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An experimental investigation of the role of personality and attributions in influencing the evaluation of social support

by

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ABSTRACT

Social support is a valuable resource for coping with stress, but many do not benefit from the receipt of supportive behaviors. Characteristics of the individual may cause variations in reactions to support. The purpose of this project was to examine how individual characteristics such as neuroticism, extraversion, and general support expectations can influence the evaluation of social support and the degree to which attributions mediate this effect. It was hypothesized that these individual difference variables would influence attributions for support which would subsequently influence the evaluation of supportive behaviors.

This project utilized an experimental design in which participants were provided information that guided them toward support enhancing or support diminishing attributions. This permitted a test of whether prior findings on attributions and the evaluation of social support were truly causal or a function of a third variable. Furthermore, this design allowed a test of whether individual differences in personality and expectations influence the information people use to make attributions. Finally, by examining both traits and expectations in the same study, this project permitted a test of the causal relationship among these variables.

The findings partially supported the major hypotheses. The attribution manipulation procedure influenced the evaluation of support, suggesting that attributions have a causal influence on perceptions of support. Participants high in neuroticism who were given negative information about their partner's behavior evaluated the support they received more harshly than participants low in
neuroticism, suggesting that neuroticism is associated with the greater utilization of negative information in making attributions. However, this effect was not found for extraversion or the general support expectation measures. Also, the results suggested that the influence of traits on attributions for support were mediated by expectations. The results suggest that attributions play an important role in the social support process.
CHAPTER 1. INTRODUCTION

We know that our relationships help sustain us through life's difficulties, but how do they accomplish this? Most would state that our friends and loved ones help through a kind word, a sympathetic ear, or a helpful hand, but that is only part of the story. While these acts are integral to helping, the literature on social support suggests that it is not the supportive act itself that matters most – it is how we perceive that act. The benefits of social support, improved physical and mental health, are more strongly related to perceptions of support than to the actual receipt of support (Barrera, 1986; Wetherington & Kessler, 1986). These findings suggest that not all people benefit in the same way from the support they receive. Why is there a difference? Do people perceive supportive acts differently? What factors lead to differing perceptions of supportive acts?

An analysis of how individual characteristics influence the social support process may help answer these questions. Social support researchers have begun to recognize the degree to which stable individual characteristics such as personality traits and general expectations can influence social support (Pierce, Lakey, Sarason, & Sarason, 1997a). For example, neuroticism has demonstrated a consistent, negative correlation with general measures of perceived social support and evaluations of one's social network (Bolger & Eckenrode, 1991; Henderson, 1981; Lakey & Cassady, 1990; Russell, Booth, Reed, & Laughlin, 1997; Vinokur, Schul, & Caplan, 1987), and extraversion tends to correlate positively with perceived social support (Bolger & Eckenrode, 1991; Cutrona & Russell, 1987;
Russell et al., 1997). General expectations for the receipt of support from one's social network also appear to influence social support processes. People who expect their social network to be helpful evaluate the support they receive more positively than people with more negative expectations (Pierce, Sarason, & Sarason, 1992; Ross, Lutz, & Lakey, 1999). These findings suggest that individual characteristics may enhance or diminish the benefit people receive from social support.

However, research has just begun to explore how these individual characteristics influence the social support process. Traits and expectations may influence the social support process in several ways. First, these factors can influence a person's social network. For example, extraverts typically develop larger social networks from which to draw support (Henderson, 1981; Russell et al., 1997). Other studies have found both extraversion and neuroticism to have an effect on the social network. In a longitudinal study of veterans seeking treatment for alcoholism, Russell et al. (1997) found that both of these traits were indirectly related to perceived social support by way of network characteristics. Extraverts reported more perceived support, in part as a result of a larger, more positive social network. Neurotics reported lower perceived support because of a greater number of negative relationships. Individual characteristics can also influence the degree to which a person seeks out support. Extraverts are more likely to cope with stress by using social resources (Amirkahn, Risinger, & Swickert, 1995), and insecure
attachment styles have been associated with avoidant coping and choosing not to seek support in response to stress (Ognibene & Collins, 1998).

A portion of the association between personality and perceived social support can be explained by network characteristics and the effectiveness of support seeking. However, research suggests that another important influence on overall levels of perceived support is the immediate evaluation of supportive acts a person receives. Several laboratory-based studies on supportive behavior suggest that traits and expectations can bias these evaluations. In a study of married couples, Cutrona and her colleagues found that neuroticism was negatively correlated with the perceived supportiveness of the spouse during a structured interaction, even after controlling for the actual amount of support provided (Cutrona, Hessling, & Suhr, 1997). In other words, regardless of what the spouse did to help, more neurotic support recipients were less satisfied with the support received. In a study involving college students and their mothers, Pierce and his colleagues found that when given identical supportive messages from their mothers, participants who had higher general expectations of receiving support perceived the messages as more supportive than those low in perceived support (Pierce et al., 1992). An individual characteristic again biased the evaluation of support. Thus, people's overall levels of perceived social support may vary because of the more favorable or more negative evaluations they make of the support they receive, and these evaluations appear to be influenced by traits and expectations.
Exploring personality and the evaluation of social support. One purpose of the present investigation was to explore the link between personality traits and general expectations and the evaluation of supportive acts. I propose that attributions about the cause of a supportive act will partially mediate the link between individual characteristics and the evaluation of social support. For purposes of the present study, this causal relationship will be called the Personality-Attribution-Evaluation model (PAE model). The PAE model involves two stages (see Figure 1). The first stage involves the influence of personality (either traits or expectations) on cognitive processes associated with social support. These individual characteristics are associated with either a positive or negative outlook that influences explanations for the cause of support (attributions). The second stage involves the influence of these attributions on the evaluation of a supportive act. Attributions can be made in ways that enhance or diminish the evaluation of social support, and the more the cause of the support is viewed in relationship enhancing ways, the more satisfied people are with the support they receive.

The PAE model has been supported with questionnaire and non-experimental laboratory studies (Hessling, de la Mora, Russell, & Cutrona, 1998; Hessling, Russell, & Cutrona, 2000), and the goal of the present study was to examine three issues that would further develop the model. The first issue involved a closer examination of the causal relationship between attributions and the evaluation of support. Prior research examining this hypothesized causal path has been correlational, and further work is needed to establish that attributions cause
Individual Characteristics | Social Cognition | Perception
---|---|---
Traits | Attribution for Supportive Act | Evaluation of Supportive Act
Expectations

Figure 1. Personality-Attribution-Evaluation model of social support.

differences in the evaluation of support and not vice-versa. The second issue involved the mechanisms linking individual characteristics to attributions for support. I examined whether traits and expectations affect attributions for support by influencing what information the perceiver uses in making an attribution. The final issue dealt with expanding our understanding of how individual characteristics are related to one another in predicting attributions for support. Prior work has not examined both traits and expectations in the same study, and an understanding of the causal relationships among these variables would prove useful in developing the PAE model.

Because the focus of the PAE model is how bias enters into the attribution-evaluation link, I will first review literature on the influence of attributions on the evaluation of supportive acts. After establishing the link between these two factors, I will next review how individual characteristics can influence these attributions. I will then review prior work on the PAE model and present the design and hypotheses for the present study.
The Influence of Attributions on the Evaluation of Supportive Acts

When people evaluate supportive acts, they are making a judgment regarding whether the behavior of the person providing support is helpful or satisfying. Although the objective nature of the supportive act plays an important role in this judgment, the perceived causes of the support can also influence how satisfied a person is with the support he or she receives. In this section, I will first review attribution theory and the dimensions that affect evaluations of support. I will then discuss how attributions can influence evaluations of supportive acts.

Attribution theory and relationships. People need close relationships, but they can confuse and frustrate us, as the motives and characteristics of people close to us are sometimes uncertain. In order to establish a sense of order and control over one's social world, people are motivated to understand why friends and romantic partners act as they do (Heider, 1958; Jones & Davis, 1965; Kelley, 1973). Attribution theory deals with how people come to this understanding of what causes their own and others' behavior. The theory focuses on how ordinary people gather and process information in order to make causal judgments about behavior (Anderson, Krull, & Weiner, 1996; Gilbert, 1998).

Relationships provide a fertile ground for attributions, where they play an important role in processes related to relationship functioning and development (Fincham & Bradbury, 1990; Fletcher & Fincham, 1991). Causal explanations for another person's behavior can help people predict whether they can expect positive or negative behavior from that person in the future. These causal judgments will
lead to relationship development or, perhaps, dissolution. Most models of liking and relationship development emphasize that a person is drawn to people who are expected to provide reinforcement and repelled by people who are expected to be punishing (Brehm, 1992; Thibaut & Kelley, 1959). The person who is verbally abusive because of being a jerk (a chronically occurring characteristic) rather than having a bad day (an infrequent event) will not likely remain in a person's circle of friends.

When attributions are made for another person's behavior, they tend to be made along several dimensions, and these dimensions influence the evaluation of the interpersonal act. The dimensions most relevant to supportive acts include: locus of causality (where the cause originated), stability (the probability that the cause will occur again), controllability (the degree to which the cause was under personal control), and globality (the degree to which the cause affects multiple areas or domains of one's life) (Anderson et al., 1996). Research by Weiner and his colleagues has established that where a cause is located on these dimensions can have a significant impact on motivation and behavior, especially in achievement contexts (Weiner, 1986).

Work by Fincham and Bradbury has established the importance of these attribution dimensions in the context of close relationships (Bradbury & Fincham, 1992; Fincham, Beach, & Bradbury, 1989; Fincham & Bradbury, 1988, 1992, 1993). The majority of this work has focused on attributions for negative behavior in marriage among unhappy couples and the impact those attributions have on
subsequent marital satisfaction. Fincham and Bradbury have found that relationship satisfaction correlates with the types of attributions a spouse makes for the negative behaviors of his or her marital partner. If a person is satisfied with the relationship, he or she tends to be more forgiving of negative behavior and make attributions that maintain a positive view of his or her partner and relationship. Such attributions are external, unstable, and limited, which leads the person to view the negative behavior as a chance occurrence. This maintains a high level of marital satisfaction. If a person is dissatisfied with the relationship, he or she tends to make attributions that lead to a negative view of the partner. Thus, the negative behavior is attributed to internal, global, and stable causes. Such attributions intensify negative feelings about the partner, as the cause of the negative behavior is now viewed as a characteristic behavior, likely to occur again. These attributions can subsequently lead to lower marital satisfaction.

**Dimensions of attribution.** I will now review how each of these dimensions can influence the evaluation of social support.

Locus of causality is considered one of the more important dimensions of attribution (Anderson et al., 1996; Weiner, 1986). In making causal judgments about one's own behavior, the locus dimension focuses on the perception of whether the cause of this behavior is internal or external to oneself. For example, was failure on an exam due to failure to prepare (internal locus) or an unreasonably difficult exam (external locus)? In making causal judgments about another's behavior, the locus dimension focuses on the perception of whether the cause of
the behavior is internal or external to the other person. For example, was the reason a person tripped while walking due to clumsiness (internal locus) or a crack in the sidewalk (external locus)?

The locus dimension of attributions can help define who a person is (Jones & Davis, 1965; Weiner, 1986). If the attribution is being made about oneself, locus can strongly affect one’s emotional reaction, influencing both the type and strength of the reaction. If a cause is internal, this will influence the perception of a person’s self-worth and lead to feelings of pride or shame (Anderson et al., 1996). If the cause is external, the emotional reaction will be more muted. If the attribution is being made about another person, this will influence the perception of which traits the person possesses. If the cause is perceived as emerging from within the other person, the person is more likely to be perceived as possessing a trait that leads to the production of the behavior (e.g., he or she is a lazy student or clumsy person). If the cause is external, the person’s characteristics will be less certain.

