AN EXPLORATION OF HOSTILITY AND SOCIAL SUPPORT: A FOCUS

ON JOINT COGNITIVE MECHANISMS

by

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Abstract

Although past research has consistently demonstrated that hostile individuals report fewer satisfactory sources of social support, it remains unclear whether their evaluation is based on an objective assessment of their social environment or is coloured by hostile cognitions. To evaluate this question, 120 young adults, falling in the upper or lower tercile groups on a hostility measure, participated in a social cognition experiment. Participants were randomly assigned to one of three priming conditions (Hostility, Support, or Neutral) designed to activate cognitive schemata. They then read through vignettes depicting stressful situations typically encountered by students and evaluated how supportive various offers of help would be perceived in response to these problems. A 2 Hostility (high, low) x 3 Condition (hostility, support, or neutral) MANOVA examined the impact of personality and primed schemata on judgments of social support. Analyses yielded a significant Hostility x Condition interaction. Simple main effect analyses indicated that individuals low in hostility made the most negative judgments of perceived helpfulness in the Hostility condition, supporting the prediction that an active hostile schema biases people to view offers of help in a more pejorative way. However, hostile participants made their most negative judgments in the Support condition, which could indicate that an active social support schema is associated with increased mistrust and guardedness about offers of help in hostile individuals. These data suggest that hostile and non-hostile individuals process support-related information differently, which has important implications for interventions designed to augment social resources in at risk individuals.

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Introduction

Over the past 25 years, both social support and hostility have emerged as the two strongest and most consistent predictors of cardiovascular health outcomes, with the former seeming to impart a protective effect against ill health, and the latter exerting deleterious effects. For instance, numerous large-scale epidemiological studies have indicated that both psychological constructs are associated with mortality from all causes, as well as from cardiovascular disease (e.g., Barefoot, Dahlstrom, & Williams, 1983; Barefoot, Larsen, von der Lieth, & Schroll, 1995; House, Robbins, & Metzner, 1982; Orth-Gomér et al., 1998; Pennix et al., 1997). Both constructs have also been associated with disease morbidity, including survival following myocardial infarction (Berkman, Leo-Summers, & Horwitz, 1992), severity and extent of coronary artery disease (e.g., Barefoot et al., 1994; Orth-Gomér et al., 1998). Furthermore, hostility has been shown to prospectively predict more severe progression (e.g. restenosis following percutaneous transluminal coronary angioplasty or greater presence of coronary calcification) of disease in identified cardiac patients and initially healthy participants (e.g., Angerer et al., 2000; Goodman, Quigley, Moran, Meilman, & Sherman, 1996; Mendes de Leon, Kop, de Swart, Bär, & Appels, 1996). Although there have been null findings with respect to both mortality and disease incidence (Hearn, Murray, & Luepker, 1989; McCranie, Watkins, Brandsma, & Sisson, 1986; O'Malley, Jones, Feuerstein, & Taylor, 2000; Pennix, Kriegsman, van Eijk, Boeke, & Deeg, 1996; Ranchor, Sanderman, Bouma, Buunk, & van der Heuval, 1997), results from a recent meta-analysis integrating all findings indicates that both social support and hostility can be considered independent protective and risk factors for cardiovascular outcomes, respectively (Miller, Smith, Turner, Guijarro, & Hallet, 1996; Schwarzer & Leppin, 1991).

The consistency of findings on support and positive health outcomes has been so impressive that interventions are now being implemented targeting patients with fewer social resources in an effort to help reap the health benefits from support. One of the most notable examples of such intervention efforts is the ENRICHD trial, a large, multi-site randomized control trial administering depression and support interventions to cardiac patients (The ENRICHD Investigators, 2003). Yet interventions are being designed without a clear understanding of how support actually exerts its beneficial effects (Cohen, 1988; Hogan, Linden, & Najarian, 2002). For example, cognitive therapy for depression (Beck, Rush, Shaw, & Emery, 1979) is based on a clear theoretical model of how negative cognitive schemas about the self, the world, and the future are activated under stress and lead to dysphoria. Such a theoretical conceptualization is often lacking from the social support interventions, as reflected by the multiplicity of treatments approaches labelled as a support intervention (Hogan et al., 2002). It has been oft noted that hostility is consistently inversely linked to social support; in fact, a conflicted set of interpersonal relationships and a stressful social environment has been proposed as a possible pathway linking hostility to ill health (Smith, 1992). Thus, a substantial number of participants in social support interventions will also be hostile. Both hostility and social support have been usually examined independently of one another; however, as will be proposed below, there are several lines of evidence that suggest that these constructs might actually reciprocally influence one another. From an intervention perspective, ignoring the potential role that hostility might play in the support process might ultimately lead to failure in augmenting the hostile person's support resources. From a health perspective, a lack of conceptual clarity about how the two constructs might be related could obscure our understanding of how psychological factors might be involved in the disease process. Consequently, the purpose of the current

research is to shed light on the possible ways that hostility and social support might be related to one another. Before reviewing possible hypotheses about the nature of such a relationship, the terms of interest will first be defined, and issues central to their measurement will be presented. Then, theories bearing on the questions of interest will be reviewed, and ways of conceptualizing the relationship between support and hostility will be proposed. Finally, research designed to test a subset of hypotheses derived from the literature review will be described.

<div align="center">Hostility</div>

<u>Definition</u>

Several authors have lamented the lack of conceptual clarity in the definition of hostility, with related terms such as trait anger, cynicism, and aggression often used interchangeably (Barefoot, 1992; Megargee, 1985; Spielberger et al., 1985). Following the conceptual framework set forth by Barefoot (1992) and Smith (1992), hostility in this paper will be structured in a tripartite model, with hostility defined as having affective, cognitive, and behavioural correlates. With respect to the affective dimension, hostility is characterized by a proneness to experience anger, a transient emotional response involving "feelings that vary in intensity, from mild irritation or annoyance to fury and rage" (Spielberger et al., 1985, p. 16). Related, yet conceptually distinct, emotional states include contempt, resentment, envy and jealousy (Smith, 1992). In contrast to the temporary nature of the affective response, the cognitive aspect of hostility is viewed as an enduring set of attitudes or beliefs about others and the world (Spielberger et al., 1985). These include a cynical world-view that calls into question the motives and intentions of other people, with the latter being viewed with suspicion and mistrust (Smith, 1992). Finally, the behavioural component of this tripartite model involves the expression of aggressive acts or "destructive or punitive behaviour directed toward other persons

or objects" (Spielberger et al., 1985, p.16). Aggression can be verbal (e.g. insults) or physical (e.g. fist fight), and it can be direct (e.g. confrontation) or indirect (e.g. spreading rumours).

Although these three aspects of hostility are defined as separate components of the model, the cognitive, affective, and behavioural experiences are thought to correlate and overlap to a certain extent. For instance, holding cynical beliefs about the motives of other people might make one more likely to experience anger or to behave aggressively, as such beliefs might increase the likelihood of perceiving behaviour as intentionally provoking. As such, although from a conceptual standpoint it is important to differentiate these components, these distinctions might be blurred from a practical or experiential point of view.

Measurement. It should be noted that the results of the studies cited above in the brief review of findings linking hostility and cardiovascular outcomes were presented across multiple definitions of hostility, including "cynical distrust" (e.g., Julkunen et al., 1994), style of anger expression or "anger-in/anger-out" (e.g., Matthews et al., 1998), and "resentment" (e.g., Ranchor et al., 1997), to name a few. In fact, most studies do not categorize their assessment of hostility as either emotional, cognitive, or behavioural, even though such distinctions might be important in better ascertaining the nature of the relationship between hostility and health (Barefoot, 1992; although see Miller et al., 1996, for a notable exception). Part of the reason for this state of affairs is that most of the measures used in the cardiovascular literature were not developed using the conceptual framework described above. In fact, the two most widely used measures of hostility (Cook Medley Hostility Scale and the interview-derived Potential for Hostility) were not initially developed to measure hostility.

The Cook Medley Hostility Sale (Ho) is a set of 50 true/false items derived from the Minnesota Multiphasic Personality Inventory (MMPI) initially used to discriminate empirically

between teachers with good versus bad rapport with students (Cook & Medley, 1954). The MMPI itself is a large inventory in which items were selected on their ability to discriminate statistically between psychiatric patients and healthy controls (see Graham, 1993, for a more thorough review of MMPI development). Because the MMPI was developed using an empirical-keying method rather than a conceptually-driven approach, the resulting scales have been criticized for lacking a coherent internal structure. As such, scores reflect multiple constructs, and scale elevations can be interpreted in several different ways (Groth-Marnat, 1997).

The reason the Ho scale has become a popular measure for assessing hostility stems from the existence of several large prospective databases including the MMPI and health outcomes (Barefoot, 1992). Researchers interested in examining the prognostic significance of hostility accessed these databases and found that high scores on the Ho predicted both cardiovascular and all-cause mortality (e.g., Barefoot et al., 1983). Encouraged by such criterion validity, several studies were conducted to examine the construct validity of the Ho. This line of research, mostly carried out by Smith and his colleagues, indicated that high scores on the Ho were associated with a variety of anger/hostility inventories, and seemed to tap more strongly the cognitive dimension of hostility (r = .60 - .70), over the behavioural aspects such as assault or verbal aggression (r = .41 - .55; Smith & Frohm, 1985). Scores on the Ho were less strongly associated with anxiety and mood, indicating that the scale was not simply a measure of dysphoria or negative affectivity (Smith & Frohm, 1985; Smith, Pope, Sanders, Allred, & O'Keefe, 1988). Based on these findings, Smith and colleagues have suggested that the Ho be viewed as a primarily cognitive measure of hostility, or cynical mistrust (Smith, 1992). However, as noted by (Barefoot, Dodge, Peterson, Dahlstrom, & Williams, 1989), some of the item content of the Ho also tap the affective and behavioural domains.

However, more problematic have been attempts to uncover the Ho's internal structure. Indeed, factor analytic studies have alternatively found the presence of a single dimension with all 50 items (e.g., Meesters & Smulders, 1994; Smith & Frohm, 1985), a single subscale with 9 items, "Cynical Hostility" (Greenglass & Julkunen, 1989), and a two-factor solution, labelled "Cynicism" and "Paranoid Alienation" (Costa, Zonderman, McCrae, & Williams, 1986). In addition, Blumenthal, Barefoot, Burg, & Williams (1987) conceptually grouped the 50 items into 5 subscales (Cynicism, Hostile Affect, Aggressive Responding, Hostile Attributions, and Social Avoidance), of which only three predicted survival from cardiovascular outcomes [although note that Barefoot et al. (1995) could not replicate this finding]. However, in two separate studies investigating the best-fitting model to the Ho, none of the above solutions were replicated (Contrada & Jussim, 1992; Steinberg & Jorgensen, 1996). In fact, based on their findings, Steinberg and Jorgensen (1996) suggest that the overall Ho score is ambiguous, and that units on this scale cannot be assumed to measure a quantitative "amount" of hostility. Contrada and Jussim (1992) propose instead that the Ho be considered as an indicator of cardiovascular risk, given its ability to predict health outcomes, rather than a pure measure of hostility.

The other approach to the measurement of hostility is one based on clinical judgement via administration of an interview. As previously noted, this measurement option was not initially devised to assess hostility. Rather, interview questions were developed to measure the various components of the Type A behaviour cluster for large-scale studies such as the Western Collaborative Group Study (Rosenman et al., 1975). In trying to establish whether hostility was a better predictor of health outcomes than Type A behaviour, the interviews were recoded for hostile content. As reviewed by Barefoot (1992), several coding schemes now exist to measure hostility, and judgements are based on both the content (e.g., reports of anger) and stylistics (e.g.,

interrupting interviewer) of responses. Dembroski et al. (1985) defined their hostility measure (Potential for Hostility) as a "stable predisposition (...) to experience varying degrees and combinations of anger, irritation, disgust, annoyance, contempt, resentment" (p. 230), with a behavioural component (e.g. willingness to use obscenity, rudeness, argumentativeness). Although conceptually such a definition seems to involve both affective and a behavioural dimensions, it appears that interview-derived hostility measures capture the behavioural dimensions more strongly (Miller et al., 1996; Musante, MacDougall, Dembroski, & Costa, 1989).

In summary, although strong theoretical models of the hostility construct have been proposed, the most frequently used measurement approaches (Ho scale and Potential for Hostility interview assessment) have not typically incorporated such a conceptualization. Whether the distinction between cognition, affect, and behaviour is critical to our understanding of how hostility affects health outcomes is as of yet unclear, given the noted overlap between these dimensions. However, as will be argued later, differentiating between the various aspects of hostility is of importance in trying to clarify the nature of the relationship between hostility and social support.

Social Support

In attempting to present a conceptual definition of social support, it becomes quickly apparent that similar issues raised above with respect to the hostility literature also apply to the support literature. Several authors have noted that research efforts have been muddled by a lack of conceptual clarity when it comes to defining social support (Barrera, 1986; Cohen, 1988; Tardy, 1985), with some going as far as recommending that the term "social support" be dropped because it is now used as an umbrella term with little inherent meaning (Coyne & Bolger, 1990).

Reflecting this taxonomic confusion is the number of measures of support which have been developed, rendering the process of integrating research findings an arduous task. In order to shed light on the multi-dimensionality of support and to guide research efforts, several authors have proposed a taxonomy that breaks the construct into meaningful units (Dunkel-Schetter & Bennett, 1990; House, Umberson, & Landis, 1988; Schwarzer and Leppin, 1991; Stroebe & Stroebe, 1996). The following discussion is based on the common elements of these taxonomies.

Structural Social Support

Social Integration. First, most authors include social integration and social network in a separate conceptual category, often termed the structure of social relationships. Social integration refers to the quantity of social relationships (House et al., 1988), or the extent to which people actively involve themselves and participate in a broad range of social relationships (Brissette, Cohen, & Seeman, 2000). This encompasses the number and variety of roles one engages in (e.g. parent, spouse, friend, neighbour, worker), and of activities one participates in (e.g. going to church, leisure activities, spending time with family/friends). As such, social integration refers to the degree of embeddedness in one's social environment, and has been conceptualized as the opposite of social isolation (Seeman, 1996). Most epidemiological studies linking social relationships to health have used social integration measures in their conceptualization of support, with the strongest and most consistent findings linking integration to all-cause mortality. Theoretically, being engaged in and connected to one's social environment generates a sense of esteem and identity that promotes well-being (Brissette et al., 2000; Thoits, 1983). However, whether such constructs mediate the relationship between support and health outcomes remains unclear.

Social Network. Brissette et al. (2000) define network analysis as a "quantitative means of describing the relationships between members of an individual's social network" (p. 71). The most commonly used indices used in such an analysis include network size (i.e., the number of people one has regular contact with) and density (i.e., the extent members within an individual's network know one another). Although detailed analyses of social networks tend to be conducted by sociologists, psychologists often use network size in their conceptualization of support and this measure is included in many support assessment tools (e.g. Social Support Questionnaire, Sarason, Levine, Basham, & Sarason, 1983; Arizona Social Support Interview Schedule, Barrera, 1981). The exclusive reliance on network measures to capture the support construct has been criticized on the grounds that knowing the number of people a person has regular contact with usually reveals little about the quality of such relationships (Sarason, Sarason, & Pierce, 1990a). Furthermore, these measures tend to be weakly correlated with social integration, and their relationship to health outcomes has been inconsistent (Barrera, 1986; Brissette et al., 2000; Sarason et al., 1990a).

Functional Social Support

In addition to the structure of social support, several support constructs focus on the quality and content of interpersonal relationships (House et al., 1988), often termed the functions of social relationships. Such constructs can be further categorized as representing either cognitive or behavioural aspects of support (Dunkel-Schetter and Bennett, 1990; Schwarzer & Leppin, 1991).

