refer to this as being socially adept or socially competent in interactions. For example, women in close heterosexual relationships are more accurate interpreters of nonverbal messages from their partners (Gaelick, Bodenhausen, & Wyer, 1985; Hall, 1978; Noller, 1980) and are more aware of relationship difficulties than men (e.g., Holtzworth-Munroe & Jacobson, 1985; Gray & Silver, 1990). Women are better than men at accurately interpreting nonverbal communications, regardless of whether the communicator is an acquaintance or a stranger (Zuckerman et al., 1975). In addition, women are seen as more skilled in social interaction than are men (Sarason et al., 1986). They both disclose and are disclosed to more often than men (Burda, Vaux, & Schill, 1984; Wheeler et al., 1983). Women's self-reports of social support are also consistent with greater social competence. They report more available supporters, more received support (L. H. Cohen, McGowan, Fooskas, & Rose, 1984), more positive and negative interactions (Schuster et al., 1990), and provide more support than men (cf. Belle, 1987). In addition, these interpersonal interpretive skills and diverse experiences at cooperative interactions might lead women to have accurate or veridical expectancies of support provision. These, in combination with higher levels of disclosure, might make women more aware of others' behaviors and make women's behaviors more salient to others, both of which lead to dyads that include a woman showing greater concordance than all-male dyads.

Further support for the premise that women are more attuned to their interpersonal interactions is the finding that women tend to be more communally oriented than men (M. S. Clark, personal communication, May, 1994). People who are communally oriented are more aware of other's needs and have the desire to respond to those needs in appropriate ways (Clark, Mills, & Corcoran, 1989). It is possible that because women are more communally oriented than men they may form relationships in which partners are more attentive and responsive to one another than in man-man relationships. Because participants in communal relationships are more attentive to one another (Aries, 1987; Clark et al., 1989; Clark, Mills, & Powell, 1986), it is reasonable to expect that greater communal orientation should be associated with greater concordance.

Although dyads that include a woman are expected to have greater agreement than man-man dyads, the preceding discussion suggests that gender pairing of dyad members may be associated with other dyad characteristics. Consequently, gender pairing may be a proxy for these related characteristics. Dyad intimacy, fulfilled supportee expectancies, and communal orientations and social competence of the supportee or supporter

are all thought to be linked with gender and may explain gender effects on concordance. We tested whether these variables are associated with concordance and with gender pairing and whether these variables explain the relation between gender of dyad members and concordance.

In the present study, we compared perceptions of transactions related to the first major college exam of the fall semester as reported by male and female students and by their primary support persons. We chose the first major examination as the stressor because it entails the same objective event for all individuals, controlling for the possibility that predictors of concordance, student report, and supporter report may differ for different stressful events. Because not all behaviors provided by a supporter in response to a stressful event facilitate adaptation to that event (e.g., S. Cohen & Lichtenstein, 1990; Rook, 1992), we examined whether each behavior was viewed as having a helpful or harmful impact on adaptation and whether behavior valence influences concordance.

We also examined the role of gender composition of the dyad. Our hypothesis was that dyads including women would be associated with greater attention to interactions and hence greater concordance. In an attempt to understand the processes through which such an effect might occur, we examined whether other variables, such as relationship intimacy, social competence, communal orientation of student or supporter, or fulfilled supportee expectancies were associated with concordance. We assumed that more intimate dyads, accurate expectancies of target behaviors, greater social competence, and greater communal orientation may result in greater attention to transactions and hence greater concordance. We also expected that these characteristics of individuals and dyads may explain the gender composition-concordance relation.

Method

During the first or second meeting of their introductory psychology classes, students were asked to participate in a study "evaluating friendships in college students." They were given a brief description and told that their participation would involve filling out questionnaires at two different times in class and once for homework, choosing a supportive friend, and eliciting their friend's participation in the study. For this, students would receive extra class credit. To begin, students were asked to choose a primary peer supporter or roommate with whom they felt they had a close relationship and who could somehow help them as they approached their first psychology exam. For homework, students were to ask their "supportive" friend or roommate if he or she would also be willing to participate in the study by coming to a classroom and filling out a questionnaire. The session was to occur within a couple days after the student's examination and would last approximately 1 hr. For this, the supporters would receive chocolate chip cookies. Students who planned to participate came to the next class meeting with the name or initials of their designated primary support friend or roommate who was willing to participate.

The study was designed around an important examination (1/3 of the grade in Introductory Psychology) that occurred early (end of third week) in the semester. Students expressed considerable concern about their performance on the exam both in class and in individual discussion with the instructor. In class, during the first week of the semester, students answered several questions regarding the intimacy of their relationship with their designated supporter and completed a questionnaire asking about behaviors they expected from their supporter that

might be helpful or harmful to exam preparation. The behaviors questionnaire was administered again at the beginning of the fourth week of class during the class period immediately following their exam. In this case, students were asked to report which behaviors their designated supporters provided. Within the next 3 days, the behaviors questionnaire was also administered to the designated supporter in a supervised classroom setting. Supporters were also asked to indicate which behaviors they provided. Students and supporters also filled out measures of social competence and communal orientation. Students filled these out during the first week of class along with two other extraneous scales as a homework assignment, and supporters filled these out after the exam at the same time they completed the behaviors questionnaire. One person administered all questionnaires to both students and supporters. No hint was given that students and supporters would fill out similar questionnaires or that responses would be compared.