The stability dimension involves assessing the degree to which the cause is likely to change in the future. This dimension has a strong impact on the perception of whether the behavior for which the attribution is being made is likely to occur again. If the attribution is being made about oneself, stability can influence expectation for future success. For example, did a person fail an exam due to lack of ability (stable cause) or lack of effort (unstable cause)? The more an event is attributed to a stable cause, the more likely a person will perceive that it will occur again in the future and the less likely it is to change, which will subsequently
influence motivation (Weiner, 1986). If the attribution is being made about another person's behavior, stability can influence the expectations that the person will act in a similar way in the future. If the event is attributed to an unstable cause, it is uncertain whether the person will subsequently act in a similar fashion.

The controllability dimension involves assessing the degree to which the cause was under the control of the person who is the object of the attribution. Controllability is similar to locus in that if a cause is controllable, it likely emerged from inside the individual as a result of his or her intention. Thus, the person is viewed as responsible for his or her actions. If the controllability attribution is being made about oneself, it will influence whether a person will experience such emotions as guilt or shame in response to undesirable behavior (Anderson et al., 1996). If the controllability attribution is being made about another person, it will influence whether a person will experience anger or pity in response to another person's failure.

Finally, the globality dimension involves the degree to which the cause influences other areas of one's life. For example, does the cause of a student's success on a chemistry exam extend to other areas such as math and English (global), or does it just apply to chemistry (limited)? While some theorists question whether this is a basic dimension of attribution (Anderson et al., 1996), globality has proven useful in assessing the influence of attributions in relationships (Fincham & Bradbury, 1992). Globality can capture the degree to which the cause of an interpersonal act reflects the overall quality of the relationship. This is particularly
relevant for negative interpersonal acts (Fincham & Bradbury, 1992) and may also be useful for positive acts such as social support.

**How attributions can influence the evaluation of supportive acts.** Research on the relationship between attributions and social support has primarily examined the role of attributions for the cause of a problem a person is experiencing (George & Harris, 2000; Weiner, 1980; Weiner, 1995). Specifically, these studies have examined how attributions for a stressor influence a person’s willingness to provide support to another person. For example, Weiner (1980) found that when a confederate asked to borrow a participant’s notes, the participant was less likely to provide them if the confederate missed class for a controllable reason (went to the beach) rather than an uncontrollable reason (sickness). However, attributions for the causes of supportive acts has received little research attention (Fincham & Bradbury, 1990; Ross et al., 1999). This is unfortunate because attribution theory suggests that each causal dimension can have either favorable or unfavorable implications for the evaluation of supportive acts.

Attributions can affect whether a person is generally satisfied with the support he or she has received. Support has maximal benefit when the person providing support is perceived to have acted without any outside influence and is likely to be supportive again; that is, an internal, stable, and controllable attribution is made for the behavior (Fincham & Bradbury, 1990). The essence of caring in a close relationship is providing supportive acts out of concern for a person’s welfare rather than for some alternative reason. This perception is more likely when the
cause of a person’s support was something about the person (internal), that is controllable and stable. Responsibility for the supportive act is the critical component. If the person is helpful to everyone, the support may have less value, and if the support is being given due to a role obligation, it may also be less satisfying. For example, an individual who receives a supportive note from a co-worker will be more satisfied if he or she believes the note was given out of caring (an internal, controllable, and stable attribution) rather than to gain some favor at work. Even tangible support such as money or help with a chore will be less satisfying if an external, uncontrollable attribution is made for the supportive act.

The globality of attributions for supportive acts can also influence satisfaction. A global attribution for a supportive act indicates that the perceived cause also plays a role in influencing other aspects of the relationship. If a global attribution is made for a supportive act, the act is viewed as a reflection of the overall high quality of the relationship. Thus, the support is a manifestation of a good relationship and, as a result, will be perceived as more satisfying. If a limited attribution is made, the cause of the supportive act is perceived as not reflecting the overall quality of the relationship. This will not lead to more satisfaction with the supportive act. For example, if a wife provides support for her husband’s work, a global attribution for this support means the husband can expect support for parenting and other areas of the relationship. If the attribution is limited, the husband will not expect support in other areas of the relationship.
Satisfaction with a supportive act can have a significant impact on the social support process. Neither unsatisfying emotional support nor unsatisfying tangible support will psychologically benefit an individual. If a person is not happy with the support he or she receives, the support will not help the person cope with the stressor being faced. Dissatisfaction with support can also lead to a less responsive social network. If the support providers in a person's social network believe that the person is not satisfied with the support he or she has received, members of the social network may be less likely to provide support again in the future. This may lead to a less supportive social network and an overall decrease in the amount of support provided.

Relationship enhancing vs. diminishing attributions for support. Each attributional dimension can influence the evaluation of supportive acts and, by extension, the evaluation of the relationship with the support provider. In other words, causal explanations for supportive acts can lead a person to be less satisfied and less likely to believe support will occur again from the person (diminish) or the opposite (enhance).

Attributions for support that enhance the value of the support would be internal, controllable, stable, and global. Attributions such as these would be associated with favorable evaluation of support. Attributions for support that diminish its value would be external, uncontrollable, unstable, and limited. In contrast to relationship enhancing attributions, attributions such as this would be associated with a harsher evaluation of the support provided. To simplify my
discussion of these attributions, I will be discussing the overall impact of these two types of attributions rather than each dimension.

**Issues related to attributions and the evaluation of social support.** This review of the literature suggests that attributions will influence the evaluation of social support. However, no published research to date has examined attributions for the provision of support.

Another issue in this literature is the direction of causality between evaluating interpersonal acts and attributions for those acts. My discussion has highlighted how attributions may influence the evaluation of interpersonal acts. However, satisfaction may also influence attributions. A negative view of one's relationship may color the interpretation of the partner's acts. Bradbury and Fincham addressed this issue with a longitudinal study of married couples (Fincham & Bradbury, 1993). Couples were interviewed at two time points, one year apart. Controlling for depression, self-esteem, and initial marital satisfaction, the authors found that relationship diminishing attributions for negative behavior were associated with lower marital satisfaction one year later. This supports the idea that attributions for negative behavior influence the evaluation of interpersonal acts and the development of relationship satisfaction.

**The Influence of Personality on Attributions for Supportive Acts**

The literature reviewed thus far suggests that attributions can influence the evaluation of social support. Attribution is a social cognitive process, and research in social cognition has long recognized that we are not objective processors of
information in the social world (Fiske & Taylor, 1991). Information in the social environment is often fluid and ambiguous and can be processed in a number of different ways depending on the motivation of the individual (Showers & Cantor, 1985). In this section, I will elaborate on how an individual's characteristics can influence attributions for support. I will argue that an individual's personality traits and expectations can lead a person to see the world in ways that are consistent with these characteristics, and that this can subsequently result in biased attributions for supportive acts. I will first describe how bias can enter into the attribution process. I will then detail how the positive or negative outlooks associated with various traits and expectations can influence attributions. I will then review prior work on personality and attributions.

A considerable body of social-cognitive research suggests that people interpret the behavior of others in ways consistent with their own beliefs and expectations (Fiske & Taylor, 1991). For example, research on the self-concept has found that information that is self-relevant is processed more efficiently than non self-relevant information (Markus & Wurf, 1987). This effect has also been found in research on social support (Pierce et al., 1997a). Identical supportive behaviors are typically rated as more supportive by people who have high general expectations of receiving social support than people low in these expectations (Lakey & Cassady, 1990; Lakey, Moineau, & Drew, 1992; Pierce et al., 1992). Although this link between expectations and processing has been well-established, no research to
date has examined processes underlying the influence of traits and expectations on attributions and the evaluation of supportive behavior.

The outcome of social cognitive processes such as attribution depends in large part on the information used in the process. The information that is selected for use can vary depending on the motivation of the individual. Selection of information is influenced by attention processes and accessibility in memory (Kruglanski, 1996; Showers & Cantor, 1985). In social interaction, there is frequently a large amount of information that can be used in making attributions, and there is wide latitude for the perceiver to choose information in making judgments (Forgas, 1991). As a result of this “cognitive flexibility”, the motivation of the person to use one piece of information over another may bias the types of attributions made (Showers & Cantor, 1985). Furthermore, many social cognitive processes involve multiple stages in which a person must evaluate whether his or her judgment is satisfactory. A person may be motivated to terminate a cognitive process early or keep one going until a judgment is made that is consistent with his or her beliefs (Anderson et al., 1996).

Attribution is a multi-step social cognitive process that can be subject to bias as a result of what knowledge structures are accessible and what information is attended to. Attributions can occur during two phases: an immediate impression phase and a more careful processing phase (Anderson et al., 1996). After noticing the event, an immediate causal judgment occurs that is not subject to careful, deliberative processing. At this stage, the most accessible knowledge structures
are likely to influence the attribution that is made (Anderson et al., 1996). For example, if a person has racist views of a minority group, negative beliefs about that group may be easily accessible and bias attributions for test performance by a minority group member with little awareness by the individual. Attributions are also influenced by what information in the situation is attended to. At this stage in attribution, a person may differentially attend to one aspect of the person or the situation over another. As a result, the attribution may be biased by the information attended to. For example, in making judgments concerning a minority group member's test performance, a racist individual may attend to the person's ability rather than characteristics of the test in making an attribution for performance.

The second stage of attribution is more effortful, but similar biases may occur. The person making the attribution decides if further attributional analysis is needed. If the preliminary judgment is deemed satisfactory, the process stops (Anderson et al., 1996). If more attributional work is judged as needed, the individual will actively process the information more fully until a satisfactory attribution is achieved. Bias can enter at several points. First, if a person is motivated to perceive a cause in a particular way, he or she may stop the attribution process when a judgment is consistent with his or her expectations rather than examining other potential interpretations. Second, the biases described above may further influence deliberative processing. Again, the most salient cognitive structures and differential attention to information may produce a bias in which attribution is made.
How personality can influence which information is used in attributions.

Traits or expectations may provide a source of motivation that can bias attributions for supportive acts, leading to attributions that are consistent with the personality traits or expectations of the individual. A psychological factor is motivational if it "carry[ies] positive and negative incentives for behavior and guides an individual's interpretations and plans" (Showers & Cantor, 1985, p. 276). Individual characteristics can be construed as such a motivational factor. I will primarily focus on how characteristics may guide attention toward processing of information relevant to attributions.

Attributions for supportive acts hinge on what information is utilized. Whether an attribution is made in a support enhancing or support diminishing manner depends on whether a person focuses on positive or negative information related to the supportive act. Causality could be assigned based on a number of factors. If the person dwells on negative aspects of the situation, a support diminishing attribution will result. If a person dwells on positive aspects of the situation, a support enhancing attribution will result. For example, in making an attribution for a supportive e-mail from a co-worker, a person could focus on the kindness of the act (positive information which will lead to a support enhancing attribution) or the co-worker's career aspirations (negative information which will lead to a support diminishing attribution).

Individual characteristics such as personality traits and general expectations produce a lens that focuses an individual on these positive or negative aspects of
the supportive act. Positive or negative outlooks associated with neuroticism, extraversion, or support expectations may bias attributions for supportive acts. Neuroticism (or negative affectivity) is associated with a broad, negative outlook. Watson and Clark (1984) stressed that people high in neuroticism report higher levels of psychological distress and a poorer view of themselves as compared to people low in neuroticism. Moreover, these people are more sensitive and reactive to negative stimuli and experiences. They will, in general, experience more negative affect across a variety of situations than persons low in neuroticism. Extraversion (or positive affectivity) is associated with a broad, positive outlook. Extraversion is associated with greater sociability and a greater likelihood of experiencing positive affect across situations (Watson & Clark, 1997). People high in extraversion generally have a more favorable outlook on life (Watson & Clark, 1997).