Perceived Support. The main cognitive support construct discussed in the literature is perceived support, defined as "the cognitive appraisal of being reliably connected to others" (Barrera, 1986, p. 416) and the "perception of being valued and loved and having persons

available who will provide assistance if necessary" (Stroebe & Stroebe, 1996, p. 599). Thus, perceived social support involves a subjective evaluation of one's social environment as to the perceived availability and adequacy of one's social network. Given the cognitive nature of this construct, it has been proposed that perceived support has an impact on health outcomes by influencing appraisals of stressful events (Cohen, 1988). Given that one's appraisal of a situation has been theorized to partly determine the perceived stressfulness of the event and the selection of coping strategies (Lazarus & Folkman, 1984), perceived support is believed to exert beneficial effects by moderating stress levels.

Received Support. On the other hand, received or enacted support has been conceptualized as more behavioural in nature (Dunkel-Schetter & Bennett, 1990; Schwarzer & Leppin, 1991), because the construct involves a focus on the exchange of supportive acts. For instance, the Inventory of Socially Supportive Behaviors (ISSB; Barrera, Sandler, & Ramsay, 1981), the main measure used to assess received support, asks respondents to report on the frequency of aid provided to them in the past month (e.g. receipt of positive feedback, physical assistance with a task). Interestingly, although one would expect the cognitive and behavioural aspects of support to overlap considerably (i.e., that the perception of support availability would be rooted in one's experiences of receiving help), the two construct appear to share little in common (r ranging from -.13 to .46, accounting for a maximum of 21% in shared variance; (Dunkel-Schetter & Bennett, 1990). In fact, factor analytic and structural equation explorations of perceived and received support indicate that the two constructs are distinct (e.g. McCormick, Siegert, & Walkey, 1987; Newcomb, 1990). Furthermore, the relationship to outcomes differs depending on which construct is employed, with perceived support typically linked to better

mental and physical health outcomes, and received support associated with increased levels of distress and physical symptom reports (Schwarzer & Leppin, 1991; Stroebe & Stroebe, 1996).

Several hypotheses have been proposed to explain why receipt of support should be associated with worse psychological and physical outcomes. For example, it has been suggested that greater receipt of support is merely a reflection of greater support mobilization in times of increased stress (Barrera, 1986). When faced with coping with a stressful event, one's distress levels would be expected to increase, as would one's need for social resources. As such, the positive relationship between enacted support and distress is seen as indicative of the responsiveness of one's support network in times of need. Support for such a proposition comes from studies which indicate that when perceived stress is controlled, the relationship between received support and distress is either attenuated or eliminated (Barrera, 1986). Receiving help has also been suggested to pose threats to one's self-esteem, especially when one is confronted with more able or competent coping models and makes one's failure to effectively cope more salient (Bolger, Zuckerman, & Kessler, 2000). As argued by (Dunkel-Schetter & Bennett, 1990), disconfirmation of one's expectations about the ability of one's support network to be available in times of need and provide competent support might also generate feelings of distress. Such a conceptualization posits that received support, particularly poor quality support, might be instrumental in creating added stress and anguish. Finally, it should also be noted that some authors have suggested that a true test of the effects of received support on health outcomes has not yet been conducted (Dunkel-Schetter & Bennett, 1990; Finch et al., 1997). Indeed, Finch et al. (1997) note that the specificity of the received support construct has not been closely scrutinized. As will be discussed below, several dimensions of supportive behaviours have been proposed, yet most studies of received support have considered it a unidimensional construct.

According to Dunkel-Schetter and Bennett (1990), the specificity of the context (e.g. time, population, type of stressor) has also been ignored, making it difficult to arrive to strong conclusions about the usefulness of received support.

Other Support Constructs. Although most research efforts have focused on perceived and received support, other cognitive and behavioural aspects of social support have been specified. For instance, Vaux, Burda, and Stewart (1986) propose that one's attitudes or beliefs about the potential usefulness of one's support resources, termed network orientation, can have a profound impact on the amount of time and energy invested in developing a social network. Similarly, support behaviours such as providing and seeking social support have been highlighted as important aspects of the interpersonal workings of supportive exchanges (Dunkel-Schetter & Skokan, 1990; Eckenrode & Wethington, 1990). Although theoretical views on these constructs and their determinants have been proposed, these have typically been under-researched.

Functional Dimensions of Support. Both behavioural and cognitive aspects of support can be further classified depending on the function they serve (Cohen, 1988; Cutrona & Russell, 1990). Such functions include: emotional support, or the provision of sympathy, caring, positive regard, acceptance, and thoughtful attention; instrumental or tangible support, or the provision of practical help and assistance (e.g. help with repairs, transportation); companionship support, or the presence of others with whom to participate in activities (e.g. go to parties, hiking partner); informational support, or the provision of advice or guidance (e.g. information about resources or problem-solving); and esteem support, or presence of people against whom one can make positive evaluations about oneself (Wills & Shinar, 2000). Finally, Cohen and Wills (1985) and Cutrona and Russell (1990) have suggested that support might be most beneficial when the type

of support available or provided matches the demands of the stressful situation. For example, material support such as a loan might not be helpful when what one needs is a shoulder to cry on.

Social Support and Hostility

As noted above, an inverse relationship between hostility and social support, has been consistently noted. As such, a few researchers have begun to examine their joint effects in addition to their independent contributions to health outcomes. One reason for taking this approach is that at a theoretical level, similar mechanisms have been proposed to underlie the relationship between each psychological construct and health, as will be described below. However, the central thesis of this paper is that other psychological mechanisms may account for this relationship, and that an understanding of these basic processes is warranted in order to be better equipped to examine their relationship to health outcomes. The following sections will first review what is known about the association between social support and hostility at a descriptive level; next, possible ways in which their joint effects might be related to health outcomes will be described; finally, some of the processes hypothesized to underlie the relationship between social support and hostility will be outlined.

Descriptive Relationships

As previously noted, several studies have found that hostility and social support are negatively related. Using the taxonomy of terms presented above, high levels of cognitive hostility have been consistently linked to lesser perceived availability of social support (Benotsch, Christensen, & McKelvey, 1997; Brummett et al., 1998; Hart, 1999; Linden, Chambers, Maurice, & Lenz, 1993; Matthews, Woodall, Kenyon, & Jacob, 1996; McCann, Russo, & Benjamin, 1997; O'Neil & Emery, 2002; Smith & Frohm, 1985; Smith et al., 1988). Interestingly, gender differences in the pattern of relationships have been noted in a few studies,

although not all. For instance, Hart (1999) and Linden et al. (1993) found that the negative association between hostility and perceived support was stronger for women than for men. Hart proposed that overt expression of hostility violates gender-role expectations for women, such that the impact on their social environment is greater. However, it should be noted that the hostility measure administered in Hart's study was the Ho scale, which as noted above, has been predominantly conceptualized as a measure of cognitive hostility. As such, it is unclear whether the behavioural dimension of hostility would account for the gender differences noted above. Beyond cognitive hostility, few studies have examined whether the affective or behavioural aspects of the construct are related to social support. Gallo and Smith (1999) administered the Buss-Perry Aggression Questionnaire (Buss & Perry, 1992), which consists of four subscales tapping all dimensions of hostility (Physical Aggression, Verbal Aggression, Anger, and Hostility) and a measure of perceived social support. Using cluster analysis, they identified three subgroups of respondents: (a) Affiliative, who reported high levels of perceived support and low levels of hostility across all dimensions; (b) Hostile, who indicated high levels of behavioural aggression and average levels of anger, hostility, and perceived support; and, (c) Hostile-Isolated, with high scores on all Buss-Perry scales, particularly Anger and Hostility, and low perceived support scores. Taken together, these results suggest that the cognitive domain of hostility is consistently linked with perceived support, which, as noted above, has also been construed as a cognitive support dimension. There may be gender differences in the strength of this association, but to draw a strong conclusion from the above data would be premature at this time. One study also suggests that the affective domain of hostility is associated with perceived support, but again, further research would be needed in order to determine whether this result would replicate.

Among the other dimensions of social support, the relationship between hostility and network size has been examined in several studies. However, results have been inconsistent, with some studies finding that hostile individuals have fewer people in their social network (O'Neil and Emery, 2002; Smith & Frohm, 1985), and others reporting null findings (Smith et al., 1988). Using a categorical approach, Brummett et al. (2001) found that extremely socially isolated cardiac patients (i.e., with fewer than three people in their social network) reported greater levels of hostility. It may be that because social network size is such a crude indicator of social support, only large differences between extreme groups can be detected over and above the variability in estimates of network size. Finally, the cognitive dimension of hostility has also been associated with a decreased self-reported tendency to seek social support when coping with stress (Habra, 2000; Houston & Vavak, 1991), and to accept social support when offered (Houston & Vavak, 1991).

Pathways to Ill Health

As noted by Gallo and Smith (1999), overlap exists in two of the proposed linkages of these psychosocial constructs and health (Cohen, 1988; Smith, 1992). First, it has been suggested that hostility and support exert their effects on health via the promotion of either positive or negative health behaviours. For instance, hostility has been associated with consuming greater amounts of alcohol, nicotine, high fat/high calorie foods (Musante, Treiber, Davis, Strong, & Levy, 1992; Whiteman, Fowkes, Deary, & Lee, 1997). On the other hand, support is thought to provide individuals with positive role models to emulate good health practices, and to provide information about health and encouragement with adhering to treatment or discontinuing poor health practices (Cohen, 1988; Vaillant, Meyer, Mukumal, & Soldz, 1998; Wallston, Alagna, DeVellis, & DeVellis, 1983). It should be noted, however, that support can

also have a deleterious effect by promoting the desirability of certain behaviours in various peer groups (e.g. smoking).

Second, both hostility and social support have been linked to illness via their direct effect on disease pathophysiology. The hyperreactivity hypothesis (Krantz & Manuck, 1984) suggests that prolonged and repeated physiological activation contributes to the development of hypertension and atherosclerosis. In this vein, both social support and hostility have been found to be associated with dampened or heightened reactivity to acute stress, respectively. For instance, receiving supportive feedback from either a confederate or close ally (friend or partner) has been shown to be associated with lessened physiological activation of the sympathetic, neuroendocrine, and immune systems (Uchino, Cacioppo, & Kiecolt-Glaser, 1996). On the other hand, acute stress, especially if the stressor is interpersonal in nature, seems to provoke greater and more taxing physiological responses in hostile individuals (Suls & Wan, 1993).

Evidence that the health effects of social support and hostility might be interactive is only beginning to accrue. For instance, Allen, Markovitz, Jacobs, and Knox (2001) found tenuous support for the hypothesis that a supportive environment might diminish the ill-effects of hostility. They noted that highly hostile men tended to exercise more only if they had a large social network. Physiological studies have also indicated that hostile individuals do not benefit at a physiological level from support provided in the laboratory or from the mental activation of supportive relationships (Lepore, 1995; Smith, Ruiz, & Uchino, 2004). On the other hand, support has been shown to reduce the impact of hostility on ambulatory blood pressure, suggesting that having a positive social environment might buffer the negative effects of this personality trait (Brownley, Light, & Anderson, 1996). Furthermore, support and anger have been found to be prospectively associated with progression of atherosclerosis, with individuals

reporting low levels of emotional support but high anger levels at greatest risk (Angerer et al., 2000).

Although the above suggests a relationship between hostility and social support in terms of how they might exert an influence on health outcomes, the specific nature of such a relationship has not been fully explored in the health literature. The following sections will propose several ways that hostility and social support might be conceptually linked.

Cognitive Dimensions: Socio-Cognitive Perspective on Perceived Support and Hostility

Because the relationship of perceived and received support has been moderate at best, it has been suggested that perceived support availability should be construed as a personality trait that develops from early attachment experiences with caregivers (Sarason, Pierce, & Sarason, 1990b). This perspective suggests that early relationships lead to the development of a "working model" of how people interact with one another, which then influences one's beliefs about the perceived availability of support in one's social environment. This perspective is bolstered by the fact that perceived support has been shown to exhibit temporal stability despite major changes in one's social environment, and consistent associations with personality traits such as neuroticism and extraversion have been noted (Sarason, Sarason, & Shearin, 1986). From a pure trait-like approach to hostility and support, one can view the two as independent dimensions that happen to covary with one another. However, the strongest evidence accumulated so far links their cognitive dimensions: perceived support and hostile cognition. This suggests that an examination of the cognitive processes underlying perceived support and hostility might be a fruitful avenue in terms of understanding how the two might reciprocally influence one another.

In this vein, it should be noted that information processing and social cognition mechanisms have been proposed for both perceived social support (Lakey & Drew, 1997;

Mankowski & Wyer, 1996; Mankowski & Wyer, 1997; Pierce, Baldwin, & Lydon, 1997) and hostility/aggression (Crick & Dodge, 1994; Huesmann, 1988; Huesmann, 1998), although they have not typically been integrated into a joint model or theory.

General Background. The underlying theme to all social cognition theories is that people are actively engaged in construing their social environment, and that cognitive representations of such a construal actively guide that process and influence behaviour (Pervin, 2003). Using the computer as an analogy for human cognitive processes, information processing theories assume that behaviour can be explained with reference to (1) 'hardware', or biologically determined structures, (2) 'software', or cognitive processes or programs, (3) 'knowledge structures', or memory databases which store different kinds of information, (4) 'inputs', or cues and information gathered in situations, and finally, (5) 'outputs', or behaviour, thoughts, or new knowledge structures (Huesmann, 1998).

Memory or knowledge structures are thought to be a network of interconnected *nodes* that represent different constructs, such as semantic constructs, or knowledge about the meaning of words and concepts, and episodic constructs, or knowledge of objects, past events, and people (Kunda, 1999). Central to many theories are *schemas*, which represent larger structures that include substantial knowledge about a particular concept and help guide the way we perceive, organize, and remember information about ourselves, others, and the world (Fiske, 2000). *Scripts* are a type of schema that link together an expected sequence of events (e.g. restaurant script; Huesmann, 1998). Other types of schema include representations of the self, of relationships (Pierce et al., 1997), of people and of events (Mankowski and Wyer, 1997).

Cognitive processes involved in social cognition processes include *retrieval* of information stored in memory, conceptualized as the activation of relevant nodes. Activation is

thought to spread to closely linked nodes, such that these related concepts can also be retrieved (Kunda, 1999). This process can be controlled (e.g. trying to remember a specific event), or it can be automatic and occur outside one's awareness (e.g. triggered by specific cues such as mood or situations). More recently activated nodes are more easily accessible, and can serve to *prime* the retrieval process to begin in a specific location of the memory structure. Furthermore, nodes that are activated frequently may no longer require specific cues to be retrieved, and are labelled *chronically accessible* (Pervin, 2003). *Encoding* refers to the process of incorporating and consolidating new information into existing memory structures. Encoding is influenced by already existing schemas, such that information that is inconsistent with our existing knowledge base will be less easily incorporated (Kunda, 1999). The salience of cues will also make the individual more likely to attend to the information, therefore facilitating the encoding process as well. Other important processes include *interpretations* and *causal attributions*, or inferences and explanations for events or behaviours.

Finally, social cognition theories view mood as impacting the process of construing our social environment in several ways (Huesmann, 1998). First, mood can serve as a cue to activate certain schemas, especially if information was encoded in a mood state. Second, mood can direct, narrow and focus attention to a smaller range of cues (both internal and external). Finally, mood, especially high levels of emotional arousal, can slow down information processing, making it more likely that only strongly associated schemas will be activated and as such, narrow down the possible interpretation for an event and guide behaviour in a more constrained manner. For instance, a fear of spiders will make it likely that the environment will be routinely scanned for the presence of the feared object; once detected, perhaps the only schema/script to be activated will be 'spider' and 'escape'.

Individual differences in social cognition can be represented at various levels of this process, from the content of the information contained in the memory structures (termed *availability*), which is seen to be shaped by learning experiences, to the types of cues selected as relevant, and to the kind of information that is chronically accessible. Although people are assumed to be similar in the types of structures held and processes computed (e.g. everyone is assumed to make causal attributions or to develop schemas), the content and outcome of these are viewed to be diverse, and ultimately lead to variability in terms of behaviour and beliefs.