Participants

Respondents were 212 freshmen, 78 sophomores, and 7 junior year students who attended one of eight introductory psychology classes ("groups") the first day of the study and designated a peer as their primary support person. Students elicited the participation of their supporter and agreed to participate for extra credit. Six pairs were eventually excluded for not filling out all the questionnaires. Analyses were based on the remaining 297 pairs. However, analyses including social competence or communal orientation were based on 220 pairs, because only six of the eight groups were administered these scales. Students ranged in age from 17 to 46 years with a median age of 18 years. Students were 168 men (57%) and 129 women (43%). Supporters were 157 men (53%) and 140 women (47%). The gender composition of the dyads included 99 male students-male supporters, 71 female students-female supporters, 58 female students-male supporters, and 69 male students-female supporters.

Measuring Helpful and Harmful Behaviors

Prior to the study, we created a list of behaviors a supporter might provide in relation to the exam by asking 22 college students to list helpful and harmful behaviors in regard to exam preparation. Next we interviewed them to clarify their responses and elicit more behaviors. The 67 behaviors that resulted from this process were then rated by 18 student judges from another psychology class as either helpful (positive valence) or harmful (negative valence) for students preparing for an exam. A behavior was deemed helpful if at least 70% of the judges reported it as helpful and harmful if at least 70% of the judges reported it was harmful. All 67 behaviors were categorizable on the basis of these criteria.

Thirty-six behaviors were judged helpful, and 31 were judged harmful. Examples of behaviors judged as helpful include "expressed concern or empathy regarding my situation," "gave good advice about studying for the exam," and "helped maintain a quiet study environment." Examples of harmful behaviors include "distracted me from my work," "made noise when I had to study," and "asked me to do things when I was busy."

We administered two versions of the questionnaire to the students. In the first, administered before the exam (during the first week of the semester), we asked the students to indicate the behaviors they expected their supporter to provide as they prepared for the first exam. For each behavior, the students checked either "yes" the behavior was expected or "no" it was not. They also responded to several questions regarding the intimacy of their relationship, which are described later. In the second questionnaire, administered in the first class period following the exam (but preceding any feedback on exam performance), students indicated the behaviors their supporters actually provided. For each be-

havior, students checked either "yes" the behavior occurred or "no" it did not occur. We administered only one questionnaire to supporters who attended one of six supervised classroom "supporter meetings" within 3 days following the exam. Like students, supporters reported behaviors they provided to the students by indicating "yes" and ones they did not provide by indicating "no."

Scores assessing the agreement between students and supporters that a behavior occurred were calculated within each dyad separately for helpful and harmful behaviors. We also calculated a total concordance score combining helpful and harmful behaviors. To calculate each of the concordance scores, the report of the student ("received" behavior) was paired with the report of the supporter ("provided" behavior), resulting in a 2 (student said received or not) \times 2 (supporter said provided or not) contingency table. The four cells in the table represent the four possible combinations of agreement and disagreement: a) a behavior was not provided and not received, b) a behavior was provided and received, c) a behavior was provided but not received, and d) a behavior was received but not provided. The first two pairings represent concordant perceptions of whether the behavior occurred, and the last two represent nonconcordant perceptions.

We used the kappa statistic to adjust the percentage concordance for chance agreements (Siegel & Castellan, 1988). We calculated separate kappas for helpful behaviors, for harmful behaviors, and for total (combined helpful and harmful) behaviors. A kappa is used instead of a percentage agreement score because chance agreements increase with the number of behaviors reported by both students and supporters. Without a correction for chance, a percentage agreement score would increase with increases in the numbers of reported behaviors. For example, if both members of a dyad reported 28 of the 56 behaviors, there would be 25% agreement by chance. However, if one reported 28 and the other 14, there would be only 13% agreement by chance. The formula for kappa is (actual % of agreement - chance % of agreement) \div (1 - chance % of agreement). The numerator expresses the excess number of agreements after subtracting the chance number of agreements, and the denominator expresses the maximum possible excess (Fleiss, 1981). Kappa scores can range from -1.00, which represents perfect disagreement, to +1.00, which represents perfect agreement.

An example that helps clarify the nature of this quantity is scoring a 100-item true-false exam. A person scoring 75 on such an exam is actually correct on 50% of the items exceeding chance and hence could be given an adjusted score of 50%. Similarly, a dyad with 75% agreement when 50% agreement should occur by chance would have a kappa of .5. In both cases scores corrected for chance would be calculated as follows: $[(.75 - .50) \div (1.0 - .50)] = .50$.