Furthermore, general expectations about one's social network (such as perceived social support) can have a significant impact on a person's outlook. Such beliefs are associated with favorable or unfavorable expectations for the receipt of social support from others (Pierce, Baldwin, & Lydon, 1997b). In other words, people with high perceived social support believe that others are likely to help them in times of need, whereas people low in perceived social support believe the opposite. Perceived social support is considered a cognitive structure that displays many trait-like characteristics (Baldwin, 1992; Sarason, Sarason, & Shearin, 1986).
Personality may also bias whether negative or positive information is more accessible in making an attribution for support. The literature on affect and cognition provides some insight into this process. As mentioned above, neuroticism, extraversion, and general support expectations are associated with the tendency to experience positive or negative moods, and these mood states are associated with characteristic cognitive styles. Forgas has used Bower's human associative memory model as a way to understand how affect can influence cognition (Bower, 1991; Forgas, 1991). According to Forgas, mood can influence cognition by 1) priming mood-congruent constructs, 2) biasing recall of mood-congruent information, 3) directing attention toward mood-congruent information (Forgas, 1990). If a person chronically experiences a negative mood state, as has been found with neuroticism, negative information may be chronically accessible and may bias attributions for supportive acts. The same is true of extraversion. If a person chronically experiences a positive mood state, positive information may be chronically accessible and may bias attributions for supportive acts.

Prior work on personality and attributions. The attribution literature contains many examples of how attribution has been linked to personality. Research has even suggested that the types of attributions a person typically makes can be viewed as a personality trait itself, termed "attributional style" (Buchanan & Seligman, 1995). This approach, however, has been called into question (Cutrona, Russell, & Jones, 1984). What is most relevant to the present study is the link between more general traits or expectations and the attributions a person typically
makes. Several studies on personality and attribution support the idea that attributions are made in ways that are congruent with people's personality traits.

Work in the 1970's showed that both achievement motivation and locus of control influence attributions. It was found that students who were high in achievement motivation were more likely to take responsibility for success at a task than students low in achievement motivation (Weiner & Kukla, 1970). In another study, students were given performance feedback on a task (Sobel, 1974). If students possessed a more internal locus of control, they were more likely to attribute success on the task to internal factors. If they possessed an external locus of control, the attribution was made to external factors. The largest body of research in this area is that on the relationship between depression and attribution (Weary & Edwards, 1994). Although not a personality trait per se, depressive symptoms and negative affectivity are similar in their implications for cognitive processing. Work in this area has found that compared to non-depressed people, depressed individuals are more likely to make attributions that maintain a negative view of the world. The causes of negative events are attributed to internal, stable, and global causes, whereas the causes of positive events are attributed to external, unstable, and specific causes.

Two studies have examined links between traits or expectations and attributions about relationships. A longitudinal study of eighty married couples was conducted in which attributions for negative partner behavior, dispositional negativity, and marital satisfaction were assessed (Karney, Bradbury, Fincham,
Sullivan, 1994). Structural equation models indicated that spouses high in dispositional negativity were more likely to make internal, stable, and global attributions for their partner's negative behavior, thus enhancing the impact of the negative act. Negativity led to attributions that had negative implications for the relationship, and these attributions predicted diminished marital satisfaction. A second study examined how perceived social support was related to attributions for failed social support attempts (Ross et al., 1999). Participants who were high in general support expectations were more likely to make unstable, external attributions for failed support attempts than participants who were low in general support expectations. In other words, the perceived cause of the failure to provide support was seen in a positive light by people with positive expectations and a negative light by people with negative expectations. Both studies support the notion that characteristics of the individual can influence how a person makes attributions for the behavior of a person to whom they are close.

**Issues related to personality and attributions.** Two issues remain to be explored. First, the hypothesized mechanisms linking personality and attribution are speculative. I propose that the outlooks associated with neuroticism, extraversion, and general support expectations will produce biased attributions for supportive acts. People with a negative outlook will be more likely to dwell on and use negative information in making attributions. This will lead to a greater likelihood of making relationship diminishing attributions. People with a positive outlook will be more likely to dwell on and use positive information in making attributions. This
will lead to a greater likelihood of making relationship enhancing attributions. However, this process has not been investigated.

Prior studies support the idea that personality traits and expectancies may influence attributions, but no research to date has examined the combined influence of these two factors. The PAE model would benefit from a greater understanding of how different individual characteristics are related to one another in influencing attributions.

Prior Research on the PAE Model

To summarize, the PAE model proposes that attribution is a cognitive process that is vulnerable to bias at several points. Outlooks associated with personality traits or general expectations will bias attention to information and will influence what knowledge is accessible when making attributions for supportive acts. Higher levels of extraversion will be associated with support enhancing attributions, whereas higher levels of neuroticism will be associated with support diminishing attributions. These attributions will subsequently influence the evaluation of social support. Support diminishing attributions will be associated with less satisfaction with support, whereas support enhancing attributions will be associated with more satisfaction with support. I will now present results from two studies that have tested the PAE model.

Questionnaire study of the PAE model. The first test of the PAE model was a survey in which participants described in detail a supportive act they had received in the past and rated that act on several dimensions relevant to the model (Hessling
et al., 2000). In this questionnaire study, 122 Iowa State University undergraduates wrote a detailed description of a stressful experience in which a friend or romantic partner helped them in some way. After writing this description, they completed an attribution measure regarding the support they received. The attribution measure assessed the locus of causality, stability, and globality dimensions. These subscales were combined into a single index, with higher scores reflecting relationship enhancing attributions and lower scores reflecting relationship diminishing attributions. Participants then rated their satisfaction with the supportive act and completed measures of neuroticism and extraversion.

The PAE model was tested with a fully-recursive path model. The results generally supported the model (see Figure 2). Higher extraversion was associated with more relationship enhancing attributions for support. These attributions subsequently predicted satisfaction with the support, resulting in a significant mediational pathway. The data failed to support the link between dispositional negativity and attributions for support.

These findings were limited in several respects. First, attributions were being made for recalled events, which could lead to bias in the perception of the events. Furthermore, the nature of stressful events varied widely among participants, ranging from minor hassles, such as exams, to major stressors, such as the death of a parent. The influence of personality and attributions may vary as a function of the type of stress. A better test of the model would involve attributions immediately following a supportive encounter in which the support and stress experienced was
Laboratory study of the PAE model. The second study involved attributions for a supportive act provided by a confederate (Hessling et al., 1998). The study involved 91 female Iowa State University undergraduates who were recruited from the university participant pool. In an earlier testing session, participants completed the Eysenck Personality Inventory (Eysenck & Eysenck, 1968), and participants who were either in the top or bottom quartiles of the neuroticism and extraversion measures were recruited for the study. The participants disclosed a minor problem they were facing to a confederate who was trained to provide a standard level of social support to all participants. After interacting with the confederate for 10 minutes, the participants were asked to make attributions for the support they received and to rate their satisfaction with the interaction.

As shown in Figure 3, higher negativity was associated with more relationship diminishing attributions for support. However, positivity (as assessed by the extraversion scale) did not predict attributions. 

Figure 2. Test of PAE model with questionnaire data.
Figure 3. Test of the PAE Model with laboratory-provided social support.

Negativity $\rightarrow (-.30^*) \rightarrow$ Attribution

Positivity $\rightarrow (.07) \rightarrow$ Support

$\rightarrow (\cdot26^*) \rightarrow$ Satisfaction

* Significant, p < .05.

subsequently predicted satisfaction with support. Relationship enhancing attributions were associated with more satisfaction with the supportive act. However, attributions were not a significant mediator between negativity and satisfaction with support provided.

These two studies provide support for the PAE model. The link between attributions and support evaluation was strong. Both studies found that relationship enhancing attributions were associated with more satisfaction with support, whereas relationship diminishing attributions were associated with less satisfaction with the support. However, findings regarding the personality to attribution link were mixed.

Hypotheses and Design

Although these findings provide support for PAE model, I sought to explore three additional issues with the present study that will further develop the model. The first issue concerns the causal direction of the attribution and support evaluation link. The second issue concerns the process that links personality to attributions for supportive acts. The final issue concerns the causal relationship between traits and expectations in predicting attributions for social support.
Issues addressed in the present study. Do attributions influence the evaluation of support, or are other causal processes responsible for this association? Because prior work in this area has been correlational, the direction of causality between attributions for support and the evaluation of support is not clear. The causal flow may be the opposite of that presented in the PAE model. That is, an evaluation of the interaction may be formed prior to making an attribution for support, and that evaluation may color the attribution that is made. For example, if a person is generally dissatisfied with the support of a friend, his or her attributions may be brought in line with the overall evaluation of the interaction and result in more relationship diminishing attributions for the support provided. Also, the association between attribution and evaluation may be a function of a third, unmeasured variable. For example, the perceiver's personality may influence both the attribution made and the evaluation of the support. A person high in neuroticism may make more diminishing attributions for support and may also evaluate the support more harshly. An experimental test was needed to establish the causal link between these two factors and rule out these other explanations.

How do individual characteristics influence attributions? Although a link between individual characteristics and attributions for supportive acts has been observed in correlational studies, there has been no effort to understand the psychological mechanisms linking these two factors. My literature review suggested that traits and expectations lead to attributions that are congruent with the trait, and this process occurs because people attend to information that is consistent with the
outlook associated with the trait. Understanding the mechanism linking these two factors would develop the model and provide insight into other personality / social cognitive interactions. It may also provide avenues for intervening to enhance people's social support.

How are personality traits and general support expectations related in predicting attributions for support? Prior research has indicated that these individual characteristics are associated with the social support process. However, no studies have examined both traits and expectations as predictors of the variables in the PAE model. If personality traits bias processing about social interactions, these biases will be reflected in general support expectations. These expectations may also then influence attributions, as they lead to a general outlook that may bias the interpretation of other's behavior.

**Overview of the study.** I examined these issues in a study in which attributions for support were manipulated experimentally. This manipulation was accomplished by providing information that guided attributions for support that was provided in a controlled, laboratory setting in a support-diminishing or support-enhancing direction. This tested the causal relationship between attributions and the evaluation of support. Furthermore, I investigated the influence of individual characteristics by examining the relationship between neuroticism, extraversion, and general support expectations and the effectiveness of the information used to guide attributions. If these characteristics bias the perceiver to utilize information consistent with one's outlook, the manipulation (which was valenced in either a
relationship enhancing or diminishing direction) will be more effective if a person's characteristics are consistent with the information provided to influence the evaluation. In other words, people with a negative outlook will respond more to relationship diminishing information than people with a positive outlook. Furthermore, by measuring individual characteristics, attributions for support, and the evaluation of support, the hypotheses concerning mediation of the experimental manipulation and the effects of individual characteristics can be tested using path models.

**Hypothesis 1: Attributions and support evaluation.** I predict that attributions will influence the evaluation of support. An experimental manipulation that leads to a relationship enhancing attribution will lead to a more favorable evaluation of support than in a control condition. An experimental manipulation that leads to a relationship diminishing attribution will lead to a less favorable evaluation of support than in a control condition. Furthermore, I hypothesize that attributions made for support will mediate the effect of the experimental manipulations on relationship evaluations. I predict a significant causal pathway between the attribution manipulation, the types of attributions participants make for support, and the evaluation of the social support.

**Hypothesis 2: Personality and attributions for support.** I predict that individual characteristics will moderate the effect of the attribution manipulation on the evaluation of support. Because neuroticism is associated with a greater likelihood of attending to and utilizing negative information, participants high in
neuroticism given negative information about a support provider will evaluate support more negatively than participants lower in neuroticism given the same information. Because extraversion is associated with a greater likelihood of attending to and utilizing positive information, participants high in extraversion given positive information about a support provider will evaluate support more positively than participants lower in extraversion given the same information. Furthermore, it is hypothesized that these effects will be mediated through attributions for support.