Person Perception. The application of socio-cognitive theory to person perception and impression formation began in earnest in the late 1970's with the publication of a few key studies. Higgins, Rholes, and Jones (1977) were the first to report that making a trait construct temporarily available via priming influenced the evaluation of a fictitious person in a supposedly unrelated task. For instance, participants exposed to the term "adventurous" judged a hypothetical person ready to cross the Atlantic in a sailboat more positively than participants exposed to the trait "reckless". Srull and Wyer (1979) extended these findings by showing that priming participants with words semantically related to the trait "hostility" tended to judge a hypothetical character 'Donald' as more aggressive after reading a behavioural description of this person ambiguous with respect to that trait dimension. These studies suggest that temporarily activating or rendering accessible schematic information such as hostility or adventurousness carries over to evaluative judgments about people in a separate context. In addition, participants did not report any awareness that such an influence played a role in their evaluation. Since these seminal studies, several authors have replicated and extended these findings, using different types of priming methods, including primes presented subliminally or below the threshold of conscious awareness (e.g., Bargh & Pietromonaco, 1982), and different

sources of knowledge accessibility (i.e., chronic vs. temporary activation of a trait concept, Bargh, Lombardi, & Higgins, 1988).

Assimilation vs. Contrast Effects. Studies examining the effects of priming a trait concept on social judgements or impressions have found evidence for two types of outcomes: assimilation and contrast effects. Assimilation occur when judgements are made incorporating the primed trait (DeCoster & Claypool, 2004). For instance, in the classic study by Srull and Wyer (1979) described earlier, research participants rated "Donald", a person ambiguous with respect to aggression, as more hostile when primed with the hostility trait concept. On the other hand, contrast effects are found when judgements are biased away from the activated trait concept relative to a control condition (DeCoster & Claypool, 2004). Conceptually, contrast effects are further subdivided into two categories, anchoring and correction, although the pattern of results remains the same. Anchoring takes place when priming leads participants to bring to mind a specific exemplar that is then used as a standard of comparison. For instance, Herr (1986) found that priming with exemplars of extreme hostility (e.g., Hitler, Charles Manson) resulted in individuals rating "Donald" as *less* hostile as those primed with exemplars of extreme non-hostility (e.g., Santa Claus, Shirley Temple). Anchoring effects are hypothesized to result from the marked dissimilarity between the primed category and the target to be evaluated, such that the primed trait is not assimilated or incorporated into the social judgement, but instead is used as a criterion (DeCoster & Claypool, 2004; Herr, 1986). Correction effects are postulated to occur when people become aware of the priming manipulation and consequently consciously correct their judgement away from the primed trait.

Hostility. Socio-cognitive formulations of hostility have mainly focused on understanding social maladjustment and the development of aggressive behaviour in children

(Crick & Dodge, 1994; Huesmann, 1988). While Huesmann (1988) has mainly focused on how the acquisition and retrieval of scripts influences the likelihood that aggression will be enacted, Crick and Dodge (1994) have highlighted the importance of how schemas influence the interpretation cues, how social relationships can modify schemas, and how the child's developmental level impacts information processing skills. Huesmann (1998) has combined these features into a social cognition model of aggression and hostility. This model specifies that children enter an objective social situation (e.g., finding Peter playing with my ball) with a pre-existing cognitive database which will vary from person to person. However, they also enter the situation with already activated schemas and emotional states, which can from the beginning affect how they attend to cues in their environment (e.g. Peter, ball, anger). Such cues will activate specific schemas (e.g. information about Peter, about peers, hostility), which in return will guide the interpretation of these cues. Central interpretation processes include attributions about intentionality (i.e., benign or hostile) and about causality (e.g. Peter stole my ball). Then, scripts for behavioural responses will be reviewed for acceptability based on social norms for aggression, self-efficacy for enactment, and evaluation of outcomes (e.g. ignore Peter, hit Peter, complain to the teacher). A behavioural choice will be made and enacted (e.g. hit Peter); responses from the social environment will be noted (e.g. Peter runs away crying), interpreted (e.g. Peter is crying because he knows he did something wrong in taking my ball), and incorporated into the knowledge structure if necessary (e.g. hitting works, I got my ball back).

Out of all the steps outlined in the model, there is strong support for the contention that making attributions of hostile intent is influenced by schema-driven processes. Multiple studies have shown that aggressive children tend to interpret others' behaviour as more hostile, across a variety of response formats (e.g. questionnaire, interview) and methodologies (e.g. hypothetical

vignettes, staged interpersonal interaction) (as reviewed by Crick & Dodge, 1994, and supported by meta-analysis, Orobio de Castro, Veerman, Koops, Bosch, & Monshouwer, 2002). This seems to be particularly true when the context of the social behaviour is ambiguous, or neither clearly friendly nor hostile. Attributions of hostile intent have also been linked to social maladjustment and observable aggressive behaviour (Crick and Dodge, 1994).

Although most of this research has focussed on children, it seems that these processes are also evident in adults. In fact, several studies have demonstrated that adults are just as susceptible to errors in social judgement. Hostile individuals have been shown to attribute greater hostile intent in response to hypothetical situations and scenarios, replicating the pattern of results found in children (Dill, Anderson, Anderson, & Deuser, 1997; Flory, Matthews, & Owens, 1998; Pope, Smith, & Rhodewalt, 1990). Interestingly, this pattern was found in response to scenarios that were both ambiguous or unambiguous with respect to their hostile content (Epps & Kendall, 1995), which suggests that the pervasiveness of the application of these processes might be even more generalized in adulthood. Hostile individuals have also been shown to rate both friends and strangers more harshly (Allred & Smith, 1991; Guyll & Madon, 2003; Pope et al., 1990); and to show evidence of biased processing of schema-inconsistent information, as demonstrated by slower reaction time to judge people on positive traits (Guyll & Madon, 2003), by enhanced recall of schema-consistent information (hostile adjectives, (Allred & Smith, 1991) and by poorer recall of schema-inconsistent information (friendly adjectives, (Guyll & Madon, 2003).

Perceived Social Support. Several groups of researchers have also applied social cognition theories to understanding the processes underlying how people make supportive judgements. For instance, both Lakey and Drew (1997) and Mankowski and Wyer (1997) note

that there are similarities between how people make judgements about supportiveness and how people construe others in general. For instance, the person perception literature suggests that individuals tend to store information in memory about others in trait-like form, independent from the representation of memories for specific behaviours or events (Lakey & Drew, 1997). As such, when making a judgement about a person, individuals tend to refer back to previous judgements or trait-like representations, rather than reviewing specific behaviours, which would be a lengthy and cumbersome procedure. This process results in enhanced speed and efficiency in processing information about people, although it can also lead to errors in social judgements.

Applying this to social support, Lakey and Drew note that once judgements about others' supportiveness are made, people do not review evidence for past supportive behaviour; rather, they rely on these judgements and attend to information and interpret new behaviours in a manner that is consistent with their previous judgements. Such processes would explain why received and perceived support tend to be only moderately related. Over repeated exposure to and experiences with various types of people, individuals may also integrate information about similar trait-like representations, events or relationships into schemas (Mankowski & Wyer, 1997; Pierce et al., 1997). Such schemas would then guide the way individuals attend to information about other people, and interpret, judge, and remember others' behaviour (Lakey & Drew, 1997). Although this review presents judgements of support in a relatively simplistic manner, it should be noted that people do not necessarily develop a single "support" schema that influences and guides all support behaviours. In fact, people likely hold multiple schemas depending on the role they take on in the support process (e.g. different scripts guiding support provision or receipt; Mankowski & Wyer, 1997) or on the type of relationship (e.g. different schema for self-mother or self-spouse relationships; Pierce, Baldwin, & Lydon, 1997).

Furthermore, there seems to be much variability in the type of information used to arrive at support judgements (Lakey, McCabe, Fisicaro, & Drew, 1996; Lutz & Lakey, 2001), and individual differences exist in the ease of accessibility of certain schemas or concepts (Mankowski & Wyer, 1997).

Recent empirical findings have lent support to the viability of using a socio-cognitive approach in understanding how individuals arrive at support judgements. First, individuals high in perceived support tend to make more positive interpretations as to the perceived supportiveness of the same behaviours (Lakey & Cassady, 1990; Lakey, Moineau, & Brittain Drew, 1992; Pierce, Sarason, & Sarason, 1992). For instance, Lakey and Cassady (1990) had participants read a series of vignettes depicting interpersonal behaviours that were meant to be neither clearly supportive nor unsupportive, and then rate the vignettes on the perceived helpfulness of the behaviours. They found that individuals high in perceived support rated the behaviours as more helpful than those low in perceived support, even though the participants were rating the same outcome. Second, cognitive support has also been shown to influence attributions for failed support attempts, with low perceived support associated with arriving at more internal and stable causal explanations (Ross, Lutz, & Lakey, 1999). Finally, perceived support has been shown to be associated with biases in information processing, with some studies showing enhanced recall for schema-consistent behaviours (Lakey and Cassady, 1990) and others finding better recall for schema-inconsistent behaviours (Mankowski and Wyer, 1996).

Summary and Integration. To summarize, social cognition and information processing theories of hostility/aggression and perceived social support have been proposed. However, these theories have developed in parallel based on different behaviours (anti- vs. pro-social

behaviour) and different populations (children vs. adults). However, in reviewing the main elements of each theory, it becomes clear that integrating these models would be of theoretical interest. First, both models specify that early learning experiences shape the content of people's knowledge structures. With respect to social support, it has been suggested that early attachment experiences are crucial to the development of working models of social relationships (Pierce et al., 1997; Sarason et al., 1990b). In other words, the presence of an attentive, loving, and responsive caregiver is thought to provide a template for social interaction that guides behaviour in subsequent relationships and interpretation of relationship experiences. With respect to hostility/aggression, early experiences with aggression, including harsh parenting strategies and availability of observational models that reinforce the acceptability of aggression, are seen as central in setting the stage for the acquisition of aggressive scripts and schemas (Huesmann, 1998). Interestingly, early attachment experiences have also been linked to the development of aggressive behaviour (see Lyons-Ruth, 1996, for a review), and hostile individuals tend to either concurrently or retrospectively rate their parents as inconsistent, punitive, and less accepting of their behaviour (Houston & Vavak, 1991; Matthews et al., 1996). This suggests that there is overlap in the kinds of experiences thought to contribute to the development of knowledge structures held by hostile individuals and those with low perceived support.

Examining the content of hostile beliefs further suggests that this overlap is also evident in the type of information held in the knowledge structures. For example, hostile cognitions include beliefs that others are "untrustworthy, undeserving, and immoral" (Barefoot, 1992, p. 14) and "likely sources of mistreatment, frustration, and provocation" (Smith, 1992, p. 139). As such, the central aspect of hostility is fundamental mistrust of others. Similarly, the core concept - of support is relational in nature, with perceived support involving the belief that one is "reliably

connected to others" (Barerra, 1986, p. 416). Given that both concepts involve relational content, it is conceivable that for hostile individuals, schematic information relevant to hostility and (non)support would be more closely linked, as there would likely be an increased likelihood of joint activation in similar circumstances or by similar cues (e.g. representation of the mother referent might include links to both support and hostility schemas). If knowledge were represented in such a fashion, it would suggest that for hostile individuals, support schemas are filled with a greater proportion of negatively valenced concepts.

Although the above analysis suggests hostility and support schemas would be strongly related in hostile individuals, such that activating one would likely activate the other, another possibility is that for hostile individuals, the hostility schema has become chronically accessible because of their past experiences. As such, the hostility schema becomes consistently used to organize information, across a broad range of social situations, given the relational content in such a schema. This might mean that hostile individuals would be vigilant for cues in their environment that are consistent with their view that the world is replete with potential threats, making it less likely that they would attend to cues that might activate the support schema. This theorizing would suggest that hostile individuals do possess a positive support schema, but that it is used less frequently and, consequently, is less well developed and integrated with other knowledge structures. If that were the case, presenting information that would activate the support schema might counter some of the biases associated with processing support-based information using the hostility schema.

Behavioural Dimensions: Hostility and Interpersonal Relationships

The above section reviewed possible ways in which hostility and support are associated via cognitive representation of knowledge about people. However, this is by no means to

suggest that the only manner in which the two concepts might influence one another is along cognitive dimensions. In fact, the two might be related via their impact on interpersonal relationships.

As previously noted, both hostility and support were defined as having a behavioural component. For instance, hostility has been conceptualized as involving a greater likelihood of enacting antagonistic behaviours that affect the quality of interpersonal relationships. In fact, Smith (1992) proposed that one of the ways that hostility has an ill effect on health is by imparting a psychosocial vulnerability for negative health outcomes via impoverished social relationships. Several lines of evidence are consistent with the proposition that hostility is associated with a pattern of conflicted and difficult interpersonal relationships. Hostile individuals report being less satisfied with their support networks, with their marriages (especially for hostile men), and with their jobs (Houston & Kelly, 1989; Smith & Frohm, 1985; Smith et al., 1988). They also report experiencing a greater number of negative life events and more frequent and severe daily hassles (Smith & Frohm, 1985; Smith et al., 1988). During marital interactions, hostile men have been found to display more antagonistic and overtly hostile/dominant behaviours toward their wives, accompanied by both affective (e.g. anger, anxiety) and cognitive responses (e.g. blame) (Smith, Sanders, & Alexander, 1990). During competitive play, hostile men tended to exhibit more aggressive behaviour toward their partner (Pope et al., 1990). Finally, hostile individuals have been shown to be less friendly and more hostile in social interaction (Hardy & Smith, 1988).

In the social support literature, there has been a recent emphasis towards better understanding the interpersonal dynamics of the support process, given that supportive exchanges usually occur within the context of close relationships (Coyne & DeLongis, 1986).

From this perspective, the constructs of interest have been relationship satisfaction, intimacy, companionship, and conflict (Lakey & Cohen, 2000). This perspective has drawn attention to the fact that close relationships grant benefits such as love and support, but also entail certain costs (e.g. conflict, dependency, embarrassment, criticism, failed support attempts; (La Gaipa, 1990; Rook, 1984; Wortman & Dunkel-Schetter, 1987). As previously noted, social integration and network measures have been criticized because simply tallying the number of social contacts does not reveal anything about the quality of such relationships (Edwards, Nazroo, & Brown, 1998). In other words, social relationships provide the context not only for supportive exchanges, but also for negative interactions, with the latter hypothesized to have a greater impact on mood and health outcomes (Parris Stephens, Kinney, Norris, & Ritchie, 1987; Rook, 2001).

The research reviewed above does suggest that hostile individuals are more prone to express conflict and anger within the context of close relationships. However, we know very little about their ability and inclination to be involved in supportive exchanges. How often do hostile individuals actually receive support? Is it the case that hostile people are less likely to provide support to others, and therefore are less likely to reciprocally receive support? Or are they simply less adept at providing support, such that their intentions may be good, but their delivery is flawed? In other words, do hostile people tend to provide less competent forms of support (e.g. criticism, sarcasm) and/or do they simply refuse requests or offers for support? If either of the latter is true, then hostile individuals would find themselves in a difficult position: not only do they experience the negative aspects of interpersonal interactions more frequently, but they would also less regularly reap the rewards associated with such relationships.

It should be noted that the above discussion does not negate the fact that hostility might affect the experience of social support at a cognitive level, via information processing mechanisms such as interpretation, attribution, accessibility of constructs, and the like. In fact, both approaches should be considered complementary, given that behavioural transactions are likely influenced by cognitive processes, and that interpersonal interaction provides the content and context for information processing. For example, people might elicit behavioural responses from others that are consistent with their construal of the world, thereby confirming beliefs via self-fulfilling prophecy (Lakey and Drew, 1997; Mankowski and Wyer, 1997). For instance, it has been suggested that although depressed individuals express a greater need for social support and seek comfort and reassurance from friends and family, they tend to elicit dysphoria and rejection from others. This in turn, confirms their depressive beliefs and increases the need for reassurance (Coyne, 1976; Coyne, Aldwin, & Lazarus, 1981). Similarly, people's impressions of others have been shown to elicit behaviour that confirms their initial impression (Snyder & Swann, 1978). Given that hostile individuals tend be more likely to perceive aggressive intent in others (e.g. Dill et al., 1997), they may in return act in such a manner that elicits hostility. As such, both behaviour and cognition are seen as mutually influencing one another.