Measuring Fulfilled Expectancies

We created a kappa variable to assess whether students' expectancies were fulfilled by the supporters. We matched behaviors the students expected with behaviors the students reported receiving. The expectation of the students ("expected" behavior) was paired with the report of receipt by the students ("received" behavior), resulting in a 2 (students said expected or not) \times 2 (students said received or not) contingency table with four possible combinations of agreement and disagreement: a) a behavior was not received and not expected, b) a behavior was received and expected, c) a behavior was received but not expected, and d) a behavior was expected but not received. The first two pairings represent fulfilled expectancies, and the last two represent nonfulfilled expectancies.

Measuring Intimacy

We assessed intimacy in the relationship by asking three questions that evaluated the students' freedom to self-disclose to, have a positive

attachment to, and have a depth of friendship with their supporter. All students responded to the following three questions regarding their supporter: a) "To what degree can you tell this person anything on your mind?", response alternatives varied from 0 (*can't tell him or her anything*) to 4 (*can tell him or her anything that is on my mind*); b) "How sad would you be if he or she was moving away?", response alternatives varied from 0 (*not sad at all*) to 4 (*very sad*); c) "How do you rank this person as your friend?", response alternatives varied from 1 (*not close*) through 3 (*close to best friend*) to 5 (*my very best friend*).

A principal-components factor analysis of the three responses showed that they loaded on one factor with factor loadings ranging from .74 to .82. Sixty-one percent of the variance was explained by the first disclosure item. Cronbach's alpha for all three items was .67, and we summed scores on the three items to form a measure of student intimacy with peer supporters. The alpha for this scale is on the lower end of conventional standards for acceptable reliability. However, the scale has few items, and estimates of alpha are strongly affected by the number of items in a scale.

Measuring Social Competence

The measure of social competence was a 13-item revision of Levinson and Gottman's (1978) social competence scale used by S. Cohen, Sherrod, and Clark (1986). The scale measures ability to interact with others of the same and opposite genders. It taps what Buhrmester, Furman, Wittenberg, and Reis (1988) referred to as the more public domains of social competence (i.e., initiation, assertiveness, disclosure), rather than the more private domains (i.e., emotional support, conflict management). The scale included 9 of Levinson and Gottman's original 18 items, representing behaviors relating to assertiveness skills (4 items) and dating skills (5 items), plus 4 additional items developed by S. Cohen et al. (1986), representing behaviors relating to social skills with same-sex others (e.g., "Maintain a long conversation with a member of the same sex"). Respondents were asked to rate the extent to which a behavior was indicative of them from 0 (*I never do this*) to 3 (*I do this almost always*). The scale is scored by summing the responses. Levinson and Gottman (1978) demonstrated evidence for the reliability and validity of their scale, as did S. Cohen et al. (1986) for the 13-item scale. S. Cohen et al. (1986) reported a Cronbach's alpha of .82 for their sample. A reliability analysis of the revised scale for our sample yielded alphas of .81 for students and .77 for supporters.

Measuring Communal Orientation

The 14-item Communal Orientation Scale (Clark, Ouellette, Powell, & Milberg, 1987, Study 1) measures the degree to which a person endorses behavior according to communal norms, that is, benefiting others in response to their needs or simply to please the other. People high in communal orientation feel a special mutual responsibility for each other's needs. The scale includes items that measure the desire to respond to another's needs (e.g., "When making a decision I take other people's needs and feelings into account") and items that measure the desire to have another respond to one's own needs (e.g., "It bothers me when other people neglect my needs"). Respondents to the scale note the degree to which each behavior is characteristic of them from 0 (*not at all like me*) to 5 (*very much like me*). Items are counterbalanced, and the scale is scored by reversing the negatively stated items and summing the responses. Prior research has shown that the scale has adequate reliability and validity (Clark et al., 1987). Cronbach's alpha for the Communal Orientation Scale for students in our sample was .76, and for supporters it was .76.

Table 1
Means and Standard Deviations of Each of the Variables in the Study

Variable	M	SD
Total concordance (κ)	.39	.21
Helpful behaviors (κ)	.28	.21
Harmful behaviors (κ)	.14	.26
Intimacy	12.52	2.38
Total fulfilled expectancies (κ)	.51	.19
Helpful behaviors (κ)	.39	.20
Harmful behaviors (κ)	.27	.29
Student communal orientation	55.07	6.43
Supporter communal orientation	54.21	6.96
Student social competence	37.13	6.32
Supporter social competence	37.53	5.90

Table 3
Correlations Between Total Concordance and Student and Supporter Gender and Between Total Concordance and the Six Potential Mediators

	r_{pb}
Student gender	.20**
Supporter gender	.09
Potential mediators	
Intimacy	.41***
Student communal orientation	.27***
Supporter communal orientation	.23**
Student social competence	.16*
Supporter social competence	.18**
Fulfilled expectancies	.53***

Note. Correlations with gender variables are point-biserial coefficients (0 = male and 1 = female).
* $p < .05$. ** $p < .01$. *** $p < .001$.