General support expectations are also expected to be related to attention to information and the effectiveness of the manipulation. Because general support expectations are associated with either a positive or a negative outlook (not simply the presence or absence of one outlook), it is not clear if they will be related to the relationship diminishing or enhancing manipulations. As a result, these interactions will be tested, but no formal hypotheses will be made.

**Hypothesis 3: Relationship of traits and expectations.** Consistent with the PAE model, I hypothesize that neuroticism, extraversion, and general support expectations will predict attributions for support. Neuroticism will be negatively related to relationship enhancing attributions for support. Extraversion and general support expectations will be positively related to relationship enhancing attributions for support. I also hypothesize the following mediational model. Because traits influence both one's outlook and the nature of social interactions, I hypothesize that neuroticism will be negatively related to general support expectations and that extraversion will be positively related to general support expectations. Furthermore,
because the outlook associated with general support expectations are more closely related to attributions for support than personality traits, I hypothesize that the effect of neuroticism and extraversion on attributions for support will be mediated through general support expectations.
CHAPTER 2. METHODS

General Overview

The study utilized three experimental conditions: a condition to generate relationship enhancing attributions (in which the participant perceived that the support was provided against the wishes of the experimenter, hereafter called the support discouraged condition), a condition to generate relationship diminishing attributions (in which the participant perceived that the support was provided because the experimenter required it, hereafter referred to as the support required condition), and a no-treatment control group. Because prior work has suggested that neuroticism is the strongest predictor of attributions in a laboratory setting, the study focused on this trait. To maximize the effect of negativity, people high and low in dispositional negativity were recruited for the study, creating a 2 (high negativity, low negativity) X 3 (support discouraged, support required, control) design. Extraversion and general support expectations were measured and analyzed as continuous predictors.

Participants

Participants were recruited from a large testing session of the Iowa State University undergraduate psychology research participant pool. The sample consisted of 123 women who were predominately young (M = 19.52 yrs, SD = 3.31), European-American (N = 115, 94%), unmarried (N = 119, 97%) undergraduates in their first two years of college (N = 106, 90%). Participants were also predominantly U.S. residents (N = 121, 98%) who spoke English as a first language (N = 122,
99%). Participants were given extra credit in their psychology classes for participating in the study.

Even though the use of one gender in a study limits the generalizability of findings, using only women can reduce the error variance in statistical models, resulting in an increase in statistical power. Due to the time-consuming nature of this paradigm, the decision to use only women was made to most efficiently test the hypotheses. Furthermore, prior work with this paradigm has utilized only women as participants, and using a female-only sample maximized the ability to make comparisons to previous studies (Hessling et al., 1998).

The design of the study also required the use of a confederate. A total of six undergraduate, female confederates were used as part of the study. Confederates were not involved in recruiting participants and did not know the individual characteristics of the participants. In addition, the study methodology was structured so that confederates would not know the participant's experimental condition until after the interaction was completed. Confederate effects on the outcome measures are addressed in the results section.

Materials

Three questionnaires were administered as part of the study. The mass-testing questionnaire contained the neuroticism and extraversion measures. (Due to copyright restrictions, these measures cannot be reproduced). The pre-interaction questionnaire contained the general support expectation and demographic measures (see Appendix A). The post-interaction questionnaire
contained the mood measure, support attribution measure, and the support evaluation measures that were used to create the support evaluation index (see Appendix B).

**Individual characteristics.** To assess neuroticism, the Revised NEO Five Factor Inventory neuroticism subscale was used (Costa & McCrae, 1992). To assess extraversion, the Revised NEO Five Factor Inventory extraversion subscale was used (Costa & McCrae, 1992). The neuroticism scale consists of 12 items, such as “I often feel inferior to others”, “I often feel tense and jittery”, and “I am not a worrier” (reverse scored). The extraversion scale consists of 12 items, such as “I like to have a lot of people around me”, “I laugh easily”, and “I don't consider myself especially light-hearted” (reverse scored). On a five point Likert-type scale ranging from 1 (disagree) to 5 (agree), the participant rated the extent to which she agreed with each item. Total scores for each scale could range from 12 to 60, with higher scores reflecting higher neuroticism or extraversion. The NEO has demonstrated excellent reliability with internal consistency ranging from .90 to .93 and test-retest reliability (six-year interval) for the NEO ranging from .68 to .83 (Costa & McCrae, 1992). For the present sample, the reliability was high, with a coefficient alpha for the neuroticism scale of .84 and for the extraversion scale of .81.

The Social Provisions Scale (SPS) was used to assess general expectations concerning the receipt of social support (Cutrona & Russell, 1987). The SPS is a 24-item scale designed to assess six dimensions of social support: attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity
for nurturance. Each of the six subscales consists of two positively worded and two negatively worded items. Sample items include, "There are people I can depend on to help me if I really need it," and "I feel that I do not have close personal relationships with other people" (reverse scored). Participants rate the degree to which they agree with each statement on a four-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). Total scores for the overall SPS can range from 24 to 96, with higher scores reflecting higher perceived social support. Reliability for the SPS is excellent with internal consistency of .92 (Cutrona & Russell, 1987). For this sample, the SPS displayed excellent reliability with a coefficient alpha of .89. The SPS correlates highly with other measures of social support (Cutrona & Russell, 1987).

**Support attribution measure.** Attributions for the support received during the interaction were measured as both a manipulation check and as a mediator of effects in the study. To assess attributions people make concerning supportive acts, a support attribution measure (SAM) was developed. This scale was based on a measure of attributions for negative interpersonal acts called the Relationship Attribution Measure (RAM; Fincham & Bradbury, 1992). The measure assesses three dimensions of attributions. The perceived stability of the cause of the supportive act (stability dimension) is assessed with one item, "The reason this person supported me is not likely to change" (rewording of RAM item). The degree to which the cause for the supportive act can be generalized to other aspects of the relationship (globality dimension) is assessed with one item, "The reason this
person supported me is something that would affect other areas of our relationship” (rewording of RAM item).

Because the locus dimension is the most important aspect of attributions for supportive acts (and the most difficult to conceptualize), nine additional items were developed to assess it (see Table 2). One item was reworded from the RAM, “This person’s behavior was due to something about him/her (e.g., the type of person he/she is)”. New items included: “This person supported me because he/she truly cared” and “This person supported me because he/she felt obligated” (reverse scored). On a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree), participants rated the extent to which they agreed with each item. Scores could range from 12 to 60, with higher scores reflecting more relationship-support discouraged attributions for the support received.

The full scale was tested with a large sample of Iowa State University undergraduates (N = 328), who were asked to think about a time when someone did something supportive for them. The participants then completed the support attribution measure. The scale had an adequate coefficient alpha of .73 and displayed significant relationships with measures of the evaluation of social support. Coefficient alpha for the present sample was high, with a value of .86. Factor analyses of the larger undergraduate sample suggested the potential existence of two factors, but the present data did not support the existence of these factors. Because the two factors demonstrated similar correlations with the outcome
measures and the overall measure displayed high reliability, all the items were summed to create the final attribution score.

**Support evaluation index.** Four aspects of social support evaluation were assessed as outcome measures.

A support perceptions measure was used to assess the perceived frequency with which different types of support were received during the interaction (Cutrona et al., 1997). This measure consisted of 20 items that correspond to different types of support a person can receive, such as “My partner related to or shared my interests and concerns” (emotional support) and “My partner gave me no useful information” (tangible support; reverse scored). On a four-point Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree), the participant rated the degree to which he or she agreed with each statement. Total scores for each scale could range from 20 to 80, with higher scores reflecting the perception that more support was received.

A second measure was used to assess the participant’s overall satisfaction with the interaction. This measure consisted of three items, on which participants were asked to rate how satisfied they were with the interaction, how pleased they were with the interaction, and how helpful the interaction was. On a five-point Likert-type scale ranging from 1 (not at all) to 5 (very), participants rated the degree to which each descriptor was true of their perceptions of the interaction. Total score for this scale ranged from 3 to 15, with higher scores reflecting greater satisfaction.
with the interaction. In prior laboratory work with this measure, internal consistency has been high (.88). For this sample, internal consistency was again high (.88).

A partner genuineness measure was used to assess perceived naturalness of the confederate’s behavior. This measure consisted of three items, in which participants were asked to rate how much they believed their partner was “genuine”, “being him/herself”, and “acting naturally”. On a five-point Likert-type scale ranging from 1 (not at all) to 5 (very), participants rated the degree to which each descriptor was true of the confederate’s behavior. Total score for this scale could range from 3 to 15, with higher scores reflecting greater belief in genuineness of the partner’s behavior. In prior laboratory work with this measure, internal consistency has been high (.87), and for this sample, internal consistency was again high (.87).

A partner trust measure was used to assess beliefs concerning potential future interactions with the partner. Participants were asked, “If you were to interact with this person again in the future...”, and then asked to rate how much they agreed with six statements such as “I could count on him/her to be concerned with my welfare” and “I couldn’t rely on him/her to keep a promise” (reverse scored). On a six-point Likert-type scale ranging from 1 (disagree strongly) to 6 (agree strongly), participants rated the degree to which they agreed or disagreed with each statement. Total scores for this scale could range from 5 to 36, with higher scores reflecting greater trust in the partner. In prior laboratory work with this measure, internal consistency has been high (.87) and the measure displayed predicted
correlations with other measures of support evaluation. In the present sample, reliability was again high, with a coefficient alpha of .83.

Because the four support evaluation measures displayed high intercorrelations (r's ranging from .38 to .71) and similar relationships with the predictor variables, the four measures were standardized and summed to create a single support evaluation index. The reliability for this linear composite was high (.93).

Mood. The Depression Adjective Check List (DACL) was used to assess mood following the interaction (Lubin, 1965). The DACL consists of 30 positive and negative emotions, such as “downhearted”, “lively”, and “unfeeling”. Participants are asked to circle all the words that describe their feelings at that moment. Total scores for the DACL range from 0 to 30, with higher scores reflecting more negative mood.

Procedure

Recruitment. The personality measures were placed in the Psychology Department mass-testing packet. Participants were recruited from the group of individuals who scored in either the top or bottom quartile of the neuroticism measure. Potential participants were called and asked to participate in a study of “impression formation and social interaction”. They were told that the study involved filling out a questionnaire, interacting with another student for ten minutes, and completing a questionnaire about the interaction. Furthermore, they were told that the interaction would be videotaped.
Pre-interaction. After the participant arrived, she was introduced to the confederate, whom the participant was told was another psychology student taking part in the study for extra credit. The participant and the confederate were told: “We’re doing a study of the impressions people have of others after they discuss problems with them. In this study, we’re going to ask one of you to disclose a problem for 10 minutes and the other to listen. Then we’ll have you fill out some questionnaires about the impression you have of the other person. Also, you will fill out and then exchange a questionnaire.”

The roles of discloser and listener were then assigned. The experimenter asked the participant and confederate to guess a number between 1 and 10 and told them that the person who guessed the number closest to the number the experimenter had selected would be the discloser. The experimenter always reported a number within 1 of the number the participant guessed, so that the participant would always be the one chosen to disclose a problem. After assigning the participant the role of discloser and the confederate the role of listener, the participant and confederate were told: “Now we need you to fill out a questionnaire prior to the interaction. The discloser’s questionnaire is longer than the listener’s, so you’ll probably complete it earlier.”

The pre-test measures were then handed out. The confederate’s questionnaire was similar but shorter than the discloser’s questionnaire. This was to allow time for the experimenter and the confederate to ostensibly discuss instructions for the interaction in another room. After the confederate completed her
questionnaire, she was guided into the interaction room, and the door to this room was closed. The experimenter stayed in the room for a few minutes talking quietly with the confederate in such a fashion that the participant knew they were talking but could not tell the content of the discussion. The experimenter then returned to the main room and closed the door to the interaction room. The confederate could not hear any of the information the participant was told prior to the interaction.