Summary and Conclusions

To summarize, the above review presents a rationale for taking a closer look at the ways in which support and hostility influence one another. From a health perspective, understanding this relationship might lead to a better conceptualization about how these psychological factors might yield synergistic effects on cardiovascular health outcomes. In fact, it was pointed out that overlap exists with respect to the hypothesized pathways proposed to explain the effects of support and hostility on health.

It was proposed that these two constructs could be related at either a cognitive level, via information processing mechanisms, and/or at a behavioural level, via the interpersonal exchange of support and conflict. Whether the problem is a behavioural or a cognitive one could have important implications for support interventions. For instance, if it is the case that hostile people are less competent support providers such that they drive people away, then a social skills/behavioural training approach would be more appropriate in helping them to manage interpersonal strain. However, if the problem is at a perceptual level, then a more cognitive approach, which would focus on changing one's beliefs about the world, might be a better match.

Current Research

Although the above literature review suggests multiple avenues for arriving at a better understanding of the relationship between hostility and social support, the present research will begin by exploring the cognitive links between the two constructs. First, at the present time, the strongest evidence that a relationship exists between the two constructs comes from studies that connect the cognitive domains of hostility and support, as previously noted. Second, the cognitive components of both support and hostility have been most strongly associated with health outcomes, as reviewed above. The latter is especially true for perceived support, which, along with social integration, accounts for protective effects against ill health. As such, an exploration of the cognitive mechanisms underlying hostility and perceived social support would be a good starting point for the program of research outlined above.

More specifically, the present research examined the impact of hostility status on judgements of social support. Participants were presented with vignettes describing stressful situations typically encountered by undergraduate students (e.g., romantic relationship difficulties). They then reviewed a friend or family member's attempt at providing support in

response to the stressful situation, and then evaluated the support attempts as to their perceived helpfulness. These vignettes have been used in work investigating how people arrive at judgements of supportiveness, and the support attempts were designed to be neither explicitly helpful nor unhelpful (Lakey & Cassady, 1990). Participants were selected on the basis of their self-reported hostility status, as described below. Finally, participants underwent one of three experimental conditions. Prior to reading the vignettes and making support judgements, participants were exposed to either a 'hostility', 'support', or 'neutral' priming condition, and the effects of having the one of these constructs temporarily available on judgements were examined. Among hostile participants, it was expected that being exposed to hostile primes right before reading the vignettes would be associated with making more negative evaluations of the standardized support behaviours. Differences between the neutral and hostility priming conditions (or lack thereof) would speak to effects of temporary vs. chronic accessibility of hostile schemas. In other words, little or no difference between these two conditions would indicate that the hostile schema is chronically accessible for highly hostile individuals, such that they access and apply hostile-related knowledge to a wide range of situations. No specific predictions are made about the results of the support priming condition. As discussed above, two suggestions were made as to how support-related information was organized for hostile people. First, it was proposed that on the basis of negative early relationship experiences, hostile individuals have developed close links between support and hostile information nodes; as such, the information held in support-related schema is assumed to overlap with hostility schema, and contains a greater proportion of negatively valenced concepts. If knowledge were organized in such a fashion, then one would expect that a support priming condition would generate judgements that are less negative than those made under the hostility priming condition, but

more negative than those made under a neutral priming condition (i.e., hostility>support>neutral). Note that the opposite pattern would be expected for non-hostile individuals, namely that the most positive judgements would be anticipated in the support priming condition relative to the neutral and hostile conditions (i.e., hostility>neutral>support). However, it was also suggested that hostile individuals might neglect to use a support schema in processing information involving relational content because they tend to be biased toward using hostile schema in such situations. If the latter holds true, then one would expect that support judgements would be more positive in the support priming condition relative to the neutral condition (i.e., hostility>neutral>support).

Methods

Participants

A total of 226 undergraduate students at the University of British Columbia participated in this study in exchange for course credit. Three participants were excluded because of missing data on the dependent variables. An additional five were left out of the analyses because they guessed the purpose of the study. Finally, another six participants were excluded because of poor self-rated reading comprehension skills in English (see Appendix A). The latter moved to Canada past age 13 and started acquiring English after the age of 10. Given the heavy focus on reading comprehension in this study, these participants were excluded.

The overall sample was comprised of 212 students (173 women, 39 men), with mean age of 20.5 (SD = 3.91). The ethnic composition was varied, as is typical of our student body (43% North American; 38% Chinese; 8% South Asian; 4% Other Asian; 7% Other). As previously noted, students were included in the analyses if they fell either in the upper or lower tertiles on a self-report measure of hostility (Buss-Perry Aggression Questionnaire, see below). Because the

assessment of their hostility status was conducted following the experimental protocol, random assignment based on hostility scores was not possible. This resulted in uneven cell sizes among the experimental groups. In order to conduct the analyses with a balanced statistical design, 20 participants from each experimental group were selected at random. The final sample was comparable to the overall group with respect to demographic variables: a total of 120 participants (102 women, 18 men) were included in the analyses; mean age was 20.7 years (SD = 4.27); self-identified ethnic group membership was again varied (46% North American; 31% Chinese; 8% South Asian; 7% Other Asian; 8% Other). In addition, to ensure that randomly selecting participants for equal cell sizes did not result in an uneven distribution of age and gender, cells were examined individually. There were no significant differences between each cell with respect either of these demographic variables.

Measures

Hostility. All participants completed the Buss-Perry Aggression Questionnaire (AQ; (Buss & Perry, 1992). This measure represents a revised version with improved psychometric properties of one of the most widely used aggression measures: the Buss-Durkee Hostility Questionnaire (Buss & Durkee, 1957). The AQ consists of four subscales tapping the behavioural (9-item Verbal Aggression, 5-item Physical Aggression), affective (7-item Anger), and cognitive (8-item Hostility) domains of hostility, with responses on a 5-point scale ranging from "extremely uncharacteristic of me" to "extremely characteristic of me". The measure has been shown to possess good psychometric properties (test-retest reliability = .80; internal consistency = .89). The factor structure of the scale has been replicated in several samples (Bernstein & Gesn, 1997; Bryant & Smith, 2001), including a Canadian student sample (Harris, 1995). Furthermore, self-report of hostility and aggression as measured by the AQ has been

shown to be correlated with spouse or peer reports (Buss and Perry, 1992; O'Connor, Archer, & Wu, 2001), with other self-report measures of the same construct (Harris, 1997), and with behavioural and affective response to provocation (Felsten & Hill, 1999). Thus, the accumulated research so far lends support the AQ's validity.

Priming Task. The current study used the scrambled sentences paradigm in order to prime constructs of interest. This paradigm was first used by Srull and Wyer (1979) to examine the effects of making the 'hostility' construct available on initial impressions of a hypothetical person. These authors had participants unscramble sentences, i.e., choose three words out of a list of four in order to make a sensical phrase (e.g. his break it arm → break his arm). Sentences reflecting hostile content were adapted from a measure initially developed by Costin (1969) to measure hostility surreptitiously.

The goal of the current study was to examine the influence of priming or activating the trait concept of hostility and support on judgements of offers of help, using the unscrambled sentences procedure. This required items that would tap the concepts of hostility and social support in order to activate the relevant schema. Also required were neutral or filler items to include in the control condition. Neutral items were also needed for the hostile and supportive conditions in order to minimize suspiciousness about the priming manipulation by constantly unscrambling sentences with hostile or supportive content (Srull & Wyer, 1979). As such, a pool of 150 three-word sentences was developed for selection for the priming tasks. Some items of hostile content were taken from Costin (1969), and the remainder were generated by the investigator's research laboratory members. These sentences were then rated by a separate group of 46 undergraduates on a 7-point Likert scale. Participants were asked to evaluate the degree to which the various sentences tapped the concepts of hostility and social support (see Appendix

B). Given that relatively extreme scores can easily influence averages, both the modal and mean responses to items were examined. Items were considered neutral if (1) the modal rating on both the hostility and support dimensions was four, the mid-point of the rating scale, and/or (2) the difference between the mean ratings on each dimension was less than two points apart. Items were considered hostile if (1) the modal rating on the hostility dimension was greater than five and the modal rating on the social support dimension was less than three, and/or (2) the mean difference between the two dimensions were more than two points apart. A similar rule was applied to select the items to prime social support.

Each priming task included 40 sentences. In the Hostility priming condition, 75% of sentences were of hostile content and 25% were of neutral content (see Appendix C). In the Support condition, 75% of the sentences were of supportive content and 25% of neutral content (see Appendix D). Finally, in the Neutral condition, all sentences were neutral in content (see Appendix E).

Supportive Vignettes. Individual differences in judgements of supportive behaviours were assessed using a modified version of the Social Support Evaluation and Recall Task (SSERT; Lakey & Cassady, 1990). The original measure consists of a series of hypothetical scenarios of personal or academic problems (e.g., recent break-up with boyfriend/girlfriend). Participants are asked to imagine they are describing a recent problem to a friend or relative. Each scenario is followed by eight statements describing supportive behaviours enacted by the friend or relative (e.g., "Well, now you'll have more time to study" or "Cheer up, you'll find someone new"), and participants are asked to rate each response on a 5-point Likert scale ("very helpful" to "very unhelpful"). As previously noted, this measure was developed for a college population, similar to the current sample, and responses were designed to be neither clearly

supportive nor unsupportive. Lakey and Cassady (1990) also included a recall task in their study, but this portion of the SSERT was not be used for this project.

The current study used a modified version of the SSERT. First, the Likert scale was expanded to a 9-point measure instead of a 5-point scale, in order to capture as much variability in the pattern of responses as possible. Second, to ensure that the statements describing supportive behaviours were indeed perceived as neutral by our student population, the SSERT was piloted in a group of 46 students. Out of the eight items associated with each vignette, the five with the most neutral mean ratings of helpfulness were selected for the present study. Third, in addition to asking participants to evaluate the helpfulness of these support statements, three other questions were included in order to examine the impact of trait hostility and primed schema on related supportive behaviours. The final measure also asked participants to evaluate how genuine they perceived the offer of help to be, whether they would ask the support provider for help again in the future, and whether they would offer to help this person in return. This measure is included in Appendix F.

Procedure

Participants were recruited through posted advertisements in the Psychology Department and were informed that their participation in three separate studies was requested.

Priming Task and Manipulation Check. Participants were randomly assigned to one of three priming conditions, each requiring them to unscramble forty sentences varying in content, as described above. To ensure that participants viewed the priming task as unrelated to the support judgement task, this section was introduced as a pilot study to be used for future research studying the impact of verbal problem-solving on blood pressure. The importance of speed of completion and accuracy was emphasized during instructions. Participants answered self-report

items immediately preceding and following the priming task. Some items were included to increase the credibility of the cover story for the task. For instance, participants were asked to record their start and finish times using a digital clock given to them for that purpose. They also rated the task on several dimensions (i.e., difficulty, stressfulness, and arousal). Other questions were included as manipulation checks. As it was important not to raise suspiciousness about the priming task and to ensure that participants did not realize that the manipulation was meant to influence their responses on the support judgement task, the manipulation check items were again designed to be consistent with the cover story. Participants assessed their state anger, sadness, happiness, and upset both prior to and following the task using a 10-cm visual analogue scale (see Appendices G and H). Ratings of anger, sadness, and happiness were particularly of interest in assessing the impact of the priming manipulation. However, priming manipulations have typically not produced large changes in affect (Erdley & D'Agostino, 1988). As such, effect sizes were examined for direction and magnitude of results instead of significance testing.

Support Judgement Task. Participants were then asked to move on to the second task, described as a study collecting norms on what students find helpful or unhelpful when coping with stressful situations. Participants were given the modified SSERT measure described above.

Hostility Assessment. Finally, participants were asked to complete a series of measures, including the AQ. Questionnaires were administered following the priming and judgement tasks, in order to minimize possible carry-over effects from the experimental tasks. All questionnaires were administered in a fixed order, and the AQ was positioned towards the end of the package.

Debriefing. Following the experimental session, participants were probed using a "funneled" or guided debriefing method recommended by Bargh & Chartrand (2000), see Appendix I. The debriefing was approached in this manner to determine whether participants

suspected a connection between the first two tasks. As previously noted, five students were excluded from the final analyses for that reason. In addition, to ascertain whether participants were familiar with the situations described in the SSERT, they were asked to rate the questionnaire on a scale of 1 to 10 to evaluate familiarity with these stressful events and their tendency to personalize their responses to the measure (e.g., degree to which they imagined specific situations or persons from their own life). Participants were then fully debriefed.

<div align="center">Results</div>

Data Reduction

Hostility. In the overall sample, two participants had a single item missing on the Hostility subscale. This value was replaced with the mean response of the remaining seven items. This technique allowed the full use of the sample while minimizing loss of information, a conservative way of dealing with missing data as it reduces variability among scores (Tabachnick & Fidell, 1996). The mean and standard deviations for all AQ subscales are presented in Table 1. These values are similar to those reported by Buss and Perry (1992). Internal consistency for the subscales was also similar to values reported by the scale developers; of interest for the present study, the internal consistency for the Hostility subscale was $\alpha = .78$.

As mentioned above, participants belonging in the upper or lower tertiles of the Hostility subscale, based on scores from the entire sample, were included in the current study. In order to examine gender or experimental priming condition differences in AQ scores in the final sample of selected participants, a 2 (Gender: men, women) x 3 (Experimental condition: hostility, support, neutral) MANOVA was conducted on the four AQ subscales. There were no significant main or interaction effects, indicating that mean values did not vary by gender or by experimental condition.

<u>Supportive Vignettes.</u> Support judgements across all the SSERT vignettes were averaged for each participant (Lakey and Cassady, 1990). This resulted in four dependent variables: perceived helpfulness (HELP), perceived genuineness (GENUINE), tendency to seek support in the future (ASK), and tendency to offer help in the future (OFFER). In the entire sample, internal consistency values ranged from $\alpha = .82-.93$ for each of the dependent variables. Inter-correlations among the four variables for the participants selected for the main analyses are presented in Table 2. As can be noted, the correlation between ASK and GENUINE was strong ($r = .81$). The reason for such a strong correlation is unclear; perhaps people are only willing to ask for help when they perceive the support provider as genuinely interested in offering assistance. Regardless, including both variables in the MANOVA would be redundant because of the overlap in shared variance and could create multicollinearity problems. As such, the ASK variable was excluded from the analyses.

<u>Manipulation Check.</u>

Effect sizes were computed to explore changes in affect from pre- to post-priming (see Table 3). As can be noted, participants reported a slight increase in self-reported happiness following the Support priming condition, but a decrease after the Hostility condition. Conversely, participants described experiencing an increase in angry affect after the Hostility priming condition, but a decrease following the Support condition. Self-reported sadness was unaffected by priming. Affect changes were negligible in the Neutral condition. In sum, these validity checks support that the priming had the intended effect.

<u>Assumptions</u>

Checks for univariate and multivariate normality and outliers were conducted to verify that the data collected met the required assumptions for MANOVA/ANOVA analyses. These

indicated that the dependent variable scores were normally distributed, both at the univariate and multivariate level. In addition, no outlier scores were identified, indicating that assumptions for analyses had been met.