Results

Descriptive Statistics

Means and standard deviations for study variables are presented in Table 1, and a correlation matrix including independent and proposed mediator variables is presented in Table 2.

Do the Proposed Mediators Predict Concordance?

We proposed that two dyad (intimacy and fulfilled expectancies) and four individual variables (student and supporter communal orientation and social competence) would predict concordance and possibly act as mediators of gender pairing and behavior valence relations to concordance. Zero-order correlations between these six variables and total concordance are presented in Table 3. As is apparent from the table, increases in each of the variables are associated with greater concordance, with intimacy and expectancies showing the greatest association.

We also wanted to explore the extent to which each of these six variables contributed independently to concordance and to estimate the total variance explained by the combination of these variables. Hence, we fit a simultaneous regression model that provided the variance accounted for by each of the six possible mediating variables independent of the remaining five.

The simultaneous regression with group controls indicated independent contributions of only four of the six variables: intimacy (4%), fulfilled expectancies (18%), and both student (2%) and supporter (1%) communal orientation. The total variance in concordance accounted for by class group was 7%, and the variance accounted for by the combination (including nonindependent variance) of the six variables (i.e., not including the 7% of variance attributable to class group) was 41%.

We proposed earlier that women tend to be more communally oriented than men and that they would thus be more likely to form relationships that are attentive and responsive. This mediation hypothesis is consistent with an interaction between student and supporter communality in predicting concordance rather than main effects of these two variables. The specific prediction is that dyads with at least one communally oriented member are more concordant than those without such a member. To test this hypothesis, we fit a regression model in which total concordance was regressed on class group, student and supporter communality, and their interaction. There was no indication of an interaction, $F(1, 210) = 1.00, p = .32$. We used a similar procedure to test whether dyads with at least one socially competent member would be more concordant. In this case, the interaction was not significant, $F(1, 209) = 3.26, p$

Table 2
Correlations Among Student and Supporter Gender and the Six Potential Mediators

	Intimacy	Student communal orientation	Supporter communal orientation	Student social competence	Supporter social competence	Fulfilled expectancies
Student gender	.30***	.22**	.19**	.12	.04	.18**
Supporter gender	.20***	.10	.22**	.13	.17*	.03
Intimacy	—	.15*	.20**	.14*	.24***	.29***
Student communal orientation		—	.13	.37***	.17*	.11
Supporter communal orientation			—	.20**	.30***	.11
Student social competence				—	.22**	.11
Supporter social competence					—	.12

Note. Correlations with gender variables are point-biserial coefficients (0 = male and 1 = female).
* $p < .05$. ** $p < .01$. *** $p < .001$.

< .08, but the form of the interaction was consistent with our hypothesis. There was little difference between dyads with at least one member high on competence, but when both were low there was a lower level of total concordance. Because neither of these interactions reached statistical significance, we did not pursue the interactive hypotheses in our attempt to explain associations between gender pairing and concordance.

Does Behavior Valence Predict Concordance?

We analyzed the data using a repeated measures analysis of covariance (ANCOVA) with two between-subject (student gender and supporter gender) and one within-subject (behavior valence) variables. Because we were concerned that classes from which the students were drawn may have differed in terms of gender pairing, intimacy of relationships, or one or more of the personality characteristics assessed in the study, we covaried class in the analysis (covariates were seven dummy-coded variables representing the eight Introductory Psychology classes from which the data were collected). (Analyses not including class as a covariate resulted in identical conclusions, although the percentage of variance accounted for in specific analyses varied.) To evaluate the significance of comparisons among the means, we used the Least Significant Difference (LSD) procedure with the Bonferroni correction to ensure an experiment-wide error rate of .05 (Sokal & Rohlf, 1981). In this section, we report only the results relevant to the effects of behavior valence. Differences in concordance due to gender composition of the dyads assessed by this analysis are discussed later.

We suggested earlier that students would expect more helpful than harmful behaviors from their supporters and that this would result in greater concordance for helpful than harmful behaviors. In fact, more helpful (22.02) than harmful (4.83) behaviors were expected, $t(296) = 39.47, p < .001$. Further analyses show that twice as many helpful behaviors were expected (22.02) than unexpected (11.17), $t(296) = 16.62, p < .001$, whereas five times as many harmful behaviors were unexpected (24.11) than expected (4.84), $t(296) = -44.57, p < .001$. Moreover, as predicted, there was greater concordance on helpful ($\kappa = .277$) than on harmful ($\kappa = .142$) behaviors, $t(296) = 7.70, p < .001$.

Why Is There Greater Concordance for Helpful Than Harmful Behaviors?