After the participant had completed the pre-interaction questionnaire, the experimenter then asked the participant to select a problem from her life that she would like to disclose to the confederate. The confederate was not able to hear their discussion and was therefore blind to the participant’s condition. The experimenter guided the participant toward a problem that was not too serious or personal. Participants largely selected problems involving academic work.

After selecting an issue to discuss, the experimenter provided the first attribution-manipulation information. In the support discouraged condition, the experimenter told the participant: “I’ve told your partner that she must not say much while you talk. We’ve had a lot of problems with our participants talking too much, so we’ve really needed to emphasize the importance of remaining quiet”. The purpose of this information was to manipulate the attribution in a relationship enhancing direction. The confederate provided the same level of support regardless of condition, and because she was being supportive in spite of the experimenter’s “instructions” not to, the support would more likely be attributed to genuine concern for the participant (a relationship-enhancing attribution).
In the support required condition, the experimenter told the participant: “I've told your partner that she must provide support to you for your problem. We've had a lot of problems getting our participants to provide support, so we have really needed to emphasize the importance of providing it”. The purpose of this information was to manipulate the attribution in a relationship diminishing direction. Because the confederate was being supportive as the perceived result of the experimenter’s instruction, the cause of the support provided would more likely be attributed to the experimenter and not genuine concern (a relationship-diminishing attribution).

In the control condition, the experimenter did not provide any attribution-manipulation information.

At this point, the participant was guided into the interaction room, the video camera was started, and the participant and the confederate were instructed to begin their interaction. The participant then disclosed her problem to the confederate for ten minutes. The confederate was trained to be supportive and understanding during the interaction. She was instructed to acknowledge understanding the situation, allow the person to vent emotions, and ask for further information about the situation.

Post-interaction. After the 10 minute interaction, the participant and confederate were brought back into the main room. The confederate and participant then filled out two additional questionnaires. The first questionnaire consisted of three open-ended questions. The confederate's questionnaire
contained the following open-ended questions (see Appendix C). The first question was, “What was the problem your partner disclosed?”, to which the confederate was instructed to write a brief, one-sentence description of the problem. Question two was, “What did you do to provide support to your partner?”, to which the confederate was instructed to write “Listened and tried to help.”

The last question was, “Why did you provide support to your partner?” The purpose of the last question was to provide additional attribution-manipulation information. On this questionnaire, the confederate found a code that indicated which condition the participant was in. If the confederate was in the support discouraged condition, she would write: “I supported my partner because I really wanted to help her with her problems”. If she was in the support required condition, she would write: “I supported my partner because the experimenter told me to.” If the participant was in the control condition, this question was omitted from the questionnaire.

The participant’s questionnaire contained the following open-ended questions (see Appendix D). Question one was, “What was the problem you disclosed?”, “What did your partner do to provide support to you?”. These responses were not analyzed.

The participant and confederate then exchanged questionnaires. They were asked to read each other’s questionnaire, with the purpose of providing additional information to support the attribution manipulation. They were then given the final
post-interaction questionnaire. Following completion of this questionnaire, the participant was probed for suspicion, debriefed, and released.
CHAPTER 3. RESULTS

Overview

The results will be presented in four sections. The first section will address several potential confounding variables. The second section will focus on hypotheses concerning the role of attributions in influencing the evaluation of social support. The third section will focus on hypotheses concerning the role of individual characteristics as moderators of the effectiveness of the attribution manipulation. The final section will present path analyses that will test the degree to which general support expectations and the support attribution measure function as mediators.

Means and standard deviations for all variables can be found in Table 1. Means and standard deviations for all variables within each experimental condition can be found in Table 2. Correlations among all variables can be found in Table 3. Correlations among all variables within each experimental condition can be found in Tables 4 (control condition), 5 (support required condition), and 6 (support discouraged condition).

Potential Confounds

Confederates. Because several confederates were used as part of the study (N = 6), analyses were conducted to rule out any potential confounds due to characteristics of the confederate. A hierarchical multiple regression was conducted with the support evaluation index as the dependent measure. In the first step of the regression, confederate effects were tested using five dummy variables. In the second step of the regression, the effect of the manipulation was tested using
Table 1. Means and standard deviations of main study variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>47.72</td>
<td>5.90</td>
</tr>
<tr>
<td>Support Expectation</td>
<td>87.23</td>
<td>6.67</td>
</tr>
<tr>
<td>Support Attribution Measure</td>
<td>40.34</td>
<td>6.94</td>
</tr>
<tr>
<td>Support Evaluation Index</td>
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<td>3.29</td>
</tr>
<tr>
<td>Support Perception</td>
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<td>6.45</td>
</tr>
<tr>
<td>Partner Trust</td>
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<td>4.82</td>
</tr>
<tr>
<td>Partner Genuineness</td>
<td>12.83</td>
<td>2.04</td>
</tr>
<tr>
<td>Satisfaction with the Interaction</td>
<td>12.24</td>
<td>2.07</td>
</tr>
</tbody>
</table>

two dummy variables reflecting experimental group membership. The two experimental group dummy variables were coded to reflect membership in either the support discouraged condition or the support required condition. The "support discouraged" dummy variable was coded "1" if the participant was in that particular condition, and the variable was coded "0" if the participant was in the other two conditions. The "support encouraged" dummy variable was coded in a similar fashion. As a result, the control condition was the omitted comparison or reference group. In the third step of the regression, the interaction between confederates and experimental conditions were tested using ten interaction terms.

The confederate dummy variables did not significantly predict outcome, and none of the interaction terms achieved significance. These analyses were repeated
Table 2. Means and standard deviations of main study variables broken down by experimental condition.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Support Discouraged</th>
<th>M</th>
<th>SD</th>
<th>Support Control</th>
<th>M</th>
<th>SD</th>
<th>Support Required</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
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<td></td>
<td>47.82</td>
<td>5.17</td>
<td></td>
<td>48.75</td>
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<tr>
<td>Support Expectation</td>
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<td></td>
<td>87.55</td>
<td>6.81</td>
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<tr>
<td>Support Attribution Measure</td>
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<td></td>
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<td></td>
<td>35.02</td>
<td>5.65</td>
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</table>

using the support attribution measure. Once again, the confederate dummy variables and interaction terms did not achieve statistical significance. Furthermore, all subsequent analyses were run both controlling for and not controlling for confederate effects. The results were essentially unchanged. Therefore, confederate effects were not included in the final set of analyses.

Participant suspicion. A small number of participants reported some suspicion concerning the confederate's claim to be another undergraduate in the research participant pool (n = 9, 7.3%). Neither the manipulation nor participant's neuroticism appeared to influence suspiciousness. Chi-square measures of
Table 3. Correlation among study variables.

<table>
<thead>
<tr>
<th>Variable</th>
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<th>2.</th>
<th>3.</th>
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<td>.30**</td>
<td>.22**</td>
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</tbody>
</table>

* p < .05. ** p < .01.

association between participant suspicion and experimental condition were non-significant, \( \chi^2 (2) = 4.48, p = .11 \), as were comparisons between participant suspicion and neuroticism group, \( \chi^2 (1) = 0.14, p = .71 \). Suspicious participants also did not significantly differ from the other participants in terms of extraversion or general support expectations, \( t (121) = -1.09, p = .28 \), \( t (121) = .58, p = .56 \), respectively.

To test whether participant suspicion influenced the results, a hierarchical multiple multiple regression was again conducted with the support evaluation index and support attribution measure as dependent measures. Participant suspicion and
Table 4. Correlation among study variables in control condition.

<table>
<thead>
<tr>
<th>Study Variable</th>
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<th>3.</th>
<th>4.</th>
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<th>6.</th>
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<tr>
<td>5. Evaluation</td>
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<td>-.02</td>
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<td>.78**</td>
<td>.64**</td>
<td>.09</td>
<td>.49**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01.

dummy codes reflecting experimental condition were entered in the first step, and interactions between these variables were tested in the second step. For both the support evaluation index and the support attribution measure, neither participant suspicion nor the interaction terms achieved statistical significance. Furthermore, all subsequent analyses were run both controlling for and not controlling for participant suspicion. The results were essentially unchanged. Therefore, participant suspicion was not included in the final set of analyses.

**Problem severity.** Participants were instructed to select minor problems to disclose to the confederate. However, the severity of the problem selected did vary. To examine the potential effects of problem severity, the videotapes were coded for
Table 5. Correlation among study variables in support required condition.

<table>
<thead>
<tr>
<th>Study Variable</th>
<th>1.</th>
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<th>3.</th>
<th>4.</th>
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<td>.68**</td>
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<td>.76**</td>
<td>.19</td>
<td>.77**</td>
<td>1.00</td>
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</tbody>
</table>

*p < .05.  **p < .01.

Problem severity. Problems were coded into three categories: 1) mild severity, 2) moderate severity, and 3) high severity. Across all conditions, 38.2% of the participants selected problems of mild severity (n = 47). Moderate severity problems were selected 49.6% of the time (n = 61), whereas more serious problems were selected by 12.2% of the participants (n = 15).

Problem severity did not vary as a function of experimental condition or neuroticism group. Chi-square tests of association between problem severity and experimental condition were non-significant, $\chi^2 (4) = 1.71$, $p = .79$, as were measures of association between problem severity and neuroticism group, $\chi^2 (2) = 3.97$, $p = .14$. Furthermore, correlations between the severity code and the other...
Table 6. Correlation among study variables in support discouraged condition.

<table>
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<tr>
<th>Study Variable</th>
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<th>4.</th>
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<td>-.01</td>
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<td>.52**</td>
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<td>.71**</td>
<td>.63**</td>
<td>.65** 1.00</td>
<td></td>
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</table>

*p < .05. **p < .01.

study variables revealed only one significant correlation. Extraverted participants were more likely to select higher severity problems to disclose, r (120) = .21, p < .05.

To determine whether problem severity influenced the results of the study, a hierarchical multiple regression was conducted with the support evaluation index as the dependent measure. Problem severity was entered in the first step of the regression, and dummy codes reflecting experimental condition were entered in the second step. In the third step, two interaction terms were entered into the equation to test for any potential interaction effects between problem severity and experimental condition.
The problem severity measure did not predict the support evaluation index significantly, and none of the interaction terms achieved significance. These analyses were repeated using the support attribution measure. Once again, the problem severity and interaction terms did not achieve significance. Furthermore, all subsequent analyses were run both controlling for and not controlling for problem severity. The results were essentially unchanged. Therefore, problem severity was not included in the final set of analyses.

**Differences in individual characteristics as a function of experimental treatment.** Participants were randomly assigned to condition, but if, by chance, participants in one condition were significantly higher in extraversion or general support expectations, this would be a serious confound for the study. To test this, a one-way analysis of variance was conducted on the support attribution measure using treatment condition (support required, support discouraged, control) as the independent variable. The analysis indicated that there was no statistically significant difference among the three conditions for either extraversion \( F(2,120) = 1.30, p = .28 \) or general support expectations \( F(2,120) = .11, p = .90 \).

**Attributions for Support and Support Evaluation**

**Personality differences.** Participants in the high neuroticism group scored significantly higher on the NEO neuroticism measure \( M = 41.32, SD = 5.98 \) than participants in the low neuroticism group \( M = 23.74, SD = 3.72, t(121) = 19.83, p < .01 \). The high neuroticism group was in the 75th percentile among college age students, while the low neuroticism group was in the 5th percentile (Costa & McRae,
The average extraversion score for participants in the sample ($M = 47.72$, $SD = 5.90$; Minimum = 31, Maximum = 58; Inter-quartile range = 8.00) was in the 80th percentile for college age students, indicating that the sample was, overall, highly extraverted (Costa & McRae, 1992).