Analyses

Priming and Hostility. In order to examine the impact of hostility status and experimental priming condition on SSERT ratings, a 2 (Hostility: high, low) x 3 (Priming: hostility, support, neutral) between-subjects MANOVA was conducted on the HELP, GENUINE, and OFFER dependent variables. The analyses yielded significant main effects of Hostility [Roy's Greatest Root = .12, $F(3,112) = 4.41$, $p = .01$] and Priming [Roy's Greatest Root = .10, $F(3,113) = 3.79$, $p = .01$], qualified by a Hostility x Priming interaction [Roy's Greatest Root = .08, $F(3,113) = 3.15$, $p = .03$]. The interaction was further explored by running three univariate 2 (Hostility: high, low) x 3 (Priming: hostility, support, neutral) between-subjects ANOVA on each of the dependent variables. This yielded a significant interaction for HELP [$F(2,114) = 4.64$, $p = .01$] and a marginally significant interaction for GENUINE [$F(2,114) = 2.58$, $p = .08$]. These interactions are graphed in Figure 1.

The HELP univariate interaction was investigated further by conducting tests of simple main effects. The simple main effect of Priming was significant for both low and high hostility groups [$F(2,57) = 5.69$, $p < .01$ and $F(2,57) = 4.05$, $p < .05$, respectively]. Post-hoc follow-up tests using Tukey's honestly significant difference (HSD) indicated that among individuals low in hostility, judgements of perceived helpfulness were significantly less favourable in the Hostility priming condition compared to the Neutral condition [$q(3,57) = 4.76$, $p < .01$]. Among individuals high in hostility, judgements of perceived helpfulness were significantly less favourable in the Support priming condition compared to the Hostility [$q(3,57) = 3.46$, $p < .05$]

and Neutral [q (3,57) = 3.51, p < .05] conditions. No other post-hoc comparisons reached significance. Means and standard deviations are presented in Table 4.

Familiarity Ratings. During the guided debriefing, participants were asked to evaluate their degree of familiarity with the scenarios used in the SSERT and the extent to which they were personalizing their responses (i.e., imagining a specific person or situation when making support judgements). In order to examine whether degree of familiarity and personalization influenced their responses on the SSERT, bivariate correlations between these ratings and the dependent variables were conducted (see Table 5). Overall, there was no clear pattern of associations. Two correlations were marginally significant: participants who imagined a specific person providing support tended to view the offer of help as more genuine (r = .16, p = .08), and those who were less familiar with the stressful situations were more willing to offer help to the support provider if needed in the future (r = -.16, p = .08). Rerunning the main analyses with these variables as covariates did not change the results reported above. Finally, to examine whether hostility status affected ratings of familiarity and personalization, a series of independent-samples t-tests were run comparing mean ratings on these measures between high and low hostility participants. Only one comparison approached significance: hostile individuals tended to report imagining a specific support provider to a greater degree (M = 7.45, SD = 2.1) than their low hostility counterparts [M = 6.71, SD = 2.7; t (111.7), p = .10].

Task Ratings. In order to examine whether the tasks varied in their perceived difficulty, and degree of arousal and stress, a 2 (Hostility: high, low) x 3 (Priming: hostility, support, neutral) between-subjects MANOVA was conducted on the post-task ratings (see Appendix H). Results yielded a marginally significant main effect of experimental priming condition [Roy's Greatest Root = .059, F (3,6) = 2.22, p = .09]. Participants in the Hostility priming condition

tended to find the experimental task more difficult. No other main or interaction effects were significant. In addition, the impact of hostility status and priming condition on self-reported anger were explored with a 2 (Hostility: high, low) x 3 (Priming: hostility, support, neutral) x 2 (Time: Pre-task, Post-task) between-within ANOVA. Results indicated a marginally significant main effect of Hostility [F (1,114) = 2.83, p = .10) and no other significant effects. Individuals scoring high on this dimension reported higher overall levels of state anger.

Exploratory Analyses. The above analyses collapse participants' responses to the six different vignettes into summary scores. However, the vignettes vary in terms of the type of relationship to the support provider (e.g., friend, sibling, parent) and the type of function the support might serve (e.g., emotional support, ride to school). Creating summary scores increases the reliability of the dependent variables by reducing error measurement and is consistent with the original use of the SSERT by Lakey and Cassady (1990), although it might also obscure interesting differences between the vignettes. As such, participants' responses were examined by rerunning the main analyses using each vignette as a separate dependent variable. Only the HELP ratings were examined in this fashion as the main analyses yielded significant results for this dimension alone. Finally, the results of these analyses should be interpreted with caution given the post-hoc nature of this investigation.

A 2 (Hostility: high, low) x 3 (Priming: hostility, support, neutral) between-subjects MANOVA was conducted on the HELP ratings of the six vignettes. The analyses yielded significant main effects of Hostility [Roy's Greatest Root = .13, F (6,109) = 2.34, p = .04] and Priming [Roy's Greatest Root = .19, F (6,110) = 3.42, p < .01]. The main effects were qualified by a significant Hostility x Priming interaction [Roy's Greatest Root = .14, F (6,110) = 2.49, p = .03]. The interaction was further explored by running six univariate 2 (Hostility: high, low) x 3

(Priming: hostile, supportive, neutral) between-subjects ANOVA on each of the dependent variables. This yielded significant interactions for vignette #4 [$F(2,114) = 5.06, p = .01$] and vignette #5 [$F(2,114) = 3.72, p = .03$], and a marginally significant interaction for vignette #3 [$F(2,114) = 3.04, p = .05$]. Vignette #4 involved asking a classmate for notes after missing a lecture; vignette #5 wanting to spend time with an older sibling when lonely; and vignette #3 discussing a problem in a romantic relationship with a close friend. These interactions are graphed in Figure 2, 3, and 4.

The significant interactions were further explored with simple main effects analyses. For vignette #4, the simple main effect of Priming was significant for the high hostile group [$F(2,57) = 4.02, p = .02$], but not for the low hostile group [$F(2,57) = 1.49, ns$]. Follow-up tests using Tukey's HSD indicated that hostile individuals viewed the offers of support as significantly more helpful in the Hostility priming condition relative to the Neutral condition [$q(3,57) = 3.91, p < .05$]. No other comparison was significant. For vignette #5, the simple main effect of Priming condition was significant for the low hostility, but not the high hostility group [$F(2,57) = 4.18, p = .02; F(2,57) = 1.67, ns$, respectively]. Follow-up tests indicated that individuals low in hostility rated the offers of help more negatively in the Hostility condition relative to the Neutral condition [$q(3,57) = 4.06, p < .05$].

Discussion

To summarize, the present findings indicated that trait hostility and activated mental set influenced participants' evaluative judgements of support dimensions. Participants viewed offers of support as *less* helpful when these offers were evaluated through the lens of an acutely activated hostile schema. However, these results were limited to the sub-group of participants who endorsed low levels of trait hostility. When the 'hostility' trait concept was activated by

priming, hostile individuals did not modify their evaluation of the perceived helpfulness of support. However, they judged the offers of help more pejoratively following the activation of the 'support' trait concept. It should be noted that the pattern of results described above held for judgements of perceived helpfulness only, although the marginally significant findings for the perceived sincerity ratings were in the same direction. Furthermore, changes in self-reported affect ratings were consistent with activation of primed trait concepts, indicating that the manipulation was effective in bringing to mind the intended hostility schema, support schema, or neither. Finally, the current results cannot be explained by degree of familiarity with the stressors described in the vignettes or the extent to which participants were imagining specific life experiences and support providers.

Hostility and Social Support: Socio-cognitive Processes

It was proposed above that hostile individuals have a hostility schema that is chronically accessible, i.e., that does not need eliciting cues in order to be activated (Previn, 2003). Given that hostile cognitions involve expectations about other people's intention and behaviour, it was postulated that hostile individuals might use such a schema in a broad range of social situations, including supportive exchanges. The result would be a pervasive skew in how the behaviour of support providers is interpreted. However, the present findings argue against the idea that hostile individuals view all social interactions through a single, chronically accessible, broad-based, distorted lens. Indeed, the presence of an interaction effect, as opposed to a trait hostility main effect, indicates that personality moderates social perception, but that the effect is not constant across activated cognitive structures and situations described. As such, the current findings are consistent with Lakey et al. (1996)'s report that it is the interaction between characteristics of the

person perceiving the support and the support provider that accounts for the largest amount of variance in perceptions of social support.

Furthermore, hostile and non-hostile individuals differed in their incorporation of activated trait concepts in evaluating supportive behaviours from friends and family. Non-hostile individuals demonstrated an assimilation pattern in the Hostility priming condition; in other words, they applied the trait concept of hostility when appraising supportive acts, as demonstrated by more negative support ratings with an active hostility schema. On the other hand, there was a contrast effect in the Support priming condition; hostile individuals biased their responses away from the primed concept, as demonstrated by more negative support ratings with an active support schema. This pattern of results, assimilation by one group in one context and contrast by the other under a dissimilar condition, is perplexing and not easily amenable to an overarching explanation.

Most accounts of contrast effects focus on features of the priming stimuli, usually its extremity (DeCoster & Claypool, 2004). For instance, exposure to extreme exemplars of aggression such as 'Hitler' has been shown to influence people to judge a hypothetical person 'Donald' as less hostile than after more moderate primes such as Robin Hood (Herr, 1986). However, several theoretical models have also been articulated to identify alternative factors that lead to contrast vs. assimilation effects. These models will be briefly reviewed and their suitability in explaining the present results will be discussed.

Set/Reset Model. Martin (1986) used his Set/Reset theory to postulate that application of a trait concept following temporary activation via priming is not an inevitable process and that assimilation/contrast effects are determined by more than structural properties of the priming stimuli such as extremity. He suggested that if temporary activation of a primed construct

perseverates or carries through to the judgement of a target, then the trait concept is assimilated into the evaluation. He termed this effect 'Set'. However, Martin hypothesized that factors can halt this carry over effect, or 'Reset' one's mindset, which then produces a contrast effect. By experimentally manipulating Set/Reset with task interruption, Martin was able to demonstrate assimilation and contrast effects after exposure to the same priming stimuli, thereby supporting his contention that factors other than characteristics of primes influence the direction of one's evaluation. Finally, Martin viewed Reset as a more effortful thinking process, and showed that making a priming task more cognitively taxing eliminated the contrast effect (Martin, Seta, & Crelia, 1990). He speculated that Reset happens because people attribute their negative thoughts or feelings to the task, rather than their own genuine reaction to the target, although none of his participants described such a process or guessed the purpose of the priming task.

Martin (1986)'s model has some bearing on the current findings. For instance, it was reported earlier that participants tended to rate the Hostility priming condition as more difficult, although this finding was marginally significant. Assuming that the sentence completion task involving hostility-themed sentences was more arduous and cognitively taxing, Martin's theory would account for the fact that non-hostile individuals assimilated the trait concept of hostility into their judgements of supportive behaviours. However, why did we not observe a similar pattern for hostile individuals? One could speculate that hostile participants unscrambled the priming sentences tapping the aggression trait concept with greater ease, presumably because such words are more accessible; however, if that were the case, one would anticipate an assimilative pattern for the non-hostile participants in the Support priming condition. Yet no such effect was found. Furthermore, the analyses involving the task difficulty ratings did not yield a main effect of trait hostility, indicating that all participants found the Hostility priming

more difficult, not simply those scoring low in hostility. As such, Martin's model does not completely account for the current findings.

Shifting Standards Model. Biernat (2003) has proposed a model of assimilation/contrast effects that she has applied to social stereotyping. She notes that judgements of individuals along a certain dimension are usually compared to a within-group standard. For instance, when evaluating a person's height, woman are compared against the norms of that gender; similarly, a man is judged relative to the average for his own subgroup. However, in everyday language, such a reference group is often implied rather than obviously stated. For example, one will say that a 5'10" woman is tall, meaning she is tall compared to most women, even though her height places her below the average man. Subjective rating scales such as a Likert scale often reflect implicit norms, while objective scales such as inches or centimetres are more likely to carry a similar meaning for all judges. In fact, Biernat and her colleagues showed that participants judged photographed men to be taller than women, but only when they conveyed their ratings with a measurement scale in inches. When using a Likert scale ranging from "very short" to "very tall", mean scores estimating height were similar for men and women (Biernat, Manis, & Nelson, 1991). As such, the Likert scale ratings reflected people's internal norms or distribution for the height of men and women. Based on the results of several studies similar to the one described here, Biernat's model, termed the shifting standards model, predicts that objective rating scales are associated with assimilative effects, because they more accurately reflect people's internal representation of category differences such as gender (e.g., men are taller than women); whereas subjective rating scales are associated with contrast effects, because implicit norms mask category differences (e.g., women rated as tall or taller than men).

How does that apply to person perception? People will have within-group norms based on their interpersonal interactions, socialization, and culture. For instance, in North American culture, physical aggression is stereotypically less common and acceptable for women. As such, people likely have their own internal norms for aggressive behaviour that are gender-specific. However, because expectations are different for each gender, the number of behavioural instances of aggression required for one to be judged as hostile will vary. Consequently, women have to display fewer aggressive acts to be labelled as hostile. Providing people with individuating information about a person (e.g., John/Joanne hit a dog) and then asking them to assess hostility levels using a subjective Likert scale would likely result in a contrast effect reflecting the internal norms described above; Joanne would be judged equally aggressive or more aggressive than John (Biernat, 2003).

Extending this discussion to the present findings, Biernat (2003)'s model possibly holds implications for the results obtained in the Neutral priming condition. Recall that after unscrambling sentences that tapped neither the concepts of social support and hostility, both hostile and non-hostile participants rated the offers of help described in the SSERT similarly. However, as participants made their assessments using a subjective Likert response scale, it is unclear which norms were used to arrive at their judgement. Given that hostile individuals describe conflictual interpersonal experiences and unsupportive relationships, one could assume that their expectation of help are set low. As such, although their rating the supportive behaviours is average and comparable to that of non-hostile individuals, it may be that for hostile people, average is actually very good. Similarly, for non-hostile individuals, the bar for a supportive behaviour is high, based on a greater preponderance of positive experiences with supportive others. Although their rating of supportive behaviours in the Neutral condition did

not differ from that of hostile individuals, it may be that in this case, an average rating is not very good. Given that the present study was not specifically designed to address this issue, whether the results obtained in the control condition are a reflection of shifting standards based on varying internal norms for supportive behaviours or a true reflection of what participants considered helpful is unclear. Although Biernat's model could explain the lack of differences between hostile and non-hostile individuals in the neutral condition, its applicability to the results obtained in the active priming conditions is limited. Indeed, the shifting standards model focuses on different internal representations of a trait based on category membership, and how the language we use to communicate these representations can mask stereotype knowledge. This model does not address how stereotypes or expectations about subgroups influence impression formation and judgement under more ambiguous circumstances, as acknowledged by Biernat (2003, p.1026). Furthermore, it does not tackle the role of priming and temporary activation of a trait concept on judgements. As such, this model does not adequately explain why individuals varying in self-reported trait hostility responded differently in judging supportive behaviours in distinct contexts.

Selective Accessibility in Social Comparison Model. Finally, Mussweiler (2003) has also articulated a model for contrast/assimilation effects. He proposed that judging a target necessarily involves a process of comparison. For instance, when evaluating a specific person's ability in sports, one essentially makes a statement about the target's athleticism relative to others belonging to the same group. Mussweiler suggests that whether a contrastive or assimilative assessment is made depends on the nature of the comparison process. He proposes that judges first make a quick and holistic assessment of similarity between the target and the standard of comparison. After this initial assessment, the judge is hypothesized to undergo a

process of hypothesis testing in order to verify the preliminary impression. However, Mussweiler postulates that the first holistic assessment determines the nature of the hypothesis testing process. If the target is seen as similar to the standard, then evidence consistent with this hypothesis is serially and selectively reviewed. The consequence is assimilation towards the standard. However, if the target is judged as dissimilar, then evidence confirming the dissimilarity is reviewed, thereby confirming the difference. The result is a contrastive evaluation away from the standard. For example, comparing one's athletic ability to Michael Jordan would lead to an initial assessment of dissimilarity between the target and the standard; consequently, evidence confirming the divergence would be selectively reviewed, and the result would be a contrast effect or low rating on the dimension of athleticism. However, if the standard of comparison is another fellow gym member, then hypothesis-testing for similarity would ensue, resulting in assimilation or a high rating on the same dimension. In contrast to the shifting standards model, Mussweiler's model does include the role that priming or temporary accessibility plays in social comparison. He notes that a complete review of relevant knowledge of the target and the standard during the comparison process is unlikely and inefficient; rather, judges selectively review evidence that is consistent with their initial hypothesis. As such, knowledge made temporarily accessible during this review process would carry over to the evaluation stage, as described above. In addition, priming can influence the type of information that is selectively examined by focusing the review process.