We predicted that there would be more fulfilled expectancies for helpful than harmful behaviors and that this might explain why there is greater concordance. To establish that expectancies are responsible for the association between behavior valence and concordance, we need first to establish relations between valence and fulfilled expectancies and between fulfilled expectancies and concordance. If these exist, we need to show that the relation between behavior valence and concordance that we have demonstrated is substantially reduced when we partial the effects of fulfilled expectancies from that relation (Baron & Kenny, 1986).

With regard to the first prerequisite of mediation, as reported earlier, the mean kappa for helpful expectancies is .277, and kappa for harmful expectancies is .142, $F(1, 293) = 61.65, p$

< .001 (from original repeated measures analysis of variance [ANOVA]). With regard to the second prerequisite, as reported earlier, the correlation between fulfilled expectancies and concordance is .53 ($p < .01$). Finally, results of the repeated measures ANOVA that controls for the potential role of fulfilled expectancies in the valence effect (i.e., where both fulfilled expectancies and valence were within-subject variables) showed both a substantial decrease in the F statistic (from 61.65 above to $F(1, 293) = 0.43, p < .51$) and that concordance was no longer reliably predicted by behavior valence. In sum, these analyses support the role of fulfilled expectancies as a primary mediator of the relation between behavior valence and concordance.

Does Gender Pairing of the Dyad Predict Concordance?

The analysis indicated a Student Gender \times Supporter Gender interaction, $F(1, 286) = 9.04, p < .004$. The two-way interaction is depicted in Figure 1. As is apparent from the figure, there was greater concordance in dyads that included at least one woman than in the dyads with two men. As predicted, man-man pairs differed from every other type of dyad pair and had the least concordance ($p < .05$, LSD). Dyads that had a woman did not differ from one another ($p > .05$, LSD). The Student Gender \times Supporter Gender \times Valence interaction was not significant ($p = .633$), indicating that the effect depicted in Figure 1 occurred similarly across positive and negative behaviors. For this reason, analyses addressing possible mediators of gender pairing and concordance were collapsed across valence, focusing on total (combining harmful and helpful behaviors) concordance.

There was also an unexpected Student Gender \times Valence interaction, $F(1, 293) = 7.44, p < .008$. There were greater levels of concordance about the occurrence of helpful behaviors in dyads with a female ($\kappa = .32, SD = .20$) than with a male ($\kappa = .25, SD = .21$) student, whereas there was no difference in concordance on harmful behaviors between dyads with a male ($\kappa = .15, SD = .26$) or a female ($\kappa = .13, SD = .26$) student.

Why Is There Greater Concordance in Dyads With a Woman?

Next, we explored whether other dyadic variables (intimacy, fulfilled expectancies) or individual-difference variables (communal orientation, social competence) could explain relations we found between genders of dyad members and total concordance. As discussed earlier, in order for the evidence to support the role of a third variable as a mediator for the Student Gender \times Supporter Gender interaction, three criteria must be met (Baron & Kenny, 1986). The third variable must be associated with both gender composition of the dyad and with concordance. Moreover, when the third variable is controlled (entered as a covariate), a previously significant relation between concordance and dyad gender composition must be substantially reduced. We have already presented evidence establishing that all six proposed mediators are related to concordance. Here we first address their relation to gender composition. For proposed mediators related to gender composition, we then control for their contribution to the relation between gender composition and concordance.

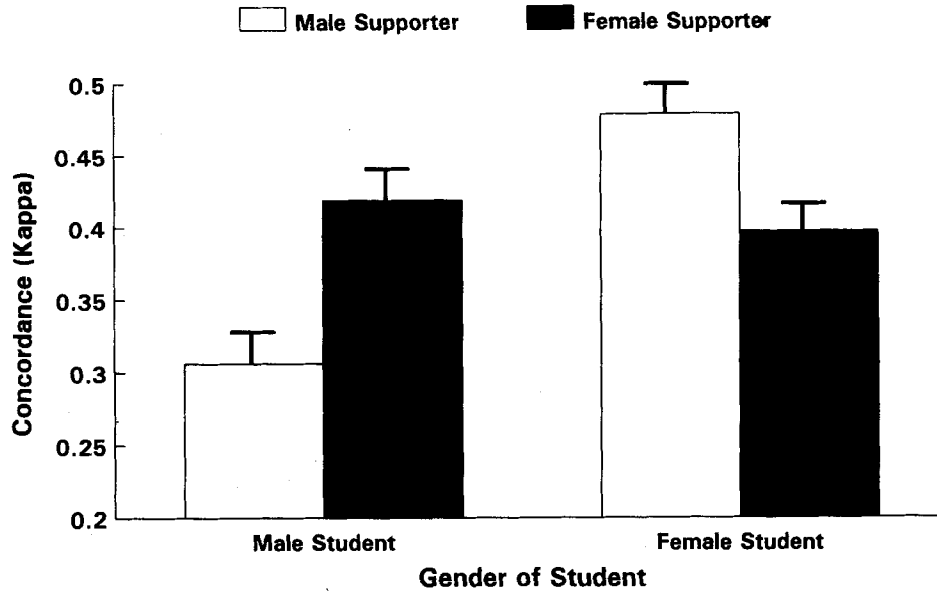


Figure 1. Mean concordance between students and supporters in regard to the occurrence of behaviors by student gender and supporter gender. Concordance is expressed as kappa—agreement is adjusted for chance agreement.

