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Effect of severity versus probability of a negative
consequence on women's assertiveness

Lynn Andrews
University of Ottawa



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Abstract

Two studies were designed to test the hypothesis that the severity of an anticipated negative consequence deters women's assertiveness more than the probability of an anticipated consequence. The first study, involving a 2 X 2 factorial design, manipulated two levels of anticipated severity (low versus high) and two levels of anticipated probability (low versus high). The type of response studied involved the refusal of an unreasonable request. Female undergraduate psychology students (N=198) were randomly assigned to view one of four videotapes reflecting these conditions. After viewing the videotapes, participants were asked to rate their intentions to act assertively (BI) and to rate other variables which could potentially be coeffects or mediators of BI (e.g., anxiety, competence). In study 2, 151 female psychology students completed a survey in which they were required to imagine their own anticipated negative consequences, severities, and probabilities for five vignettes involving the refusal of an unreasonable request. Participants in study 2 completed questions about similar variables to study 1. Personality variables, including social desirability, assertiveness (for studies 1 and 2), and anxiety (for study 2) were measured to see if they moderated the results. Path models showed that in all cases, severity and probability affected BI, either directly or indirectly through distress/low self-efficacy or unfairness/need for

support. The hypothesis was mostly confirmed in that in almost all cases, severity contributed more variance to BI than did probability. All personality factors moderated the results some of the time. Support was found for both the rational choice and cognitive distortion models of assertiveness. The results were discussed in reference to Beck et al.'s (1985) theory of social anxiety and implications for assertiveness training.

Chapter 1

Introduction

Assertive behavior has been defined as "that type of interpersonal behavior in which a person stands up for her (his) legitimate rights in such a way that the rights of others are not violated. Assertive behavior is an honest, direct and appropriate expression of one's feelings, beliefs and opinions." (Jakubowski-Spector, 1973, p. 76). The increase in popularity of assertiveness training has been related to the emergence of the women's movement. Women have been socialized to be passive, nurturant, submissive, and feelings-oriented, while men have been socialized to be assertive, task-oriented, and logical (MacDonald, 1982). Feminists hoped that if women were taught to be assertive, they would develop their own power base to confront the male establishment and redress societal inequities. A number of indicators, such as the number of women enrolled in assertiveness training during the 1970's, and the number of articles on assertiveness published in popular women's magazines, reflects the value of assertiveness training from the perspective of women (Goldstein-Fodor & Epstein, 1983).

Research suggests that acting assertively is associated with better mental health and that acting passively is associated with a number of undersirable psychological states. The undesirable effects associated with passivity include negative self-evaluation, anxiety, and negative self-

statements (Alden & Cappe, 1981; Schwartz & Gottman, 1976). On the other hand, social skills have been linked to desirable effects such as being able to obtain social support, a variable which in turn has been linked with physical and mental health (Sarason, Sarason, Hacker, & Basham, 1985). A patient's level of social competence has been shown to be a better predictor of post-hospital adjustment than psychiatric diagnosis or type of treatment received (Zigler & Phillips, 1960, 1961). The ability to be assertive in one's marriage and to have that assertiveness accepted by one's spouse has been related to marital adjustment (Smolen, Spiegel, Bakker-Rab dau, Bakker, & Marten, 1985).

Assertiveness training has been used to help women who have problems with depression (Barbaree & Davis, 1984; Becker, Heimberg, & Bellack, 1987; Heiby, 1986; Miller, Norman, & Keitner, 1989; Reidel, Fenwick, & Jillings, 1986), agoraphobia (Emmelkamp, Hout, & de Vries, 1983), anorgasmia (Kuriansky, Sharpe & O'Connor, 1982), being an offender (McGuire & Priestley, 1985; Calabrese & Hawkins, 1988), drug abuse (Hawkins, Catalano, Gillmor, & Wells, 1989), schizophrenia (Linehan & Egan, 1979), chronic mental illness (Monti, Coriveau, & Curran, 1982), shyness and social avoidance (Cappe & Alden, 1986; Alden & Cappe, 1988), and marital distress (Epstein, Degiovanni, & Jayne-Lazarus, 1978; Epstein, 1981). "Normal" populations with specific social skills deficits have also been helped through assertiveness

training, such as students who have difficulty making and refusing requests (Piccinin, Chislett, & McCarrey, 1987), students experiencing anger problems (Deffenbacher, 1988), and elderly people who have difficulty maintaining social contacts (Angels & Poser, 1987; Fernandez-Ballesteros, Diaz, Gonzalez, & Souto, 1988).

Thus, there are at least three major reasons for wanting to give women more options with respect to being assertive: (1) women would like to stand up for their rights, and would like to take their place in society as equals to men; (2) women would like to be more effective on a personal level; and (3) assertiveness is associated with better mental health, while passivity is associated with mental health problems. While trainers would like women to be more assertive, and trainers spend much time and money teaching women to be assertive, there are many indications that such training is not always as successful as trainers would like. Women who have been taught to be assertive in the clinic setting often do not change their behavior in the real world, a problem referred to in the literature as "generalization" or "transfer of training".

1. Generalization problems and negative consequences

When therapists teach women to be assertive in the clinic setting, their intention is for women to use these skills in their natural environment. Two types of generalization directly or indirectly relate to this issue of applying

social skills learned in a clinic setting to the natural environment. The first type of generalization is maintenance of treatment effects across time. It does not necessarily follow that if women perform assertively in a clinic setting, they will subsequently use these skills environment after a period of time has elapsed. However, if treatment effects are not maintained over time, then the social skills learned during treatment are not being used in the natural environment. The second type of generalization has to do with applying skills that were learned in a clinic to the natural environment. In generalization of training to the natural environment, researchers directly or indirectly measure assertive responding in the natural setting.

While some assertiveness studies have shown generalization across time (Deffenbacher, 1988; Giesen, 1988; Van Dam-Baggen & Kraaimaat, 1986), other studies have shown mixed or negative results. For example, mixed results were found in a follow-up conducted by Piccinin, Chislett, and McCarrey (1987) for students who had received assertiveness training. Performance on a behavioral role-play test conducted in a lab was maintained at a 2-year follow-up. However, a global verbal-request rating improved at a 6-week follow-up but declined at a 2-year follow-up. Likewise, Fernandez-Ballesteros et al. (1988) found mixed effects at follow-up for a group of institutionalized elderly people who had received social skills training. Participants in social skills training showed improvements in objective behavioral

ratings and levels of depression, but did not differ from a control group on their Rathus Assertion Schedule scores. Mixed results have also been found by Muehlenhard, Baldwin, Bourg, and Piper (1988), Schefft and Kanfer (1987), Riedel et al. (1986), Cappe and Alden (1986), Hawkins et al., (1989) and Fisher and Carstensen (1990).

The more important generalization issue pertains to generalization to the natural environment, since maintaining an effect over time does not necessarily guarantee transfer to the natural environment. While some studies have demonstrated that generalization to the natural environment does occur (e.g., Calabrese & Hawkins, 1988; Foxx, McMorrow, Bittle & Fenlon, 1985; Gutride, Goldstein, Hunter, Carrol, Clark et al., 1974; and Piccinin et al., 1987), other studies have found mixed or negative results. McFall and Twentyman (1973) trained clients to refuse an unreasonable request. In three out of four experiments, these researchers found no differences between treated and control groups for an in vivo telephone solicitation task. Fisher and Carstensen (1990) found that one elderly resident who received social skills training increased conversational skills on the ward, while a second elderly resident who received social skills training did not show such generalization. Muehlenhard et al. (1988) found that shy women who received social skills training in heterosexual skills showed increased self-reported dates compared to controls. However, there was no difference between treated and control shy women on a behavioral role-play test. Lopez,

Hoyer, Goldstein, Gershaw, and Sprafken (1980) looked at overlearning as a possible means to enhance generalization effects for elderly, institutionalized women. The targeted skill was starting a conversation. There was no generalization to on-ward behavior whether the skill was overlearned or not. Negative or mixed results have also been reported by Alden and Cappe (1988), Derry and Stone (1979), Hersen, Eisler, and Miller (1974) Monti et al. (1982), and Shepherd (1977).

Looking at these generalization studies as a whole, it appears that at least some of the time, generalization to the natural environment does not occur. Moreover, there are a number of methodological issues which point to the possibility that generalization difficulties are more frequent than the studies reviewed here might suggest. First of all, few studies actually assessed generalization to the natural environment due to difficulties in obtaining the data, such as time and financial burdens imposed by following-up clients who have moved over large geographical areas (Hollin & Henderson, 1984; Scott, Himadi, and Keane, 1983). If more generalization studies were done, more difficulties in using social skills in the natural environment might be found. Secondly, when generalization to the natural environment was found, the type of data used was often self-report. There have been many studies suggesting that self-report and behavioral measures of assertion do not always concur (e.g., Alden & Cappe, 1988; Muehlenhard et

al., 1988). Hence, one wonders if the self-reports about generalization to the natural environment are valid. Also, researchers can only contrive a certain number of situations on which they can collect objective data. Whether subjects act assertively when an unreasonable request is made over the telephone may or may not relate to why the subjects came for treatment, or how subjects would behave with significant others.

Most assertiveness studies do not report drop-out rates, or the reasons for dropping out (Goldstein-Fodor & Epstein, 1983). When these statistics are reported, they can be quite high. For example, Giesen (1988) reported close to a 50% drop-out rate, and Monti et al. (1982) reported about a 30% drop-out rate. Perhaps these subjects dropped out because they could not see themselves carrying out assertive behaviors in their natural settings.

When published studies do report that generalization occurred, the possibility remains that generalization problems were still present for some subjects. Emmons and Alberti (1983) pointed out that published results represent group averages, not individual clients. What this means in practice is that research may show that generalization to the natural environment occurred, but there can still be individual clients who did not change their behavior in the natural environment. Welburn (1989) underlined this point in his study. He was able to define a group of high- and low-generalization clients, and to delineate differences between

the two groups. Welburn (1989) found that high-generalization clients had higher self-efficacy perceptions and higher expectations of positive consequences. Self-efficacy refers to the degree to which individuals perceive themselves to be competent and have personal mastery in the performance of specific behaviors (Welburn, 1989). The Welburn (1989) study suggested one possible reason why women do not act assertively in their natural environment, namely that they expect negative consequences to befall them if they act assertively. Studies by Arisohn, Bruch, and Heimberg (1988), Gormally, Sipps, Raphael, Edwin & Varvel-Wald (1981), Robinson and Calhoun (1984), and Zollo, Heimberg, and Becker (1985) were also consistent with Welburn's (1989) findings, in that non-assertive women in these studies expected more negative consequences than did assertive women.

Hence, these generalization studies point out that social skills trained in a clinic setting do not always transfer to the natural environment. Studies by Welburn (1989) and others suggest one possible reason why social skills do not generalize to the natural environment: Women expect to receive negative consequences for acting assertively. If trainers wish to encourage women to act assertively, then this perception of negative consequences occurring, and indeed the possibility of negative consequences actually occurring, is an important issue to address. The next section will consider how trainers may lead women to expect positive consequences from assertion, but how negative consequences can result from assertive behavior.

2. Hoping for the best, but receiving the worst

Assertiveness training, at least as initially taught, often suggested that positive outcomes were likely to occur as the result of being assertive. Linehan and Egan (1979) suggested that most definitions of "assertive" imply that assertive behavior will be effective in producing or maintaining positive consequences, while avoiding negative ones. For example, Alberti and Emmons (1974) defined assertion as "behavior which enables a person to act in his own best interest" (p. 2). Heimberg, Montgomery, Madsen, and Heimberg (1977) defined assertive behavior as behavior which maximizes the reinforcement value of social interactions. Jakubowski-Spector (1973) suggested that assertion would elicit respect from others; aggression would elicit anger, hurt, and humiliation; and nonassertion would elicit disgust and pity. In his social skills training model, Kazdin (1974) asked participants to imagine themselves behaving assertively and receiving a positive consequence. Delamater and McNamara (1987) felt that the assumption that assertive behavior led to mostly positive consequences was a guiding assumption of the assertiveness movement, and that this assumption remained largely untested prior to 1979.

Since the sex-role socialization literature suggests that women are more passive and men are more assertive, the possibility exists that women who act assertively will be judged negatively for their behavior, because they are

violating expectations of how women "should" behave. One of the first studies to explore this issue was conducted by Kelly, Kern, Kirkley, Patterson, and Keane (1980). These researchers made a series of videotapes depicting a male or female stimulus model behaving either assertively or unassertively during four interactions similar to those used in assertiveness training. Subjects then evaluated the stimulus models on a number of interpersonal attraction dimensions which were factor analyzed into clusters of common themes. Assertive models were viewed as being competent, but not likeable. Also, assertive behavior in women was devalued more than assertive behavior in men. The finding that assertive women are viewed as competent, but not likeable, has often been replicated (e.g. Lowe & Storm, 1986; St. Lawrence, Hansen, Cutts, Tisdelle, & Irish, 1985; Zollo et al., 1985), although not always (Levin & Gross, 1987).

Other research has supported the idea that women's assertiveness is devalued but has refined the premise by specifying under what conditions this effect is observed. Kern, Cavell, and Beck (1985) found that women's assertiveness was devalued by men with conservative, traditional attitudes towards women, but not by men with liberal attitudes towards women. Gormally (1982) compared participants' ratings of their own live interactions with an assertive or passive confederate to ratings by others who heard the interaction on tape, but did not take part in it. Participants who actually interacted with the confederate gave higher ratings for passivity than did the outside

observers. Other factors that may moderate the social evaluation of assertiveness include whether the type of assertion used is basic or empathic assertion (Wildman & Clementz, 1986; Zollo, Heimberg, & Becker, 1985) and the response class studied (Schroeder, Rakos, & Moe, 1983).

There are also studies which suggest that more concrete negative consequences may be experienced by women who act assertively. Cianni-Surridge and Horan (1983) explored the question of whether assertiveness in the context of looking for a job could lead to negative consequences. These researchers made a list of assertive behaviors recommended in the job-seeking literature. They mailed their list of behaviors to potential employers of university graduates and asked the employers to rate how likely they would be to hire a student who displayed the behaviors. Half of the potential employers were asked to consider a female student, and half were asked to consider a male student. There were no differences in employability related to the sex of the student. However, the display of some assertive behaviors related to high likelihood of being hired (e.g., student calls ahead of time to get information about the company), while the display of other behaviors related to low likelihood of being hired (e.g., student calls to rearrange the time of an interview due to a scheduling conflict). The ratings of the assertive behaviors also varied according to company size, with more risk attached to assertiveness in larger companies where there was more competition for jobs.

Another study suggested that recipients of assertive behavior were more likely to acquiesce to a man's rather than a woman's assertiveness. Eisler, Hersen, Miller, and Blanchard (1975) investigated how male psychiatric patients responded to a male or female confederate making a request in a role-playing situation. The male patients were more likely to acquiesce to a male than a female.

Fishman (1975), a sociologist, was interested in male and female interaction patterns which reflected power and control in interpersonal relationships. Fishman (1975) asked married couples to leave a tape recorder running for 4 hours a day in their own homes. She then analyzed the tapes for different interaction patterns. She found that men made twice as many statements as women and almost always got a response. In contrast, women seldom got a response when they made a statement. In one case, the husband and wife were both writing their vitas. When the wife talked about her vita, the husband rarely responded. He turned the attention back to his vita, and his wife commented on it.

Fishman (1975) also found that men and women differed in their use of minimal responses, such as "un-huh" and "yeah". Men often gave one minimal response after the wife made a lengthy speech with several points in it. In contrast, women gave many minimal responses interspersed through the conversation at appropriate times, such as when the husband paused or took a breath. Women's minimal responses seemed to flow with the conversation, a pattern which is referred to as back channels. According to Fishman (1975), the impression

created was that husbands used minimal responses as lazy ways of taking a turn to speak, and were not interested in what their wives had to say. In contrast, the wives appeared to be interested and closely attending to what their husbands had to say. A further finding was that men's conversational topics tended to be carried on, while women's conversational topics tended to be dropped. Fishman's (1975) findings suggest that men are reinforced for participating in a conversation between spouses, while women are ignored.

Kollock, Blumstein, and Schwartz (1985) extended the findings of Fishman (1975). Kollock et al. (1985) wanted to sort out the effects of sex and power. In addition to heterosexual couples, they studied homosexual couples, where power would not be related to sex. They used tests other than conversational patterns to determine who had the power in the relationship, and then studied the conversational patterns of the partners. The most powerful partner tended to interrupt more than the least powerful partner, and the least powerful partner tended to use back channels more. The implication is that a passive women with less power who acts assertively in her marriage may well be discounted by her partner.

Several studies investigated how a marriage changes as a result of the woman in the marriage receiving assertiveness training. As part of her longitudinal study on women in traditional marriages who became assertive, Giesen (1988) examined the reactions of spouses and people at work to the women's assertiveness. All 11 women in the study reported

both positive and negative reactions to their assertion. Negative reactions included husbands refusing to negotiate changes in household chores, and husbands and bosses disregarding the women's input into discussions. Since there was almost a 50% drop-out rate in this study, one also wonders if the women who dropped out received even more negative reactions to their assertiveness. Smolen et al. (1985) examined the relationship between spouse-specific assertiveness and marital adjustment. Spouse-specific assertiveness was measured by asking subjects to indicate how they would respond to 11 commonly occurring marital conflict situations. Smolen et al. (1985) found that the level of assertion displayed by a wife in a marriage was related to perceived outcome effectiveness. The implication is that some women felt that negative consequences would occur if they act assertively in their marriage, and therefore they acted passively. Muchowski and Valle (1977) looked at the husband's rating of the quality of the marital relationship after the wife took assertiveness training. Some husbands reported that the marital relationship had improved and others reported it had become worse after their wives received assertiveness training. Hence, in some cases women's assertiveness was not positively received.

In summary, a women who acts assertively may be judged negatively, may have her views ignored or discounted, or may not be offered a job. If negative consequences result from acting assertively, and if women learn and expect that

negative consequences will occur to them, then there is a good chance that women will not behave assertively. Such an outcome would be consistent with an avoidance-learning paradigm. A woman behaves assertively and is punished. Situations which call for assertiveness then elicit uncomfortable and anxious feelings. The woman avoids these uncomfortable feelings by acting passively. She comes to expect punishment if she should act assertively, and she never finds out that sometimes punishment does not occur, because she does not act assertively. Bandura's (1986) theory suggests that people do not act assertively if they expect a negative outcome. This theory was supported by the work of Welburn (1989). Because a primary goal of assertiveness training is to get women to use their assertiveness skills in the natural environment, it is important to understand more about the role that expected negative consequences play in deterring assertive behavior.

3. Anticipated severity and probability of a negative consequence as factors in deterring assertiveness

When we imagine ourselves in the place of the woman who is making a decision about acting assertively, we can easily imagine that she may take into consideration the probability and/or severity of a possible negative consequence for acting assertively. Social problem-solving or decision-making models consider the cognitive processes that a woman goes through in deciding how to act in a situation which might

require an assertive response. A closer look at these models suggests that some models emphasize both the severity and probability of a negative consequence, while other models emphasize only one of these factors.

Researchers who emphasized the importance of probability include Fiedler and Beach (1978) and Kuperminc and Heimberg (1983). Fiedler and Beach began their research using a model of decision making that employed severity and probability concepts, but concluded that probability was the variable which differentiated assertive and non-assertive people. They were influenced by an often-quoted formula by Edwards (1961) used to describe the relationship between severity and probability and behavioral intentions as:

$$\text{behavioral intentions} = \text{probability} \times \text{severity (of an anticipated negative consequence)}$$

This model is called the subjective expected utility (SEU) model. Fiedler and Beach (1978) applied the SEU model to assertiveness to determine if nonassertive subjects have different perceptions of probability and severity than assertive subjects. High- and low-assertive subjects were asked to rate a list of possible consequences as positive or negative on a 7-point scale and were also asked to rate the probability that these consequences would actually occur. High- and low-assertive subjects did not differ in their ratings of the utility (severity) of the consequences.

However, low-assertive subjects viewed the negative consequences as more probable and the positive consequences as less probable than did the high-assertive subjects. Hence, these researchers emphasized the importance of probability.

The Fiedler and Beach (1978) research was interpreted by Lucock and Salkovskis (1988) as demonstrating that the difference between high- and low-assertive subjects was the anticipated probability of a negative consequence, not the severity. These researchers compared a group of socially anxious patients to a control group of undergraduate law students. Both groups completed a Subjective Probability (Social) Scale, which consisted of 24 items describing hypothetical events. Half of the items were social (e.g., having a serious disagreement with a friend in the next 6 months) and half were non-social (e.g., the weather will be fine on my vacation). Subjects were asked to judge the likelihood of these events, which were assumed to be equally probable in the two groups. Half of the items referred to positive events; half referred to negative events. The socially anxious subjects indicated higher likelihood of negative social events and lower likelihood of positive social events compared to controls. There were no differences between the two groups in non-social items. Following a treatment which involved cognitive restructuring, no differences were found between the socially anxious and the control group in the ratings of probability.

Other theorists have emphasized the importance of probability rather than severity in differentiating high-

versus low-assertive people. Lohr et al. (1984), interpreting the Fiedler and Beach (1978) study, suggested that it is "the expectation of the relative probability of a desirable versus an undesirable outcome (not the evaluation of how good or bad the outcome would be) that predicts assertive behavior" (p. 288). Beck, Emery, and Greenberg (1985) described one type of cognitive distortion which occurs in social anxiety as a distortion of the likelihood of threatening social events occurring regardless of the person's performance.

Two models of assertiveness which take severity and probability into account are McFall's (1982) model of social skills and D'Zurilla and Goldfried's (1971) decision-making model. In McFall's (1982) model, a person decodes incoming stimuli, then searches for response alternatives and chooses a response based upon perceived task demands and the likelihood that a given choice will lead to a positive outcome. Inappropriate utility evaluation may result in social incompetence. McFall (1982) is somewhat vague about what he means by "utility evaluation" and how to assess it, although he implies that it is related to anticipating outcomes (severity) and their probabilities.

D'Zurilla and Goldfried (1971) described a decision-making model with the following steps: (1) general orientation or "set", (2) problem definition and formulation, (3) generation of alternatives, (4) decision making, and (5) verification. The fourth step is based upon assigning a

utility (severity) and probability value to each alternative, with the best option being the one which maximizes gains and minimizes losses. D'Zurilla and Nezu (1982) applied this model to social skills, and Cianni-Surridge and Horan (1983) used this model as background for their study on the relative merits of assertiveness versus passivity in increasing the chances of being hired for a job.

Other researchers have emphasized the importance of both severity and probability. Kuperminc and Heimberg (1983) felt that Fiedler and Beach (1978) may not have found differences in the utility ratings due to methodological problems in their research design. These methodological problems included (1) presenting a standard set of consequences after each scene instead of tailoring the consequences to the specific scene; and (2) having subjects rate probability and behavioral intentions after each scene, but doing only one utility rating at the end of the study. Kuperminc and Heimberg (1983) replicated Fiedler and Beach's (1978) study, but made changes to Fiedler and Beach's (1978) methodology. Like Fiedler and Beach (1978), Kuperminc and Heimberg (1983) found that high- and low-assertive participants differed in their probability ratings. However, in contrast to Fiedler and Beach (1978), Kuperminc and Heimberg (1983) found differences in the desirability of outcomes. High-assertive subjects rated the negative consequences of complying with requests as more undesirable and the positive consequences of refusing requests as more desirable than did low-assertive subjects.