Assuming that in the hostile condition, priming influenced the comparison process by bringing to mind the 'hostility' trait concept, including examples of past aggressive behaviours enacted by social network members. One would expect that the supportive behaviours presented in the SSERT would be on the surface evaluated as dissimilar to events, people, and situations

associated with the hostility schema, especially for non-hostile individuals. As such, Mussweiler (2003)'s model would predict that the resulting judgement would be contrasted away from the standard temporarily elicited via priming. In other words, this model would predict that the supportive behaviours would be judged as *more* helpful, especially by non-hostile individuals. However, the opposite pattern was observed in the main analyses, as ratings revealed an assimilative rather than contrastive effect. Interestingly, the current results indicate that the type of relationship involved when rating offers of help might be an important moderator of these effects. Recall that examination of responses to individual vignettes revealed a pattern consistent with the main analyses, with the exception of the vignette involving an unfamiliar classmate (vignette # 4). When evaluating help from this person, hostile individuals found him/her *more* helpful with an active hostile schema relative to the control condition. This patterns of results is suggestive of a contrast effect, as hostile individuals biased their responses away from the trait concept activated via priming, consistent with Mussweiler's theory. In other words, priming could have brought to mind several instances of mean and unhelpful behaviour, which then lead to a judgement of dissimilarity when evaluating help from the unfamiliar classmate, which ultimately resulted in a contrast effect. Furthermore, it might be the case that knowledge about close friends and relatives, and the cognitive representation of these ties, also influenced participants' evaluation of the supportive behaviours, resulting in the observed pattern of findings. However, given that the analyses involving individual vignettes was exploratory, and that Mussweiler's theory can only account for a portion of the results, this model appears to have limited applicability in explaining the present findings.

Summary. Ratings of perceived helpfulness varied by experimental priming condition and hostility status, yet none of the existing theoretical models explaining contrast and

assimilation effects account for all of the current findings. Note, however, that the current study is innovative in its intent and that these explanatory models were not developed to aid with the interpretation of the specific research questions posed here. As such, it is not surprising that they are of limited help in explaining the current findings.

The above discussion highlights an important distinction between the present study and most studies on the effect of activation of schematic information on person perception. While this study explored the influence of both chronically and temporarily accessible trait concepts such as hostility on judgements of help from family and close friends, most person perception studies involve evaluating ambiguous strangers (e.g., 'Donald'). How hostility influences the perception of support from unfamiliar people is an important question, as such a process likely influences the development of new relationships. Indeed, the current data suggest that relative to their non-hostile counterparts, hostile people are more guarded, cautious, and less tolerant when assessing help from acquaintances, as indicated by their more negative evaluation of support in the Neutral priming condition. However, how hostility moderates the perception of support from current network members is of equal importance, if not greater given that the relationship between social support and physical health usually pertains to help from family and friends (or lack thereof). The current results point to the possibility that assessing support from established relationships involves different processes than evaluating help from strangers or acquaintances, but that current socio-cognitive models of person perception or impression formation cannot quite account for both. As such, it is possible that when judging help from strangers, people use a more global schema, but that support from friends and family are also influenced by cognitive representations of these specific relationships. This view is consistent with Baldwin (1992)'s theory that individuals have separate schemas for the self, close others, the relationship between

the self and significant others, and Mankoswki and Wyer (1997)'s view that people hold multiple schemas for the various roles taken in the support process (e.g., provider vs. recipient). In the social support literature, it has also been proposed that individuals develop both relationship-specific and general perceptions of social support (Pierce, Sarason, & Sarason, 1991). Studies on the relationship between cognitive hostility and perceived social support have consistently reported an inverse relationship, i.e., that high levels of trait hostility are associated with diminished sense of general support availability (e.g., Hart, 1999; Linden et al., 1993). However, few studies have assessed relationship-specific appraisals of support. Interestingly, those studies that have asked respondents to evaluate several sources of support have reported differential links to hostility. For instance, Houston and Kelly (1989) found that hostile women reported poorer perceived support from their spouses and employers, but not from their friends/relatives and co-workers. Matthews et al. (1996) found that cognitive hostility, as measured with the Cook-Medley Ho scale, was related to less perceived support from friends, but not from family. Consequently, both the present findings and the socio-cognitive and social support literatures suggest that the link between cognitive hostility and perceived social support is not constant, and is instead moderated by situational or contextual factors such as type of relationship or relationship quality (Lakey et al., 1996).

What to make of the initial hypotheses postulated earlier? Support for the hypothesis that activating a 'hostility' trait concept or schema would result in a more negative evaluation of offers of help was mixed. An active 'hostility' schema did not modify hostile participants' perception of the offers of support relative to the control condition, whereas it did for individuals low in hostility. The current results are consistent with the notion that hostile cognitions do colour people's perception of how helpful support providers are, but that this effect is limited to

individuals who do not report a high level of trait hostility. This would suggest that when the interpersonal context provides cues triggering the 'hostility' trait concept, non-hostile individuals adjust their perception accordingly and view their social environment more negatively. Could it be that non-hostile individuals are more sensitive to negative behaviour on the part of close family and friends, presumably because such behaviour is more unusual, and therefore incorporate it into their evaluation? In other words, for non-hostile people, hostility within the context of social support is a more novel experience, one that needs to be understood and explained. As such, individuals who normally do not mistrust offers of help or wonder about network members' intentions simply incorporate the active hostility schema by modifying their perception of support. The result is an offer of help that is judged to more negative, less useful, and unsupportive. On the other hand, an active 'hostility' trait concept may be more familiar experience for hostile individuals; consequently, such a cognitive context does not provide any new information in the determination of the helpfulness of supportive acts from family and friends. As such, priming hostility does not modify hostile individuals' perception of the usefulness of these offers of support.

The current study did not provide clear support for the hypotheses pertaining to the Support priming condition. It had been predicted that evaluations of perceived helpfulness would be more positive in the Support priming condition relative to the Hostility condition, and either more positive or negative in comparison to the Neutral group. With respect to the latter, it had been hypothesized that (1) hostile individuals might underemploy a support schema because of an overused, chronically accessible hostility schema, in which case temporarily activating the 'support' trait concept would result in a more positive evaluation of perceived helpfulness relative to the control group; or that (2) hostile individuals' support schema might hold more

negatively valenced information because of a history of conflicted and unsupportive relationships, in which case the ratings of the standardized offers of help would be more negative relative to the 'neutral' group. The present findings indicated that hostile individuals viewed offers of help as significantly less supportive with an active 'support' schema than with a 'hostile' one or none. This pattern of results lends credence to the hypothesis that the support schema of hostile individuals includes relatively more negative information nodes. In addition, the results in the Support priming condition are consistent with research noting that hostile individuals have a poorer perception of the support that is available to them if needed, i.e., perceived support (e.g., Smith and Frohm, 1985; Smith et al., 1988). Presumably, completing questionnaires measuring perceived support triggers the activation of a support schema, which then influences participants' responses to the questionnaire. This would not be seen as a biased or distorted perception of the social environment, but rather a reflection of the influence of early experiences in close relationships. As suggested earlier, conflicted, punitive, inconsistent and disrupted relationships with caregivers lead to non-secure attachment styles, which in turn have been hypothesized to influence the development of hostility and perceived social support (Lyons-Ruth, 1996; Pierce et al., 1997; Sarason et al., 1990b). Consequently, the results obtained in the Support priming condition can be construed as reflecting hostile participants' representation of the concept of social support: one that is negative, critical, and disparaging.

The pattern of results in the Hostility and Support priming conditions suggest a possible process contributing to a more negative trait concept of support. Recall that priming hostility rendered non-hostile participants' evaluation of support more negative, but did not alter that of hostile individuals. One can speculate that cues activating the concept of hostility in an interpersonal interaction would typically not involve a purely supportive exchange. However, if

temporary activation of that schema does not result in a more pejorative evaluation, then the likelihood that concepts of conflict, antagonism, etc… would be incorporated into the concept of 'support' is increased. As such, the result would be a 'support' trait concept that contains more negatively valenced information. Although this proposition is conjectural and not easily amenable to empirical investigation, it could provide a clue to the development of poor perceived support in hostile individuals.

Perceived support vs. support provision.

Although participants were asked to evaluate the offers of help and the support providers on several dimensions, results indicated that priming and personality influenced solely the perceived helpfulness judgements. The pattern of results for ratings of perceived sincerity was in a similar direction, but only approached significance. On the other hand, participants' evaluation of the likelihood they would offer the support provider help if needed in the future was unaffected by trait hostility or active schema. In fact, the variability in the responses to that question was considerable, especially in comparison to the other two dependent variables ($SD =$ 34.5, 26.8, and 23.1 for OFFER, GENUINE, and HELP, respectively). Research examining the determinants of social support provision in the context of close relationships is sparse. Dunkel-Schetter and Skokan (1990) have theorized several potential factors that could influence offering help or support. First, situational factors play a role, in that a high level of perceived stress, either on the part of the support provider or recipient, might be needed for a supportive exchange to occur. Second, characteristics of the relationship, such as intimacy, closeness, and history of supportive exchanges, can determine whether provision of help occurs. Third, the authors outlined features of the recipient that could influence the offering of support, including the perceived level of distress experienced, and the amount and type of coping the recipient has

already engaged in. Finally, characteristics of the support provider, including the experience of empathy, altruism, and the attribution of responsibility for the current problem, are hypothesized to play a role. In addition, it is conceivable that the support provider's sense of efficacy in his/her ability to offer appropriate help and the belief that support can have beneficial would also play a role in support provision. Although some of the above factors have a cognitive component (e.g., attributions about causation, belief in the helpfulness of support), most pertain to aspects of the relationship, the situation, or the specific people involved. As such, it is not surprising that neither trait hostility nor primed cognitive schema did not have had an impact on these ratings.

Limitations

Several limitations to the current study should be noted, mainly related to issues of generalizability. First, although the use of written vignettes allows for a degree of standardization appropriate for an experimental design, such a stimulus is clearly removed from direct interpersonal interactions which are typically the focus of supportive exchanges. Variables other than verbal statements likely influence judgements of supportiveness, including non-verbal signals (e.g., communication of warmth and understanding), the quality of the relationship, and the success of past support provision. However, it should be noted that the authors who developed the vignette questionnaire used in the present study replicated their results using videotaped supportive interactions, which suggests that the current results can at least generalize to more realistic representations of supportive exchanges (Lakey, Moineau, & Drew, 1992). Second, whether priming in the laboratory using paradigms such as the scrambled sentences task approximate activation of trait concepts and information processing in real life remains to be determined. Socio-cognitive processes are certainly more complex outside the

laboratory, as a multiplicity of cues vie for our attention, possibly resulting in variability of activated trait concepts when involved in supportive exchanges. Third, the present study provides additional evidence that the multifaceted nature of social support renders studying it an arduous task. One could argue that having participants rate familiar targets such as a parent or a friend muddied the results, as cognitive representations of close relationships likely influenced the pattern of findings. However, given that support is usually provided within the context of close relationships, rating known support providers enhances the generalizability of the findings, even though the interpretation of results becomes more complex. Finally, out of several dependent variables and vignettes, significant findings were found for only one dependent variable and two vignettes. Although this could be interpreted as suggesting that the socio-cognitive approach has limited applicability in exploring the relationship between hostility and social support, it should be noted that this study was intentionally designed to broadly sample support dimensions because of the preliminary and novel nature of this work. As such, future studies might be more focused in their design to explore more specifically some of the key variables identified in the current research.

Future Directions

In conclusion, the results of the present study argue against a generalized hostility bias in perceptions of social support, but instead are consistent with a complex process involving several factors. Cognitive variables include the type of trait concept used to process support-related information. The current findings also suggest that close relationships, and the cognitive representations of such ties, also modify perceptions of support, although the present study was not specifically designed to explore such an influence. Further research could explore the role of these moderator variables, perhaps by systematically varying the type of relationship in order to

replicate and expand the current pattern of findings. In addition, exploring the role of affect in judgments of social support would be valuable, given that there is some indication that anger and negative emotions can influence information processing (e.g., Lutz et al., 2003; Tiedens, 2001).

It was argued above that a better understanding of cognitive processes in the relationship between hostility and perceived social support was warranted in order to ensure that interventions designed to augment social resources would be maximally effective in individuals at risk for cardiovascular disease. The present study does indicate that there is clinical utility in targeting cognitions surrounding social support in hostile individuals, but it does not offer any easy solutions about how this should be approached. Further research might explore the specific kinds of thoughts hostile individuals have when receiving social support using thought-sampling techniques, in order to identify common themes and cognitions to be challenged within the context of an intervention. In addition, there is a need to better understand how hostility manifests itself in the interpersonal context, both at a cognitive and a behavioral level. For instance, several authors have developed coding schemes to study supportive exchanges in the laboratory (Cutrona, Hessling, & Suhr, 1997; Mickelson, Helgeson, & Weiner, 1995; Yankeelove, Barbee, Cunningham, & Druen, 1995), which can be used evaluate the influence of personality on interpersonal exchanges. It seems clear that the relationship between social support and hostility is complex and multi-faceted; yet a better understanding of the dynamics of this relationship can only improve our interventions designed to curb the risk associated with poor and conflict-ridden relationships.

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Figure Caption

Figure 1. Mean ratings of offers of help on the SSERT according to experimental priming condition and hostility level.

Figure 2. Mean ratings of offers of help on vignette #3 of the SSERT according to experimental priming condition and hostility level.

Figure 3. Mean ratings of offers of help on vignette #4 of the SSERT according to experimental priming condition and hostility level.

Figure 4. Mean ratings of offers of help on vignette #5 of the SSERT according to experimental priming condition and hostility level.