Are the Potential Mediators Related to Gender Composition of the Dyad?

We explored whether intimacy, fulfilled expectancies, and communal orientation and social competence of the student and supporter are related to gender composition of the dyad. We used an ANCOVA in which the potential mediator was the dependent variable, and gender of student and supporter were the independent variables. Class group was covaried. If the third variable functions as a mediator, then we would expect a Student Gender \times Supporter Gender interaction, in which man-man dyads are different from dyads that include a woman.

Two of the variables, intimacy and fulfilled expectancies, generally met the criterion of being related to the Student Gender \times Supporter Gender interaction, $F(1, 286) = 42.43, p < .001$, and $F(1, 286) = 6.68, p < .011$, respectively. The mean intimacy and mean fulfilled expectancy for each of the four types of gender pairs are reported in Table 4. In the case of intimacy, this interaction

closely conforms to the pattern expected for a mediator. The LSD procedure for comparisons among means shows that male students who have chosen a male supporter rated their relationships as less intimate than did students in each dyad type that included a woman ($p < .05$). Unexpectedly, female students who chose a male supporter rated their relationships as more intimate than those who chose a female supporter ($p < .05$).

In the case of fulfilled expectancies, the pattern of means for the Student Gender \times Supporter Gender interaction, shown in Table 4, suggests that expectancies are greater for dyads that included a woman in contrast to man-man dyads. However, this could be only partially confirmed using the LSD procedure. Man-man dyads differed reliably only from dyads that included a female student and male supporter ($p < .05$). Because the role of potential mediator was suggested by the reliable interactions and mean patterns only in the cases of intimacy and fulfilled expectancies, only they were evaluated further.

Are Intimacy and Fulfilled Expectancies Mediators?

We used multiple regression models to assess the extent to which controlling for (partialing out) each mediator reduced the amount of variance in concordance explained by gender pairing. Because there was no Student Gender \times Supporter Gender \times Valence interaction, we collapsed across valence in these analyses using a concordance measure based on all items. The first model we tested included only the control variable (class), participant gender, supporter gender, and the Participant Gender \times Supporter Gender interaction. In a second model, intimacy was forced in before the gender variables, and in a third model fulfilled expectancies was forced in first. The greater the decrease in the variance accounted for by the interaction when a potential mediating variable is entered, the

Table 4
Means and Standard Deviations for Intimacy and Fulfilled Expectancies (κ) \times Gender Composition of the Dyad ($N = 297$)

Student gender	Supporter gender			
	Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Intimacy				
Male	11.0	2.3	13.2	2.0
Female	13.9	1.9	12.8	2.0
Fulfilled expectancies				
Male	0.46	0.20	0.52	0.19
Female	0.59	0.15	0.52	0.20

greater the role that variable plays in mediating the gender pairing association with concordance.

The Student Gender \times Supporter Gender interaction accounted for 5% of the variance in concordance, $F(1, 286) = 15.47, p < .001$. When intimacy was entered into the regression preceding the gender variables, it accounted for 16% of the variance, $F(1, 288) = 56.93, p < .0001$, and the interaction accounted for only 1% of the variance, $F(1, 285) = 3.37, p < .07$. Thus, intimacy explained 4% of the 5% variance attributable to the interaction. This is 80% of that variance. In short, intimacy accounted for most, but not all, of the gender pairing association with concordance.

When fulfilled expectancies were entered into the regression before the gender variables, it accounted for 25% of the variance in concordance, $F(1, 288) = 105.50, p < .0001$, and the interaction accounted for 2%, $F(1, 285) = 9.14, p < .003$. This is 54% of the variance attributed to the interaction. Although not as important a mediator as intimacy, fulfilled expectancies also accounted for a substantial amount of the variance attributable to the interaction.

In a final analysis, we entered both intimacy and fulfilled expectancies into the equation to determine their combined role as mediators. After partialing out these variables, the interaction accounted for .5% of the variance, $F(1, 284) = 2.33, p < .13$. Hence the combination of intimacy and fulfilled expectancies accounted for 89% of the variance attributed to the interaction.

Discussion

There is a sense in the literature that there are high levels of agreement on provision and receipt of helpful supports. Antonucci and Israel (1986) reported that the extent of agreement between a primary respondent and his or her closest network member on provision and receipt of six categories of helpful support (e.g., reassurance, confiding, respect) ranged from 55%–78%. Similarly, Vinokur et al. (1987), in their path analysis model, reported that self-reports of provision of six types of helpful social support by a significant other were closely associated with reports of obtained support by the primary respondent. However, both of these studies evaluated only categories of helpful support, not specific helpful behaviors. In addition, agreement in the Antonucci and Israel study was inflated by failure to control for chance agreement, and Vinokur et al. did not really address agreement on specific categories, but rather the correlation of numbers of support categories reported by supporter and supportee.