In contrast to the approaches reviewed above, other problem-solving approaches have emphasized the severity of negative consequences. Some of these approaches do not consider probability at all. Robinson and Calhoun (1984) wanted to compare problem-solving approaches in high- versus low-assertive subjects. They asked their female subjects to view a scene in which a male asserted himself and received an initial response which was either pleasant or neutral. Subjects were then asked what they would say and do next, and what the recipient of assertiveness was likely to say, do, and feel. No mention was made of attaching probabilities. There were no differences between the high- and low-assertive subjects on the accuracy in perception of the initial response, or the likely effectiveness, or possible response alternatives. However, the researchers felt that unassertive subjects were less accurate in predicting the other's next response.

Likewise, Liberman et al. (1986) and Wallace (1982) used only a severity dimension in teaching problem-solving skills to psychiatrically disabled adults. Participants were taught to generate multiple ways to handle a difficult social situation. Participants were then asked to think about what could occur if each option were selected. Participants were to select the best option based on the available information, but there was no assigning of probabilities to possible outcomes.

Spivack, Platt, and Shure (1976) started out with the

premise that interpersonal problem-solving skills were related to adjustment. However, none of the problem-solving skills that they delineated, such as considering the other person's point of view or considering possible consequences, had a probability dimension attached to it. Of particular interest are two types of problem-solving skills that describe what a normal, effective person does. The first one is means-end analysis, which involves the ability to orient oneself to and conceptualize the step-by-step means of moving towards a goal. It contains a number of elements, including considering obstacles towards a goal and how to get around them. For example, if Mary wants to make more friends at school, she might ask Jane home for dinner. She would anticipate how Jane might react (e.g., saying no, giving off non-verbal cues that she dislikes Mary.) Mary would consider how to react and what to do if these things were to happen (e.g., opening a discussion about the problem, asking someone else home for dinner). A second type of thinking delineated by Spivack et al. (1976) is similar to means-end thinking, and is called consequential thinking. This involves considering the pros and cons of an action (i.e., what consequences might happen) before taking the action. None of these problem-solving skills involve the consideration of probability.

Spivack et al. (1976) cited a number of studies suggesting that normal groups tend to use these kinds of problem-solving strategies, whereas patient groups do not. Bruch (1981) applied these ideas to high- versus low-assertive

participants but found no difference in means-ends thinking between the groups. However, this finding may be related to the way in which means-ends thinking was assessed. In assessing means-ends thinking, participants are typically given the beginning of a story in which a character has a need, and an ending in which that need is fulfilled. For example, the beginning might involve Mr. Jones moving into a new neighbourhood where he has no friends, to an ending where he has friends. Participants are required to tell how Mr. Jones got there. That high- and low-assertive participants can describe how someone else achieved their social goals does not necessarily mean that they could do these same steps for themselves.

Kern et al. (1985) also placed more importance on dealing with the severity of a consequence in the discussion section of their study on the perceptions of women's assertiveness. These researchers found that people with conservative attitudes towards women devalued women's assertiveness, whereas people with liberal attitudes towards women did not do so. Kern et al. (1985) suggested that studies such as theirs can help clients in determining and weighing the probability and severity of the interpersonal outcomes of their behavior. They further noted that, "When trainers are interacting with such individuals [people who are learning to be assertive], it may be best to focus cognitive restructuring efforts on the severity of negative reactions to assertion as opposed to the probability that negative

reactions will occur. Research on reactions to assertion needs to address this severity question" (p. 72).

4. Severity as the more important predictor of behavioral intentions

Since there are a number of speculations about whether severity, probability, or both are important as factors in deterring assertive behavior, there is a need to do more research on this issue. Furthermore, Bellack, Morrison, and Mueser (1989) noted that we have little understanding of the natural way in which problem-solving is done, yet researchers like D'Zurilla and Nezu (1982) prescribe methods for problem-solving that may not be the most effective or healthy. Bellack et al. (1989) feel that there is a need to understand more about the natural processes involved in problem-solving. The purpose of this thesis is to look at the effects of severity and probability on behavioral intentions to act assertively in order to understand how people use severity and probability information. In this respect, this thesis will explore natural ways that people use severity and probability information. It will begin to address Bellack et al.'s (1989) concern that we do not understand the natural way that people problem-solve.

The purpose of this thesis will be to test Kern et al.'s (1985) hypothesis that the SEVERITY of an anticipated negative consequence is more of a deterrent to behaving

assertively than is the PROBABILITY of an anticipated negative consequence. The SEU formula is:

$$\text{behavioral intentions} = \text{probability} \times \text{severity (of an anticipated negative consequence)}$$

This thesis will explore whether severity carries a greater weight than probability in the choices that women make to employ or not employ assertive responses. While studies such as those by Fiedler and Beach (1978) and Kuperminc and Heimberg (1983) have compared differences in perceptions of severity and probability, no one has compared the relative deterrent effect of the two aspects of anticipated negative consequences. Even if we assume that high- and low-assertive subjects differ in their perceptions of probability, it could still be that the perception of severity, not probability, influences behavioral intentions to act assertively. There are a number of lines of research and/or theory which would point to severity as the more important factor in deterring assertive behavior. These lines of theory/research include: (1) research on framing decisions, (2) theory and research about limited information-processing capabilities, (3) need for control, (4) types of irrational thinking, and (5) logical considerations.

Framing research. Kahneman and Tversky (1984), among other researchers, have done a great deal of research on how people use information about probability and severity in decision making under conditions of uncertainty, also referred to as

risky choices. A risky choice is one in which a decision has to be made without advance knowledge of the consequences (e.g., whether to take an umbrella or not, whether to go to war or not). A riskless choice would be one in which a good or service is exchanged for money or labour. Kahneman and Tversky (1984) suggest that under conditions of uncertainty, people are not objective, rational decision-makers who use mathematical reasoning (also called normative decision-making strategies) to choose the option which will give them maximum benefit in the long run (SEU model). Instead, people use conscious or unconscious heuristics (information processing short-cuts) and subjective judgments in assessing probability and severity, and do not use this information in an optimal manner. For example, judgments of probability can be influenced by emotional state (Johnson & Tversky, 1983). Also, when the value of loss and gain is plotted on a graph, with loss and gain on the X axis and value on the Y axis, the resulting curve is an S-shaped curve. Logic would suggest that a straight line should result (Kahneman & Tversky, 1984).

One aspect of decision making under conditions of uncertainty that compares severity and probability is research looking at the effects of frames (i.e., whether problem information is given in positive or negative terms) on decisions. McNeil, Pauker, Sox, and Tversky (1982) found that preferences of physicians and patients between hypothetical therapies for lung cancer varied markedly when

the probable outcomes were described in terms of percentage of patients expected to die versus the percentage of patients expected to live (60% expected to live = 40% expected to die from a mathematical perspective). Fewer physicians and patients wanted to use a treatment if the statistics were presented in terms of mortality, than if the statistics were presented in terms of survival rates. These findings have been replicated by Levin, Schnittjer, and Thee (1988) and Marteau (1989).

The framing effect has been found in other situations besides medical decisions. Levin (1987) found that people were more likely to rate ground beef positively if it were described in terms of percent lean, instead of percent fat. The decision to gamble has been related to whether the odds were described in terms of gains or losses (Levin, Johnson, & Davis, 1987). The rated incidence of cheating on exams was rated higher if a previous survey of cheating behavior was given in terms of percent of students in general who cheat, rather than percent of students who do not cheat (Levin et al., 1988). If probability were the most important variable in these studies, then both frames would be selected equally. The fact that there are differences in these studies depending upon the frame implies that the content (severity) was the more important factor in making the choice.

Levin (1987) explained the framing effect in terms of an associative model. He suggested that the wording of a stimulus brings forth a positive or negative connotation, and that judgments and intentions to act are based upon these

positive or negative connotations. Levin et al. (1988) further interpreted these findings in terms of an anchoring and adjustment process described by Tversky and Kahneman (1974).¹ A typical stimulus item in these experiments is made up of two components, the label or qualitative component, and the probability or quantitative component. Subjects first make a decision about the positiveness or negativeness of the label, which is called the "anchor". After this decision has been made, subjects then consider the probability, and an "adjustment" is made or not made depending upon whether the probability has an impact on the judgment or not. Levin et al. (1988) felt that the parameters of this process (i.e., when probability alters or enhances severity information) are not clearly understood at present.

Limited information-processing capabilities. Wright (1985) noted that people do not extract as much information as they could from probabilistic data, and called this process "conservatism". Hogarth (1975), Wright (1985), and Mathews (1990) suggested that we do not use all available information

¹One difficulty with the literature on the effects of severity and probability on behavioral intentions is that terms do not have a consistent meaning from one writer to the next, and are being interpreted in different ways by different writers. Tversky and Kahneman (1982) used the word "anchor" to refer to a first judgment of probability or severity, and the word "adjustment" to refer to how the initial judgment is changed with additional information. Levin (1988) felt that subjects make judgments about severity first, and called this the "anchor". Levin (1988) suggested that subjects may or may not change their judgments based on probability, which he referred to as the "adjustment". Levin's (1988) interpretation was used in the text because it is consistent with the view expressed in this thesis that severity is the primary cognition.

because we have limited memory, attention, and reasoning capacities. Rogoff (1984) noted that everyday problem-solving requires an adequate solution, and not necessarily a full and systematic consideration of all alternatives, such as might occur in an academic environment. Hence, these writers raise the possibility that only one dimension may be used in making decisions.

There is some research on decision making concerning criminal activities which suggests that people use mainly one dimension in making decisions about committing a crime, and that severity is the dimension which is primarily used. Carroll (1978) presented both criminal and non-criminal populations with information about the probability of a successful crime, the money obtained if successful, the probability of capture, and the penalty if caught. Subjects then made an evaluation of the crime opportunity on a scale ranging from 10 to 90. Carroll (1978) found that subjects' judgments of the value of the crime was influenced most by the amount of money to be gained, followed in order by the amount of penalty, probability of success, and probability of capture. Carroll (1978) concluded from his study that subjects tended to use primarily one dimension when making decisions about criminal activity, and that severity played a more important role than probability.

Need for control. A number of writers such as Kelly (1955), Seligman (1975), and White (1959) have postulated that people have an inherent need to control themselves and

their environment. Control, in this context, is equated with predictability. When events are uncontrollable, people will go to great lengths to impose some control, such as engaging in superstitious behavior (Friedman & Lackey, 1991).

Malinowski² (1954), a well-known anthropologist, studied a tribe called the Trobrianders, who live in New Guinea. Malinowski (1954) found that the Trobrianders had no religious or magical rituals for fishing in a lagoon, where there was little danger and unpredictability. However, there were religious rituals associated with fishing on the ocean, where danger and unpredictability were great.

If we have a need for control, then we might be motivated to pay more attention to the content of the possible consequences, and to focus on what to do about them if they should occur. A number of researchers do suggest that people think about possible negative consequences and what to do about them if they should occur. Mathews (1990) and Friedman and Lackey (1991) suggested that in the face of threat, we picture the threat and then search for ways of avoiding or coping with the threat. The type of thinking that Mathews (1990) and Friedman and Lackey (1991) talk about is similar to the means-ends thinking proposed by Spivak et al. (1976), which has been shown to be related to adjustment (Spivak et al., 1976). This type of thinking involves severity, not probability.

²Kirsten Krismer (1990) suggested the anthropological literature and the importance of control to my study, and suggested some relevant references.

If people were to focus on probability, their anxiety levels would go up, since focusing on probability reminds us that we are entering an unpredictable and possibly dangerous situation, but would not allow us to prepare for the danger. Langer (1983) suggested that when one's belief in control is threatened, then the result is stress and anxiety, which can be debilitating. She cited, among other things, the well-known research by Seligman (e.g., Seligman, 1975) showing that if people perceive an independence between their actions and negative outcomes, learned helplessness and depression result. From the point of view of survival and adaptability, focusing on severity would be more adaptable than focusing on probability.

Irrational beliefs. Another reason why severity could be more important than probability is suggested by Albert Ellis' (1987) theory of rational-emotive therapy. Ellis (1987) suggested that people engage in irrational beliefs which are rigid and absolutist, such as, "I must not fail." Such beliefs go along with a desire to avoid danger (Ellis, 1987). This kind of thinking does not allow the consideration that there is some unpredictability about negative events, and that negative events befall all of us, no matter what we do. A person engaging in this type of irrational thinking would be focused on avoiding a negative event, and hence would consider severity, not probability.

Logical considerations. There are also some logical and practical reasons why severity would be more important than probability. First of all, it is possible to think about

severity by itself, but it is not possible to think about probability by itself. We can think, "If I am assertive, my friend will yell at me." However, we are not likely to think, "If I am assertive, there is a 20% chance that 'something negative' might happen." If we do use probability, it is in the context of something specific happening, i.e., "If I am assertive, there is a 20% chance that my friend will yell at me." From a logical perspective, severity stands alone, while probability does not. Probability is secondary.

Furthermore, probability, in the sense that we use it now, is not a concept which is natural to humans in an evolutionary sense. Hacking (1975) made the point that probability, as we now conceive it, came into being about 1660. Furthermore, in everyday situations, we do not often have objective information about mathematical probability, and hence we are forced to make judgments which can be subject to bias. However, we can readily imagine a possible consequence and assign a severity to it.

Hence, a number of theories and lines of research would support the notion that humans may use information about severity, not probability, when deciding whether to act assertively. These theories/lines of research include framing studies, limited information-processing capabilities of humans, need for control, and logical considerations. For all of the above reasons, it is postulated that severity is more important than probability in deterring assertive



behavior.

5. Other issues explored in this thesis

The main hypothesis tested in this thesis was that the severity of an anticipated negative consequence is more of a deterrent to acting assertively than is the probability of the anticipated negative consequence. However, there were a number of other issues which were explored, but for which no hypothesis was stated.

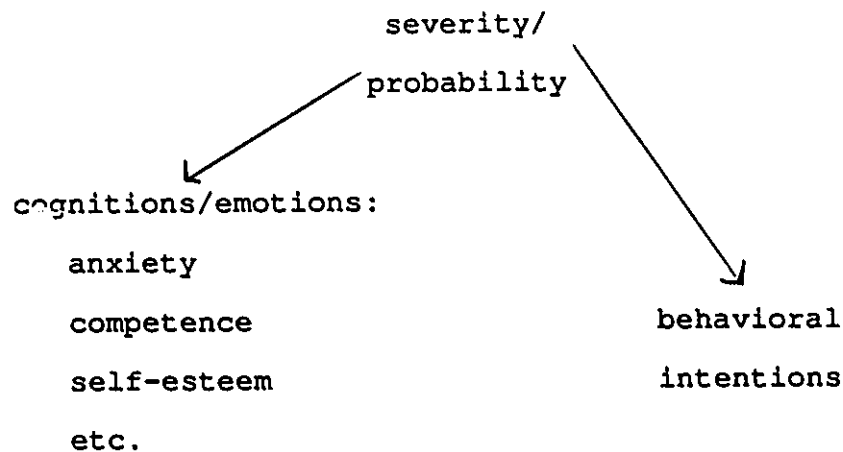
(a) Using multiple variables to explore mediational versus coeffects models

Shepherd (1984) has argued for the need for better understanding of the cognitions and emotions which occur in situations calling for an assertive response. A primary, underlying assumption in cognitive-behavioral therapy is that we change behavior by changing cognitions. The relationship between cognition and behavior is a linear one, with cognitions mediating between stimulus (i.e., anticipated severity and probability) and response (intentions to behave assertively.) This model can be diagrammed as follows:

severity/probability --> cognition --> behavioral
intentions

An alternative model is a coeffects model. It is possible

that certain cognitions and emotions are present at the same time as one is deciding upon whether or not to act assertively, but that these cognitions/emotions do not mediate behavior. Such cognitions/emotions might include anxiety, competence, self-esteem, and so on. This model could be diagrammed as follows:



In this latter model, there are no arrows between cognitions/emotions and behavioral intentions because the cognitions and emotions are present, but do not mediate, behavioral intentions.

One purpose of this thesis was to measure some other variables which could either be coeffects along with behavioral intentions, or could mediate behavioral intentions. The variables selected for study were based upon the theoretical and experimental literature, and could reasonably be postulated to mediate between the situation and the response. Principal components analysis (PCA) was used

to reduce the number of potential coefficients/mediators. The results of the PCA were used with path analysis to explore whether any of the components obtained from the PCA could mediate the effects of severity and probability on behavioral intentions. The path analysis would also show if any of these components could be viewed as coefficients rather than mediators (i.e., the component was affected by severity and probability, but the component did not affect behavioral intentions.) The path analysis would also show if the component affected behavioral intentions, but was not affected by severity and probability.

The following is a discussion of the variables which were included, and the rationale behind their inclusion.

(a) Anxiety -- Wolpe (1990) described assertiveness as the socially appropriate verbal and motor expression of any emotion other than anxiety. Wolpe (1990) viewed anxiety as an internal state that inhibits or blocks the expression of feelings. A relaxed, assertive person expresses himself clearly and effectively, and is likely to have an effective social exchange. An anxious, unassertive person will express herself in a vague way, leading to ineffective social exchange and more anxiety.

Decreasing subjects' level of anxiety has been used to increase assertiveness in socially anxious clients (Nelson, Hayes, Jarnett, Sigman, & McKnight, 1987). In this perspective, anxiety is seen as a mediating variable.

(2) Worry -- This item could be viewed as synonymous with anxiety. On the other hand, some writers make a distinction between worry and anxiety. Mathews (1990) talked about worry as the cognitive rehearsal of possible negative events which could happen, and as a process that goes along with anxiety.

(3) Competence -- Bandura (1986) defined an efficacy expectation as the conviction that one can successfully execute certain behaviors. Bandura (1986) suggested that actions are related to the kind of efficacy expectations that a person holds. Hence, if a person feels competent to perform a task, the person is more likely to carry out the action. As related specifically to assertiveness, Welburn (1989) found that a high social-skills-generalization group scored higher than a low social-skills-generalization group on self-rated efficacy.

(4) Reasonableness of request -- Chiauuzzi and Heimberg (1986) hypothesized that if an unreasonable request is judged as reasonable, an individual is more likely to act assertively as a result of this evaluation. This hypothesis was supported by their finding that low-assertive subjects were more likely to rate a request as reasonable than high-assertive subjects.

(5) Fairness -- People make judgments about whether they are being treated fairly, and these judgments in turn influence

actions (Baron & Byrne, 1991). In this thesis, students may consider it "unfair" if it is possible that a negative outcome could result from being assertive, since in a fair world, an assertive person should receive a positive outcome. Perhaps such a judgment would deter people from acting assertively.

(6) Self-esteem -- Schwartz and Gottman (1983) suggested that there is a positive relationship between direct assertion and positive self-concept. Such a correlation suggests either that assertiveness leads to increased self-esteem, increased self-esteem leads to increased assertiveness, or that some third variable influences them both. Self-esteem is a possible mediator of behavioral intentions.

(7) Support of friends -- Bowlby's (1988) attachment theory suggests that we seek out the comfort and support of other people during times of stress, and in times of perceived danger. We can better handle stress if we have social support (Cohen & Wills, 1985). Perhaps the perceived availability of social support will influence our decision to act assertively.

(8) Costs versus benefits of acting assertively -- Some psychological literature suggests that we act in ways to maximize benefits and reduce costs to ourselves. Bandura's

(1986) model included outcome expectations, or the person's estimate that a given behavior will lead to certain outcomes. There is research to suggest that people do not act assertively if they expect negative outcomes (e.g. Welburn, 1989).

(9) Resources to cope -- Lazarus and Folkman (1984) defined stress as "...a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 19). Hence, one can ask whether severity and/or probability will affect a person's appraisal of his/her ability to cope, and whether such an appraisal will mediate behavioral intentions.

(b) Comparing subjects' ratings of self versus another person

It is possible to ask, "How would I act under these specific conditions of anticipated severity and probability?", or "How would another person act under these specific conditions of anticipated severity or probability?" It is not clear that if we ask students about how they would act versus how another person would act that students would see themselves and another person acting in the same way. At least one groups of researchers (Zollo et al., 1985) added together items for self and another person to get a consequences rating, when it is not clear that "self" and

"another-person" items are comparable.

One theory which would suggest that self and another-person ratings may be different is suggested by Stamps (1989). Stamps (1989) suggested that people have a tendency to rate their own work more positively than they rate another's work. This hypothesis was confirmed in his study in which he compared architectural students' ratings of their own work to the same work rated by more objective standards. That is, students rated their own work more positively than more objective standards would warrant. As applied to the effects of severity and probability on behavioral intentions, this theory would predict that students would see themselves as acting assertively under conditions of high severity and/or probability, while they would view another person as acting unassertively, since they themselves perform well, but others do not.

Another theory which would predict differences in self and another-person ratings is suggested by the actor-observer effect (Jones & Nisbett, 1971). The actor-observer effect suggests that people make different causal attributions about a negative outcome depending on whether they see that outcome as happening to themselves, or to someone else. If a person trips, she is likely to attribute her behavior to external circumstances or bad luck (e.g., wet pavement). If someone else trips, she is likely to attribute this behavior to negative internal personal characteristics or lack of skill (e.g., clumsiness). This theory would predict that severity

and/or probability would affect self items, since one's own negative behavior (i.e., lack of assertion) is related to external events (i.e., severity and probability). One would further predict that severity and/or probability would not affect the other-person items, since another person's negative behavior (i.e., lack of assertion) would be related more to internal factors (i.e., lack of competence, lack of skill). In this study, whether severity and/or probability affected behavioral intentions in the same way for self and another person was explored.

(c) Personality factors as possible moderator variables

The question can be raised as to whether severity is always more important than probability in predicting assertive behavior. One factor which may moderate the effects of severity and probability on behavioral intentions is personality. Personality could affect whether one of the two factors (severity or probability) is more important, or personality may affect whether two dimensions are used instead of one.

There has been some research linking personality variables such as dogmatism, cognitive complexity, and field independence-dependence to decision-making (Taylor, 1984). For example, individuals high on dogmatism have been found to consider fewer dimensions in making decisions than individuals low in dogmatism (Taylor, 1984), although these studies have not used information about the probability and

severity of a negative consequence. In this thesis, three personality variables related to the decision to act assertively which could potentially moderate the effects of severity and probability on behavioral intentions were studied: assertiveness, anxiety, and need for approval. No research was found which examined the relationship between these personality variables and anticipated probability and severity. For each of these personality variables, many different combinations of relationships between severity and probability are possible. If we consider whether different or the same dimensions are used, nine combinations of outcomes are possible ([severity or probability or both] with [severity or probability or both] = $3 \times 3 = 9$). If we add to this the fact that one dimension may have more impact on students who are high versus low for a personality factor (assertiveness, anxiety, or need for approval), then the number of possible outcomes goes even higher. Therefore, no attempt was made to provide rationales for all possible combinations of variables. However, relevant literature was reviewed to provide some insight into why personality may relate to whether severity and probability are used differentially by different personalities, or why two dimensions might be used instead of one dimension by a certain personality type, or why a dimension may have more impact on one group versus another.

Assertiveness. With respect to assertiveness, Rudy, Merluzzi, and Henahan (1982) were interested in finding out

how high-, medium- and low-assertive people naturally construed situations calling for assertiveness. They used a card-sort task, in which situations varying in content were presented to subjects. The subjects were asked to sort the cards into piles based on similar characteristics. The researchers used a multidimensional scaling method to sort out the nature of the dimensions used and the importance of the dimensions in making ratings about familiarity, uncomfortableness, ego-involvement, and difficulty of assertiveness scenes. The authors did not have the subjects rate intentions to act assertively.