Low Hostility High Hostility

HELP

140

120

100

80

60

Hostility   Support   Neutral

Experimental Priming Condition

GENUINE

160

140

120

100

80

60

Hostility   Support   Neutral

Experimental Priming Condition

Experimental Priming Condition

Experimental Priming Condition

Experimental Priming Condition
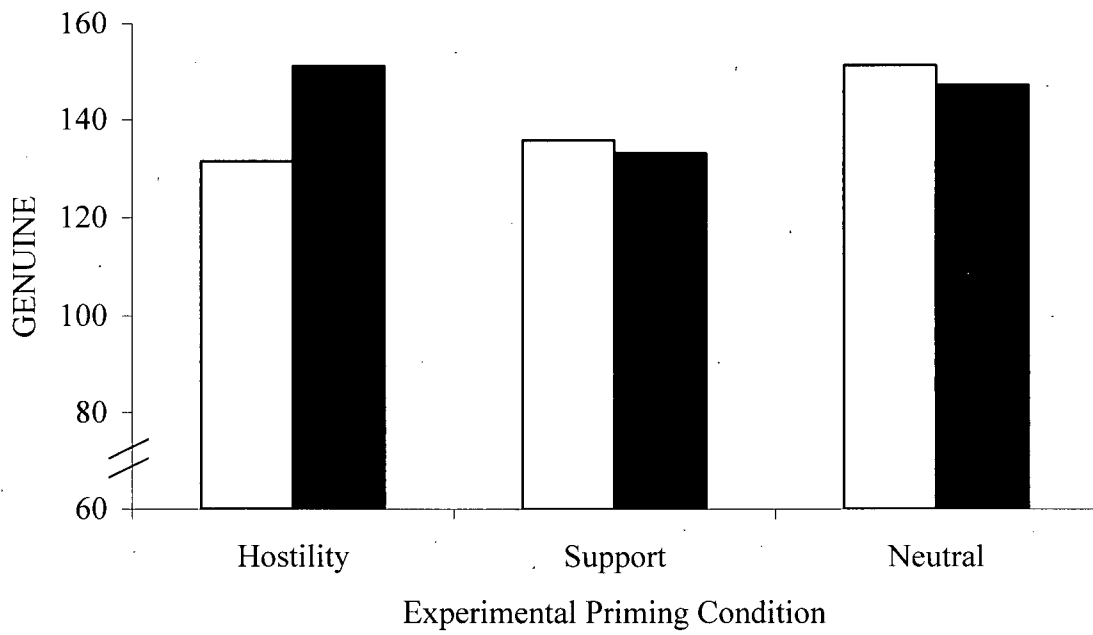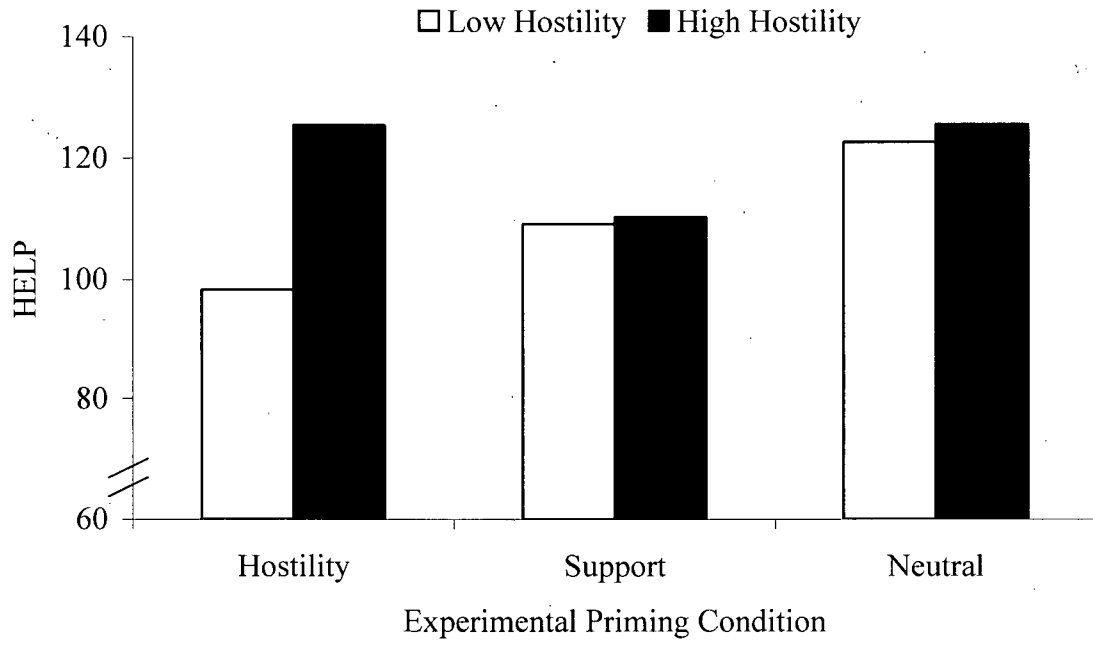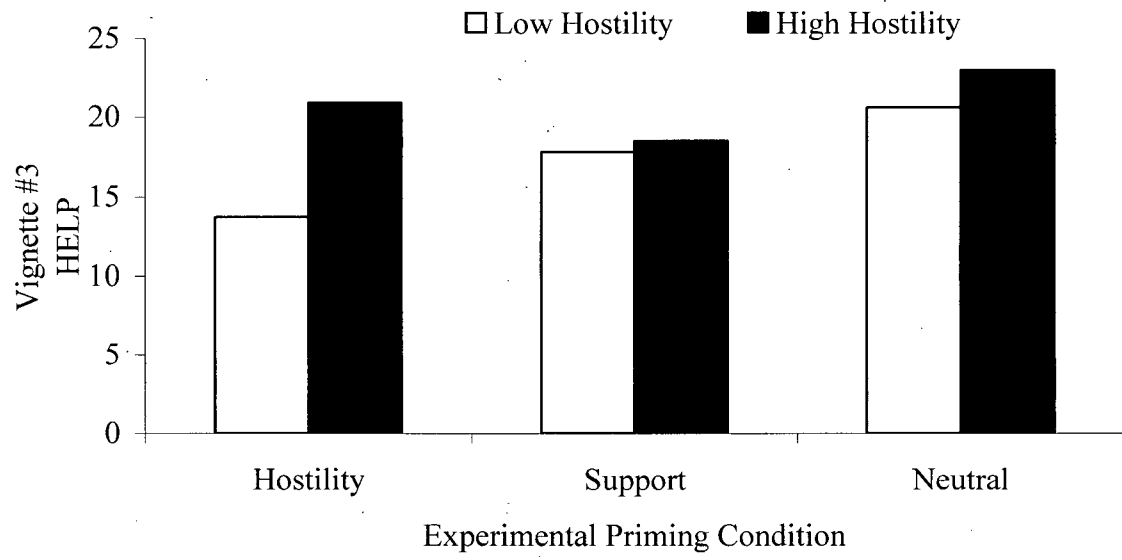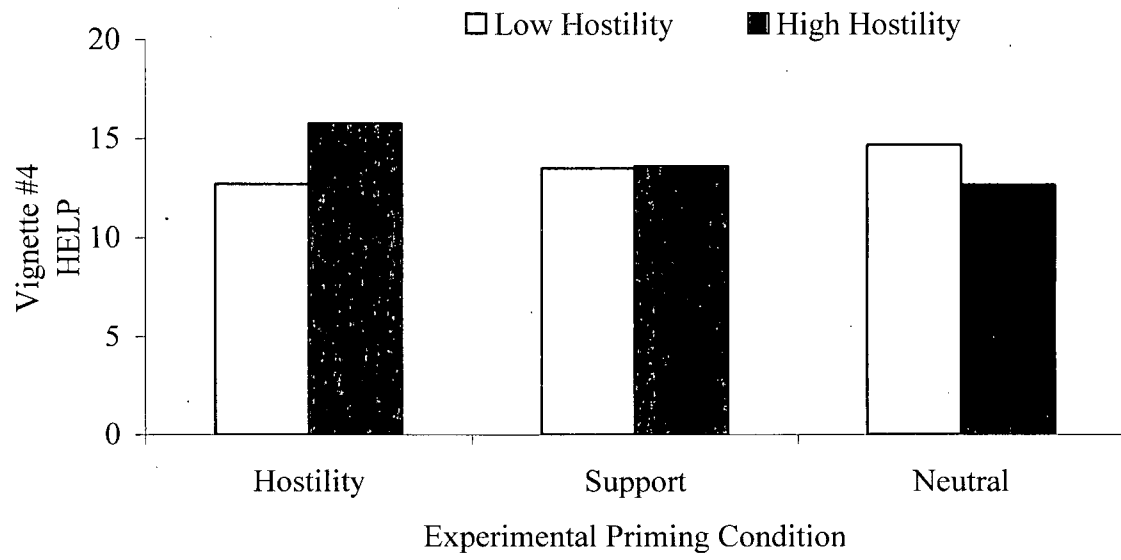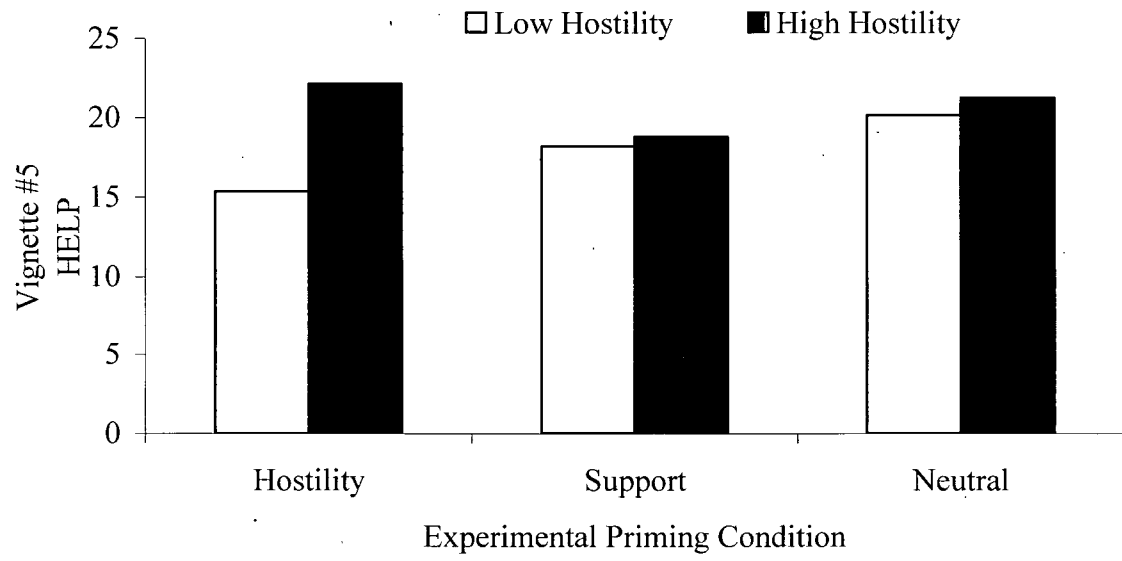
Table 1

Means, Standard Deviations, and Internal Consistency for the Aggression Questionnaire (AQ)

Subscales (N = 188)

AQ Subscale	Mean	SD	Internal Consistency
Physical Aggression	19.2	7.3	.80
Verbal Aggression	13.3	4.3	.76
Hostility	21.0	7.5	.79
Anger	16.4	5.3	.76

Note. Internal consistency computed with Cronbach's alpha.

Table 2

Intercorrelations among the Dependent Variables on the SSERT (N = 120)

Variable	1	2	3	4
1. HELP	--	.67	.61	.32
2. GENUINE	--	--	.81	.60
3. ASK	--	--	--	.69
4. OFFER	--	--	--	--

Note. All correlations are significant at α < .01.

Table 3

Changes in self-reported affect by experimental priming condition in effect size (d) metric (N = 120)

	Affect Ratings		
	Happiness	Anger	Sadness
Priming Condition			
Hostility	-.24	.11	-.06
Supportive	.15	-.12	-.08
Neutral	.00	.04	.07

81

Table 4

Means and Standard Deviations for Judgments of Perceived Helpfulness (HELP) and Sincerity

(GENUINE) as a Function of Hostility Status and Experimental Priming Condition (N=120)

		Priming Condition		
Variable		Hostility	Support	Neutral
HELP				
	Low Hostility	98.3 (19.1)$_a$	109.1 (26.8)$_b$	122.6 (22.1)$_b$
	High Hostility	125.3 (23.0)$_a$	110.3 (20.7)$_b$	125.5 (13.2)$_a$
GENUINE				
	Low Hostility	131.6 (28.6)	135.8 (30.7)	151.3 (29.0)
	High Hostility	151.1 (22.6)	133.2 (19.3)	147.2 (24.1)

Note. Values in parentheses represent standard deviations. Means in the same row that do not

share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison.

Table 5

Intercorrelations among the Dependent Variables and Debriefing Ratings of Familiarity and

Personalization (N = 120)

Variable	HELP	GENUINE	OFFER
1. Familiarity with situations	-.04	.01	-.16[t]
2. Imagine specific person	.11	.16[t]	.06
3. Imagine specific situation	.03	-.05	-.10

Note. [t] p < .10

Appendix A

BACKGROUND AND DEMOGRAPHIC INFORMATION

Date of Birth (month/day/year): _____   Age: _____

Gender: _____

Where were you born (country)? _____

If your birth country was not Canada, at what age did you move here? _____

Where was your mother born? _____

Where was your father born? _____

With which ethnic group(s) do you identify yourself (e.g., Canadian, Chinese)? _____

_____

Is English your first language (or if bilingual, one of your first languages)?   Yes   No

If no, at what age did you first learn English? _____

Using the following scale, how would you assess your English skills?

1	2	3	4	5	6	7	8	9

non-fluent   average   completely fluent
no English skills   like a native English speaker

Reading skills: _____   Oral comprehension skills: _____

Writing skills: _____   Overall English skills: _____

Pilot Study for Verbal Problem-Solving Task

We are interested in finding out how well the sentences below represent the following concepts: (1) aggressive/hostile, (2) helpful/supportive. Please rate each sentence on these dimensions by circling the number you think best describes the sentence.

1. Break his arm

1   2   3   4   5   6   7
Not at all hostile   Neutral   Very hostile

1   2   3   4   5   6   7
Not at all supportive   Neutral   Very supportive

2. He is sleeping

1   2   3   4   5   6   7
Not at all hostile   Neutral   Very hostile

1   2   3   4   5   6   7
Not at all supportive   Neutral   Very supportive

3. Help her out

1   2   3   4   5   6   7
Not at all hostile   Neutral   Very hostile

1   2   3   4   5   6   7
Not at all supportive   Neutral   Very supportive

4. They are reliable

1   2   3   4   5   6   7
Not at all hostile   Neutral   Very hostile

1   2   3   4   5   6   7
Not at all supportive   Neutral   Very supportive

5. Lock the door

1   2   3   4   5   6   7
Not at all hostile   Neutral   Very hostile

1   2   3   4   5   6   7
Not at all supportive   Neutral   Very supportive

6. Destroy the book

1   2   3   4   5   6   7
Not at all hostile   Neutral   Very hostile

1   2   3   4   5   6   7
Not at all supportive   Neutral   Very supportive

7. Listen to her

1   2   3   4   5   6   7
Not at all hostile   Neutral   Very hostile

1   2   3   4   5   6   7
Not at all supportive   Neutral   Very supportive

8. Dig a hole

1   2   3   4   5   6   7
Not at all hostile   Neutral   Very hostile

1   2   3   4   5   6   7
Not at all supportive   Neutral   Very supportive

9. Rip it apart

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all hostile | | | Neutral | | | Very hostile

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all supportive | | | Neutral | | | Very supportive

10. She blames me

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all hostile | | | Neutral | | | Very hostile

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all supportive | | | Neutral | | | Very supportive

11. They were hungry

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all hostile | | | Neutral | | | Very hostile

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all supportive | | | Neutral | | | Very supportive

12. Get more milk

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all hostile | | | Neutral | | | Very hostile

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all supportive | | | Neutral | | | Very supportive

13. Care for her

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all hostile | | | Neutral | | | Very hostile

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all supportive | | | Neutral | | | Very supportive

14. He is clever

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all hostile | | | Neutral | | | Very hostile

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all supportive | | | Neutral | | | Very supportive

15. Push him down

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all hostile | | | Neutral | | | Very hostile

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all supportive | | | Neutral | | | Very supportive

16. Bring her down

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all hostile | | | Neutral | | | Very hostile

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all supportive | | | Neutral | | | Very supportive

17. Paint the kitchen

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all hostile | | | Neutral | | | Very hostile

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all supportive | | | Neutral | | | Very supportive

18. Twist his arm

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all hostile | | | Neutral | | | Very hostile

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
Not at all supportive | | | Neutral | | | Very supportive