**Manipulation check.** To determine if the experimental manipulation influenced attributions for the social support received from the confederate, a one-way analysis of variance was conducted on the support attribution measure. The independent variable was treatment condition (support required, support discouraged, control). The analysis indicated that there were significant differences among the three conditions, $F(2,120) = 30.66, p < .01$ (see Figure 4; Figure 5 also presents the means broken down by neuroticism group). The experimental manipulations explained a large portion of the variance in the relationship attribution measure, $R^2 = .34$. These differences were in the predicted direction and indicated that the manipulation was successful. The most relationship enhancing attributions were made in the support discouraged condition ($M = 44.78$, $SD = 6.23$) followed by the control condition ($M = 40.90$, $SD = 5.10$) and the support required condition ($M = 35.03$, $SD = 5.65$). The midpoint of potential responses is 36, which means the scores for all three conditions were at or above the midpoint of the scale (range 12-60).

Follow-up post-hoc comparisons indicated that scores in both the support discouraged and support required conditions were significantly different from the control condition and from each other (all $p$'s < .01). Although the manipulations
were apparently successful, the strength of the support discouraged manipulation differed from the strength of the support required manipulation. The effect size for the difference between the support discouraged condition and the control condition was lower ($d = .56$) than the difference between the support required condition and the control condition ($d = .85$), suggesting that the support required manipulation was more effective at influencing attributions for social support than the support discouraged manipulation as compared to the control condition.

To test whether these findings replicate previous work on the PAE model, a multiple regression analysis predicting the support attribution measure was conducted using both the attribution manipulation and individual characteristics as
The results of the regression analysis (see Table 7) partially supported the PAE model. Overall, the variables significantly predicted the support attribution measure, $F(5,117) = 13.81$, $p < .01$, $R^2 = .37$. Participants who expected more support from their social network were more likely to make more relationship enhancing attributions for the support they received from the confederate. General support expectations were a significant predictor of the support attribution measure, $\hat{\beta} = .19$, $t = 2.34$, $p < .05$. However, neuroticism ($\hat{\beta} = .03$, $t = .36$, $p = .72$) and
extraversion (\(\beta = .01, t = .74, p = .94\)) were not significant predictors. This finding suggests that general support expectations may be mediating the effect of neuroticism and extraversion on the support attribution measure. If this hypothesized mediational model is true, neuroticism and extraversion would not be significant predictors when controlling for the effect of general support expectations (Baron & Kenny, 1986). This hypothesis will be tested in the section presenting path models of the mediational hypotheses.

A hierarchical multiple regression was also conducted to test for interactions between the experimental manipulations and the individual characteristics. The dependent variable in this regression was again the support attribution measure. The first step of this regression was identical to the regression listed above. In the second step of the regression, product terms were entered representing the interactions between the support required manipulation and all the individual
difference variables (neuroticism, extraversion, and general support expectations) and the support discouraged manipulation and all the individual difference variables, for a total of six interaction terms. None of these interaction terms achieved significance (see Table 8), suggesting that individual characteristics did not moderate the effect of the experimental manipulation on the support attribution measure.

Effect of the manipulation and individual characteristics on support evaluation. It was hypothesized that the attribution manipulation would influence the evaluation of social support. Specifically, I predicted that the support discouraged manipulation would lead to a more favorable evaluation of social support as compared to the control group. Furthermore, I predicted that the support required manipulation would lead to a less favorable evaluation of social support when compared to the control group.

A multiple regression analysis was again conducted to test these hypotheses. The dependent variable in this regression analysis was the support evaluation index. The neuroticism group variable, extraversion score, general expectations score, and two dummy variables reflecting experimental group membership were predictors.

The regression results (see Table 9) partially supported the hypotheses concerning the effect of the experimental manipulation. Overall, the variables significantly predicted the support attribution measure, $F(5,117) = 6.18, p < .01, R^2 = .21$. Participants in the support required condition evaluated the support they
Table 8. Hierarchical multiple regression testing for interactions between individual characteristics and manipulation in predicting support attribution measure.

<table>
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<td>.01</td>
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</tbody>
</table>

* p < .05. ** p < .01.

received more negatively than participants in the control condition. The support required dummy variable was a significant predictor of scores on the support evaluation index, β = -.34, t = -3.54, p < .01. However, the support discouraged manipulation did not significantly affect how participants evaluated the support they received from the confederate. The support discouraged dummy variable was not a
Table 9. Multiple regression predicting support evaluation index

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>-.36</td>
<td>.31</td>
<td>-.11</td>
<td>-1.15</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.35</td>
<td>.31</td>
<td>.11</td>
<td>1.14</td>
</tr>
<tr>
<td>Support Expectation</td>
<td>.38</td>
<td>.30</td>
<td>.12</td>
<td>1.28</td>
</tr>
<tr>
<td>Support Required</td>
<td>-2.37</td>
<td>.67</td>
<td>-.34</td>
<td>-3.54**</td>
</tr>
<tr>
<td>Support Discouraged</td>
<td>.82</td>
<td>.66</td>
<td>.12</td>
<td>1.24</td>
</tr>
</tbody>
</table>

* significant, p < .05. ** significant, p < .01

significant predictor of the support evaluation index, $\beta = .12$, $t = 1.24$, $p = .22$.

Neither neuroticism group, extraversion, nor general support expectations were significant predictors of the support evaluation measure.

It was also hypothesized that the effect of the support encouraged and support discouraged manipulation were a result of the participant's attributions for support. This hypothesis will be tested in the section on the overall path model of the results of the study.

**Personality and Attributions for Support**

It was hypothesized that the experimental manipulations would interact with personality characteristics in predicting the evaluation of social support. Because extraversion is associated with increased use of positive information in making attributions, I predicted that the support discouraged manipulation would be more effective for participants who are high in extraversion than for participants who are
low in extraversion. Furthermore, I predicted the opposite would occur for participants high in neuroticism. That is, I predicted that the support required manipulation would be more effective for participants who are high on this trait. Thus, I predicted two interactions: one between extraversion and the support discouraged manipulation, and one between neuroticism and the support required manipulation. The interactions between general support expectations and the manipulations were also tested, although no a priori hypotheses were put forward.

Another hierarchical multiple regression was conducted to test these predictions. The dependent variable in this regression was again the support evaluation index. In the first step, the dichotomous neuroticism variable, extraversion score, general expectations score, and the dummy variables reflecting experimental condition were entered. All continuous variables were standardized. In the second step of the regression, product terms were entered representing the interactions between the support required manipulation and all the individual difference variables (neuroticism, extraversion, and general support expectations) and the support discouraged manipulation and all the individual difference variables, for a total of six interaction terms.

The hypothesis that neuroticism would bias the processing of negative information was supported, as the support required manipulation was more effective if the participant was in the high neuroticism group (see Table 10). The interaction between the support required manipulation and neuroticism dummy code was statistically significant, $\beta = -.33, t = -2.64, p < .05$. There was also a significant
Table 10. Hierarchical multiple regression testing for interactions between individual characteristics and attribution manipulation

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.23</td>
<td>.51</td>
<td>.07</td>
<td>.45</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.12</td>
<td>.57</td>
<td>.04</td>
<td>.21</td>
</tr>
<tr>
<td>Support Expectation</td>
<td>.35</td>
<td>.46</td>
<td>.11</td>
<td>.76</td>
</tr>
<tr>
<td>Support Required</td>
<td>-2.59</td>
<td>.65</td>
<td>-.37</td>
<td>-4.00**</td>
</tr>
<tr>
<td>Support Discouraged</td>
<td>.63</td>
<td>.64</td>
<td>.09</td>
<td>.98</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sup. Req. X Neu.</td>
<td>-2.02</td>
<td>.76</td>
<td>-.33</td>
<td>-2.64**</td>
</tr>
<tr>
<td>Sup. Req. X Ext.</td>
<td>.50</td>
<td>.83</td>
<td>.08</td>
<td>.60</td>
</tr>
<tr>
<td>Sup. Req. X Sup. Exp.</td>
<td>-.96</td>
<td>.68</td>
<td>-.17</td>
<td>-1.40</td>
</tr>
<tr>
<td>Sup. Disc. X Neu.</td>
<td>.11</td>
<td>.70</td>
<td>.02</td>
<td>.16</td>
</tr>
<tr>
<td>Sup. Disc. X Ext.</td>
<td>.13</td>
<td>.71</td>
<td>.03</td>
<td>.18</td>
</tr>
<tr>
<td>Sup. Disc. X Sup. Exp.</td>
<td>1.15</td>
<td>.71</td>
<td>.19</td>
<td>1.63</td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01.

change in the amount of variance explained between the two steps of the model, $\Delta r^2 = .10$, $F (6, 111) = 2.77$, $p = .02$. A plot of this interaction indicated that the support required manipulation was strongly related to the support evaluation index among individuals in the high neuroticism group ($M_{\text{high N / dimm}} = -2.70$, $SD = 3.27$; $M_{\text{high N / control}} = .85$, $SD = 2.37$; see Figure 6). Among low neuroticism participants, the mean
difference was much smaller ($M_{\text{low N / dimin}} = -0.82$, $SD = 3.64$; $M_{\text{low N / control}} = 0.13$, $SD = 2.86$). For people in the low neuroticism group, this mean difference was much smaller ($M = 0.95$, $d = 0.27$) than for people in the high neuroticism group ($M = 3.43$, $d = 0.98$). A follow-up simple effects test was conducted to test whether the difference between the experimental conditions for participants high in neuroticism was significant. The difference was found to be statistically significant, $\beta = -0.19$, $t = -2.26$, $p < .01$.

The hypothesis that extraversion would interact with the effectiveness of the support discouraged manipulation was not supported. The interaction between the
support discouraged manipulation and extraversion score was non-significant, \( \beta = .02, t = .15, p = .88 \). Therefore, it does not appear that the effect of the support discouraged manipulation was moderated by the person's level of extraversion. Furthermore, none of the general support expectation terms achieved significance. General support expectations were not a factor in predicting the effectiveness of the manipulation.

**Testing Mediational Hypotheses**

To further examine the relationships among the study variables, several path models were fit using LISREL 8.14 (Joreskog & Sorbom, 1989). Three mediational pathways were tested. The first involved general support expectations as a mediator of the personality and attribution portion of the PAE model. The second involved the degree to which attributions mediated the relationship between the attribution manipulation and the support evaluation measure. The third involved an examination of the interaction effect noted between neuroticism and the effectiveness of the support required manipulation. Because of the small sample size, all variables were treated as manifest (observed) variables.

**Overall path model.** The first two mediational hypotheses were tested by creating an overall path model of the results. Using the PAE model and the hypotheses concerning traits and expectations as a guide, the model was specified as shown in Figure 6. Neuroticism, extraversion, and the two treatment condition variables were specified as exogenous. General support expectations were in the second stage of the model and were specified as being determined by the two
personality variables. The support attribution measure was in the third stage and was specified as being determined by the treatment condition variables, personality variables, and general support expectations. The support evaluation index was in the final stage, and it was specified as being determined by all other variables. This model provided an excellent fit to the data, $\chi^2 (2) = .82, p = .66, GFI = 1.00$. All non-significant pathways were then removed from the model, and the model was fit again. This "trimmed" model also provided an excellent fit to the data, $\chi^2 (9) = 11.93, p = .22, GFI = .97$ (see Figure 7).

**General support expectations as a mediator.** General support expectations appeared to mediate the relationship between personality and attributions for support. Both neuroticism and extraversion predicted general support expectations, which subsequently predicted the support attribution measure. However, the indirect path between the personality traits and the support attribution measure was only significant for neuroticism ($b = -.05, t = -1.96, p = .05$). The direct paths between the personality trait measures and the support attribution measure were not significant.