The findings of relevance to this thesis were that all groups perceived similar underlying dimensions, although these dimensions were of differential importance to the ratings. One dimension reflected riskiness, with items on one end of the scale involving the expression of an opinion to an intimate, familiar person, and items on the other end of the scale involving defending oneself to an unknown person. The riskiness scale was more important to the high-assertive subjects than the low-assertive subjects, while an emotionality scale was more important to low-assertive subjects than to high-assertive subjects. In addition, low-assertive subjects were less likely than the other groups to use more subtle dimensions. One interpretation of these findings is that high-assertive subjects used more dimensions than low-assertive subjects in forming opinions about task difficulty, level of discomfort, etc. The implication of the high-assertive subjects using more

dimensions would be that these subjects would be more likely to use both severity and probability dimensions, while the low-assertive subjects might use only one dimension. One other interpretation is that high assertives are not afraid to look at risks, perhaps weighing probability and severity in a rational way; whereas the low-assertive subjects focus on unpredictability (probability) and become emotional and afraid, since unpredictability increases anxiety. In fact, several researchers have suggested that high-assertive subjects may be more willing to take risks than low-assertive subjects (Eisler et al., 1975; Dahlback, 1990). However, it is still unclear as to what the two groups would do with explicit probability and severity dimensions, since these dimensions were only implied by the material used in this study.

Another possibility for how high- versus low-assertive women use probability and severity dimensions is suggested by research by Pilkington and Richardson (1988). These researchers developed an inventory to measure perceived risk in intimate relationships. They found that high perceived risk was correlated with low assertion. This research might suggest that if two dimensions are used, and women consider both the possible consequence (severity) and the uncertainty (probability) around it, that they are unlikely to act assertively. Perhaps assertive people use only one dimension, such as focusing on what the consequences could be and how to cope with or get around the consequences.

Anxiety. With respect to anxiety, Nichols-Hoppe and Beach (1990) postulated that high-anxious subjects would use more dimensions in making a decision than would low-anxious subjects. This hypothesis was based on the premise that high-anxious subjects have difficulty concentrating, and are therefore more cautious. The task involved having subjects decide what apartment to move into. Various information was available (e.g., rent, size, location), but subjects had to indicate what information they wanted, and their search strategies were recorded. As predicted, high-anxious subjects wanted more information than low-anxious subjects, and more of the information requested was redundant. Although severity and probability dimensions were not used, the implication would be that high-anxious subjects would use two dimensions, whereas low-anxious subjects would use one dimension.

Other theories might make other predictions about how high-versus low-anxious women might use probability and severity dimensions. Langer's (1983) theory suggests that when events are unpredictable, anxiety and stress result. Perhaps high-anxious subjects focus on probability, and thus become anxious, while low-anxious subjects focus on severity and how to cope with it. On the other hand, Beck et al. (1985) suggest that high-anxious people want predictability and tend to view things in an all-or-nothing manner. Perhaps high-anxious subjects will use the severity dimension, while low-anxious subjects use both dimensions.

Need for approval. High need for approval has been linked to low assertiveness (Delamater & McNamara, 1987; Lobel, Kashtan, & Gilat, 1987; Stefanek & Eisler, 1983). One possibility is that individuals high in the need for approval focus on both severity and probability, and realize that they may not receive approval and that the outcome is unpredictable, with both variables increasing their discomfort levels and leading to a decision not to act assertively. Those low in the need for approval might be using only the severity dimension, and considering in a rational way how to cope with or avoid possible negative consequences. Alternatively, perhaps those low in need for approval use neither dimension, since information concerning approval is not relevant to them.

One measure of need for approval is the Marlowe-Crowne Social Desirability Scale (MC-SDS). There is controversy in the literature about how to use the data from this test when dealing with assertiveness issues. Some researchers have found the full score to be related to assertiveness, and others have found only a subscale score to be related to assertiveness. Delamater and McNamara (1987) found a correlation between overall scores on the MC-SDS and assertiveness. In contrast, Lobel et al. (1987) found assertiveness to be unrelated to the full score of the MC-SDS, but found assertiveness to be related to a subscale score called the "approach component". The approach component represents a tendency to attribute desirable characteristics to oneself. Because of these findings, Lobel

et al. (1987) recommended using the approach component, but not the full scale score for studies involving assertiveness.³ In this thesis, the tendency to attribute desirable characteristics to oneself (approach component of the MC-SDS) will be explored in addition to the overall score for the MC-SDS.

Since there is no previous research relating these specific personality variables to anticipated probability and severity, no specific hypotheses were stated. However, these variables were explored in this thesis.

(d) Cognitive distortion versus rational choice models

Linehan and Egan (1979) made the distinction between the "cognitive distortion" and "rational choice" approach. In studies of anticipated negative consequences to assertion, researchers adopt either the cognitive distortion model or the rational choice model. The cognitive distortion model assumes that the negative consequences anticipated by women are unrealistic and exaggerated, and implies that if one can change these unrealistic expectations of negative consequences then women will act more assertively. Lucock and Salkovskis (1988) were using this model when they made

³ Incidentally, Lobel et al. (1987) divide the MC-SDS into two subscales: (1) the approach component, representing the tendency to ascribe positive characteristics to oneself, and (2) the avoidance component, representing the denial of undesirable characteristics. Lobel et al. (1987) found that assertiveness was unrelated to the avoidance component.

the assumption that negative interpersonal consequences occur to assertive and unassertive people at the same rate. The cognitive distortion view was also used by Wolpe (1982) when he said that appropriate assertive behavior usually leads to positive consequences, but that clients may not be "convinced" of this due to past social conditioning, perhaps from childhood. McFall's (1982) model suggests that women do not act assertively because of inaccurate perceptions of consequence probabilities and severities. Fiedler and Beach (1978) were using a cognitive distortion model when they suggested that practitioners focus on changing perceptions of anticipated consequences.

In contrast, the rational choice model reflects the idea that negative consequences really do befall women who act assertively (at least sometimes). Linehan and Egan (1979) suggest that, "Feminist rhetoric suggests that in most, if not all, instances, women are nonassertive because of a high probability of punishing consequences" (p. 253). Stefanik and Eisler (1983) state that, "Fiedler and Beach's notion that the "skill deficit" in nonassertive individuals is their inability to estimate the consequences of their assertiveness may be inaccurate... subjects (may be) aware that assertive behavior may disrupt social relations" (p. 298). Solomon and Rothblum (1985) point out that the newly assertive woman risks possible negative consequences for being assertive. The research as a whole on negative reactions to women's assertiveness (reviewed earlier) suggests that actual negative consequences (e.g., having your conversation topic

ignored, being evaluated as unlikeable, etc.) do accrue to women who act assertively. The negative consequences of assertion are seen to be real by these various writers, not distortions of reality (i.e., cognitive distortions).

The two studies that were undertaken allowed an exploration of the cognitive distortion versus rational choice models. By using regression analysis of variance (regression ANOVA), it was possible to partial out the effects of anticipated consequences first (i.e., the severity and probability), then determine whether assertiveness still contributed to behavioral intentions to act assertively. Research has shown cognitive differences between high- and low- assertive people. For example, Chiauzzi and Heimberg (1986) found that assertiveness was related to judgments of reasonableness of request. Lohr, Nix, Dunbar, and Mossesso (1986) found that assertiveness was negatively correlated with the presence of irrational beliefs as described by Ellis (1962). For a detailed review of cognitive factors related to assertiveness, the reader can refer to Stefanek and Eisler (1983). Therefore, if assertiveness still had an effect on behavioral intentions after the "realistic" component was partialled out, then some limited support would be provided to the cognitive distortion model, because unassertive subjects would be deciding to act passively even after the effect of the depicted environmental contingencies had been removed.

6. A brief description of the two studies

Two studies were planned to test the main hypothesis and the related research questions. The first study was a laboratory study which manipulated two levels of severity (low and high) and probability (20% versus 80%) through videotape presentation of possible outcomes of an assertive interaction involving the refusal of an unreasonable request. The personality variables used in this study were need for approval (as measured by the MC-SDS), the tendency to attribute positive characteristics to oneself (as measured by the approach subscale of the MC-SDS), and assertiveness (as measured by the RAS). By keeping the possible consequences constant, it was possible to attribute any differences in responding by assertive and unassertive participants to internal factors (e.g., cognitive differences), rather than environmental consequences.

Because laboratory studies can be criticized on the grounds that they do not reflect what people do in the real world, the second study planned was a survey study which more closely approximated naturalistic conditions. In the second study, participants were presented with four vignettes involving refusing an unreasonable request. The vignettes involved scenes with peers, authority figures, business associates, and intimate acquaintances. This classification system has been used by a number of writers and researchers (Lange & Jakubowski, 1976; Piccinin et al., 1987; McFall &

Lillesand, 1971). In a fifth vignette, participants were asked to write their own scene reflecting a situation which they actually had difficulty with. Following each vignette, participants were asked to make up their own possible consequence along with its severity and probability. Participants then rated their intentions to act assertively and made judgments about possible coeffect/mediator variables for each vignette.

Self-generated scenes and experimenter-generated scenes have been found to result in different reactions. Arisohn et al. (1988) found that subjects thought of more negative consequences for self-generated scenes as compared to other-generated scenes. Chiauzzi, Heimberg, Becker, and Gansler (1985) found that subjects performed less well and experienced more discomfort in personally-tailored scenes as compared to standard scenes. In the survey study, the personally-relevant, self-generated, self-relevant scene most closely approximated naturalistic conditions.

Hence, the survey study differed from the laboratory study in providing more naturalistic conditions. The survey study also allowed a range of severities and probabilities to be explored, as compared to the limited severities and probabilities necessitated by the experimental study. The personality variables measured in this study were anxiety, need for approval, tendency to ascribe positive characteristics to oneself, and assertiveness.

7. Overview and summary of theory, hypotheses, and issues

While there are mental health advantages for women to act assertively, assertiveness trained in clinical settings does not always generalize to the natural environment. Lack of generalization to the natural environment may result from real (rational choice model) or imagined (cognitive distortion model) negative consequences which could befall a woman when she acts assertively. A number of studies have documented negative consequences which happen to women who act assertively, including being viewed as unlikeable, having one's opinions ignored or discounted, being refused a job, and having others refuse to negotiate change.

When we imagine ourselves in the place of the woman who is making a decision about acting assertively, we can easily imagine that she may take into consideration the probability and/or severity of possible negative consequences of acting assertively. There are differing theories about whether severity, probability, or both factors deter women from acting assertively.

The hypothesis and issues addressed in this thesis were:

(1) Main hypothesis: The SEVERITY of an anticipated negative consequence is more of a deterrent to behaving assertively than is the PROBABILITY of an anticipated negative consequence

This is the main hypothesis for studies 1 (videotape study) and 2 (survey study). From a logical perspective, it is possible to think about severity by itself, while it is not possible to think about probability by itself. Theoretical, research, and logical support for why people may use only the severity dimension include: (1) framing research, which shows that people give more weight to severity; (2) theories on the limited information processing capabilities of humans, and Carroll's (1978) study which showed that severity was more important than probability in making decisions about criminal activity; (3) various theories which suggest that humans have a need for control, and want to know what consequences might happen so that we can cope with or avoid the threat.

(2) Other issues

(a) Using multiple variables to explore mediational versus coeffects models

This issue was explored in study 1 (videotape study) and study 2 (survey study). Certain cognitions/emotions may be present at the same time as one is making a decision about acting assertively. These cognitions/emotions may mediate the effect of severity and probability on behavioral intentions, or may merely be coeffects (i.e., affected by severity and probability, but not affecting behavioral

intentions). The variables in study 1 and/or study 2 which were tested as coeffects/mediators were: anxiety, worry, competence, reasonableness of request, fairness, self-esteem, need for support, costs versus benefits of acting assertively, and having the resources to cope.

(b) Comparing participant's ratings of self versus another person

Several theories suggest that severity and probability may affect ratings of behavioral intentions for oneself versus another person differently. Stamps (1989) suggests that we rate ourselves more positively than we rate others, and would predict that we would see ourselves as acting assertively under given conditions of severity and probability, while others would act unassertively. In contrast, the actor-observer effect suggests that we attribute our own behavior to external causes (e.g., severity and probability), while we attribute another person's behavior to lack of skill. The actor-observer effect would suggest that severity and probability would affect behavioral intentions for self, but not for another person.

(c) Personality factors (assertiveness, need for approval, tendency to attribute positive characteristics to oneself, and trait anxiety) as possible moderators of the effect of severity and probability on behavioral intentions

The question can be raised as to whether severity will always be more important to behavioral intentions than will probability. One possibility is that personality may moderate the effects. The personality variables selected for consideration were need for approval (MC-SDS), tendency to attribute positive characteristics to oneself (approach subscale of the MC-SDS), assertiveness (RAS) (studies 1 and 2) and trait anxiety (STAI; study 2). Examples of some ways in which people high versus low on the above traits might differ are:

Assertiveness. Perhaps high-assertive women are not afraid to look at risks, and use both severity and probability dimensions, while low-assertive women focus on probability and become anxious and paralyzed.

Anxiety. High-anxious women may use more information in making a decision than low-assertive women, and hence would be expected to use two dimensions, while low-assertive women would be expected to use one dimension. The low-assertive women may use the probability dimension, which causes them to become anxious due to focusing on unpredictability.

Need for approval. Women high on the need for approval may focus on all information related to gaining another's approval, and therefore they may use both severity and probability information. Those low in need for approval might focus on severity, and may consider in a rational way how to cope with or avoid possible negative consequences.

(d) Cognitive distortion versus rational choice models

The value of the cognitive distortion versus rational choice models was assessed in studies 1 and 2. The cognitive distortion model assumes that the negative consequences anticipated by women are unrealistic and exaggerated, and implies that if one can change these unrealistic expectations of negative consequences then women will act more assertively. In contrast, the rational choice model reflects the idea that negative consequences really do befall women who act assertively (at least sometimes). By using regression ANOVA, it was possible to partial out the effects of anticipated consequences first, then determine whether assertiveness as measured by the RAS still contributed to behavioral intentions to act assertively. In study 1, in particular, any differences attributed to assertiveness (RAS) could not be related to differences in imagined severities and probabilities of consequences, since the values were given on the videotapes, and were not related to the imaginations of the participants. In both studies, if assertiveness (RAS) still contributed to behavioral intentions after the effects of severity and probability had been removed, then the cognitive distortion model would be supported.

Chapter 2

Method for Study 1 -- Videotape Study

1. Development of videotapes and assessment of validity

The design of this study was a 2 X 2 factorial design with the manipulation of two levels of severity (low and high) and two levels of probability (low and high) of anticipated negative consequences. Before the experiment could be carried out, four videotapes had to be constructed which would represent each of the conditions. The initial part of the script would be identical across conditions, but the ending would reflect the differing consequences.

The situation selected involved refusing an unreasonable request. The specific scene involved saying no to a friend who wanted to borrow the protagonist's class notes too close in time to an exam. One difficulty which had to be overcome was that the negative consequence had to be an anticipated rather than an actual consequence. This was accomplished by having a narrator describe the protagonist as daydreaming about what might happen if she were to assert herself with her friend. Establishing that these events were happening in a daydream was accomplished by (1) including a narrator's voice with an explanation that it was a daydream, (2) using a white screen to fade in and out at the beginning and end of

the daydream, and (3) having the protagonist "think out loud" about the probability when she had stopped daydreaming. Her lips were not moving while a voice-over of her own voice considered the actual probability of the events which she had just daydreamed about.

The mild consequence involved the friend expressing disappointment that the protagonist could not help her out. The severe consequence involved the friend becoming loud and angry, calling the protagonist names, and threatening to break off the relationship. The probability that things would happen as the protagonist had daydreamed was stated at the end of the videotape as 20% (low probability) or 80% (high probability). The script used, with its relevant variations, is presented in Appendix A (p. 278).

2. Manipulation check

The purpose of the manipulation check was to ensure that the videotape conditions were valid. In other words, the purpose of the manipulation check was to determine that the consequence of disappointing a friend was seen as a low-severity consequence, and that the consequence of a friend's anger and the threat of losing a relationship was seen as a high-severity consequence. A second purpose was to ensure that 20% was seen as a low-probability consequence, and that 80% was seen as a high-probability consequence. Two orders of questions were used in a counterbalanced manner, with half of

the participants completing the probability rating first, and half of the participants completing the severity rating first. It was assumed that the order of the questions would not affect the ratings of probability and severity. A copy of the manipulation check questionnaire is presented in Appendix B (p. 283).

Subjects. Thirty-seven women volunteers were recruited from an undergraduate psychology class to participate in the manipulation check. After completing a consent form, the women were divided into four groups to view only one of the four videotapes.

Procedures. Before the videotape was shown, the women were told, "I am going to show you a videotape of Helen thinking about asserting herself with Phyllis. I would like you to view the videotape and then answer some questions about what you saw." The videotape, lasting about 4 minutes, was then shown.

Following the videotape, the women were told, "Here is a questionnaire for you to complete and a copy of the script. Do not put your name on the questionnaire or the scripts so that your answers will remain anonymous, and the scripts can be reused. If you didn't hear all of the dialogue on the videotape, or if you would like a reminder of what was said, then please refer to the script. If you have any questions, then please raise your hand and I will come to your desk and answer the question. Make any comments that you wish to make about the videotape or the study on the back of the

questionnaire."

When the women had completed the questionnaire, they were thanked for participating. They were then debriefed about what they had been participating in. They were told that they were testing the validity of four videotapes by rating the perceived severity and the perceived probability of the consequence.

Results of the manipulation check. The first step in analyzing the data was conducting a Pearson correlation on the two dependent variables, ratings of probability and severity. As expected, the correlation between severity and probability ratings was not significant ($r = .15$, $p = .19$). Because there was no correlation between these two variables, univariate analysis of variance was used (Huberty & Morris, 1989).

For the severity rating, a significant effect was found for severity group, ($F(1, 3) = 66.23$, $p < .0001$), but not probability group, ($F(1, 3) = .04$, $p > .05$), or order ($F(1, 3) = .73$, $p > .05$). These findings indicated that the high-severity condition was seen as high and the low-severity condition was seen as low, irrespective of the probability or the order of the question (i.e., whether participants were asked about severity or probability first). For the probability rating, a significant effect was found for probability group, ($F(1, 3) = 77.58$, $p < .05$), but not severity group ($F(1, 3) = .38$, $p > .05$) or order ($F(1, 3)$

= .45, $p > .05$). These findings indicated that the low-probability condition was seen as low and the high-probability condition was seen as high, irrespective of the severity or the order of the question. Hence, the videotapes were assessed as reflecting the conditions of interest.

3. Measurement of variables

(a) Post-Videotape Questionnaire (PVQ)

The PVQ was designed to measure behavioral intentions to act assertively plus the possible coeffects/mediators which were specified in the introduction section. These possible coeffects/mediators were intentions to act assertively (BI), anxiety, worry, competence, reasonableness of request, fairness, self-esteem, support of friends, costs versus benefits of acting assertively, and resources to cope. The questionnaire format was modelled after the semantic differential scale of Osgood, Suci, and Tannebaum (1957). Each item was rated on a 7-point bipolar scale. To control for response bias, the favorable and unfavorable ends of the scale were reversed in random order for different items. For items in which the question could be worded positively or negatively, the positive or negative wording of the item was randomly selected and varied among items. Two versions were composed, one for "self", and one for "another person". Half of the subjects completed the "self" version first, while

half of the subjects completed the "other person" version first. The PVQ is presented in Appendix C (p. 287).

In addition, several items were added to determine whether participants perceived severity or probability as more important, and whether or not participants found severity or probability easier to rate.

Reliability. To obtain test-retest correlations, the PVQ was administered 3 weeks apart to a group of 35 female undergraduate participants. Participants viewed one of the videotapes, which was selected at random, and represented the 80% low-severity condition. Consistent responding by the participants was expected on the basis that students were viewing the same videotape and were responding to the identical situation.

The average Spearman's rho for each of the 10 items is presented in Table 1 (p. 63). The average rho for the self items was .60, and the average rho for the other-person items was .47, although the values ranged from .47 to .87 for self items, and from .39 to .60 for the other-person items. The Pearson r is also presented for comparison purposes, and in fact the Spearman's rho and Pearson r values are quite similar. The rho was thought to be more appropriate because it gives more stable results with small sample sizes. The fact that the size of many of the correlations was only moderate was somewhat surprising. The BI item for self was examined in more detail because it was the main dependent variable and was the only item to be used by itself in

Table 1

Test-retest reliability (Spearman's rho and Pearson r) for self and other-person items for the Post Videotape Questionnaire

Item	Variable	<u>Self</u>		<u>Other Person</u>	
		rho	r	rho	r
1	behavioral intentions	.47	.43	.50	.49
2	worried	.49	.48	.42	.32
3	anxious	.77	.77	.37	.39
4	competence	.51	.40	.57	.59
5	self-esteem	.87	.86	.39	.38
6	fairness	.47	.51	.60	.50
7	need for support	.69	.62	.45	.47
8	costs/benefits	.14 ^a	.15 ^a	.50	.51
9	resources to cope	.63	.72	.54	.50
10	reasonableness of request	.52	.36	.43	.53
Mean ^b		.60	.53	.48	.47

Note. The test-retest interval was 3 weeks. ^aNon-significant. All other items were significant at $p < .05$.
^bItem 8 was excluded in the calculation of the mean for the self items.

subsequent analyses.

A cross tabulation chart of the number of students who indicated a given score at time 1 and time 2 was constructed (See Table 2, p. 65). It appeared that more students had increased as opposed to decreased their BI from time 1 to time 2. This hypothesis was confirmed with a 1-tailed t-test for correlated groups ($t(34) = 2.25, p < .02$). The mean for BI at time 2 was 5.26, compared to 4.89 at time 1. Of those 23 students who changed their BI ratings from time 1 to time 2, 21% of them changed 3 points or more in the direction of increased assertiveness, while 0% of them changed 3 points or more in the direction of decreased assertiveness.

Another way of looking at this is to note that if Spearman's rho were calculated for those students whose scores lay on or close to the diagonal (with +2 or -2 from the diagonal), then 27 students would be included and a Spearman's rho of .83 ($p < .000$) would result. In other words, 79% of the sample was consistent in responding from time 1 to time 2, while the remaining 21% changed in the direction of becoming more assertive at time 2.

While the moderate correlations by themselves might be interpreted as suggesting that there were psychometric problems with the PVQ, the results from the t test suggested other interpretations. If the moderate correlations reflected that the BI measure was a poor and inconsistent measure (the issue that reliability is trying to get at), then the number of students increasing or decreasing their BI

Table 2

Cross tabulation of the number of students indicating a given assertiveness score at time 1 and time 2

		Time 1 Assertiveness Score						
		low				high		
		1	2	3	4	5	6	7
Time 2 Assertiveness Score	low	1						
	2		1	1	1			
	3			2		2		
	4					1		
	5		1	1			3	
	6	2	1	2		2	3	2
	high	7	1	1			3	4

ratings should have been random, and there should have been no significant difference from time 1 to time 2. However, random changes were not found, with the t test indicating that the subgroup of students who did change were more likely to act assertively at time 2 than at time 1. Moreover, a detailed look at the correlation coefficient suggested that 79% of the students were consistent, while 21% changed -- all in the direction of acting assertively.

One explanation of this phenomenon could be that when we first encounter someone who may respond unfavorably to our assertion, we might be unprepared, feel surprise, and so give in to the other person. After some of the participants indicated that they would give in to Phyllis at time 1, they may have subsequently felt used or annoyed, and then decided that they would not give in again. Then, when they were asked to respond again 3 weeks later, they acted in the more assertive direction.