19. Work with them

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

20. Iron the clothes

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

21. She was critical

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

22. He raged about

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

23. It worked out

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

24. Give her praise

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

25. Let him fall

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

26. Watch the movie

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

27. Ready to help

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

28. She fell ill

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

29. Cheer him up

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

30. You disgust me

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

31. Share a joke

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

32. Hang out together

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

33. Sell the car

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

34. Let him cry

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

35. Hit his head

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

36. Tune the piano

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

37. Winter is here

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

38. He persecuted them

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

39. Give her grief

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

40. I trust her

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

41. Finish the work

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

42. Read the book

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

43. Argue with her

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

44. Knock him out

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

45. Take his side

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

46. Hit the nail

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

47. The lion attacked

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

48. Yell at him

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

49. Give her compliments

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

50. She is funny

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

51. Hurt his feelings

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

52. Do things together

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

53. Back her up

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

54. Connect with him

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

55. Don't give up

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

56. Throw it out

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

57. Bake the cake

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

58. Drink the coffee

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

59. Be friends forever

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

60. Defended me well

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

61. Take a break

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

62. Ruin his work

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

63. He provides assistance

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

64. Math is difficult

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

65. Come join us

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

66. Shatter the dish

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

67. Gave me relief

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

68. Fix her car

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

69. Chop the wood

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

70. Think of her

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

71. Can't trust them

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

72. Rake the leaves

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

73. Grab with force

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

74. He came prepared

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

75. She is laughing

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

76. Push him over

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

77. Find the key

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

78. Lift my spirits

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

79. Enjoy her company

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

80. Bring them harm

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

81. Make orange juice

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

82. Examine the evidence

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

83. Count on me

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

84. They went home

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

85. We all care

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

86. Loan her money

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

87. Wait and see

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

88. Give good advice

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

89. Break the window

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

90. Give her flowers

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

91. Drive him home

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

92. Wrap the present

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

93. Share a secret

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

94. Extinguish the fire

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

95. Take it all

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

96. Force it down

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

97. Applaud my accomplishments

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

98. Steal her lunch

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

99. We trust her

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

100. She earns wages

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

101. Talk about problems

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

102. Figure it out

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

103. Tear the cloth

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

104. Point out strengths

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

105. Break our promise

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

106. I can help

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

107. Pick it up

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

108. I studied hard

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

109. Swing the axe

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

110. Deceive his father

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

111. Others like me

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

112. Friends can help

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

113. Feed the dog

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

114. Use the tool

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

115. Help him move

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

116. Sew the clothes

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

117. He grows tomatoes

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

118. Hurt him badly

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

119. Rely on them

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

120. Know me well

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

121. Take the bus

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

122. She's at fault

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

123. Hold her back

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

124. Give her encouragement

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

125. I am liked

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

126. Drive the car

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

127. Wait for her

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

128. Blame the teacher

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

129. **Confide in me**

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

130. **Break the clock**

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

131. **Bring the papers**

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

132. **Crack the cup**

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

133. **I worked hard**

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

134. **Give him orders**

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

135. **Shoot the target**

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

136. **Take an exam**

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

137. **Make the tea**

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

138. **Sing a song**

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

139. Punish her now

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

140. Kick the dog

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

141. Crush the grapes

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

142. Take his money

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

143. She lies well

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

144. Pound the tacks

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

145. Pick out clothes

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

146. Play the flute

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

147. Fix the faucet

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

148. Provide her care

1	2	3	4	5	6	7
Not at all hostile			Neutral			Very hostile

1	2	3	4	5	6	7
Not at all supportive			Neutral			Very supportive

149.   Have fun together

	1	2	3	4	5	6	7
Not at all hostile   Neutral   Very hostile

1   2   3   4   5   6   7
Not at all supportive   Neutral   Very supportive

150.   She is trusworthy

1   2   3   4   5   6   7
Not at all hostile   Neutral   Very hostile

1   2   3   4   5   6   7
Not at all supportive   Neutral   Very supportive

Appendix C

1. door   the   fire   lock

2. arm   break   soon   the

3. book   the   quiet   destroy

4. apart   it   dinner   rip

5. leaves   the   funny   rake

6. she   silly   me   blames

7. down   cup   him   push

8. here   play   is   winter

9. flower   him   fall   let

10. shatter   dish   music   the

11. trust   can't   joy   them

12. dig	chief	hole	a
13. him	at	soap	yell
14. down	bring	her	dash
15. money	his	funny	steal
16. hard	I	computer	worked
17. grief	her	veil	gave
18. his	head	dine	hit
19. with	tip	her	argue
20. persecuted	private	them	he
21. lion	the	attacked	river
22. twist	shout	arm	his
23. all	it	take	sale

24.	clothes	out	fly	pick
25.	promise	break	out	our
26.	his	ruin	soft	work
27.	clothes	big	iron	the
28.	window	the	break	down
29.	knock	out	door	him
30.	it	pick	if	up
31.	over	be	him	push
32.	he	about	face	raged
33.	teacher	blame	apple	the
34.	steal	her	fall	lunch
35.	dog	the	kick	far

36. finish   sunny   work   the

37. punish   bake   now   her

38. down   town   it   force

39. father   his   deceive   sell

40. she   ill   fell   brisk

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Appendix D

1. door	the	fire	lock
2. out	strange	her	help
3. they	reliable	figure	are
4. to	giant	her	listen
5. muffins	the	play	flute
6. care	wet	for	her
7. with	doll	them	work
8. praise	done	give	her
9. up	down	him	cheer
10. I	her	joy	trust
11. it	pick	if	up

12. her	compliments	be	give
13. together	very	do	things
14. the	piano	tune	does
15. front	back	up	her
16. connect	poll	him	with
17. give	don't	funny	up
18. tap	forever	be	friends
19. the	clothes	ask	sew
20. help	small	to	ready
21. defended	well	jail	me
22. the	paint	kitchen	cat
23. provides	does	he	assistance

24.	my	puddle	lift	spirit
25.	on	me	have	count
26.	give	open	flowers	her
27.	hungry	ate	they	were
28.	problems	fill	talk	about
29.	point	strengths	soak	out
30.	help	silk	can	I
31.	trustworthy	she	have	is
32.	home	they	fulfill	went
33.	them	on	rely	buy
34.	the	read	yell	book
35.	her	care	foot	provide

36. the   find   key   upper

37. give   close   her   encouragement

38. in   me   figure   confide

39. move   help   poor   him

40. watch   ask   movie   the

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Appendix E

1. door   the   fire   lock

2. dig   chief   hole   a

3. hungry   ate   they   were

4. more   get   upper   milk

5. the   paint   kitchen   cat

6. clothes   big   iron   the

7. watch   ask   movie   the

8. she   ill   fell   brisk

9. sell   car   will   the

10. the   piano   tune   does

11. here   play   is   winter

12.	finish	sunny	work	the
13.	the	read	yell	book
14.	bake	cake	if	the
15.	coffee	the	drink	saddle
16.	math	play	difficult	is
17.	leaves	the	fall	rake
18.	the	find	key	upper
19.	juice	make	growing	orange
20.	home	they	fulfill	went
21.	the	examine	able	evidence
22.	I	sufficient	hard	studied
23.	see	wait	and	amusing

24.	present	the	sip	wrap
25.	she	believes	earns	wages
26.	it	pick	if	up
27.	feed	dog	well	the
28.	tool	use	the	does
29.	the	clothes	ask	sew
30.	grows	field	tomatoes	he
31.	bus	take	it	the
32.	clothes	out	fly	pick
33.	drive	car	hope	the
34.	take	house	exam	an
35.	brew	tea	rain	the

36.	muffins	the	play	flute
37.	sleeping	joy	he	is
38.	faucet	laugh	fix	the
39.	prepared	he	bowl	came
40.	hard	I	computer	worked

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Appendix F
SCENARIO #1

Imagine you've been feeling "down" lately, but you don't know why. It just seems as though nothing has been going right for the last few weeks. You decide to call a friend and ask him/her to meet you so that the two of you talk this over.

These are some things your friend might say to you when you call. Please rate each offer of help individually along the dimensions listed below:

1) "OK, come on over to my place, you can cry on my shoulder."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask this friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer this friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

2) "I have a cute friend I'd like you to meet. Maybe that will cheer you up."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask this friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer this friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

3) "Everyone gets this way sometimes. Don't take it too seriously."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask this friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer this friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

4) "Why don't we get together and see a movie tonight?"

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask this friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer this friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

5) "That's a shame you feel bad. You shouldn't feel that way. Other people have worse problems than you."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask this friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer this friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

....
....
....

SCENARIO #2

Your boy/girlfriend just broke up with you. You are feeling very upset and lonely, so you decide to call your Mom/Dad to talk things over.

The following are some things they might say to you when you call. Please rate each offer of help individually along the dimensions listed below:

1) "Cheer up. You'll find someone new."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your parent genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your parent for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your parent help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

....

2) "I never liked him/her anyway."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your parent genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your parent for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your parent help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

....

3) "Well, now you'll have more time to study."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your parent genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your parent for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your parent help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

4) "I understand that you miss him/her, but things happen for the best."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your parent genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your parent for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your parent help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

5) "You are too good for him/her, anyway."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your parent genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your parent for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your parent help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

SCENARIO #3

Imagine you have just told your best friend that the girl/guy you've been dating exclusively for the past three months has told you he/she wants to see other people as well as date you occasionally.

The following are some of the things that your best friend might say to you. Please rate each offer of help individually along the dimensions listed below:

1) "Don't worry about it. You're attractive and you'll find other dates. "

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your friend help in the future?	1 Not at all willing	2	3	4	5. Moderately willing	6	7 .	8	9 Very willing

....

2) "He/She is a jerk anyway."

How helpful would this offer be to you?	1 Not at all helpful	2.	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

....

3) "You'll get over it."

How helpful would this offer be to you?

1   2   3   4   5   6   7   8   9
Not at all helpful   Moderately helpful   Very helpful

How much do you think your friend genuinely wants to help you?

1   2   3   4   5   6   7   8   9
Not at all   Moderately   Very much so

How likely would you be to ask your friend for help again in the future?

1   2   3   4   5   6   7   8   9
Not at all likely   Moderately likely   Very likely

How willing would you be to offer your friend help in the future?

1   2   3   4   5   6   7   8   9
Not at all willing   Moderately willing   Very willing

4) "Do you think that he/she has already found someone else?"

How helpful would this offer be to you?

1   2   3   4   5   6   7   8   9
Not at all helpful   Moderately helpful   Very helpful

How much do you think your friend genuinely wants to help you?

1   2   3   4   5   6   7   8   9
Not at all   Moderately   Very much so

How likely would you be to ask your friend for help again in the future?

1   2   3   4   5   6   7   8   9
Not at all likely   Moderately likely   Very likely

How willing would you be to offer your friend help in the future?

1   2   3   4   5   6   7   8   9
Not at all willing   Moderately willing   Very willing

5) "He/She still likes you. Maybe you should try to be a little less possessive."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

SCENARIO #4

You have been sick, and you have had to miss two days of class. You would like to get the class notes you missed, but you're not very close friends with any of your classmates. You ask one classmate, who you have sat beside often in class, to see if you could borrow his/her notes.

The following are some responses that he/she might make at your request. Please rate each offer of help individually along the dimensions listed below:

1) "I can't lend you my notes. My handwriting is illegible."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your classmate genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your classmate for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your classmate help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

....

2) "I need my notes to study for tomorrow's quiz."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your classmate genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your classmate for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your classmate help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

3) "I can't lend them to you now, but if you will meet me at 2 o'clock you can copy them then."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your classmate genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your classmate for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your classmate help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

4) One classmate says "yes", but gets up and leaves immediately after class.

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your classmate genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your classmate for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your classmate help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

5) "Well, why weren't you in class, anyway?"

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your classmate genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your classmate for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your classmate help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

SCENARIO #5

Imagine that this is your first semester at this university. You have not made any close friends yet, and you find that you are spending too much time alone. Your older brother/sister also attends this school, so you ask him/her if you can do some things with him/her and his/her friends.

The following are some things that he/she might say to you in response to your request. Please rate each offer of help individually along the dimensions listed below:

1) "Can't find friends your own age?"

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your sibling genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your sibling for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your sibling help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

2) "Don't feel bad. Try to be a little more friendly, and you will have plenty of friends."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your sibling genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your sibling for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your sibling help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

3) "You need to learn how to solve your own problems."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your sibling genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your sibling for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your sibling help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

4) "You always were a little shy."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your sibling genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your sibling for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your sibling help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

5) "All freshmen go through this. Cheer up! "

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your sibling genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your sibling for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your sibling help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

Scenario #6

You have just moved into a new apartment that is five kilometres from campus. Your car broke down, you don't have a bike, and you must get to your evening class because there will be a major test tonight. You decide to call your friend and ask him/her to drive you to campus tonight.

The following are some things that your friend might say to you when you call. Please rate each offer of help individually along the dimensions listed below:

1) "I have to study. Can you call someone else?"

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

....

2) "I have to go to work, but you can borrow my bike."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

....

3) "I'm supposed to meet some people at the library. Let me get back to you after I check with them."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

4) "I can't give you a ride, but I know someone who is going to school tonight. Let me give you his/her number."

How helpful would this offer be to you?	1 Not at all helpful	2	3	4	5 Moderately helpful	6	7	8	9 Very helpful
How much do you think your friend genuinely wants to help you?	1 Not at all	2	3	4	5 Moderately	6	7	8	9 Very much so
How likely would you be to ask your friend for help again in the future?	1 Not at all likely	2	3	4	5 Moderately likely	6	7	8	9 Very likely
How willing would you be to offer your friend help in the future?	1 Not at all willing	2	3	4	5 Moderately willing	6	7	8	9 Very willing

5) "Why don't you walk to school? It's only a few kilometres."

How helpful would this offer be to you?

1   2   3   4   5   6   7   8   9
Not at all helpful   Moderately helpful   Very helpful

How much do you think your friend genuinely wants to help you?

1   2   3   4   5   6   7   8   9
Not at all   Moderately   Very much so

How likely would you be to ask your friend for help again in the future?

1   2   3   4   5   6   7   8   9
Not at all likely   Moderately likely   Very likely

How willing would you be to offer your friend help in the future?

1   2   3   4   5   6   7   8   9
Not at all willing   Moderately willing   Very willing

....
....
....

END

Appendix G

Please record your start time here:

Start time: _____

Please mark the following scale to indicate how you are feeling <u>RIGHT NOW</u>:

1. Feeling stressed:

not at all   very much so

2. Feeling upset:

not at all   very much so

3. Feeling angry:

not at all   very much so

4. Feeling happy:

not at all   very much so

5. Feeling sad:

not at all   very much so

Appendix H

Please record your finish time here:

Finish time: _____

Please mark the following scale to indicate how you are feeling <u>RIGHT NOW</u>:

6. Feeling stressed:

not at all   very much so

7. Feeling upset:

not at all   very much so

8. Feeling angry:

not at all   very much so

9. Feeling happy:

not at all   very much so

10. Feeling sad:

not at all   very much so

Please answer the following questions by circling your answer:

1. How difficult did you find the task?

1	2	3	4	5	6	7
very easy			moderately difficult			very difficult

2. How stressful did you find the task?

1	2	3	4	5	6	7
not at all stressful			moderately stressful			very stressful

3. How much physiological arousal did the task elicit (e.g., increased heart rate, feeling hot or perspiring)?

1	2	3	4	5	6	7
very low arousal			moderate arousal			very high arousal

Appendix I

DEBRIEFING FORM

Thank you very much for participating in our study. In this next part, I will give you a bit more information about our research. Before I do that, I'd like to ask you a few questions first about your experiences during the study.

1. In Study 2, you were to evaluate how helpful or unhelpful certain behaviours were during a stressful time like your car breaking down or breaking up with someone. (Show questionnaire to jog person's memory).

On a scale from 1 to 10, how much familiarity have you had with these experiences, 1 being "not at all familiar" and 10 being "very familiar" with the situations?

When you were answering those questions, on a scale from 1 to 10, to what extent were you imagining someone in particular saying these things to you? 1 being not at all and 10 being very much so.

When you were answering those questions, on a scale from 1 to 10, to what extent were you thinking back to situations that actually happened to you? 1 being not at all and 10 being very much so.

2. Thinking about all 3 studies, what did you think the general purpose of this study was?

3. Did you think that any of the tasks you did were related in any way?

     Circle: YES   NO

   a. (If yes) In what way were they related?

4. When you were completing Study 1, the Pilot study (Show questionnaire to jog memory), did you notice anything unusual about the words?

    Circle: YES   NO

    a. (If yes) What did you notice?

5. Did you notice a particular theme or pattern to the words that were in Study 1?

    Circle: YES   NO

    a. (If yes) What did you notice?

Great, thanks! Let me tell you a bit more about this research (see separate handout)