In the current study, we assessed both specific helpful and specific harmful behaviors provided in response to a stressor. We found a relatively unimpressive level of agreement after controlling for chance. The rate of concordance on all behaviors (i.e., kappa) was only .39 and only .28 for helpful, and .14 for harmful, behaviors. Because the reliability of the behaviors scale is less than perfect, these are undoubtedly underestimates of the true level of agreement. (The reliability of the behaviors scale was not assessed in this study.) However, even with this reservation, a kappa of .39 for specific behaviors raises concern about the interpretation of studies that base estimates of support solely on receiver reports of specific supportive behaviors.

It is also likely that if we compared general categories of support we might have found greater agreement. This is because a single superordinate category can represent many specific behaviors, leading to a greater probability of agreement at the superordinate level. In addition, it is possible that there is less attention to specific behaviors and more to the tone of support in interpersonal transactions, resulting in greater agreement on categories.

To better understand the theoretical roots of concordance, we explored the relations between supporter–student concordance and characteristics we thought would influence attention to transactions and, hence, concordance. These included dyadic characteristics (relationship intimacy and fulfilled expectancies) and individual characteristics (communal orientation and social competence of student and supporter). We also examined whether behavior valence and gender composition of the dyad influenced concordance. Finally, we assessed whether the dyadic and individual factors we studied mediated the relations between behavioral valence and concordance and between gender composition and concordance.

Dyad and Individual Variables as Predictors of Concordance

We thought that two dyad variables, that is, intimacy and fulfilled expectancies, and/or four individual differences variables, that is, student and supporter communal orientation and social competence, would be associated with concordance. We were particularly interested in these variables because they were plausible mediators of relations between gender composition of dyads and concordance. First, we found that all six variables were correlated with concordance. However, when we looked at independent contributions of variance, the social competence variables no longer contributed. The greatest variance by far was accounted for by fulfilled expectancies (25% total and 18% independent variance). This is consistent with evidence that expected events are more likely to be attended to, coded, and remembered than unexpected ones (Posner et al., 1980). Intimacy of the relationship also accounted for 4% independent variance (16% total). This was consistent with the argument that more intimate relationships involve more accurate expectancies and more attention to ongoing behaviors. Interestingly, although intimacy alone predicted 16% of the variance in concordance, adding fulfilled expectancies reduces the prediction to 7%. This suggests the possibility that intimacy operates primarily by creating accurate expectancies, but some additional variance (possibly attributable to direct effects of intimacy on attention to interactions) still remains.

As expected, greater communal orientations on the parts of both students and supporters were associated with increased concordance (2% independent variance for students and 1% for supporters). Each of these variables accounted for about 6% of the variance when examined alone, with a substantial decrease in variance when fulfilled expectancies were partialled out. Again, this suggests an important role of accurate expectancies in mediating the relation between communal orientation and concordance.

Behavior Valence and Concordance

With respect to behavior valence, we thought that primary supporters would be expected to be helpful rather than harmful. That helpful behaviors were expected more than harmful ones would result in their being attended to, encoded, and remembered by both dyad members. Supporting these premises, we found that students expected more helpful than harmful behaviors. Moreover, their supporters were more likely to provide the behaviors they expected when the behaviors were helpful as opposed to harmful. Finally, greater fulfilled expectancies were associated with greater concordance, and controlling for the possible role of fulfilled expectancies substantially reduced the relation between behavior valence and concordance. These findings are consistent with the hypothesis that helpful behaviors are associated with greater concordance because they are expected. It should be emphasized, however, that greater concordance on helpful than harmful behaviors probably is limited to interactions with primary (historically supportive) persons. We think that harmful behaviors from such people tend to be subtle prompts that occur in the course of ordinary interactions. More intentional and disruptive harmful behaviors would probably attract quite a bit of attention from both giver and receiver.

Dyads With Women and Concordance

On the basis of earlier work indicating greater interpersonal sensitivity and skills on the part of women, we predicted that dyads that included a woman would have greater rates of concordance on behaviors related to a stressor than would man-man dyads. This hypothesis was confirmed. If women are better than men at attending to transactions, it is also logical to expect that woman-woman dyads would have the greatest concordance. Unexpectedly, woman-woman dyads did not differ from cross-gender dyads. It is possible that, in our young sample, cross-gender dyad members paid as much attention to each other as members of woman-woman dyads because of sexual attraction. Information on whether these cross-gender dyads were romantically involved might have shed more light on this result.