Nelson, Hay, and Hay (1977) noted that in behavioral assessment, test-retest reliability is often low. Traditional assessment, which is more often aimed at measuring personality, would predict consistency in behavior over time (Cone, 1977). However, behavioral consistency is not always expected from a behavioral perspective. Nelson et al. (1977) noted that, "The lack of consistency in assessment scores cannot be interpreted as lack of precision on the part of the assessment tool: The assessment tool may be precise, but the behavior being measured may have changed" (p. 428).

For example, suppose we were measuring the behavior of giving up one's seat on a bus to an elderly person. If a student were rested today, she might give up her seat to the elderly person. If a student were exhausted tomorrow, she may not give up her seat. Our measurement may not be inaccurate and poor, but rather the behavior is different on the two different days.

Nelson et al. (1977) gave two examples in which the measurement instrument was thought to be precise, but behavior was inconsistent or changed. The first concerned an unpublished study by Jones (cited in Nelson et al., 1977), who was interested in the stability of interactions between mothers and sons. Jones compared the first 5 days of a baseline period to the last 5 days of a baseline period, and found that although he could predict the behavior of 72% of the subjects from time 1 to time 2, he could not predict the behavior of the other boys. Jones did not conclude that his measurement was inaccurate, but rather that behavioral variability over time may be characteristic of some subjects. A second example cited by Nelson et al. (1977) was a study done by LoPiccolo and Steger (1974), who conducted test-retest reliability across a two-week interval for their Sexual Interaction Inventory. These researchers found test-retest correlations ranging from .53 to .90, depending upon the subscale. Again, rather than concluding that the low reliability reflected measurement error, they concluded based on other information that the changes in scores were a result

of actual behavioral changes in the subjects as a result of taking the test (i.e., reactivity), rather than as a result of faulty measurement.

As a third illustration, Andrews and Kozma (1990) studied, among other things, children's on-task behavior in a Grade 5 classroom. During the baseline phase, a group of 12 students out of a total of 37 students were identified as low on-task. A second phase was implemented which did not involve intervention with these low on-task children. Without specific intervention, 4 out of the 12 children were no longer considered low on-task in the second phase of the study. These four children, who represented 9.3% of the class, were inconsistent from baseline to the second phase. The actual number of inconsistent children in the class might have been higher than 9.3% because we do not know how many medium- and high on-task children were inconsistent from baseline to phase 1.

In this thesis, BI was measured by one item, so that some other forms of reliability (e.g., split-half) could not be obtained. The measurement of a behavior with one item occurs often in the psychological literature. Two illustrations of measuring behavioral intentions with one item in the assertiveness field can be given. Fiedler and Beach (1978) used a single behavioral intentions item to measure intentions to refuse an unreasonable request. Cianni-Surridge and Horan (1983) asked employers how likely they would be to hire a student who demonstrated 16 different

assertive behaviors, with one item per behavior. Outside of the assertiveness area, Perrott and Taylor (1992) used one behavioral intentions item to measure the intentions of police officers to arrest suspects under differing situational conditions. MacNair, Elliott, and Yoder (1991) used one behavioral intentions item to measure whether people would use a condom after participating in an AIDS prevention education group. A single item or question can be more accurate in predicting behavior in the real world than can self-report scores on complex multi-item tests (Mischel, 1972). This is especially true if the single item is situationally-specific (Mischel, 1972). Behavior in the real world, or validity, is what we are really trying to get at when we talk about reliability (Nelson et al., 1977).

Reliability can be thought of having two kinds of error attached to it: (1) small random errors about the mean, and (2) systematic error, such as error due to learning or reactivity. The test-retest data suggest that there are two kinds of error in operation for the test-retest data: (1) small, random errors reflected in the data of the large majority (79%) of the participants, and (2) error due to reactivity or learning for a small number of participants (21%). In the actual videotape study, there was no possibility of learning effects, because each participant saw only one film, and saw it only one time.

There are data to suggest that the BI item was valid. The

BI item was predicted by the Rathus Assertiveness Schedule (RAS) when it was entered into a regression equation predicting BI ($F(4, 198) = 6.96, p < .01, \beta = .18$). Validity is the primary issue of concern (Nelson et al., 1977).

(b) State-Trait Anxiety Inventory (STAI)

The state part of the STAI, called the Self-Evaluation Questionnaire (Appendix D, p. 303), was administered as an additional measure of situational anxiety. The state part was also rewritten in the third person so that participants could respond as if they were the protagonist (Actor Evaluation Questionnaire, AEQ, Appendix E, p. 305). The trait part of the STAI was used in Study 2 as a trait measure of anxiety.

The STAI was constructed by Spielberger and his colleagues in 1964 to measure both state and trait anxiety, a distinction first introduced by Cattell (Spielberger, et al., 1983). State anxiety (S-anxiety) is transitory, and is characterized by subjective feelings of tension, apprehension, nervousness, and worry, often invoked by external stimuli. Trait-anxiety refers to relatively stable differences between people to perceive stressful situations as dangerous or threatening (Spielberger et al., 1983). In the S-anxiety section of the STAI, test takers are asked to respond to 20 anxiety-present or anxiety-absent items

describing how they feel right now, at this moment (e.g., I feel tense; I feel content). Responses are scored on a 4-point scale ranging from "not at all" to "very much so". In the trait anxiety section, test takers respond to 20 anxiety-present or anxiety-absent items about how they generally feel. Responses are scored on a 4-point scale ranging from "almost never" to "almost always".

Reliability. The STAI was updated in 1983. Correlations of about .95 between Form X (1964 version) and Form Y (1983 version) have been found for males and females and for college students and high school students (Chaplin, 1984). Because the correlations are so high, data on reliability and validity for one version of the test is viewed as applicable to the other version of the test (Chaplin, 1984; Spielberger et. al, 1983).

Using undergraduate student samples, test-retest correlations ranging from .73 to .86 were found for the T-anxiety scale, and test-retest correlations ranging from .16 to .62 were found for the S-anxiety scale (Spielberger, et. al., 1983). Lower correlations for S-anxiety than T-anxiety would be expected, since traits should be relatively stable over time, and states should change with different external circumstances. Correlations for S-anxiety also decreased with longer periods of time from the original testing, as would be expected (Anastasi, 1988; Spielberger et. al., 1983).

Measures of internal consistency were quite high for both

T-anxiety and S-anxiety. Alpha coefficients for the Form Y S-anxiety scale were all above .90 for samples of working adults, students and military recruits, with a median coefficient of .93. The alpha coefficient for the T-anxiety scale were similarly high, with a median alpha coefficient of .90. Measures of internal consistency are slightly higher for Form Y compared to Form X, which suggests that Form Y is a more consistent measure than Form X, as was intended (Spielberger, 1983).

Validity. Groups of psychiatric patients with different diagnoses were compared to each other and to normal controls. All psychiatric patient groups had higher levels of T-Anxiety than did normals, with the exception of character disorders, who had lower anxiety than normals (Spielberger et al, 1983).

Military recruits and college students of a similar age were similar on their levels of T-anxiety. However, these same groups showed discrepancies in S-anxiety, with the recruits' scores higher than the college students' scores. At the time, the recruits were going through a stressful training condition, whereas the college students were tested under relaxed conditions. S-anxiety for college students was higher under examination conditions and lower after relaxation training, compared to a control condition (Spielberger et. al., 1983).

In terms of concurrent validity, correlations between the T-anxiety scale, and the IPAT Anxiety and the Taylor Manifest

Anxiety Scales, ranged from .73 to .85 in college student and psychiatric populations. While correlations with the Zuckerman Affect Adjective Checklist were lower, the latter is not as good a measure of anxiety as the former scales, which were the most-used scales prior to the STAI (Spielberger et. al., 1983).

Correlations between S-anxiety and T-anxiety for Form Y for samples of working adults, students and military recruits showed a median correlation of .65, and ranged from .59 to .75. Persons high in T-anxiety tended to have more S-anxiety than persons low in T-anxiety even in relatively neutral situations. This finding is consistent with what one would predict (Spielberger et. al., 1983). A number of researchers have conducted factor analysis on the STAI. Generally speaking, the STAI has been found to have either a four- or two-factor structure. The two factors correspond to state and trait anxiety, while the four factors subdivide state and trait anxiety into anxiety-present and anxiety-absent items (Chaplin, 1984).

With respect to convergent and divergent validity, Spielberger et. al. (1983) predicted that the STAI would show higher correlations with measures of emotional disturbance, and would show lower correlations with unrelated constructs. These researchers found that the Cornell Medical Index correlated at a .70 level with both S-anxiety and T-anxiety in a psychiatric population. No correlation was found between STAI scores and the army Beta intelligence test in

the same population. In another study, S-anxiety and T-anxiety scores were independent of scores on the Edwards Personal Preference Inventory, with the exception of the abasement scale. The STAI seems to be relatively independent of other personality measures.

Most reviewers give the STAI high points in terms of test construction, reliability, and validity (Buros, 1978; Chaplin, 1984). In view of the overall excellent properties of this scale, it is a good choice for measuring anxiety.

(c) Rathus Assertiveness Schedule (RAS)

The RAS (Rathus, 1973) is a 30-item test designed to measure general assertiveness. Each item is rated on a 6-point scale, with "very characteristic of me, extremely descriptive" at one end, to "very uncharacteristic of me, extremely non-descriptive" at the other end (Appendix F, p. 307).

Beck and Heimberg (1983) reviewed the literature on self-report assertiveness questionnaires. For the RAS, test-retest reliability was around .8 in several studies which included a test-retest component ranging from 2 to 5 weeks. Split-half reliability was also around .8. These reliabilities are quite acceptable. Beck and Heimberg (1983) noted that the RAS is one of the few self-report instruments with adequate reliability data.

Beck and Heimberg (1983) suggested that with respect to

validity, the RAS has shown differences between treated and untreated subjects. The RAS correlates highly with other assertiveness measures. In several studies, social desirability and scores on the RAS have not been found to correlate significantly (Cummins, Holombo, & Holte, 1977; Frisch, 1988). Beck and Heimberg (1983) concluded that, in comparison with other assertiveness scales, there are adequate data to recommend the RAS.

(d) Marlowe-Crowne Social Desirability Scale (MC-SDS)

Need for approval is a construct developed by Crowne and Marlowe (1960) to describe a person who needs the approval of others and attempts to obtain this approval by describing himself/herself in socially desirable terms. In 1964, Crowne and Marlowe (1964) revised their definition to include a defensive component related to avoidance of disapproval.

There are 33 true-false items on the MC-SDS (See Appendix G, p. 311). The items in the scale were selected to reflect approximately equal numbers of two types of statements: culturally acceptable, but probably untrue items; and true but undesirable items.

The internal consistency of the MC-SDS is high, with a Kuder-Richardson 20 score of .88. Test-retest correlations over a 1-month interval for 57 college students was .88 (Robinson & Shaver, 1973). Robinson and Shaver (1973) reported a variety of studies supporting the validity of the

scale, such as a greater tendency to social conformity and verbal conditionability for subjects high on the MC-SDS.

A number of researchers (e.g., Lobel, Kashtan, & Gilat, 1987; Millham, 1974) believe that the MC-SDS should be broken down into two components: the approach component, representing a tendency to attribute desirable characteristics to oneself; and the avoidance component, representing the denial of undesirable characteristics. Lobel et al. (1987) found that assertiveness was related to the approach component, but not to the avoidance component. The approach score is calculated by adding together the 18 true-keyed items (Millham, 1974). In this thesis, the approach and total scores from the MC-SDS were used and were compared to see if the same or different outcomes would result.

4. Videotape study procedures

Subjects. The participants were 198 female student volunteers recruited from undergraduate psychology classes at the University of Ottawa. The experiment was conducted during class time, with the permission of the instructors. Participants were given the option to participate or not. The participants were told that the study was about people's reactions to certain types of social interactions. They were told that they would be viewing a brief 3 to 5 minute film

about two people interacting. Following the film, they would complete questionnaires about their opinions, ideas, and feelings concerning the interaction. The exact instructions are given in Appendix H (p. 314).

Procedures. Students who had agreed to participate in the study were first asked to sign a consent form (See Appendix I, p. 315). Then the students were randomly divided into four groups to view one of the videotapes. Because of limited availability of classrooms and videotape equipment, two groups went with an assistant to another classroom, while two groups remained with the main experimenter (the author). In each class, one group viewed the videotape, while the other group waited outside the class. Then the two groups changed places.

The instructions given to the participants in the classroom prior to viewing the videotape were as follows:

"I am going to show you a videotape of Helen thinking about asserting herself with Phyllis. I would like you to view the videotape and then answer some questions about what you saw."

The videotape was then played. When the videotape was finished, the students were given copies of the script, and a set of questionnaires. They were then told,

"Here is a questionnaire for you to complete, and a copy of the script. Do not put your name on the questionnaire or the

script so that your answers will remain anonymous, and the scripts can be reused. If you didn't hear all of the dialogue on the videotape, or if you would like a reminder of what was said, then please refer to the script. If you have any questions, then please raise your hand and I will come to your desk and answer the question.

(For the first group only:) Because we have only one set of video equipment in this room, and we have two groups, I will have to ask you to wait in the hall while the second group comes into this room to view their videotape. It will last only about 5 minutes. Please wait quietly in the hall and do not discuss your answers with your classmates. You may start to fill out your questionnaire in the hall if you wish, or you may wait 5 minutes and fill it out after you are let back into the classroom."

An assistant stayed in the hall to ensure that the group did not discuss the answers to the questionnaire.

The reason for giving a copy of the script was that during pre-testing, some students found parts of the videotape difficult to hear, or did not remember the probability. The intent of the videotape procedure was to provide a common scene, with the same people interacting, to be considered by all students. It was felt that giving a copy of the script would not invalidate the study in any way. The order of questionnaires in the package handed out to students was:

- (1) PVQ/Self-evaluation Questionnaire (SEQ; state anxiety

questionnaire from the STAI) for one-half of the participants or PVQ/Actor Evaluation Questionnaire (AEQ; state anxiety questionnaire from the STAI rewritten from the perspective of another person) for one-half of the participants; (2) the PVQ/SEQ or PVQ/AEQ, whichever was not completed in step 1; (3) MC-SDS; and (4) RAS. A sheet with additional instructions was placed between steps 1 and 2 to remind the participants that they were responding from a new frame (See Appendix J, p. 317, for the instructions).

When the students were reassembled in the same room, their attention was brought to the additional instructions written on the blackboard:

"(1) Assume that no other solution to the problem is possible, that HELEN/YOU are thinking about refusing to loan Phyllis the notes.

(2) On the Post Videotape Questionnaire, question #2 on assumes that HELEN/YOU are thinking about refusing to loan Phyllis the notes, irrespective of your answer to question #1."

The additional instructions were given because it was also discovered, when the first students were tested, that there was some confusion about the meaning of some items. This issue had not become apparent during pre-testing. The first item about BI was confusing because some students wanted to find a solution other than assertiveness, such as

photocopying the notes for their friend. The second item was a clarification of the intent of the other items, since items beginning at item 2 assumed that students were thinking about refusing their friend the notes, even if they had said that they would give her the notes in item #1. Students were encouraged to ask questions if they were confused or had any questions at all (as per previous instructions).

When the participants finished the questionnaires, they were thanked for their participation. They were told that if they wanted to have feedback on the overall study, they should write their name and address on sheets provided by the experimenter/assistants for that purpose.

Chapter 3

Results for Study 1 -- Videotape Study

1. Effects of severity and probability on behavioral intentions

Data Screening. Prior to assessing the effects of severity and probability on BI, data screening was performed to look for outliers and to check the shape of the distributions. There were few missing data. The number of participants used in the analysis was 195 participants. Outliers were checked for the demographic variables and BI. There were no outliers for BI, but there were 10 outliers for age. The analysis was repeated with age outliers removed, but the outcome was the same. Therefore, the age outliers were retained.

During data screening, it was discovered that the BI variable could best be described as bimodal, since most students responded in the 1 to 3 or 5 to 7 ranges, with only 4 of 198 students selecting item number 4. Several attempts were made to transform the data to a normal distribution, including transforming the data using log, square root, and inverse transformations, and eliminating a "4" response to make a 6-point scale. None of these procedures resulted in a normal distribution, presumably because the underlying distribution was bimodal.

Because BI was bimodal, a decision was made to do two tests

to examine the effects of severity and probability on BI. The first test was logit analysis, a method analogous to a non-parametric ANOVA, but which uses the chi-square distribution (Tabachnick & Fidell, 1989). Logit analysis has few assumptions, and is designed to analyze categorical data. The number of participants required to do the analysis is 5 times the number of cases as cells, and therefore there was an adequate number of cases in this study. The second method was univariate analysis of variance (ANOVA), which is a parametric technique. It was felt that ANOVA was still appropriate for this analysis because it is robust to violations of its assumptions, especially when group sizes are equal (Stevens, 1986), as was the case in this study. If logit analysis and ANOVA gave the same results, then one could have more confidence in the results of the analyses.

Logit analysis. BI was collapsed into two categories, high and low, to reflect the bimodal distribution. A screening analysis was done using SPSSX HILOGLINEAR, examining the self and other-person items in two separate analyses. While the self and the other-person items could have been entered as another factor, the self and other-person items were conceptualized as two different and unrelated issues. In fact, there was virtually no correlation between self and other-person items ($r = .15$, $p > .05$).

The results of the screening analysis for the other-person items indicated no significant one-way ($\chi^2(3) = 1.77$, $p > .05$), two-way ($\chi^2(3) = .13$, $p > .05$), or three-way effects

($\chi^2(1) = .96, p > .05$). This means that severity and probability had no effect on BI for the other-person items. For the self items, the results of the screening indicated a significant one-way effect ($\chi^2(3) = 45.06, p < .001$), but no significant two-way ($\chi^2(3) = 6.72, p > .05$) or three-way effects ($\chi^2(1) = .79, p > .05$). The partial association likelihood ratio chi-square was significant for severity with BI ($\chi^2(1) = 5.73, p < .05$), but not for probability with BI ($\chi^2(3) = 6.72, p > .05$). Hence, the empirically derived model during screening suggested that severity affected BI, while probability did not.

This empirically derived model was tested using loglinear analysis. The predicted and observed values for BI were not significantly different ($\chi^2(2) = 1.63, p > .05$), suggesting that the severity model adequately fit the data. The standardized parameter estimate between BI and severity was negative, suggesting that as severity increased, BI decreased. Measures of association suggested that severity accounted for at best about 9% of the variance (entropy = .03, concentration = .03).

ANOVA. The ANOVA analysis was done using SPSSX MANOVA. There was no difference in the outcome with age outliers removed, so age outliers were left in. There were 195 participants in the analysis. The assumption of homogeneity of variance was confirmed (Bartlett-Box $F(3, 67461) = 1.49, p > .05$). For the other-person items, there was no significant effect for probability group ($F(1, 194) = .02, p > .05$), severity group ($F(1, 194) = .27, p > .05$), or the

probability by severity interaction ($F(1,194) = 1.32, p > .05$). For the self items, there was a significant effect for severity ($F(1,194) = 6.49, p < .01$), but not for probability ($F(1,194) = .19, p > .05$) or the interaction ($F(1,194) = .58, p > .05$). The mean for the high-severity group was 3.9, and the mean for the low-severity group was 4.6, with high scores reflecting high BI, and low scores reflecting low BI.

Power analysis. Both the logit analysis and the ANOVA suggested that severity affected BI, while probability and the severity by probability interaction had no effect on BI. The question can be raised as to whether there was sufficient power to detect an effect if one were there for probability and the severity by probability interaction. A power analysis for the ANOVA's indicated that given 195 participants, there was an 81% chance of finding an effect as small as .04. Hence, if even a small effect were present for probability and/or the severity by probability interaction, it likely would have been detected by this analysis.

Conclusion. The results of the ANOVA's agree with the results from the logit analysis. Severity and probability had no effect on BI when rated from the perspective of the other person. Because no significant effects were found for the other-person items, these items were not considered further in this study. However, as hypothesized, severity was more of a deterrent to acting assertively when one was answering for oneself. The role of cognitions/emotions as mediators between antecedents and consequences, and the role

of personality as moderators of the effect, were explored in the remainder of the study for the self items.

2. Coeffects versus mediational models

The next analysis involved doing a principal components analysis (PCA) of the Post Videotape Questionnaire (PVQ) self items, plus the state-anxiety score from the STAI. The purpose of this analysis was to decrease the number of possible coeffects/mediators from 11 (10 items on the PVQ plus the state-anxiety [STAI] scores) to a smaller number of dimensions. These fewer dimensions could then be tested as coeffects or mediators between severity and probability and BI by using path analysis.

(a) PCA

While there is some controversy in the literature about whether to use PCA or principal factor analysis (PFA), PCA was used in this study. The reasons for using PCA as opposed to PFA were:

- (1) PCA can be used if the purpose is to summarize the data, as compared to using statistical inference to determine the number of factors (Tabachnick & Fidell, 1989). The main purpose was to decrease the number of possible coeffects/mediators to be used in subsequent analyses.
- (2) PFA can be used if the results of the PCA are uninterpretable (Stevens, 1986). If interpretable dimensions

followed from a PCA, then PCA might be sufficient.

(3) For PFA, the factor indeterminacy issue is a problem, in that factors are not uniquely determined. Stevens (1986) argues that factor indeterminacy is such a problem with PFA that any advantages that PFA might offer are cancelled by its disadvantages.

Data screening. First, the data were screened to determine whether the assumptions of PCA were met. It was assumed that outliers would not be a problem with the PVQ because of the use of a 7-point scale, which by its restricted range rendered the concept of outliers meaningless. There were no outliers on the state-anxiety (STAI) scores. The sample size of 195 participants was considered adequate. A number of variables showed deviation from normality, and a few factors might be considered to more closely approximate a bimodal distribution in the sense that a small number of participants selected the mid-point (e.g., BI, as already discussed). If PCA is being used descriptively to summarize data, then assumptions of normality are not in force (Tabachnick & Fidell, 1989). Even if normality fails, the solution may be degraded, but still worthwhile (Tabachnick & Fidell, 1989). Because of deviations from normality, some variables may not be linearly related. Gorsuch (1983) argues in several places in his book that factor analysis is usually robust to violations of normality, and by implication, linearity. The PCA was repeated with age outliers removed, and this made no difference to the outcome. Therefore, age outliers were

retained.

PCA. The PCA was done using the SPSSX FACTOR program. The Kaiser-Meyer-Olkin measure of sampling adequacy suggested that the items could be factored (Kaiser = .75). This conclusion was supported by small values in the off-diagonals for the anti-image covariance matrix. The PCA with varimax rotation resulted in the retention of three components, using the Kaiser rule that those components with eigenvalues greater than one are retained. Loadings of variables on components, communalities, and percents of variance are presented in Table 3 (p. 89). Different writers suggest different standards for interpreting loadings. Tabachnick and Fidell (1989) suggest grouping together items that load around the .3 level. Stevens (1986) suggests taking sample size into account, and would use .36 as the critical cutoff for a sample size of 200. The value is derived from the critical cutoff for a correlation coefficient at $\alpha < .01$. The critical cutoff is also doubled to take into account the fact that multiple tests are being done. The critical cutoff score used was .36 because the loadings in the analysis were quite high, and the more stringent criteria could be used. If, using the .36 criteria, an item could be interpreted as loading on more than one component, the higher communality was used, so that an item could be included in one component. The first component extracted was labelled anxiety (component)⁴, and was made up of items 2 and 3 of

⁴There are actually two state anxiety scores in this study: (1) the component anxiety score, derived from the PCA, and (2) state anxiety as measured by the STAI. To avoid confusion, the former will be referred

the PCA (worried/calm, anxious/calm) and the state anxiety score from the STAI. A high score would reflect high anxiety. The second component was labelled negative self-evaluation, and included items 4, 5, 8, and 9 of the PVQ (competent/incompetent, high self-esteem/low self-esteem, costs versus benefits of acting assertively, and resources to cope). A high score on this component would reflect negative self-evaluation (low competence, low self-esteem, costs of behaving assertively outweighing the benefits, and not having enough resources to cope). The third component was labelled unfairness/need for support, and loaded on items 6, 7, and 10 of the PVQ (fair/unfair, high/low need for support, and reasonableness/unreasonableness of the request). A high score on this component would reflect an unfair situation, high need for support, and unreasonableness of request.