**Support attribution measure as a mediator.** The data strongly supported the importance of attribution as a mediator in the PAE model. All the observed effects on support evaluation were mediated through attributions for support. The support encouraged manipulation, support required manipulation, and general support expectations all had significant indirect effects on the support evaluation measure through the support attribution measure (see Table 11 for a listing of all indirect
Figure 7. Overall path model of results.

effects). The direct paths between the treatment condition variables and the support evaluation index were not significant.

Neuroticism interaction path models. Because the regression analyses indicated that there was an interaction between experimental condition and neuroticism, a multiple-group ("stacked") model was run. For this type of model, the above models were rerun with the personality variables removed. A stacked model simultaneously tests the same model for two groups. In this case, the two groups were the high and low neuroticism groups. To evaluate whether or not the path
Table 11. Strength of indirect effects predicting support evaluation measure.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE</th>
<th>$\beta$</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>-01</td>
<td>.01</td>
<td>.03</td>
<td>1.68</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.02</td>
<td>.01</td>
<td>-.04</td>
<td>-1.92</td>
</tr>
<tr>
<td>Support Expectation</td>
<td>.06</td>
<td>.03</td>
<td>.13</td>
<td>2.44*</td>
</tr>
<tr>
<td>Support Required</td>
<td>-2.05</td>
<td>.46</td>
<td>-.29</td>
<td>-4.48**</td>
</tr>
<tr>
<td>Support Discouraged</td>
<td>1.30</td>
<td>.43</td>
<td>.19</td>
<td>3.02**</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01.

between the support required manipulation and the support attribution measure differed for participants high in neuroticism and participants low in neuroticism, two models were tested. In the first model, the paths between the two variables were specified as equal for the high and low neuroticism groups. In the second model, the path was allowed to be different for the two groups of participants. If this second model fits the data better than the first model, we can conclude that the pathways are indeed different between the two groups. In other words, one path is significantly stronger or weaker than the other.

The goodness of fit statistics for the first model in which the paths were specified as equal indicated that this model provided a good fit to the data, $\chi^2 (10) = 8.84$, $p = .55$. The second model that was tested permitted the effects of the support
Figure 8. Stacked model in which all paths are allowed to be different.

required manipulation on the support evaluation measure to be different for the two groups of participants (see Figure 8). Since the difference in the chi-square values for two nested models is itself distributed as a chi-square statistic (Bentler & Bonett, 1980), we can test whether or not this modification to the model resulted in a
significant improvement in model fit. This model also provided a very good fit to the data, $\chi^2 (9) = 3.69, p = .93$. The difference between the two chi-square values was significant, $\Delta \chi^2 (1) = 5.15, p = .02$. The support required manipulation to support attribution path was significantly stronger among participants high in neuroticism ($b = -.53$) than participants low in neuroticism ($b = -.24$). This finding suggests that the support required manipulation had a greater effect among participants high in neuroticism than participants low in neuroticism, suggesting that personality interacted with neuroticism in predicting the effectiveness of the manipulation.
CHAPTER 4. DISCUSSION

The results of the study will be discussed in four sections. The first will focus on the findings concerning the causal role of attributions in influencing the evaluation of social support. The second will discuss the results concerning mechanisms linking personality to the evaluation of social support. The third will center on the role of expectations in mediating the impact of personality on attributions. The fourth section will be a general discussion of the results, implications, limitations of the study, and directions for future research.

Attribution and the Evaluation of Social Support

I hypothesized that attributions would play a causal role in influencing the evaluation of social support provided in a laboratory setting. To test this hypothesis, an experimental manipulation was used to alter participants' attributions concerning why their partner was providing support. The results provided partial support for this hypothesis. The attribution manipulation was successful, although compared to the control condition, the support required manipulation (intended to move the attributions in a diminishing direction) was stronger than the support discouraged manipulation (intended to move the attributions in an enhancing direction). In spite of the success of the manipulation, only the support required manipulation significantly affected satisfaction with support. Participants who were in this condition were significantly less satisfied with the support they received as compared to the control group. The participants in the support discouraged condition were not significantly more satisfied with the support they received from
the confederate, even though they made significantly more relationship enhancing attributions for the support they received.

There may be several causes for the failure of the support discouraged manipulation to make participants more satisfied with the support they received. As mentioned previously, the support required condition had a stronger effect on the support attribution measure than the support discouraged manipulation. Because the effect was mediated through these attributions, a weaker manipulation would have less impact on the support evaluation index. The association was in the hypothesized direction, but a larger sample size may be required to detect a significant effect. More importantly, moving attributions for a behavior in a more internal direction may simply be unrealistic considering people's natural propensity to make internal attributions for behavior. Research on the fundamental attribution error has demonstrated that people are highly likely to attribute an actor's behavior to internal causes (Jones & Davis, 1965). In this study, participants in the control condition were already making internal attributions for the support provided by the confederate, and making these attributions even more internal may simply be impossible.

A ceiling effect may have also affected the findings. Scores for the control group on the overall satisfaction measure were high ($M = 12.55$, $SD = 1.87$; possible range 3-15). In the absence of the manipulation, participants were already quite satisfied with the support they received in the interaction. It may have been unrealistic to assume that they could be made even more satisfied with what was
already a satisfying interaction. Finally, the two manipulations were not completely parallel. In the support required condition, the participant is told that their partner has been instructed to be “supportive”, and in the support discouraged condition, the participant is told that their partner has been instructed not to “talk to much”. This discrepancy may have also affected the manipulation.

Even though the enhancing manipulation was not significant, the findings suggest that attributions have a causal influence on the evaluation of social support. The link between the support attribution measure and support evaluation measure was quite strong (b = .72, p < .01). In evaluating the supportiveness of another person’s behavior, the perceived cause of that behavior does appear to be a significant factor in the judgment. If a person providing support is acting for reasons other than care and concern, the recipient of that support will be less satisfied with the help provided.

This finding fits well with those of Bradbury and Fincham concerning the role of attributions in marriage (Fincham & Bradbury, 1990). Attributions can either enhance or diminish the effect of any interpersonal event. In the case of negative events, attributions can be made in ways to lessen their impact (for example, by viewing them as chance events) or enhance the impact (by viewing them as characteristic behaviors). These attributions will then have a significant impact on marital satisfaction. It can be inferred that evaluations of supportive interactions would also have long term implications for a relationship. If support is always attributed to diminishing causes, a supportive relationship will likely not develop,
and in the absence of supportive behaviors, intimacy and trust are less likely to develop (Cutrona, 1996).

**Personality and the Use of Information in Making Attributions**

I hypothesized that participants would use information that was consistent with their characteristic outlook in evaluating the support received from the confederate. For example, if the participant possessed high levels of neuroticism (associated with a negative outlook), the negative information provided in the manipulation intended to diminish the attributions for the support would have a stronger effect as compared to participants low in neuroticism. The information would be more likely to be used by neurotic participants in making their judgment. The situation is analogous to making an evaluation of a meal. There are many dimensions on which to evaluate a meal, including appetizers, drinks, and the main course. If one type of person is particularly sensitive to problems with appetizers, a poor appetizer will unduly influence his or her judgement. Another type of person may recognize problems with the appetizers, but not magnify their importance in making an evaluation.

The results partially supported my hypotheses. I predicted an interaction between the support required manipulation and neuroticism level in predicting the evaluation of support, and I predicted a similar interaction between the support discouraged manipulation and extraversion. Only the neuroticism interaction achieved significance. The manipulation intended to diminish attributions for support was significantly more effective for neurotic participants, and path analyses
indicated that this effect resulted from the manipulation having a stronger, diminishing effect on the attributions made for support. Neither manipulation interacted with general support expectations in predicting satisfaction with support.

These findings suggest that neurotic people are more likely to use negative information in making attributions for support from another person. Traits such as neuroticism are associated with a broad, negative outlook, and this outlook can lead neurotic people to attend to and use negative information more extensively in making judgments. In other words, neurotics are more likely to see the negatives than the positives, and this tendency leads them to make diminishing attributions for support. This habit of attending to the negative leads to less satisfaction with support and lower overall levels of perceived support.

I predicted that extraversion would demonstrate a similar effect, with extraverts more likely to use positive information in making attributions for support. This interaction was not significant, and there are several potential reasons for this. First, the effect of extraversion was not maximized by using extreme groups. The overall mean for extraversion in this sample was in the 80th percentile for college age women (Costa & McCrae, 1992), which suggests that there may have been a ceiling effect for this individual characteristic. To detect the effect, a sample that is lower in extraversion may be needed. Furthermore, the broad, positive outlook associated with extraversion may be less likely to lead to a bias in information processing. The mood and cognition literature may provide insight into how negativity and positivity affect cognition. In this literature, it has been noted that
being in a negative mood is associated with more careful processing, and being in a positive mood is associated with less thoughtful processing (Forgas, 1991). It may be that neurotics carefully choose information to use in their attributions about social support, while extraverts are less oriented toward carefully processing information during social interactions.

General support expectations also failed to interact with either manipulation in predicting the evaluation of social support. Although no a priori hypotheses were made concerning the direction of any interaction, this is a surprising finding as general expectations are schemas that should bias attention to information in a fashion similar to neuroticism and extraversion. The data do support that general support expectations biased attributions, as path modeling suggested that they were a significant predictor of attributions for support. Again, statistical power may be the issue. The beta weights for the interaction terms between general support expectations and the support required and support discouraged manipulation would likely be significant with a larger sample ($\beta = -.17, t = -1.40, p = .16; \beta = -.19, t = 1.63, p = .11$; respectively).

Plots of these non-significant interactions revealed several suggestive findings. For participants in the control condition, individuals with positive general expectations evaluated the support they received more favorably than participants with low general expectations. For participants in the support required condition, there was no difference between these two groups. For participants in the support discouraged manipulation, the results were consistent with the hypotheses for
extraversion. Participants who had positive general expectations for the receipt of social support made more relationship enhancing attributions in the support discouraged condition than participants with less positive expectations. These findings are intriguing and suggest that general support expectations may be an important factor in information use, but additional research is needed before any conclusions can be made.

Caution must be exercised in interpreting the findings concerning bias in information processing. Use of information may be one potential explanation of the findings, but the paradigm did not use an explicit test of attention to information. A more effective test of the hypothesis would involve providing multiple sources of information (both relationship enhancing and relationship diminishing) that could be used in making an attribution for support and assessing attention to these sources. For this study, we only know that the support required manipulation was more effective with neurotics, which may be a result of factors other than use of information. These results should be considered preliminary until additional research is conducted.

**Expectations as a Mediator of the Personality to Attribution Link**

The PAE model proposes that individual characteristics influence attributions for support, but no work has been done examining how individual characteristics relate to one another in predicting these attributions. I hypothesized a casual relationship in which the personality traits of neuroticism and extraversion would affect attributions for support through the mediator of general support expectations.
The hypotheses were partially supported. Although all the hypothesized causal pathways were significant, only neuroticism had a significant indirect effect on attributions for support.

This finding extends our understanding of the relationship between individual characteristics in the PAE model and attributions for support. General support expectations have a stronger, more proximal effect on attributions for support than personality traits. If people expect others to be supportive, they are more likely to view the causes of their behavior in relationship enhancing ways that are consistent with their beliefs. Because they generally assume that others are helpful, they perceive other people as more likely to be acting out of caring and concern rather than obligation. Personality also has an effect on attributions for support, but this finding (and the findings concerning the information bias of personality in making attributions) suggest that personality affects attributions for support, and over time, these attributions begin to be reflected in general expectations concerning social support. This is speculative, however, and further research is needed.