We found that both intimacy and, to a lesser extent, fulfilled expectancies played roles in mediating the relation between gender pairing and concordance. Intimacy both predicted concordance and was greater in dyads that included a female member, in contrast with man-man dyads. This is consistent with the body of findings demonstrating greater intimacy in interactions with women (e.g., Nezek et al., 1983; Reis et al., 1985; Wheeler et al., 1983). Intimacy also accounted for 80% of the relation between gender pairing and concordance. These results are consistent with our argument that persons in intimate dyads pay closer attention to one another than those in less intimate dyads, resulting in greater agreement about the behaviors that occur around a stressful event.

Fulfilled expectancies also play a role in mediating the gender pairing concordance relation, although they account for less of the variance in the gender pairing effect than intimacy (54%). That members of dyads with women have more fulfilled expectancies is consistent with evidence that women are both more

attuned to others (e.g., Gaelick et al., 1985; Hall, 1978) and are more likely to provide cues as to their own interaction intentions (e.g., Burda et al., 1984). The combination of intimacy and fulfilled expectancies in accounting for the variance in the Student Gender \times Supporter Gender interaction is an impressive 89% of the effect. Overall, intimacy can account for much of the effect alone, but fulfilled expectancies do contribute a small increment (9%) over and above intimacy.

We failed to find relations between individual difference variables and gender pairing of the dyad and hence eliminated these variables from consideration as mediators. We also failed to find Student \times Supporter interactions in predicting concordance with either individual difference variable. In other words, having at least one member of the dyad high in social competence or high in communality was not associated with greater concordance. This excluded our hypothesis that the gender pairing effect could be attributed to women being higher in either social competence or communality. It may be that variables such as communal orientation or social competence do not act as mediators in this context. Alternatively, in the case of social competence, we may not have measured some important domains that could mediate the relation between gender composition and concordance. For example, it has been suggested that Levinson and Gottman's (1978) scale may measure domains of public social competence rather than private social competence (Buhrmester et al., 1988). Private social competence domains, including emotional support and conflict management, may be important and should be assessed in future studies.

Unexpected Results

An unexpected interaction between student gender and valence indicated that there was greater agreement on helpful behaviors in dyads that included a woman than in those that included a male student but no difference in agreement on harmful behaviors regardless of student gender. One possible explanation for this interaction relates to supporter selection. Women, who may themselves be more aware of helpful transactions than men, may choose primary supporters who are more aware of helpful supports they provide. Young women may choose close friends to whom they feel attuned. Alternatively, it may not be supporter selection, but rather that women elicit from their supporters greater awareness of helpful behaviors either by disclosing their needs or by communicating about supports received. Failure to find student gender differences in agreement on harmful behaviors may result from the low base rate of these behaviors.

Another unexpected result was that female students who chose a male supporter rated their relationships as more intimate than those who chose a female supporter. This relation is probably specific to this young sample, in which many of the cross-gender dyads may have been romantic. Unfortunately, we lack any data on the nature of relationships beyond what we report in this article and hence could not verify this interpretation.

Considerations and Conclusions

One problem in naturalistic studies of concordance is that we have no objective verification of what really happened. When

both persons involved in a transaction agree that a behavior occurred, we usually can assume that the behavior occurred. However, when there is disagreement, the interpretation of what really happened is more difficult. It is possible that behaviors occurred but were not attended to, encoded, or remembered by one of the participants. On the other hand, it is possible that participants occasionally reported behaviors that did not actually occur. Laboratory studies of behavioral concordance could address this issue by including an objective (judged) determinant of behavior occurrence. Finally, studies of simulated interactions in the laboratory would allow for measurement of factors that might mediate effects of concordance, such as attention, and threats to self-esteem and to relationship maintenance.

A kappa of .39 suggests that we should give careful thought when interpreting self-report questionnaires completed by a single member of a dyad. Interpretation of such data may be facilitated by a better understanding of the conditions under which agreement is more or less likely. In fact, our data suggest several factors that are associated with agreement between supporter and supporter. Primary contributors to concordance include whether the receiver's expectancies are fulfilled and relationship intimacy. Others include whether the behavior is helpful or harmful, gender composition of the dyad, and student and supporter communal orientation. Investigators assessing support from only one member of the dyad may want to consider controlling for these factors.

In sum, we found only moderate levels of agreement between students and their primary supporters in regard to the provision of behaviors in response to students' first college examination. Students and supporters agreed more when the behavior was rated by objective judges as helpful as opposed to harmful in adapting to the stressor, when the dyad included a woman, when the relationship was more intimate, when support expectancies were veridical, and when students and supporters were more communally oriented and more socially competent. Intimacy and fulfilled expectancies accounted for the most variance in concordance. As expected, differences between concordance for helpful and harmful behaviors were explicable in terms of differences in fulfilled expectancies, and greater concordance among dyads with women was explicable in terms of both intimacy and fulfilled expectancies. These data are consistent with our view that factors resulting in greater attention to transactions that occur within the dyad result in greater concordance.

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