Reliability. Reliability for each of the components was determined by dividing the total sample randomly into two groups with approximately equal numbers of participants in each group. The analysis was then redone on the two subsamples. If the components were reliable, then one could expect to see the same items load on the same factors in the subsamples (Stevens, 1986). Also, as recommended by Stevens (1986), the two regression equations derived from the two subsamples were applied to the total sample, and the two scores were correlated. The resulting correlations could be expected to be high if the two equations were essentially

to as anxiety (component), while the latter will be referred to as state anxiety (STAI).

Table 3

Component loadings, communalities, and percents of variance for principal components extraction and varimax rotation for the PVQ

Item Content	C ₁	C ₂	C ₃
worried	*.87	.08	.08
anxious	*.85	.16	.01
competent	.39	*.67	.04
self-esteem	.25	*.74	.18
fair	.02	.07	*.68
need for support	.18	.12	*.67
costs/benefits	.28	*.62	.09
resources to cope	.36	*.70	.06
reasonableness of request	.01	.13	*.72
state anxiety (STAI)	*.51	.36	.23
Percent of variance	31.8	14.7	11.3

Note. The labels given to the components and the direction of the item loadings were: (1) C₁: anxiety: High scores reflected feelings of worry, anxiety, and high state anxiety (STAI) scores; (2) C₂: negative self-evaluation: High scores reflected feelings of low competence, low self-esteem, costs of behaving assertively outweighing the benefits, and not having enough resources to cope; (3) C₃: unfairness/need for support: High scores reflected need for support, unfairness, and unreasonableness of request.

Criteria for inclusion: Tabachnick and Fidell (1989) .30; Stevens (1986) .36 (twice the critical cutoff for $\alpha = .01$)

equivalent. The critical cutoff for including an item on a component according to Stevens' (1986) criteria would be .51 for a sample size of 100.

The loadings of variables for the two subsamples on components, communalities, and percents of variance for all participants are presented in Table 4 (p. 91). As can be seen from Table 4, the components and loadings from the two subsamples were almost identical to the overall sample. The Pearson correlations resulting from the application of the two component equations to the full sample were .97 ($p < .01$) for anxiety, .99 ($p < .01$) for negative self-evaluation and .86 for unfairness/need for support. Hence, the components were reliable, although anxiety and negative self-evaluation showed almost perfect agreement, while the unfairness/need for support correlation was somewhat lower.

(b) Assessment of mediation of anxiety, unfairness/need for support, and negative self-evaluation between severity and probability (antecedents) and BI (consequences)

The next issue had to do with whether anxiety, unfairness/need for support, or negative self-evaluation could act as mediators between severity and probability (antecedents) and BI (consequences). Because of the design of this study, it was not possible to say for certain that these variables were mediators, since it was not possible to establish whether the students made decisions about these variables before or after they made a decision about BI. In

Table 4

Critical loadings, communalities, and percents of variance for PCA and varimax rotation for two subsamples

Item Content	Sample A ^a			Sample B ^b		
	C ₁	C ₂	C ₃	C ₁	C ₂	C ₃
worried	*.89	.17	.03	*.85	.00	.02
anxious	*.85	.13	.02	*.83	.22	.09
competent	.46	*.67	.07	.31	*.67	.09
self-esteem	.26	*.69	.35	.23	*.75	.02
fairness	.14	.17	*.69	.04	.03	*.54
need for support	*.53	.01	.46	.02	.17	*.76
costs/benefits	.23	*.48	.21	.24	*.71	.06
resources to cope	.22	*.77	.00	.45	*.68	.05
reasonableness of request	.03	.13	*.75	.09	.15	*.76
state anxiety (STAI)	*.49	.29	.31	*.55	.42	.15
Percents of variance	34.6	13.7	10.4	14.9	31.1	12.8

Note. Component labels: C₁: anxiety; C₂: negative self-evaluation; C₃: unfairness/need for support.

Criteria for inclusion: Tabachnick & Fidell (1989): .30; Stevens (1986): .51 (twice the critical cutoff at the $\alpha = .01$ level). ^aN = 99 ^bN = 95

other words, did the students feel anxious and then make a decision about BI, or did the students make a decision about BI and then feel anxious? While the order of the effect could not be determined by this study, this analysis allowed an exploration of whether it was possible for anxiety, negative self-evaluation, or unfairness/need for support to mediate BI.

Data screening. The assumptions for path analysis are essentially the same as for multiple linear regression analysis (Pedhazur, 1982). Few cases had missing data, which was thus not a problem. The influence of possible univariate and multivariate outliers was checked using Cook's distance. Since no influential outliers were found, all 198 cases were retained. Negative self-evaluation and unfairness/need for support were normally distributed. However, the anxiety component had significant kurtosis. It was felt that data transformations would not help, since data transformations are meant for skewed data (Tabachnick & Fidell, 1989). As already discussed, BI was bimodal, and transformations did not improve the distribution. The data analysis was performed on untransformed data. Because the distributions were not always normal, some assumptions of multiple regression (linearity, homoscedasticity, and independence of residuals) may not have been met. However, regression is felt to be robust to violations of its assumptions (Cohen & Cohen, 1975). Since regression analysis requires a number of subjects equal to five times the number of independent

variables (Tabachnick & Fidell, 1990), there were adequate numbers of subjects for the analyses. Correlation matrices for the path analyses were checked for multicollinearity, and none was found.

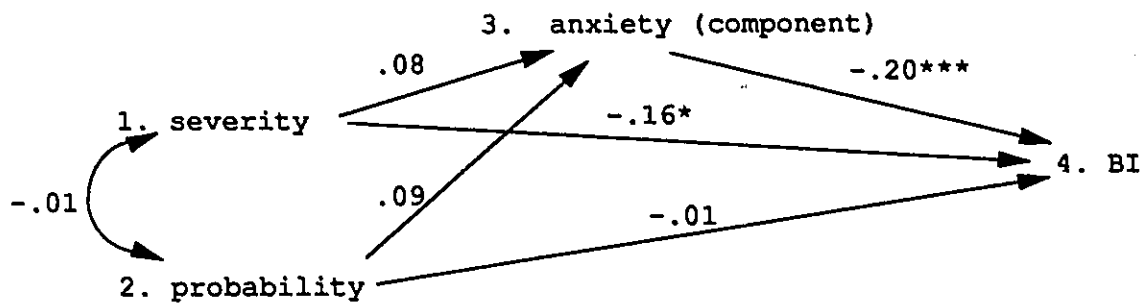
Path analysis. Figures 1 to 3 (pp. 94 to 96) present the path models and coefficients for possible mediational models between severity and probability (antecedents) and BI (consequences), with anxiety (component), unfairness/need for support, and negative self-evaluation components derived from the PCA as the respective potential mediators. Tables 5 to 7 (pp. 97 to 99) present the three types of effects implied by the path diagrams, which includes causal direct effects, causal indirect effects, and non-causal effects, the latter of which is made up of shared indirect effects and spurious covariation. The zero-order correlations between the independent and dependent variables are also presented in these tables. The coefficients representing the different types of variance between the independent and dependent variables sum across the rows of the table to produce the correlations.

The path model for anxiety (component) is presented in Figure 1 (p. 94). As can be seen from this figure, severity had a direct effect on BI ($p_{41} = -.16, p < .05$)⁵. As severity increased, BI decreased. In addition, anxiety

⁵In path analysis, the notational convention is to signify a causal path by a lower case p. The first number following the p denotes a consequent variable, and the second number after the p denotes an antecedent variable. The second italicized lower case p after a p denoting a path indicates the significance level of the path coefficient.

Figure 1

Path model of causal relationships among severity, probability, anxiety (component), and BI



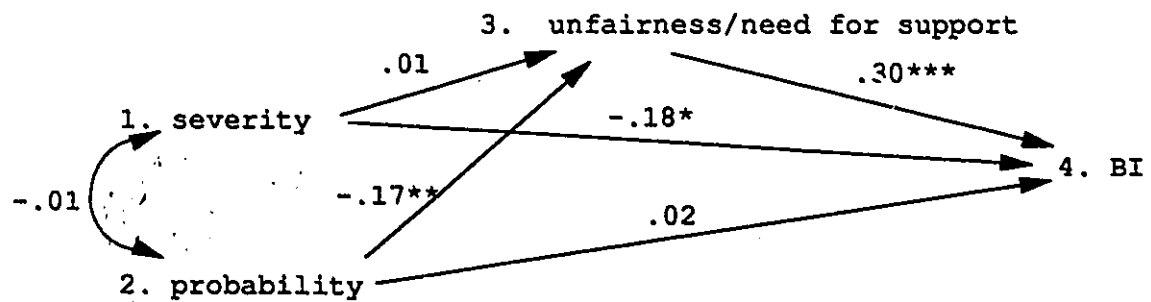
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 2

Path model of causal relationships among severity, probability, unfairness/need for support, and BI



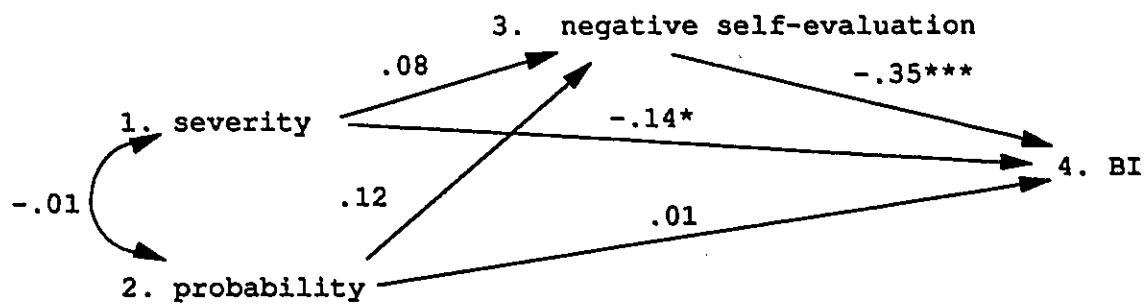
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 3

Path model of causal relationships among severity, probability, negative self-evaluation, and BI



* $p < .05$

** $p < .01$

*** $p < .001$

Table 5

Summary of path model causal effects and correlations for severity, probability, anxiety (component), and BI

Dependent Variable: anxiety (component)			
Variables	Direct Causal Influence	Shared Indirect Non-causal	Calculated Correlation
severity	.08	.00	.08
probability	.09	.00	.09

Dependent Variable: BI					
	Causal		Non-causal		Calculated Correlation
	Direct	Indirect	Shared Indirect	Unaccounted For	
severity	-.16	-.02	.00	--	-.18
probability	-.01	-.02	.00	--	-.03
anxiety (component)	-.20	--	--	-.02	-.22

Table 6

Summary of path model causal effects and correlations for severity, probability, unfairness/need for support, and BI

Dependent Variable: unfairness/need for support			
Variables	Direct Causal Influence	Shared Indirect Non-causal	Calculated Correlation
severity	.01	.00	.01
probability	-.17	.00	-.17

Dependent Variable: BI					
	Causal		Non-causal		Calculated Correlation
	Direct	Indirect	Shared Indirect	Unaccounted For	
severity	-.18	.00	.00	--	-.18
probability	.02	-.05	.00	--	-.03
unfairness/ need for support	.30	--	--	--	.30

Table 7

Summary of path model causal effects and correlations for severity, probability, negative self-evaluation, and BI

Dependent Variable: negative self-evaluation			
<u>Variables</u>	<u>Direct Causal Influence</u>	<u>Shared Indirect Non-causal</u>	<u>Calculated Correlation</u>
severity	.08	.00	.08
probability	.12	.00	.12

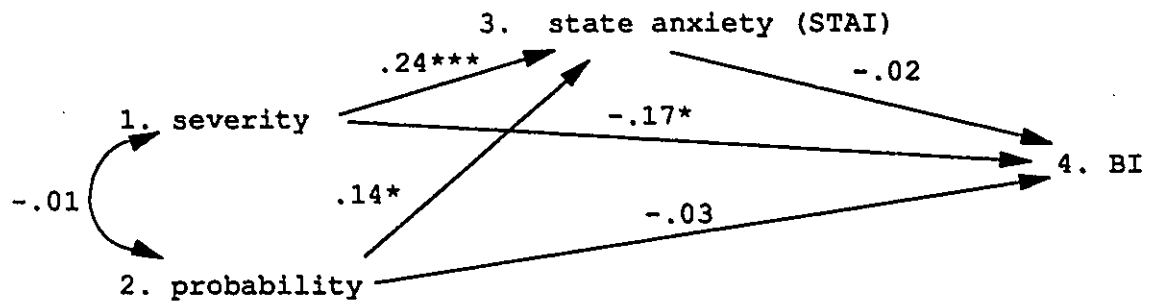
Dependent Variable: BI					
	<u>Causal</u>		<u>Non-causal</u>		<u>Calculated Correlation</u>
	<u>Direct</u>	<u>Indirect</u>	<u>Shared Indirect</u>	<u>Unaccounted For</u>	
severity	-.14	-.03	.00	--	-.17
probability	.01	-.04	.00	--	-.03
negative self-evaluation	-.35	--	--	-.02	-.37

(component) had a direct effect on BI ($p_{43} = -.20, p < .001$). As anxiety (component) increased, BI decreased. However, anxiety (component) did not serve as a mediator between the antecedents and consequences because severity and probability did not affect anxiety (component) ($p_{31} = .08, p > .05$; $p_{32} = .09, p > .05$).

Because it seemed reasonable to assume that severity and probability would affect state anxiety (in this context, the concept of state anxiety is intended), and that state anxiety would affect BI, the decision was made to examine an additional path, using state anxiety as measured on the STAI as the mediator. Perhaps the path analysis using anxiety (component) as a mediator was not sensitive enough to pick up an effect, since anxiety (component) had significant kurtosis. State anxiety (STAI) was normally distributed. State anxiety (STAI) also has demonstrated reliability and validity (see introduction section). The path model for state anxiety (STAI) is presented in Figure 4 (p. 101), and the breakdown of the various effects is presented in Table 8 (p. 102). In the state anxiety (STAI) model, severity had a direct effect on BI ($p_{41} = -.17, p < .05$). As severity increased, BI decreased. Also, severity and probability had direct effects on state anxiety (STAI) ($p_{31} = .24, p < .05$; $p_{32} = .14, p < .05$). As severity and probability increased, state anxiety (STAI) increased. However, state anxiety (STAI) did not act as a possible mediator, because the path between state anxiety (STAI) and BI was non-significant ($p_{43} = -.02, p > .05$).

Figure 4

Path model of causal relationships among severity, probability, state anxiety (STAI), and BI



* $p < .05$

** $p < .01$

*** $p < .001$

Table 8

Summary of path model causal effects and correlations for severity, probability, state anxiety (STAI), and BI

Dependent Variable: state anxiety (STAI)			
Variables	Direct Causal Influence	Shared Indirect Non-causal	Calculated Correlation
severity	.24	.00	.24
probability	.14	.00	.14

Dependent Variable: BI					
	Causal		Non-causal		Calculated Correlation
	Direct	Indirect	Shared Indirect	Unaccounted For	
severity	-.17	-.01	.00	--	-.18
probability	-.03	.00	.00	--	-.03
state anxiety (STAI)	-.02	--	--	-.05	-.07

The path model with unfairness/need for support as a possible mediator is presented in Figure 2 (p. 95). Severity directly affected BI ($p_{41} = -.18, p < .001$). As severity increased, BI decreased. In this model, unfairness/need for support can act as a possible mediator. Probability affected unfairness/need for support ($p_{31} = -.17, p < .01$), and unfairness/need for support affected BI ($p_{43} = .30, p < .001$). As probability increased, unfairness/need for support decreased (i.e., the situation is seen as fair, reasonable, and one does not require support), and BI decreased.

The path model with negative self-evaluation as a possible mediator is presented in Figure 3 (p. 96). As can be seen from this model, severity directly affected BI ($p_{41} = -.14, p < .05$). As severity increased, BI decreased. Also, negative self-evaluation directly affected BI ($p_{43} = -.35, p < .001$). As negative self-evaluation (low competence, low self-esteem, not having resources to cope, and costs of being assertive outweighing the benefits) increased, BI decreased. However, negative self-evaluation did not act as a mediator between severity and probability and BI, because the paths between severity and negative self-evaluation, and probability and negative self-evaluation, were non-significant ($p_{31} = .08, p > .05$; $p_{32} = .12, p > .05$).

Overview. Taken as a whole, the results of the three path models suggested that: (1) Severity had a direct effect on BI, but probability had no direct effect. As severity increased, BI decreased. (2) Probability may exert an

indirect effect on BI through unfairness/need for support. As probability increased, unfairness/need for support increased, and BI decreased. (3) In addition, negative self-evaluation (low competence, low self-esteem, not having resources to cope, and costs of being assertive outweighing the benefits) and anxiety (component) had a direct effect on BI. As negative self-evaluation and anxiety (component) increased, BI decreased.

In spite of the fact that both severity (directly) and probability (indirectly) were found to affect BI, it is important to note that severity can account for at best only about 3% of the variance in BI, while probability can account for at best less than .1% of the variance in BI. From this perspective, severity does seem to have more of an impact on BI than does probability, although in both cases the effects are fairly weak.

Severity and probability did not have a consistent effect on BI and the coeffects/mediators. In other words, it was not always the case that severity affected these variables, while probability had no effect. Severity by itself affected BI, probability by itself affected unfairness/need for support, both severity and probability affected state anxiety (STAI), and neither severity nor probability affected the anxiety component. Hence, complex effects of severity and probability are emerging, rather than a simple effect of severity alone.

3. Assessment of the role of personality factors (social desirability, the tendency to attribute positive characteristics to oneself, and assertiveness) in moderating the effects of severity and probability on BI

One question raised was whether personality variables, specifically social desirability as measured by the Marlowe-Crowne Social Desirability Scale (MC-SDS), the tendency to attribute positive characteristics to oneself (the approach subscale of the MC-SDS), and assertiveness (RAS), would moderate the effects of severity and probability on BI. In other words, were high-assertive students affected by severity and probability in a way that was different from the low-assertive students? Were high social-desirability students affected by severity and probability in a way that was different from the low social-desirability women? These issues were tested using regression analysis of variance (regression ANOVA) and the SPSSX REGRESSION program. Since some researchers found the approach subscale of the MC-SDS to be related to assertiveness while the MC-SDS total score was not related to assertiveness (Lobel et al., 1987), both the approach subscale and the MC-SDS total score were examined.

Data screening. The personality variables (MC-SDS, approach subscale of the MC-SDS, and the RAS) were all normally distributed, and there were no univariate outliers. As already discussed, BI deviated from normality, and data transformations did not improve the distribution. However,

regression is robust to violations of its assumptions (Cohen & Cohen, 1975). Therefore, the analysis was performed on untransformed data, and this is what is presented here. A total of about 197 participants were used in this analysis, with some slight variations in numbers due to missing data. Since the number of subjects required for the regression analysis is five times the number of independent variables (Tabachnick & Fidell, 1990), there were adequate numbers of subjects to perform the analysis.

Regression. The variables were entered in a hierarchical manner. In hierarchical regression, the order of variable entry is important, since variance is partialled out in the order in which variables are entered, and those variables entered first are more likely to achieve significance. Demographics were not entered into the equations, since this study was concerned with between-groups differences and any effects that demographics would have had would presumably have been eliminated by random assignment of participants to groups. Severity was the first variable to be entered in order to maximize power as recommended by Cohen and Cohen (1975). Probability and the severity by probability interaction were entered next to allow these main variables of interest to account for as much variance as they could. The personality variables (assertiveness, social desirability, and the tendency to ascribe positive characteristics to oneself) were entered into their respective analyses before the interaction terms involving the personality variable with severity and/or probability.

According to Cohen and Cohen (1975), all of the components of a multiplicative term must be entered into the equation (i.e., partialled out) before the multiplicative term can become a true interaction term.

A summary table of variables entered in each step, the significance of the change in variance accounted for at each step, and other related information is presented in Table 9 (p. 108) for social desirability, Table 10 (p. 109) for the tendency to ascribe positive characteristics to oneself, and Table 11 (p. 110) for assertiveness. In interpreting Tables 9 to 11, the reader may notice that in some cases the standardized beta's and correlations differ markedly, although generally speaking the standardized beta's and correlations are expected to be about equal. The explanation for the discrepancies is that some of the components of the interaction terms are very highly correlated with each other. For example, in Table 9, the severity by probability term is correlated at a .94 level with the severity by probability by MC-SDS term. This multicollinearity problem resulted in untrustworthy, "bouncing" beta's. The analysis was still appropriate, but in cases where the beta's and the correlations were markedly divergent, one can have confidence in the correlations but not the beta's (Cohen & Cohen, 1975).

As can be seen from Tables 9 to 11, severity was significant as a main effect ($F(1, 195) = 6.45, p < .01$), while probability ($F(1, 194) = .23, p > .05$) and the severity by probability interaction ($F(1, 193) = .55, p >$

Table 9

Hierarchical regression with social desirability (MC-SDS) as the possible moderator

Step	Variable	R	R ²	ΔR^2	β	r	F ΔR^2
1	severity (SEV)	.18	.03	.03	-.18	-.18	6.45(1, 195)*
2	probability (PROB)	.18	.03	.00	-.03	-.03	.23(1, 194)
3	SEV X PROB	.19	.04	.00	-.09	-.15	.55(1, 193)
4	MC-SDS	.22	.05	.01	.11	.10	2.52(1, 192)
5	SEV X MC-SDS	.24	.06	.01	-.28	-.16	1.62(1, 191)
6	PROB X MC-SDS	.24	.06	.00	-.13	-.01	.36(1, 190)
7	SEV X PROB X MC-SDS	.27	.07	.02	-.67	-.17	3.16(1, 189)

Note. N = 197. For all variables, $F(7, 189) = 2.15$ ($p < .05$).

* $p < .01$

Table 10

Hierarchical regression with the tendency to attribute desirable characteristics to oneself (approach subscale of the MC-SDS) as the possible moderator

Step	Variable	R	R ²	ΔR^2	B	r	F ΔR^2
1	severity (SEV)	.18	.03	.03	-.18	-.18	6.18(1, 193)**
2	probability (PROB)	.18	.03	.00	-.03	-.03	.21(1, 192)
3	SEV X PROB	.19	.04	.00	-.09	-.15	.59(1, 191)
4	approach (APP)	.22	.05	.01	.11	.10	2.44(1, 190)
5	SEV X APP	.22	.05	.00	-.10	-.15	.19(1, 189)
6	PROB X APP	.22	.05	.00	-.14	-.01	.32(1, 188)
7	SEV X PROB X APP	.22	.05	.00	-.15	-.14	.14(1, 187)

Note. N = 195. For all variables, $F(7, 187) = 1.42$, $p > .05$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 11

Hierarchical regression with assertiveness (RAS) as the possible moderator

Step	Variable	R	R ²	ΔR^2	β	r	F ΔR^2
1	severity (SEV)	.18	.03	.03	-.18	-.18	6.45(1, 195)**
2	probability (PROB)	.18	.03	.00	-.03	-.03	.23(1, 194)
3	SEV X PROB	.19	.04	.00	-.09	-.15	.55(1, 193)
4	RAS	.26	.07	.03	.18	.19	6.96(1, 192)**
5	SEV X RAS	.26	.07	.00	.02	.11	.04(1, 191)
6	PROB X RAS	.27	.07	.00	.10	.17	.81(1, 190)
7	SEV X PROB X RAS	.28	.08	.01	-.14	.05	1.05(1, 189)

Note. N = 197. For all variables, $F(7, 189) = 2.31$, $p < .05$.