It was hypothesized that the effects of both neuroticism and extraversion on attributions for support would be mediated through general support expectations. However, the indirect path for extraversion failed to achieve significance, and extraversion did not have a significant direct effect on attributions. In other words, extraversion was not a factor in influencing attributions for support. Again, this finding may be a result of maximizing the differences in neuroticism by selecting extreme groups and not doing so with extraversion. However, prior laboratory work
on personality traits and attribution has also failed to find a link between extraversion and attributions for support. Although more work with larger samples and different paradigms is required, these findings may suggest that extraversion may not be an important factor in the PAE model. Although extraversion is associated with several facets of the social support process, neuroticism may play a more important role in how interpersonal events are evaluated. Extraversion may simply have an effect based on network characteristics and support seeking. Additional work is needed to examine this possibility.

General Discussion

Overall, the results of the study support the hypothesized causal pathways in the PAE model. The results of this study converge well with the findings of the two previous studies testing the PAE model (Hessling et al., 1998; Hessling et al., 2000). What is most striking about the findings is the degree to which the causal pathways were all funneled through the measure of attributions made for the support provided. The results did not reveal a single variable that had an effect on the support evaluation measure through any variable other than the attribution measure. Although it must be acknowledged that the paths between the individual characteristics and attributions for support were small in magnitude, the present study did provide excellent support for the role of attributions as a mediator between personality and social support.

These findings place additional importance on expanding our understanding of how attributions can influence interpersonal processes. Research on attribution
has always emphasized the importance of attributions in person perception (Jones & Davis, 1965). Unfortunately, it has not been until the last decade that attribution has been brought into research on interpersonal processes that have direct relevance on relationship functioning and development. Prior research has focused on attributions for negative actions (Bradbury & Fincham, 1992; Fincham et al., 1989; Fincham & Bradbury, 1988, 1992, 1993), and the present findings suggest that researchers may also want to focus on the causes people assign to positive actions such as providing social support. Members of a dyad may devalue or enhance positive actions just as they devalue or enhance negative actions to fit their expectations of the relationship or their personal viewpoint. However, these findings may be limited to developing relationships. After a relationship has been established, it is expected that a person will be helpful and supportive, and attributions are typically made only in the presence of an unusual or unexpected behavior such as a negative action (Anderson et al., 1996). It may be the case, however, that in developing relationships (such as in the early stages of dating), these types of attributions may influence what type of relationship ultimately develops.

Several limitations of this study must be acknowledged. External validity is one issue. The study utilized only a female population. Thus, it remains to be seen whether these results will generalize to men. Furthermore, the artificial nature of the interaction may also make the results less generalizable. The dyad involved in the interaction had never met prior to the disclosure of the problem and the
provision of support, making this an unusual supportive interaction. Furthermore, while using a lab setting and a confederate may have provided experimental control, this regulated setting may limit the generalizability of the findings. Future work will require laboratory and field studies involving both friends and dating couples.

Several measurement issues should be addressed. The support attribution measure has demonstrated excellent reliability, but it has not been formally validated as a measure of attributions. More work is needed to insure that it is a valid measure of attributions. In addition to this, the behavior of the confederate during the interaction needs to be addressed. Confederate effects were statistically controlled for, and no statistically significant effects were found. However, the behavior of the confederates could have been inconsistent and varied as a function of characteristics of the participant, and this artifact could have influenced the results of the study. If this is the case, the interactions need to be coded for quantity and type of support provided during the ten-minute interaction. This information needs to be statistically controlled for or incorporated into the statistical models.

In spite of these limitations, these results do provide some impetus for clinical interventions to assist people who are having trouble with their relationships. Therapists may want to assess the typical causes their clients are ascribing for people helping them out, recognizing that clients high in neuroticism may be having difficulties feeling supported by their social network. Clients who are experiencing
chronic, visible problems may be especially vulnerable. Because they are experiencing visible problems, they may believe that people are helping them out because they are expected to, thus diminishing the value of the support they provide.

There are several possible directions for future research in this area. This study demonstrated that attributions play a causal role in influencing the evaluation of support, but the supportive dyad was unacquainted. As a result, these findings may only apply to relationships in the early stage of development. Additional research needs to be conducted with friend pairs or romantic couples to determine the importance of attribution in better-developed relationships. Attributions made by the support provider may also provide a useful area of study. Research by Weiner suggests that people may be more supportive if the perceived cause of the support recipient's stress is uncontrollable (Weiner, 1980). Future researchers may wish to model attributions by both the recipient and the provider. Another interesting area of research involves further work on the mechanisms linking individual characteristics to cognitive processes that influence interpersonal processes. As previously mentioned, paradigms assessing attention to information are needed. In a broader sense, future research in this area may wish to resolve some of the controversies surrounding the presence of an "attributional style" (Cutrona et al., 1984). Attribution may not be a personality trait, per se, but if attributions are influenced by stable individual characteristics (as the PAE model suggests), the type of attributions a person makes may appear stable over time.
These findings stress the importance of social cognition in relationships (Fincham & Beach, 1999). Researchers, couples, and anybody with a friend should recognize that sometimes it does not matter what people do to help – what matters most may be the perception of why they help.
APPENDIX A. PRE-INTERACTION QUESTIONNAIRE, DISCLOSER VERSION

SOCIAL PROVISIONS SCALE

Please answer the following questions using the scale below:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

1. There are people I can depend on to help me if I really need it.
2. I feel that I do not have any close personal relationships with other people.
3. There is no one I can turn to for guidance in times of stress.
4. There are people who depend on me for help.
5. There are people who enjoy the same social activities I do.
6. Other people do not view me as competent.
7. I feel personally responsible for the well-being of another person.
8. I feel part of a group of people who share my attitudes and beliefs.
9. I do not think other people respect my skills and abilities.
10. If something went wrong, no one would come to my assistance.
11. I have close relationships that provide me with a sense of emotional security and well-being.
12. There is someone I could talk to about important decisions in my life.
13. I have relationships where my competence and skill are recognized.
14. There is no one who shares my interests and concerns.
15. There is no one who really relies on my for their well-being.
16. There is a trustworthy person I could turn to for advice if I were having problems.
17. I feel a strong emotional bond with at least one other person.
18. There is no one I can depend on for aid, if I really needed it.
19. There is no one I feel comfortable talking with about problems.
20. There are people who admire my talents and abilities.
21. I lack a feeling of intimacy with another person.
22. There is no one who likes to do the things I do.
23. There are people who I can count on in an emergency.
24. No one needs me to care for them anymore.

DEMOGRAPHIC QUESTIONS
Finally, we would like to ask some general questions about YOU.

What is your gender (circle one): Male Female

How old are you?:

What year in school are you? (circle one): Fresh Soph Junior Senior Grad

Are you a United States Resident? (circle one): Yes No

Is English your first language? (circle one): Yes No

Please circle the word or words that you feel best describes your ethnicity:
1. African-American
2. Caucasian
3. Latino/a
4. Southeast Asian (China, Japan, Korea, Vietnam, etc.)
5. South Asian (India, Pakistan, Bangladesh, etc.)
6. Native American
7. Pacific Islander
8. Other

Please indicate your marital status:
1. Married
2. Widowed
3. Divorced
4. Separated
5. Single
APPENDIX B. POST-INTERACTION QUESTIONNAIRE #2, DISCLOSER

After reviewing your partner's responses to questionnaire #1, please answer the following questions.

FEELINGS SCALE

DIRECTIONS: Below you will find words which describe different kinds of moods and feelings. Circle the words which describe How You Feel Now -- Today. Some of the words may sound alike, but we want you to indicate all the words that describe your feelings.

1. Wilted
2. Safe
3. Miserable
4. Gloomy
5. Dull
6. Gay
7. Low-spirited
8. Sad
9. Unwanted
10. Fine
11. Broken-hearted
12. Down-cast
13. Enthusiastic
14. Failure
15. Afflicted
16. Active
17. Strong
18. Tortured
19. Listless
20. Sunny
21. Destroyed
22. Wretched
23. Broken
24. Light-hearted
25. Criticized
26. Grieved
27. Dreamy
28. Hopeless
29. Oppressed
30. Joyous
31. Weary
32. Droopy
Causes Scale

People's behavior can be caused by many things. Please rate the causes of this person's supportive behavior using the following scale:

1 2 3 4 5
Strongly Disagree Strongly Agree

1. This person's behavior was due to something about him/her (e.g., the type of person he/she is).
2. This person supported me because he/she truly cared.
3. This person supported me because he/she felt obligated.
4. The reason this person supported me is not likely to change.
5. The reason this person supported me is something that would affect other areas of our relationship.
6. This person supported me because he/she is a caring person.
7. This person provided support because of my problem and not something else.
8. I received support from this person because it was expected.
9. This person provided support because that's the kind of person he/she is.
10. This person provided support because it benefited him/her and not me.
11. This person's behavior was a result of concern for my welfare.
12. This person supported me because he/she likes me.
The following questions concern your reactions to the interaction you just had with the other participant in the study. The reference to "partner" in the questions refers to the person you interacted with. Please use the scale below to answer each question:

Strongly Disagree  Disagree  Agree  Strongly Agree

1. My partner gave me no useful information.
2. I felt as if my partner really cared about me.
3. I felt worse about myself.
4. My partner related to or shared my interests and concerns.
5. My partner let me know that he/she was there if I needed him/her.
6. My partner behaved warmly towards me.
7. My partner was rude and abrupt in his/her comments.
8. My partner made me feel comfortable about myself and my feelings.
9. My partner offered to participate in activity which would help me solve my problem.
10. My partner offered me good, practical advice.
11. My partner offered to spend time with me.
12. My partner offered to take over some of my extra responsibilities while I dealt with the problem.
13. My partner was sensitive to my feelings.
14. My partner did not take my problems seriously.
15. My partner made me feel that I had the skills to solve my own problems.
16. My partner was indifferent to my needs.
17. My partner showed respect for my capabilities and talents.
18. My partner told me something he/she could do to solve my problem.

19. My partner let me know that others have been through similar problems.

20. My partner offered to intervene by actually doing something to help me solve my problem.
21. Please rate your overall satisfaction with your interaction with your partner.

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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Satisfied</td>
<td>Very Satisfied</td>
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22. Please rate how pleased you were with your interaction with your partner.

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<tbody>
<tr>
<td>Not Pleased</td>
<td>Very Pleased</td>
<td></td>
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23. Please rate how helpful you felt your partner was during the interaction.

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<tbody>
<tr>
<td>Not Helpful</td>
<td>Very Helpful</td>
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24. Please rate the genuineness of your partner's behavior during the interaction.

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<tr>
<td>Not Genuine</td>
<td>Very Genuine</td>
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25. Was your partner being herself during the interaction?

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<tr>
<td>Not being herself</td>
<td>Was being herself</td>
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26. Was she acting naturally during the interaction?

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<tbody>
<tr>
<td>Not Natural</td>
<td>Very Natural</td>
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FUTURE INTERACTIONS MEASURE

The questions below concern what you would expect from future interactions with your partner. Please use the scale below to answer each question:

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<th></th>
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<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree</td>
<td>Disagree</td>
<td>Disagree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td></td>
<td>Strongly</td>
<td>Slightly</td>
<td>Slightly</td>
<td></td>
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</table>

If you were to interact with this person again in the future...

____ 1. I could count on him/her to be concerned with my welfare.

____ 2. I couldn't rely on him/her to perform an important errand for me.

____ 3. I couldn't be certain he/she would avoid doing something I'd dislike.

____ 4. I could depend on him/her to offer strength and support.

____ 5. I could expect him/her to react positively if I exposed a weakness.

____ 6. I couldn't rely on him/her to keep a promise.
APPENDIX C. POST-INTERACTION QUESTIONNAIRE #1, LISTENER

What was the problem your partner disclosed?

What did you do to provide support to your partner?

Why did you provide support to your partner?
APPENDIX D. POST-INTERACTION QUESTIONNAIRE #1, DISCLOSER

What was the problem you disclosed?

What did your partner say during your interaction?

Please list as many statements as you can remember:
REFERENCES