* $p < .05$

** $p < .01$

*** $p < .001$

.05) were non-significant. Only one personality variable was significantly related to BI, and that was assertiveness (RAS; $F(1, 192) = 6.96, p < .01$). All other main and interaction effects of personality with severity and/or probability were non-significant. The MC-SDS full scale score and the approach subscale of the MC-SDS produced the same result.

One question of interest was whether assertiveness would still predict BI after the effects of severity and probability had been removed from the regression equation. Adherents of the rational choice model suggest that women do not act assertively because of realistic expectations of negative consequences from the environment. The rational choice model would predict that once severity and probability (the "realistic" components) had been entered into the regression equation, assertiveness as measured by the RAS would have no effect on BI, since BI should be predicted by environmental consequences alone. In contrast, the cognitive distortion model would predict that the RAS would still be significantly related to BI, since low- and high-assertive women think differently. The fact that the RAS still predicted BI after the "realistic" components had been removed supports the cognitive distortion model.

Power analysis. The question can be raised as to whether there was sufficient power to detect an effect if there were one for the personality variables and the interaction between the personality variables and severity and probability. A power analysis for the regression ANOVA's indicated that there was an 81% chance of finding an effect size as small as

.04 for the personality variables and their interaction terms. Hence, even if a small effect for personality had been present, it likely would have been found.

Conclusion. In conclusion, neither social desirability (MC-SDS), the tendency to attribute desirable characteristics to oneself (approach subscale of the MC-SDS), nor assertiveness (RAS) moderated the effect of severity and probability on BI. With respect to the use of the total score of the MC-SDS or the approach subscale, there was no difference in outcome whether the full scale score or the approach subscale was used. The RAS predicted BI after the effects of severity and probability had been removed from the regression equation, supporting the cognitive distortion model of assertiveness. Incidentally, the previous results cited in this study, suggesting that both severity (directly) and probability (indirectly) affected BI, also supported the rational choice model, especially since the values of severity and probability were givens, and it could not be argued that the participants distorted the severity or probability of the consequences. Overall, the results of the study suggest that assertiveness in women is deterred both by negative environmental consequences and cognitive distortions.

4. Additional items on the PVQ: Importance and certainty of severity versus probability

Certainty ratings. Several additional questions were included on the PVQ to provide some insight into how participants used information about probability and severity. The first question had to do with whether participants were more certain of their severity or probability ratings. The first item was 10a, which asked, "In your opinion, Phyllis' reaction to Helen's refusal was ...", and participants rated severity on a 7-point scale ranging from mild to severe. The second item was question 10b, which asked, "How certain do you feel about your rating of the severity question in #10a?" Participants rated their certainty on a 7-point scale ranging from uncertain to certain.

There was one question related to the certainty of probability item. Question 12a stated, "The probability that Phyllis will act as imagined was stated on the videotape as %. Do you see _____% (insert % as stated in the videotape) as a low or high number? I am not asking if Helen's guess is accurate, but I am asking whether you see the percentage itself as a low or high number. Where would you put it on a 7-point scale?" After rating the percentage as high or low, participants rated their certainty on a scale ranging from certain to uncertain. One reason why participants may be more influenced by severity is that it is easier to rate than probability.

T test for certainty items. The mean rating for certainty

of severity was 6.03, and the mean rating for probability was 2.52, where the higher the score the more certain the rating on a 7-point scale. A t test on the rated certainty of severity versus probability for self items indicated that the participants were more certain of their severity rating than their probability rating ($t(194) = 22.94, p < .001$).

Importance ratings. A second question of interest was whether participants themselves perceived severity as more important than probability for their ratings of BI and all of the potential coefficients/mediators. Question 11, which asked about the importance of severity, was worded, "When you were answering the questions in this questionnaire from your perspective, how important was the SEVERITY of the consequence in influencing your opinion?" Question 13 asked about the importance of the probability rating, and was worded, "When you were answering the questions in this questionnaire from your perspective, how important was the PROBABILITY of the consequence in influencing your opinion?" Both the severity and probability questions were answered on a 7-point scale ranging from unimportant to important.

T test on importance rating. The mean rating for importance of severity was 4.16, and the mean rating for importance of probability was 3.88, on a 7-point scale in which the higher the score, the greater the importance. Severity was rated by participants as significantly more important than probability ($t(197) = 2.00, p < .05$).

Chapter 4

Discussion -- Study 1

The purpose of the following discussion is to briefly summarize the main findings of this study. Additional discussion of the findings of study 1 will be presented following the presentation of results for study 2.

1. Relative effects of severity versus probability

The hypothesis that severity is more important to BI than probability was more or less confirmed. If we consider only the direct effects, then severity was the only factor which had a direct effect on BI. As severity increased, BI decreased. However, while only severity had a direct effect on BI, probability had an indirect effect through unfairness/need for support. As probability increased, one's sense of unfairness, need for support, and unreasonableness of request decreased. As these latter factors decreased, BI decreased. It should be noted, however, that severity accounted for at best about 3% of the variance, and probability accounted for only .1% of the variance in BI, in spite of statistically significant correlations. Hence, one might conclude from these data that severity accounted for more variance in BI than did probability, although the size of both effects was small. Probability did not add

substantially more variance to BI.

Probability exerted its effect through unfairness/need for support. As probability increased, then one's sense of unfairness, need for support, and unreasonableness of request decreased. Then, as these latter factors decreased, BI decreased. This finding is consistent with the research by Chiauzzi and Heimberg (1986), who found that subjects were less likely to be assertive if they judged a request as reasonable. Cognitive dissonance might explain these findings. If we are likely to be punished for acting assertively, then the request must be reasonable, and the situation must be seen as fair. We are not going to act assertively, and therefore do not need support. This would also fit with the just world hypothesis. If I am going to be punished for acting assertively, then I make the assumption that acting assertively is wrong.

2. Coeffects

Some of the potential coeffects/mediators measured were affected by severity and probability, or affected BI, without acting as mediators (a mediator would have to both be affected by severity and probability, and affect BI). The coeffects found in this study were: (1) negative self-evaluation, (2) state anxiety (STAI), and (3) anxiety (component).

Negative self-evaluation. As negative self-evaluation

increased (low competence, low self-esteem, costs of behaving assertively outweighing, not having resources to cope), then BI decreased. These results are consistent with theory. Bandura's (1986) theory suggested that efficacy and outcome expectations are related to behavioral intentions (whether to act assertively, or to perform some other behavior). Welburn (1989) showed that efficacy evaluations and outcome expectations were specifically related to assertiveness. Self-esteem has been related to assertiveness (Schwartz & Gottman, 1983). Lazarus and Folkman (1984) suggested that stress is related to the extent to which one has the resources to cope. In this case, few perceived resources to cope have been related to BI.

Anxiety. There were two state anxiety measures in this study, specifically: (1) state anxiety as measured by the STAI, and (2) the anxiety component score derived from the anxiety-related PCA items (worried/calm and anxious/calm) plus the state anxiety score on the STAI. Neither the state anxiety (STAI) measure nor the anxiety (component) measure demonstrated mediation for the effects of severity and probability on BI.

For the state anxiety (STAI) measure, both severity and probability affected state anxiety (STAI), but state anxiety (STAI) did not affect BI. For the anxiety component, as anxiety (component) increased, BI decreased. While the anxiety component is less than ideal because of its flat distribution, it did show effects with BI, and hence was not ineffective. It is not clear why the two different anxiety

measures give different results, but it is clear that no mediation was demonstrated. One possible explanation for lack of mediation may be that since participants were putting themselves in a hypothetical situation, not enough anxiety was aroused to show a mediational effect clearly. The average amount of state anxiety (STAI) for the participants in this study was 43.19, and the norms for state anxiety (STAI) show an average of 36.47 for college students, with a standard deviation of 10.02. Hence, while the participants in this study did experience increased anxiety, it was not above one standard deviation from the mean. Perhaps the anxiety level needs to be higher before a mediational effect will be found.

3. Personality as a moderating factor

The personality variables which were investigated in this study (assertiveness, social desirability, and the tendency to ascribe positive characteristics to oneself) did not moderate the effect of severity and probability on BI. Of particular note is that the outcome for the full scale score MC-SDS was the same as for the approach subscale of the MC-SDS. Hence, this study did not support the suggestion of Lobel et al. (1987) that the two scores should be examined separately.

4. Cognitive distortion versus rational choice

This study provided support for both the cognitive distortion and rational choice models of assertiveness. The rational choice model suggests that women do not act assertively because of the anticipated consequences which actually occur to women when they act assertively. When the effects of severity and probability on BI were assessed, both were found to affect BI (as indicated by the path models). As severity and probability increased, BI decreased, irrespective of one's level of assertion (as indicated by the regression analysis with assertiveness/RAS entered as the personality variable). In this study, we know that the non-assertive women were not "exaggerating" the contingencies, because the contingencies were givens.

Although the results of this study supported the rational choice model, the results also supported the cognitive distortion model. Once the effects of severity and probability were removed from the regression equation, then assertiveness as measured by the RAS still exerted an effect. Presumably, one of the differences between high- and low-assertive women has to do with differing cognitions. Since there is an extensive and growing literature on cognitive differences between high- and low-assertive women, no attempt will be made to describe all of the differences here. However, a few examples include differences in defining a request as reasonable or not (Chiauzzi & Heimberg, 1986), differences in seeing oneself as competent to perform an

assertive response (Welburn, 1989), and differences in holding irrational beliefs as defined by Ellis (Lohr et al., 1984). Since cognitions differ between low- and high-assertive women, and since assertion as measured by the RAS predicted BI after environmental contingencies have been removed from the regression equation, there is indirect support for the cognitive distortion model.

5. Self and other-person items

In this study, severity affected BI for self, but neither severity nor probability affected BI for the other person. These findings are consistent with the actor-observer effect, in that external events (severity and probability) were seen as affecting oneself, but not the other person. Perhaps the other person's assertiveness or lack of assertiveness would be seen to be related to an internal state, such as lack of competence or skill.

The most important implication of the difference in findings between self and other-person items is that it is not appropriate to add self and other-person items together to get a consequences rating, as Zollo et al. (1985) did. The results of this study would suggest that self and other-person items are not comparable.

6. Participant perceptions of the certainty and importance of severity and probability ratings

The women rated themselves as more certain of their ratings of severity than their ratings of probability. The women also felt that severity was more important in making judgments about BI and possible coeffects/mediators (i.e., anxiety, competence, self-esteem, etc.). These findings were consistent with the empirical data that indicated that severity affected BI more than did probability (i.e., 3% of the variance was accounted for by severity, compared to only .1% for probability).

7. Introduction to Study 2 -- Outcome as related to specific methodology

The question can be raised as to whether the results of this study are limited to the methodology used. One aspect of the methodology that might affect outcome is scene type. Several writers and researchers have classified scenes into "scene types" which vary according to how emotionally close or distant the people interacting are and who has power in the relationship. Lange and Jakubowski (1976), Piccinin et al. (1987), and McFall and Lillesand (1991) proposed four scene types based on whether the interaction involves peers, authority figures, business associates, or intimate acquaintances. The level of difficulty in asserting oneself may be related to scene type (Lobel et al., 1987). In this

videotape study, only one scene type -- peer -- was used. It may be that the effects of severity and probability on BI that were found in this study are specific to the peer scene type.

Another aspect of the methodology which might make a difference in outcome is that this study involved a laboratory study with a standard negative consequence (severity) and a stated probability. Informal comments from participants indicated that some participants could relate to the consequences and could see a friend acting disappointed or yelling at them (depending on which version of the videotape they saw), whereas other students felt that they did not have a friend who would react in the manner depicted on the videotape. If participants could choose consequences and probabilities which were meaningful to them, perhaps different outcomes would be found. Similarly, if participants were able to select their own consequences and probabilities, a greater variety of consequences might be selected, and this greater variety might affect the outcome.

Study 2 was designed to test the main hypothesis and related issues using the methodology of a naturalistic field study and to address the points raised above. In study 2, students were presented with a survey which asked about their reactions to a number of different vignettes or stories representing the four scene types (peer, authority, close interpersonal, and business associates) delineated by various authors, plus a self-relevant scene. The self-relevant scene

involved any scene of the student's own choosing which she actually had difficulty with. In the self-relevant scene, students actually wrote their own vignette or story. All vignettes involved refusing an unreasonable request. For each vignette, students were able to write their own consequences, and to assign the consequence a severity and a probability. This second more naturalistic study allowed an exploration of whether the outcome of study 1 could be related to methodological variation.

Chapter 5

Method

Study 2 -- Survey Study

Study 2 was a survey study which investigated the impact of severity and probability on BI using a more naturalistic field method and thereby giving some idea of the robustness of study 1 findings. If the outcome of study 1 were similar to that of study 2, then the findings of study 1 would be robust with regard to methodology. The findings would not be "method bound". It was felt that a survey could accomplish several objectives which were not possible in the context of the laboratory study.

The idea was to provide participants with "vignettes" or "stories" reflecting situations in which they would be required to refuse an unreasonable request in the context of one of the scene types defined by Lange and Jakubowski (1976) and others. These scene types were defined as those involving: (1) a peer, (2) an authority figure, (3) an intimate acquaintance, or (4) a business associate. A fifth scene type was added which involved a self-relevant scene. In the self-relevant scene, participants wrote their own vignette/story for a situation involving the refusal of an unreasonable request which the participant personally had difficulty with. This self-relevant scene most closely

represented a naturalistic situation. Some of the scene types are thought to be more difficult than others (Lobel et al., 1987), and self-relevant scenes are more difficult than experimenter-generated scenes (Arisohn et al., 1988; Chiauzzi et al., 1985). An example of a vignette reflecting the peer scene was:

"A friend that you have known since high school, Marilyn, is in your French class. You see Marilyn socially, and consider her a fairly good friend. Marilyn is having trouble learning French, and has asked you if you could tutor her for half an hour a week. You do not feel that you have the time or the interest to tutor her in French.

What is a possible negative consequence that might occur if you tell Marilyn that you can not tutor her in French?"

In contrast to the laboratory procedure in which the experimenter provided the consequence (which determined severity) and the probability, participants could make up their own consequence for the five scene types and assign the consequence a severity and a probability (which they were asked to do in subsequent questions following the vignette). In this way, the survey study more closely approximated naturalistic conditions. The survey study also allowed a range of values for both probability and severity, as compared to the narrow range (only two levels) targeted in the laboratory study. The title given to the survey itself

was the Assertiveness Consequences Questionnaire (ACQ). The ACQ can be found in Appendix K (p. 318).

In short, this survey study would allow an examination of whether the findings from the videotape study might have occurred because of differences in methodology (e.g., laboratory versus field study; differences in scene type; range of values for severity and probability). The personality variables used in this study were trait anxiety (STAI), social desirability (MC-SDS), tendency to attribute positive characteristics to oneself (approach subscale of the MC-SDS), and assertiveness (RAS).

The main hypothesis and issues explored in this survey study were basically the same as for study 1. In summary, the hypothesis and issues were:

- (1) Main hypothesis: The SEVERITY of an anticipated negative consequence is more of a deterrent to behaving assertively than is the PROBABILITY of an anticipated negative consequence.
- (2) Other issues to be explored:
 - (a) Use of multiple dependent variables to explore mediational versus coeffects models
 - (b) Personality factors (trait anxiety, need for approval, tendency to attribute positive characteristics to oneself, and assertiveness) as possible moderator variables
 - (c) Cognitive distortion versus rational choice

models

Because the rationale and methodology for assessing these issues were reviewed in detail in the introduction section, the rationale and methodology will not be reviewed again here.

1. Development of the survey questions

The initial plan was to use the same possible coefficients/mediator variables and the same questions as used in study 1, and to include two vignettes for each scene type. However, the completion time for the survey needed to be 45 minutes or less, since the surveys were to be completed during class time. Preliminary testing indicated that the time required to complete the package was well over 45 minutes, when two vignettes per scene type were used along with the same questions as study 1. As a result, it was decided to use one vignette per scene type, with the exception of the self-relevant scene. There was some concern that participants would choose only high-severity high-probability values if they were left to their own choosing, and hence two additional self-relevant vignettes were included. The first and second self-relevant scene had no restrictions with respect to severity or probability. In the third self-relevant scene, participants were requested to think of either a high-severity/low-probability consequence, or a low-

severity/high-probability consequence, with half of the participants receiving each instruction. The intention was to analyze the second and third self-relevant scenes only if there was not a variety of probabilities and severities for the first self-relevant scene.

Survey item reduction. The dependent variables/items dropped were the anxious/calm, resources to cope, and reasonableness of request items. The anxious/calm item was dropped because it seemed to be redundant with the worried/calm item. All reductions were done without knowledge of the principal components analysis from study 1, as data for both studies were collected simultaneously. The following variables were retained: behavioral intentions (BI), worry, competence, self-esteem, fairness, need for support, and costs/benefits, and the additional item asking about participants' perceptions of the importance of severity and probability (See Appendix K, p. 318, for a copy of the survey).

2. Measurement of the other variables in the study

Trait anxiety was measured using the STAI, assertiveness was measured using the RAS, and need for approval was measured using the MC-SDS. The tendency to perceive positive characteristics in oneself (approach subscale of the MC-SDS) was also included. These instruments were reviewed for study 1 (see pp. 70 - 76).

3. Survey study procedures

Subjects. The participants were 151 female volunteer undergraduate psychology students.

Procedure. The experimenter was given permission to conduct the study during class time. After the experimenter/author was introduced to the class by the instructor, the following instructions were read out loud by the author.

"My name is Lynn Andrews and I am a graduate student in clinical psychology. This is (name of student), my assistant. Professor (name) has kindly permitted me to conduct a study in your class today. My study is about people's reactions to certain types of situations involving other people, and I would like to invite you to participate in my study. Your participation is totally voluntary. The study involves completing a questionnaire about your opinions, ideas, and feelings concerning a number of situations which will be presented in survey form. The study will take about 45 minutes of your time. You will not put your name on the questionnaires so that your answers can remain anonymous and confidential. I feel that you can benefit from the study by finding out what it is like to be a subject in an experiment, and you will be contributing to research. However, you may choose not to participate and your grade in the course will not be affected by your

participation or your non-participation. You will be able to get feedback about the overall study by leaving us your name and address on a piece of paper when the testing is finished. Are there any questions?" (Pause)

An assistant was present for some classes to assist in handing out and collecting materials. Participants were then given a consent form to fill out (Appendix L, p. 351), and a copy of the survey. The personality questionnaires were inserted in the survey booklet at the end of the experimenter-generated vignettes plus one self-relevant scene, and before participants were asked to generate the additional two self-relevant scenes. This was done in case the participants ran out of time while completing the final vignette (i.e., the participants would run out of time on the two additional self-relevant scenes). The order of the personality tests was: (1) trait-anxiety (STAI, called the Self-Evaluation Questionnaire, Appendix M, p. 353), (2) MC-SDS, and (3) RAS. The order of these personality questionnaires was randomly selected.

Once the participants started answering the questionnaires, the experimenter said:

"I will ask you not to take too much time with any one question. If you can not decide, please flip a coin. On the other hand, please be careful. We want your first impressions. Please do not add to the alternatives."

The experimenter read the above instructions once again after a few minutes, and after the students had finished the standard questionnaires.

Chapter 6

Survey Study

Results

1. Effects of severity and probability on behavioral intentions (BI)

This hypothesis was tested for each scene using regression analysis of variance (regression ANOVA). Regression ANOVA was selected because the independent variables of severity and probability were continuous, as compared to categorical, as had been the case for Study 1.

Data screening for scenes 1 to 5. The only univariate outliers found for the variables in this analysis were for age. Five participants over age 45 who were identified as outliers were dropped from this and subsequent analyses. A few cases were multivariate outliers as per Mahalanobis distance, but Cook's statistic indicated that these few multivariate outliers made no difference to the analysis. Hence, these cases were retained. Some variables deviated from normality, and therefore some assumptions of regression (linearity, homoscedasticity, and independence of residuals) may not always have been met. Data transformations were applied, but in most cases did not improve the shape of the distribution. In cases in which data transformations

improved the distribution, transformations were applied and the analysis was run again. There were no differences in the outcomes of the analyses for transformed and untransformed data. Therefore, the results from untransformed data are reported here. Since regression is felt to be robust to violations of its assumptions (Cohen & Cohen, 1975), and since data transformations made no difference to the outcomes of the analyses, regression ANOVA was felt to be appropriate.

A total of about 144 participants were used in each of the regression analyses, with some slight variation in the number of participants due to missing data. Since the number of participants required for regression analysis is five times the number of independent variables (Tabachnick & Fidell, 1990), there were adequate numbers of participants for the analysis.

Regression. The SPSSX REGRESSION program was used, with the variables entered in a hierarchical manner. In hierarchical regression, the order of variable entry is important, since variance is partialled out in the order in which variables are entered. Those variables entered first have a greater chance of reaching statistical significance. Cohen and Cohen (1975) recommend entering variables in the order of interest to maximize power. This order was followed except that demographics were entered first, because it was expected that demographics would be unrelated to BI. Since the main hypothesis was that severity was more important than probability in predicting BI, the next

variables entered were severity, then probability, then the severity by probability interaction. The personality variables (assertiveness, social desirability, tendency to ascribe positive characteristics to oneself, and anxiety) were entered into their respective analyses before the interaction terms involving the personality variables with severity and/or probability. According to Cohen and Cohen (1975), all of the components of a multiplicative term must be entered into the equation (i.e., partialled out) before the multiplicative term can become a true interaction term.

Since it was expected that scene type might affect the outcome, the analysis was conducted for each vignette or scene separately. A set of summary tables of variables entered in each step for each scene, and the significance of the change in variance accounted for at each step, is presented in Tables 12 to 16 (pp. 135 to 139), with an overall summary of the findings presented in Table 17 (p. 140). In interpreting Tables 12 to 16, the reader may notice that in some cases the standardized beta's and the correlations differ markedly, although generally speaking the standardized beta's and correlations are expected to be about equal. The explanation for the discrepancies is that some of the components of the interaction terms were highly correlated with each other. For example, in Scene 3 (authority), severity was correlated with the severity by probability interaction at the .73 level and probability was correlated with the severity by probability interaction at the .78 level. This multicollinearity problem resulted in

Table 12

Hierarchical regression assessing the effects of severity and probability on BI for Scene 1 (close interpersonal)

Step	Variable	R	R ²	ΔR^2	β	r	$F\Delta R^2$
1	age	.02	.00	.00	.02	.02	.08(1, 136)
2	years in university	.02	.00	.00	-.00	.00	.00(1, 135)
3	degree program	.22	.05	.05	.22	.22	6.78(1, 134)**
4	severity (SEV)	.22	.05	.00	.03	.04	.12(1, 133)
5	probability (PROB)	.30	.09	.04	-.21	-.19	5.78(1, 132)*
6	SEV X PROB	.30	.09	.00	-.18	-.14	.44(1, 131)

Note. N = 138. For all variables, $F(6, 131) = 2.22$ ($p < .05$).

* $p < .05$

** $p < .01$

*** $p < .001$

Table 13

Hierarchical regression assessing the effects of severity and probability on BI for Scene 2 (peer)

Step	Variable	R	R ²	ΔR^2	B	r	F ΔR^2
1	age	.05	.00	.00	-.05	-.05	.41(1, 131)
2	years in university	.08	.01	.00	-.06	-.07	.48(1, 130)
3	degree program	.12	.01	.01	.09	.08	1.08(1, 129)
4	severity (SEV)	.44	.20	.18	-.43	-.42	30.61(1, 128)***
5	probability (PROB)	.45	.20	.00	-.07	-.11	.71(1, 127)
6	SEV X PROB	.45	.20	.00	-.15	-.33	.38(1, 126)

Note. N = 139. For all variables, $F(6, 132) = 5.64$ ($p < .001$).

* $p < .05$

** $p < .01$

*** $p < .001$

Table 14

Hierarchical regression assessing the effects of severity and probability on BI for Scene 3 (authority)

Step	Variable	R	R ²	ΔR^2	β	r	F ΔR^2
1	age	.04	.00	.00	.04	.04	.18(1, 140)
2	years in university	.08	.01	.00	.07	.07	.62(1, 139)
3	degree program	.15	.02	.02	.13	.13	2.22(1, 138)
4	severity (SEV)	.19	.04	.01	-.12	-.11	1.93(1, 137)
5	probability (PROB)	.20	.04	.00	.07	.04	.61(1, 136)
6	SEV X PROB	.28	.08	.04	.64	.02	5.30(1, 135)*

Note. N = 142. For all variables, $F(6, 135) = 1.84$ ($p < .10$).

* $p < .05$

** $p < .01$

*** $p < .001$

Table 15

Hierarchical regression assessing the effects of severity and probability on BI for Scene 4 (commercial)

Step	Variable	R	R ²	ΔR^2	β	r	$F\Delta R^2$
1	age	.00	.00	.00	.00	.00	.00(1, 140)
2	years in university	.02	.00	.00	.01	.02	.03(1, 139)
3	degree program	.02	.00	.00	-.01	-.01	.01(1, 138)
4	severity (SEV)	.35	.12	.12	-.35	-.35	19.45(1, 137)***
5	probability (PROB)	.37	.14	.01	-.12	-.15	2.09(1, 136)
6	SEV X PROB	.39	.16	.02	-.34	-.35	2.81(1, 135)

Note. N = 142. For all variables, $F(6, 135) = 4.14$ ($p < .001$).

* $p < .05$

** $p < .01$

*** $p < .001$

Table 16

Hierarchical regression assessing the effects of severity and probability on BI for Scene 5 (self-relevant)

Step	Variable	R	R ²	ΔR^2	B	r	F ΔR^2
1	age	.01	.00	.00	.01	.01	.02 (1, 132)
2	years in university	.04	.00	.00	.04	.04	.24 (1, 131)
3	degree program	.14	.02	.02	-.13	-.12	2.22 (1, 130)
4	severity (SEV)	.30	.09	.07	-.27	-.25	9.93 (1, 129)***
5	probability (PROB)	.31	.10	.01	-.08	-.13	.91 (1, 128)
6	SEV X PROB	.36	.13	.03	-.72	-.25	4.64 (1, 127)*

Note. N = 134. For all variables, $F(6, 127) = 3.08$ ($p < .01$).

* $p < .05$

** $p < .01$

*** $p < .001$

Table 17

Summary of the significant effects of severity and probability on BI for scenes 1 to 5

Scene	Severity	Probability	
	(SEV)	(PROB)	SEV X PROB
1 (close interpersonal)	--	6.78***	--
2 (peer)	30.61***	--	--
3 (authority)	--	--	5.30*
4 (commercial)	19.45***	--	--
5 (self-relevant)	--	--	9.93**

Note. The values in the table are F values. Degree program was also significant for scene 1 at $\alpha < .01$.

* $p < .05$

** $p < .01$

*** $p < .001$

untrustworthy, "bouncing" beta's. The analysis was still appropriate, but in cases where the beta's and the correlations were markedly divergent, one can have confidence in the correlations but not the beta's (Cohen & Cohen, 1975).

As can be seen from these tables, the interaction between severity and probability was significant for scene 3 (authority, p. 137) ($F(1, 135) = 5.30, p < .05$) and scene 5 (self-relevant, p. 139) ($F(1, 127) = 4.64, p < .05$). The main effect of severity was significant for scene 2 (peer, p. 136) ($F(1, 128) = 30.61, p < .001$) and scene 4 (commercial, p. 138) ($F(1, 137) = 19.45, p < .001$). The main effect of probability was significant for scene 1 (close interpersonal, p. 135) ($F(1, 132) = 5.78, p < .05$). The correlations were checked to ensure that as severity and/or probability increased, BI decreased. This was found for all significant correlations, except for Scene 3 (authority), where the correlation between the severity and probability interactions and BI was positive, but was almost zero ($r = .02$).

The severity by probability interactions were graphed using the Kerlinger and Pedhazur (1973) method and are presented in Figure 5 (p. 142) for Scene 3 (authority) and Figure 6 (p. 143) for Scene 5 (self-relevant). For Scene 3 (authority), the rate of change for the effect of severity on BI depended upon the probability group, although none of the regression lines relating severity to BI were significant. For Scene 5 (self-relevant), as severity and probability increased, BI decreased, with the fastest rate of change for the high-probability group. There was a significant relationship

Figure 5

Graph showing the interaction effects of severity and probability on BI for Scene 3 (authority)

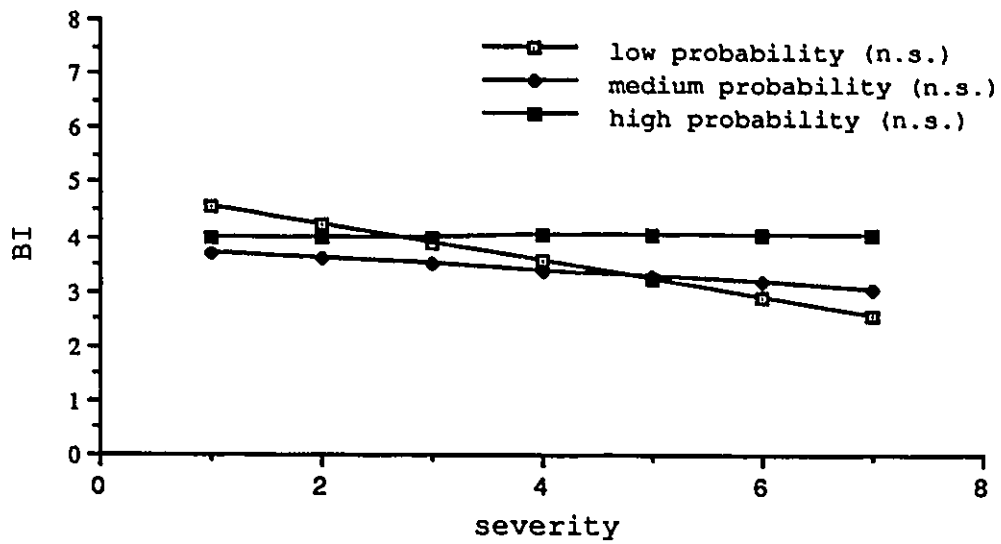
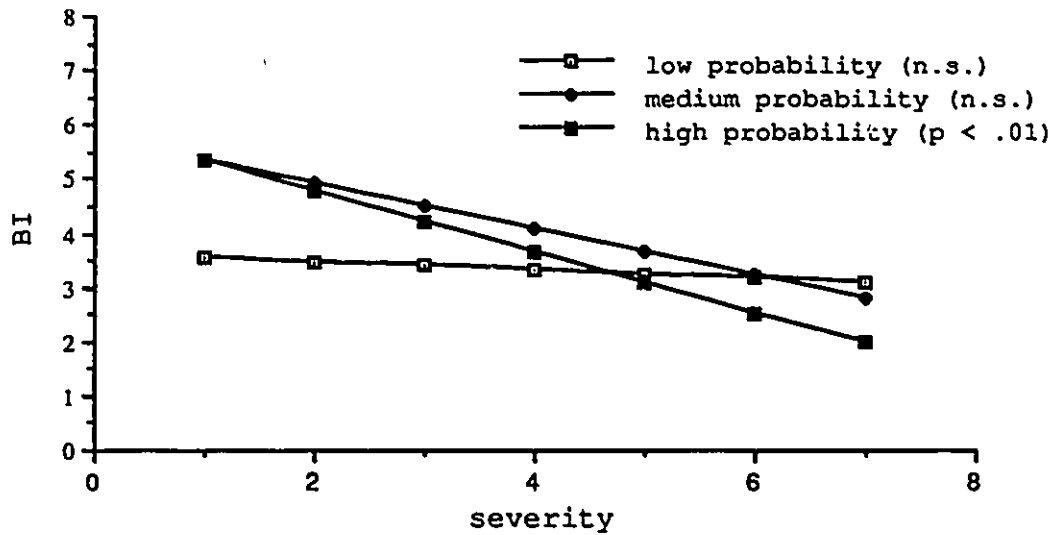


Figure 6

Graph showing the interaction effects of severity and probability on BI for Scene 5 (self-relevant)



between severity and BI for the high-probability group only.

Power analysis. The question can be raised as to whether there was enough power to detect a difference for probability and/or the severity by probability interaction if one existed. A power analysis was done which indicated that there was an 81% chance of finding an effect for probability and/or the severity by probability interaction for an effect size as small as .06. This effect size represents a small to medium effect size. Hence, there was a reasonable chance that an effect would have been found if one were there.

Demographic variables. Although demographic variables (degree program, years in university, and age) generally had no relation to BI, one exception was that degree program was related to BI for scene 1 (close interpersonal). Students had been classified as being enrolled in either an Arts, Social Science, or "Other" degree program. Since this study was conducted with undergraduate students enrolled in a psychology course, most of the students were taking either an Arts or a Social Science degree. The "Other" category comprised a mixed group of students enrolled mainly in Science, Health, or Business, with a few others included (e.g., no degree program). The BI means of the Other, Social Science, and Arts groups were 4.94, 4.30, and 3.86, respectively, where the higher the score, the more likely one is to act assertively. A post hoc analysis on the relationship between BI and degree for scene 1 was performed using SPSSX ONEWAY. The Student-Newman-Keuls procedure

suggested that students enrolled in Arts were significantly lower in BI than those in the "Other" category ($p < .05$). The Social Science students, who fell in between the two groups, were not significantly different from either the Arts or the Other group.

2. Reducing the number of possible mediators/coeffects with principal components analysis (PCA)

The possible mediators/coeffects corresponded to items d to h(2) on the Assertiveness Consequences Questionnaire (Appendix K, p.318) for each survey scene or vignette or scene type on the survey. The scenes were analyzed individually, since the first analysis of the effects of severity and probability on BI indicated that the scene type could make a difference. For all scenes, the PCA was done using the SPSSX FACTOR program. Varimax rotation was used to rotate the components unless otherwise noted. The number of components retained for each analysis was determined by the Kaiser rule, which states that those components with eigenvalues greater than 1 should be retained.

Reliability for each of the components was determined by dividing each sample randomly into two groups of approximately equal size. The analysis was then redone on the two subsamples. If the components were reliable, then one could expect to see the same items load on the same factors in the subsamples. Also, as recommended by Stevens (1986), the two regression equations derived from the two

subsamples were applied to the total sample, and the two scores were correlated. The resulting correlations could be expected to be high if the two equations were essentially equivalent.

Scenes 1 (close interpersonal), 2 (peer), and 4 (commercial). Since the PCA and reliability for scenes 1, 2, and 4 were quite similar, they are presented as a group. Loadings of variables on components, communalities, and percents of variance for all participants are presented in Tables 18, 19, and 20 for these scenes (pp. 147 to 149). The Kaiser-Meyer-Olkin measures of sampling adequacy suggested that the items could be factored (Kaiser = .79, .81, and .77 for the three scenes, in order). Small values were found in the off-diagonals for the anti-image covariance matrices, also suggesting that the data could be factored. Different writers suggested different standards for interpreting loadings. Tabachnick and Fidell (1989) suggested grouping together items that load around the .3 level. Stevens (1986) suggested taking sample size into account, testing each loading at a significance level of .01, and doubling the critical values. The stringency is used to keep the alpha level close to .01 when multiple statistical tests are being done. Stevens (1986) would use .43 as the critical cutoff for a sample size of 144 (the full sample) and a critical cutoff of .57 for a sample size of 72 (the half samples). In most cases for these scenes, the communalities were very high, and the more stringent criteria of Stevens (1986) was

Table 18

Component loadings, communalities, and percents of variance for PCA and varimax rotation for Scene 1 (close interpersonal)

<u>Item Content</u>	<u>C 1</u>	<u>C 2</u>
worried	*.73	.04
competent	*.80	.01
self-esteem	*.85	.01
fair	*.60	.04
support of friends	.06	*.80
costs/benefits	.07	*.79
Percent of variance	37.7	21.2

Note. N = 144. The labels given to the components and the direction of the item loadings were: (1) C 1: distress/low self-efficacy: High scores reflected feelings of worry, incompetence, low self-esteem, and unfairness; (2) C 2: social support: High scores reflected that the perceived costs of acting assertively outweigh the benefits, and not needing support from one's friends.

Criteria for inclusion: Tabachnick & Fidell (1989): .30, Stevens (1986): .43 (double the cutoff for $\alpha = .01$)

Table 19

Component loadings, communalities, and percents of variance for PCA and varimax rotation for Scene 2 (peer)

Item Content	C ₁	C ₂
worried	*.85	.12
competent	*.86	.06
self-esteem	*.83	.05
fair	*.73	.23
support of friends	.24	*.76
costs/benefits	.26	*.65
Percent of variance	46.5	17.9

Note. N = 141. The labels given to the components and the direction of the item loadings were: (1) C₁: distress/low self-efficacy: High scores reflected feelings of worry, incompetence, low self-esteem, and unfairness; (2) C₂: social support: High scores reflected that the perceived costs of acting assertively outweigh the benefits, and not needing support from one's friends.

Criteria for inclusion: Tabachnick & Fidell (1989): .30, Stevens (1986): .43 (double the cutoff for $\alpha = .01$).

Table 20

Component loadings, communalities, and percents of variance for PCA and varimax rotation for Scene 4 (commercial)

<u>Item Content</u>	<u>C 1</u>	<u>C 2</u>
worried	*.90	.02
competent	*.86	.07
self-esteem	*.86	.19
fair	*.63	.16
support of friends	.00	*.79
costs/benefits	.19	*.72
Percent of variance	47.5	18.2

Note. N = 144. The labels given to the components and the direction of the item loadings were: (1) C₁: distress/low self-efficacy: High scores reflected feelings of worry, incompetence, low self-esteem, and unfairness; (2) C₂: social support: High scores reflected that the perceived costs of acting assertively outweigh the benefits, and needing support from one's friends.

Criteria for inclusion: Tabachnick & Fidell (1989): .30, Stevens (1986): .43 (double the cutoff for $\alpha = .01$)

used. In cases where Steven's (1986) criteria did not fit, the less stringent criteria of Tabachnick and Fidell (1989) were used. In the few cases in the half samples where an item might load on more than one factor, the item was counted as loading on the factor on which the communality was higher.

PCA results for scenes 1, 2, and 4. The PCA on Scenes 1 (close interpersonal), 2 (peer), and 4 (commercial) resulted in the retention of two components. The first was identical for the three scenes, and was called "distress/low self-efficacy". High scores on this first component reflected worry, incompetence, low self-esteem, and unfairness. The second factor was labelled "social support". While the same items were included on this dimension for the three scenes, the poles of the items were slightly different for one of the scenes. For Scenes 1 (close interpersonal) and 2 (peer), high scores reflected that the perceived costs of acting assertively outweigh the benefits, and not needing support from one's friends if one decides to act assertively. For scene 4 (commercial), high scores reflected that the perceived costs of acting assertively outweigh the benefits and needing support from one's friends. The inconsistency in the poles for the "needing support from one's friends/not needing support from one's friends" could not be traced to a coding error. The explanation could be that while a social support dimension underlies this component, the specific poles of some of the items change according to scene type.

Reliability of components for scenes 1, 2, and 4. PCA was performed on two random half samples from each of scenes 1,

2, and 4. The results are presented in Tables 21, 22, and 23 (pp. 152 to 154). As can be seen from these tables, the components derived from the half samples were essentially identical to the components derived from the full samples. One exception was that in Scene 2, the fairness item tended to load on both dimensions, and once the dimensions were rotated, the fairness item switched dimensions. In this case, the unrotated components were used, since rotation should enhance and not change the analysis (Tabachnick & Fidell, 1989).

Two factor score regression equations were derived from the two random half samples for Scenes 1, 2, and 4. These two regression equations were then applied to the whole sample, and the two resulting scores for each component were correlated. The resulting correlations are presented in Table 24 (p. 155). As can be seen from the table, the Pearson correlations ranged from .97 to 1.00, suggesting very high agreement between the two component scores.

PCA for Scenes 3 (authority) and 5 (self-relevant). There were some similarities, and some differences, between the PCA's for these two scenes and the previous ones, and hence they are presented separately. Loadings of variables on components, communalities, and percents of variance are presented in Tables 25 and 26 (pp. 156 and 157). The Kaiser-Meyer-Olkin measures of adequacy suggested that the items could be factored (Kaiser = .78 and .70 for the two scenes, in order). Small values were found in the off-diagonals for the

Table 21

Component loadings, communalities, and percents of variance for PCA and varimax rotation for two samples from Scene 1 (close interpersonal)

Item Content	Sample A ^a		Sample B ^b	
	C ₁	C ₂	C ₁	C ₂
worried	*.70	.02	*.76	.10
competent	*.83	.07	*.76	.09
self-esteem	*.86	.01	*.84	.01
fair	*.71	.02	*.52	.15
support	.06	*.84	.05	*.80
costs/benefits	.10	*.83	.05	*.70
Percents of variance	40.8	23.2	35.6	19.4

Note. ^aN = 67 ^bN = 77. The labels given to the components were: (1) C₁: distress/low self-efficacy (2) C₂: social support

Criteria for inclusion: Tabachnick & Fidell (1989): .30; Stevens (1986): .57 (double the cutoff for $\alpha = .01$)

Table 22

Component loadings, communalities, and percents of variance for PCA with and without varimax rotation for two samples from Scene 2 (peer)

<u>Item Content</u>	<u>Sample A^a</u>		<u>Sample B^b</u>			
	<u>Rotated</u>		<u>Rotated</u>		<u>Unrotated</u>	
worried	*.87	.02	*.82	.05	*.81	.17
competent	*.89	.00	*.82	.16	*.83	.06
self-esteem	*.86	.13	*.80	.06	*.79	.16
fair	*.78	.05	.56	*.59	*.70	.42
support	.24	*.74	.08	*.80	.29	*.74
costs/benefits	.21	*.76	.48	*.44	.34	*.55
Percents of variance	49.5	18.9	44.4	18.3	44.4	18.3

Note. ^aN = 60 ^bN = 81 The labels given to the components were: (1) C₁: distress/low self-efficacy (2) C₂: social support

Criteria for inclusion: Tabachnick & Fidell (1989): .30;
Stevens (1986): .57 (double the cutoff for $\alpha = .01$)

Table 23

Component loadings, communalities, and percents of variance for PCA and varimax rotation for two samples from Scene 4 (commercial)

Item Content	<u>Sample A^a</u>		<u>Sample B^b</u>	
	<u>C₁</u>	<u>C₂</u>	<u>C₁</u>	<u>C₂</u>
worried	*.92	.04	*.87	.02
competent	*.89	.01	*.84	.14
self-esteem	*.89	.11	*.82	.28
fair	*.51	.34	*.74	.07
support	.08	*.62	.05	*.89
costs/benefits	.01	*.76	.35	*.67
Percents of variance	45.6	17.5	50.4	18.8

Note. ^aN = 67 ^bN = 77. The labels given to the components were: (1) C₁: distress/low self-efficacy (2) C₂: social support

Criteria for inclusion: Tabachnick & Fidell (1989): .30; Stevens (1986): .57 (double the cutoff for $\alpha = .01$)

Table 24

Pearson correlations for the two component scores for Scenes 1 (close interpersonal), 2 (peer), and 4 (commercial)

Correlations between two alternative		
<u>component scores for:</u>		
<u>Scene</u>	<u>distress/low self-efficacy</u>	<u>social support</u>
1 (close interpersonal)	.99 (p < .001)	.99 (p < .001)
2 (peer)	1.00 (p < .001)	.99 (p < .001)
3 (commercial)	.99 (p < .001)	.97 (p < .001)

Table 25

Component loadings, communalities, and percents of variance for PCA and varimax rotation for Scene 3 (authority)

<u>Item Content</u>	<u>C 1</u>	<u>C 2</u>
worried	*.83	.04
competent	*.86	.05
self-esteem	*.85	.08
fair	.44	*.60
support of friends	.31	*.80
costs/benefits	*.49	.15
Percent of variance	44.7	17.2

Note. N = 144. The labels given to the components and the direction of the item loadings were: (1) C₁: distress/low self-efficacy: High scores reflected feelings of worry, incompetence, low self-esteem, and costs of acting assertively outweighing the benefits; (2) C₂: social support: High scores reflected fairness and needing support from one's friends

Criteria for inclusion: Tabachnick & Fidell (1989): .30, Stevens (1986): .43 (double the cutoff for $\alpha = .01$)

Table 26

Component loadings, communalities, and percents of variance for PCA and varimax rotation for Scene 5 (self-relevant)

<u>Item Content</u>	<u>C₁</u>	<u>C₂</u>
worried	*.80	.19
competent	*.75	.15
self-esteem	*.79	.04
fair	.24	*.71
support of friends	*.38	.04
costs/benefits	.05	*.84
Percent of variance	36.4	18.5

Note. N = 138. The labels given to the components and the direction of the item loadings were: (1) C₁: distress/low self-efficacy: High scores reflected feelings of worry, incompetence, low self-esteem, and needing the support of friends; (2) C₂: social support: High scores reflected unfairness and costs of being assertive outweighing the benefits

Criteria for inclusion: Tabachnick & Fidell (1989): .30, Stevens (1986): .43 (double the cutoff for $\alpha = .01$)

anti-image covariance matrices, also suggesting that the data could be factored.

As in the other scenes, two components were derived from the PCA. The first component was consistent with the other scenes in that the first three items, which were worried, incompetent, and low self-esteem, all were contained within this component. This component was again called "distress/low self-efficacy". For Scene 3 (authority), high scores on this first component also reflected costs of acting assertively outweighing the benefits. For Scene 5 (self-relevant), needing the support of friends also loaded highly on this first component. The second dimension was labelled "social support". For Scene 3 (authority), high scores on this dimension reflected unfairness and not needing support from one's friends. For Scene 5 (self-relevant), high scores on component 2 reflected unfairness and costs of being assertive outweighing the benefits.

Reliability of components for Scenes 3 (authority) and 5 (self-relevant). PCA was performed on two random half samples for each of the scenes. Loadings of variables on components, communalities, and percents of variance are presented in Tables 27 and 28 (pp. 159 and 160). For Scene 3, items tended to load on the same components as for the full sample. One exception was fairness, which in the full sample loaded on component 2, but in sample B loaded on component 1. For Scene 5, the loadings were fairly close between the full and half samples, with only one item different in each half

Table 27

Component loadings, communalities, and percents of variance for PCA and varimax rotation for two samples from Scene 3 (authority)

Item Content	Sample A ^a		Sample B ^b	
	C ₁	C ₂	C ₁	C ₂
worried	*.82	.12	*.83	.18
competent	*.89	.04	*.85	.09
self-esteem	*.84	.27	*.78	.36
fair	.29	*.76	*.68	.17
support	.31	*.63	.02	*.94
costs/benefits	*.48	.32	*.41	.33
Percents of variance	42.9	19.5	47.0	16.9

Note. ^aN = 71 ^bN = 73. The labels given to the components were: (1) C₁: distress/low self-efficacy (2) C₂: social support

Criteria for inclusion: Tabachnick & Fidell (1989): .30; Stevens (1986): .57 (double the cutoff for $\alpha = .01$)

Table 28

Component loadings, communalities, and percents of variance for PCA and varimax rotation for two samples from Scene 5 (self-relevant)

Item Content	Sample A ^a		Sample B ^b	
	C ₁	C ₂	C ₁	C ₂
worried	*.83	.00	*.82	.14
competent	*.78	.01	*.79	.06
self-esteem	*.70	.01	*.77	.00
fair	.13	*.68	*.62	.32
support	.37	*.57	.08	*.79
costs/benefits	.02	*.77	.11	*.78
Percents of variance	32.7	22.7	42.0	18.9

Note. ^aN = 69 ^bN = 69. The labels given to the components were: (1) C₁: distress/low self-efficacy (2) C₂: social support

Criteria for inclusion: Tabachnick & Fidell (1989): .30; Stevens (1986): .57 (double the cutoff for $\alpha = .01$)

sample.

Two factor score regression equations were derived from the two random half samples for Scenes 3 and 5. These two regression equations were then applied to the whole sample, and the two resulting scores for each component were correlated. The resulting correlations are presented in Table 29 (p. 162). As can be seen from the table, the Pearson correlations for distress/low self-efficacy were very high (.95 and .97). The Pearson correlation for social support was quite good for Scene 5 (.84), but was somewhat low for scene 3 (.62).

Summary of PCA for all scenes. There was quite a bit of consistency for the PCA's across the five scenes. In all cases, two components emerged, which represented distress/low self-efficacy and social support. For three scenes (scenes 1, 2, and 4), the item loadings on components were identical. The remaining two scenes (3 and 5) were similar to the first three, with a few differences. There was particular consistency for the first three items (worry, incompetence, and low self-esteem), which unambiguously loaded on component 1 across all scenes. There was some movement for the remaining three items, depending upon the scene. Correlations of component scores derived from random half sample regression equations generally supported the reliability of the components. One exception was the social support component for scene 3, whose reliability was moderate. Analyses involving the social support component for scene 3 should therefore be regarded with caution.

Table 29

Pearson correlations for the two component scores for Scenes 3 (authority) and 5 (self-relevant)

Correlations between two alternative component scores:		
<u>Scene</u>	<u>distress/low self-efficacy</u>	<u>social support</u>
3 (authority)	.95 (p < .001)	.62 (p < .001)
5 (self-relevant)	.97 (p < .001)	.84 (p < .001)

3. Distress/low self-efficacy and social support as possible mediators between severity and probability (antecedents) and BI (consequences)

Path analysis was used to assess whether distress/low self-efficacy or social support could act as mediators between severity and probability (antecedents) and BI (consequences). This question could not be answered definitively, because in this study there was no way to demonstrate which came first, distress/low self-efficacy, social support, or BI. What path analysis did show was whether or not distress/low self-efficacy or social support *could* act as a mediator. In other words, the path analysis answered the question, "Is it possible that distress/low self-efficacy or social support *could* act as a mediator between severity and probability and BI?" All regression equations in the path analyses were obtained using the SPSSX REGRESSION program.

Data screening for scenes 1 to 5. The assumptions for path analysis are essentially the same as for multiple linear regression analysis (Pedhazur, 1982). Few cases had missing data, and hence missing data was not a problem. Each individual variable used in the analysis was screened for outliers. Few univariate outliers were found. Outliers for age were removed. Three outliers were found for distress/low self-efficacy or social support, but since Cook's distance for these points was non-significant, these cases were included. Cook's distance also indicated no significant

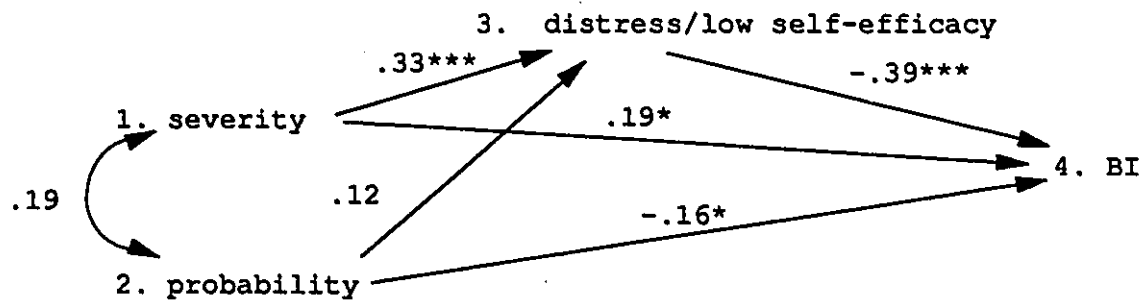
multivariate outliers. Distress/low self-efficacy and social support were normally distributed. Severity, probability, and BI for each of the scenes were not always normally distributed, and transformations did not usually improve the distributions. The data analysis was performed on untransformed data, since previous data transformations made no difference to the outcomes of the analyses. Because the distributions were not always normal, some assumptions of multiple regression (linearity, homoscedasticity, and independence of residuals) may not have been met. However, regression is felt to be robust to violations of its assumptions (Cohen & Cohen, 1975). Correlation matrices of the variables involved in each path analysis were examined for multicollinearity, and none was found.

A total of about 144 participants were used in the following path analyses, with some slight variation in the number of participants in each analysis due to missing data. Since regression analysis requires a number of participants equal to five times the number of independent variables (Tabachnick & Fidell, 1989), there were adequate numbers of participants for the analyses.

Path analysis for Scene 1 (close interpersonal). Figures 7 and 8 (pp. 165 and 166) present the path models for Scene 1, describing possible mediation of distress/low self-efficacy and social support between severity and probability (antecedents) and BI (consequences). As can be seen from Figure 7 (p. 165), both severity and probability had significant direct effects on BI ($p_{41} = .19, p < .001$; $p_{24} =$

Figure 7

Path model of causal relationships among severity, probability, distress/low self-efficacy, and BI for Scene 1 (close interpersonal)



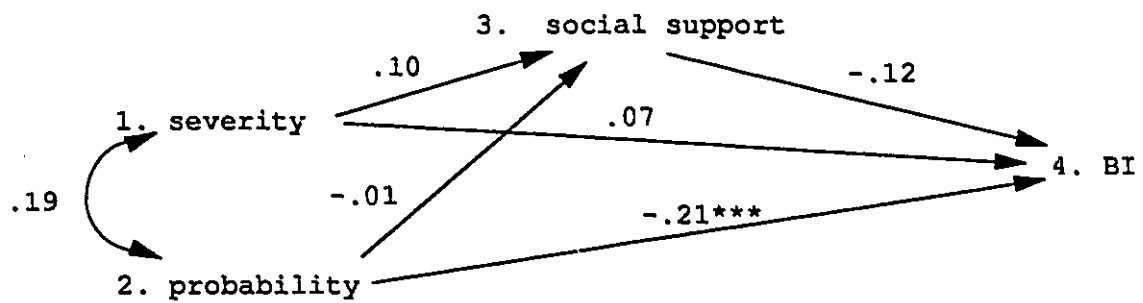
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 8

Path model of causal relationships among severity, probability, social support, and BI for Scene 1 (close interpersonal)



* $p < .05$

** $p < .01$

*** $p < .001$

-.16, $p < .05$). The mediational path between severity, distress/low self-efficacy, and BI was also significant ($p_{31} = .33$, $p < .001$; $p_{43} = -.39$, $p < .001$). Hence, severity had a direct effect on BI, but also affected BI through its mediational effect on distress/low self-efficacy. As feelings of worry, incompetence, low self-esteem, and unfairness increased, BI decreased. For the direct path, as severity increased, BI increased. While the mediational path makes sense intuitively, the direct path seems counterintuitive. The significant effect for the direct path contradicts the findings of the regression ANOVA, which suggested that severity was not significantly related to BI. Perhaps the direct path indicating that as severity increased, BI increased in this path model was a statistical artifact. For the direct effect of probability, as probability increased, BI decreased, which is what one would intuitively expect. As can be seen from Figure 8 (p. 166), social support was not affected by the antecedents, and did not affect BI.

Table 30 (p. 168) presents the three types of effects implied by the path diagram for distress/low self-efficacy. These three types of effects include causal direct effects, causal indirect effects, and non-causal effects or shared indirect effects. Table 30 (p. 168) also presents the zero-order correlations between the independent and dependent variables. The different types of effects sum across the rows to produce the correlations. This table shows that

Table 30

Summary of path model causal effects and correlations for severity, probability, distress/low self-efficacy, and BI for scene 1 (close interpersonal)

Dependent Variable: DISTRESS/LOW SELF-EFFICACY

<u>Variables</u>	Direct	Shared	Correlation with Dependent Variable
	Causal Influence	Indirect Non-Causal	
severity	.33	.02	.35
probability	.12	.06	.18

Dependent Variable: BI

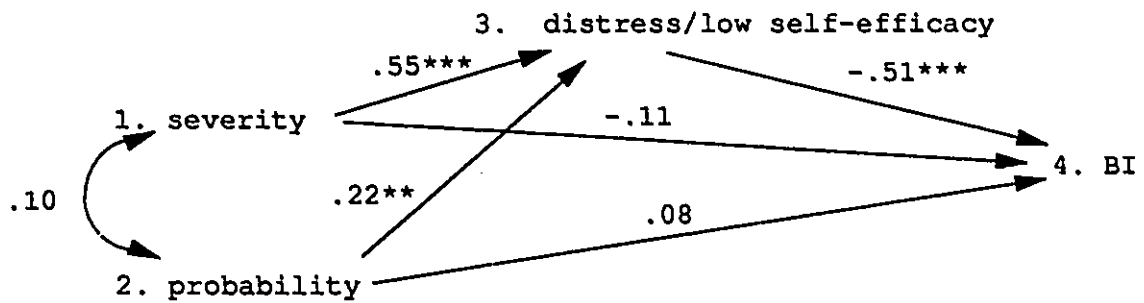
<u>Variable</u>	<u>Causal</u>		<u>Non-Causal</u>		Correlation with Dependent Variable
	Direct	Indirect	Shared Indirect Non-causal	Unaccounted for	
severity	.19	-.13	-.04	.02	.02
probability	-.16	-.05	.02	--	-.19
distress/low self-efficacy	-.39	--	--	.04	-.35

although the direct effect of severity on BI was $+ .19$, the indirect effect was $- .13$. The overall effect is close to 0. In this context, the $+ .19$ is less of a concern, and can be viewed as more of a statistical artifact. No breakdown of effects is shown for social support, since social support did not show any mediational effects.

Path analysis for Scene 2 (peer). Figures 9 and 10 (pp. 170 and 171) present the path models for Scene 2, describing possible mediation of distress/low self-efficacy and social support between severity and probability (antecedents) and BI (consequences). As can be seen from Figure 9 (p. 170), for the distress/low self-efficacy model, neither severity nor probability had a direct effect on BI ($p_{41} = -.11$, $p > .05$; $p_{42} = .08$, $p > .05$). However, both severity and probability indirectly affected BI through distress/low self-efficacy. The paths from severity to distress/low self-efficacy and probability to distress/low self-efficacy were both significant ($p_{31} = .55$, $p < .001$; $p_{32} = .22$, $p < .01$), as was the path between BI and distress/low self-efficacy ($p_{43} = -.51$, $p < .001$). As severity and probability increased, distress/low self-efficacy increased, while BI decreased. Hence, distress/low self-efficacy could have acted as a mediator between severity and probability (antecedents) and BI (consequence). Table 31 (p. 173) presents the three types of effects implied by the path diagram for distress/low self-efficacy. These three types of effects include causal direct effects, causal indirect effects, and non-causal effects or

Figure 9

Path model of causal relationships among severity, probability, distress/low self-efficacy, and BI for Scene 2 (peer)



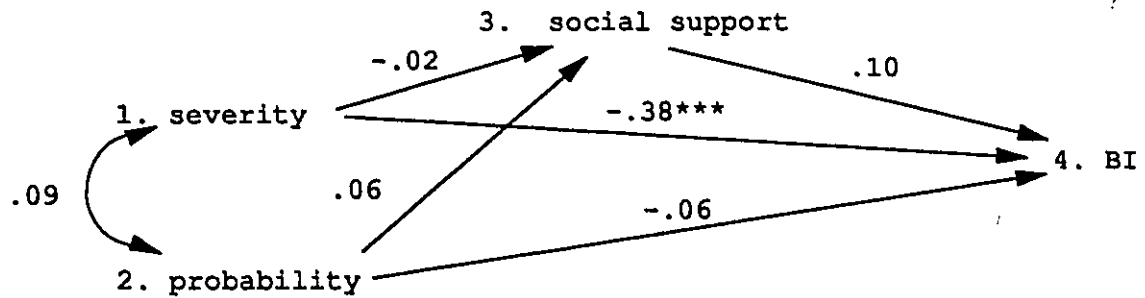
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 10

Path model of causal relationships among severity, probability, social support, and BI for Scene 2 (peer)



* $p < .05$

** $p < .01$

*** $p < .001$

shared indirect effects. Table 31 (p. 173) also presents the zero-order correlations between the independent and dependent variables. The different types of effects sum across the rows to produce the correlations.

The path model for social support is presented in Figure 10 (p. 171). As can be seen from this figure, social support was not affected by the antecedents and did not affect the consequence. Hence, social support was not a possible mediator. No breakdown of effects is provided, since social support is not a possible mediator.

Path analysis for Scene 3 (authority). Figures 11 and 12 (pp. 174 and 175) present the path models for Scene 3, describing the possible mediation of distress/low self-efficacy and social support between severity and probability (antecedents) and BI (consequence). As can be seen from Figure 11 (p. 174), the paths from severity to distress/low self-efficacy and probability to distress/low self-efficacy were significant ($p_{31} = .28, p < .001$; $p_{32} = .16, p < .05$), as was the path from distress/low self-efficacy to BI ($p_{43} = -.64, p < .001$). As severity and probability increased, distress/low self-efficacy increased and BI decreased. Distress/low self-efficacy could act as a possible mediator. In addition, the direct path from probability to BI was significant ($p_{42} = .18, p < .01$), but is counterintuitive. As probability increased, BI increased. This significant finding is likely a statistical artifact. As can be seen from Table 32, there was virtually no correlation between

Table 31

Summary of path model causal effects and correlations for severity, probability, distress/low self-efficacy and BI for scene 2 (peer)

Dependent Variable: DISTRESS/LOW SELF-EFFICACY

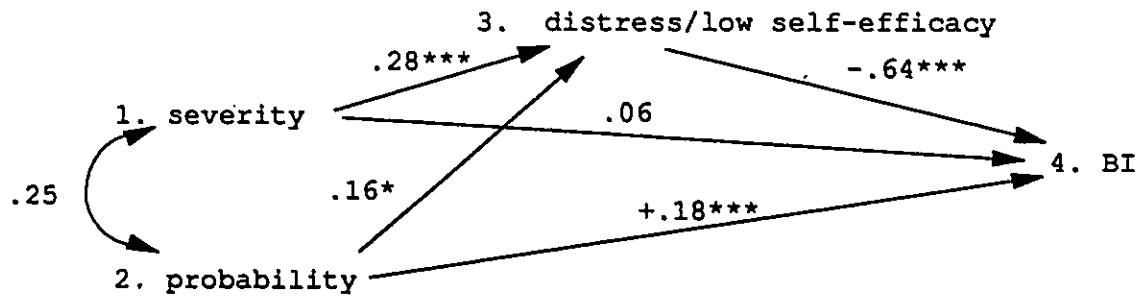
<u>Variables</u>	Direct	Shared	Correlation with Dependent Variable
	Causal Influence	Indirect Non-Causal	
severity	.55	.02	.57
probability	.22	.06	.28

Dependent Variable: BI

<u>Variable</u>	<u>Causal</u>		<u>Non-Causal</u>		Correlation with Dependent Variable
	Direct	Indirect	Shared Indirect Non-causal	Unaccounted for	
severity	-.11	-.28	-.01	--	-.40
probability	.08	-.11	-.04	--	-.07
distress/low self-efficacy	-.51	--	--	-.04	-.55

Figure 11

Path model of causal relationships among severity, probability, distress/low self-efficacy, and BI for Scene 3 (authority)



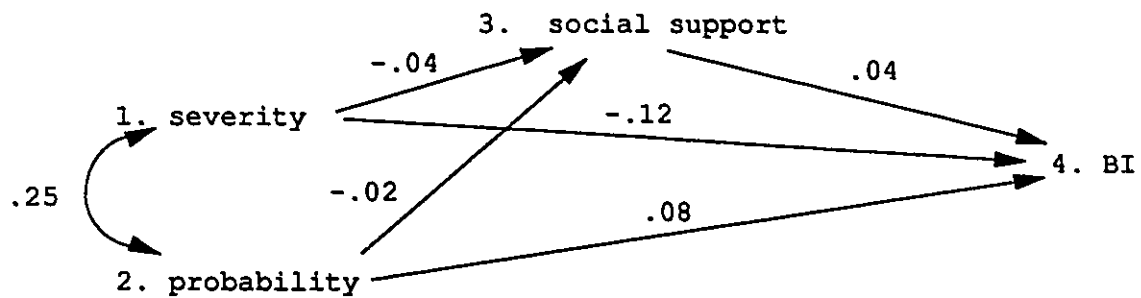
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 12

Path model of causal relationships among severity, probability, social support, and BI for Scene 3 (authority)



* $p < .05$

** $p < .01$

*** $p < .001$

probability and BI ($r = .04$), yet there is an indirect and non-causal effect at a level of $r = -.14$. To get a small correlation between probability and BI, the indirect and non-causal effect would need to be dampened by a direct positive effect ($r = .18$). Given the number of participants used in this study, a statistically significant effect was yielded.

Table 32 (p. 177) presents the three types of effects implied by the path diagram for distress/low self-efficacy. These three types of effects include causal direct effects, causal indirect effects, and non-causal effects or shared indirect effects. Table 32 (p. 177) also presents the zero-order correlations between the independent and dependent variables. The different types of effects sum across the rows to produce the correlations.

As can be seen from Figure 12 (p. 175), social support was not affected by the antecedents and did not affect BI. It could not act as a possible mediator. Since no mediation occurred, no breakdown of effects was provided.

Path analysis for Scene 4 (commercial). Figure 13 (p. 178) presents the path model for scene 4 describing the possible mediation of distress/low self-efficacy between severity and probability (antecedents) and BI (consequences). As can be seen from Figure 13 (p. 178), neither severity nor probability directly affected BI. However, the paths between severity and distress/low self-efficacy and probability and distress/low self-efficacy were significant ($p_{31} = .50$, $p < .001$; $p_{32} = .16$, $p < .05$), as was the path between

Table 32

Summary of path model causal effects and correlations for severity, probability, distress/low self-efficacy, and BI for scene 3 (authority)

Dependent Variable: DISTRESS/LOW SELF-EFFICACY

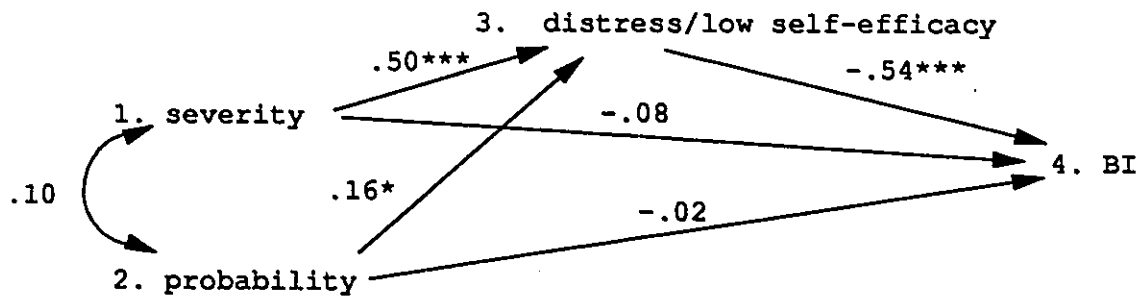
<u>Variables</u>	Direct	Shared	Correlation with Dependent Variable
	Causal Influence	Indirect Non-Causal	
severity	.28	.04	.32
<u>probability</u>	<u>.16</u>	<u>.07</u>	<u>.23</u>

Dependent Variable: BI

	<u>Causal</u>		<u>Non-Causal</u>		Correlation
			Shared		with
			Indirect	Unaccounted	Dependent
<u>Variable</u>	<u>Direct</u>	<u>Indirect</u>	<u>Non-causal</u>	<u>for</u>	<u>Variable</u>
severity	.06	-.18	.01	--	-.11
probability	.18	-.10	-.04	--	.04
distress/low	-.64	--	--	.06	-.58
<u>self-efficacy</u>					

Figure 13

Path model of causal relationships among severity, probability, distress/low self-efficacy, and BI for Scene 4 (commercial)



* $p < .05$

** $p < .01$

*** $p < .001$

Table 33

Summary of path model causal effects and correlations for severity, probability, distress/low self-efficacy, and BI for scene 4 (commercial)

Dependent Variable: DISTRESS/LOW SELF-EFFICACY

<u>Variables</u>	Direct	Shared	Correlation with Dependent Variable
	Causal Influence	Indirect Non-Causal	
severity	.50	.02	.52
probability	.16	.05	.21

Dependent Variable: BI

<u>Variable</u>	<u>Causal</u>		<u>Non-Causal</u>		Correlation with Dependent Variable
	Direct	Indirect	Shared Indirect Non-causal	Unaccounted for	
severity	-.07	-.27	-.01	--	-.35
probability	-.02	-.09	-.04	--	-.15
distress/low self-efficacy	-.54	--	--	-.04	-.58

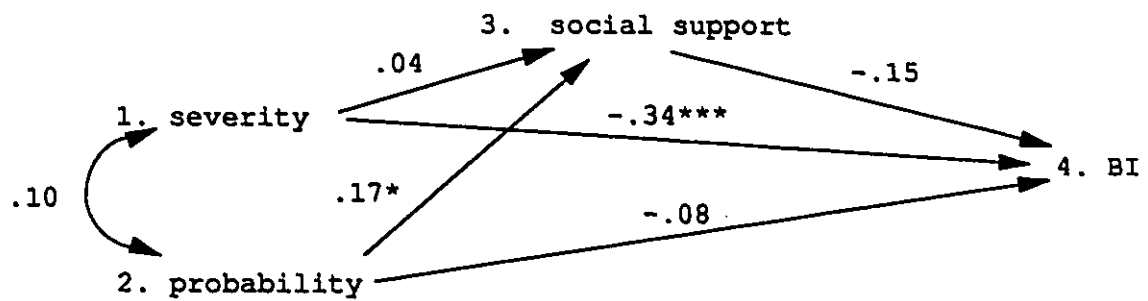
distress/low self-efficacy and BI ($p_{43} = -.54, p < .001$). As severity and probability increased, distress/low self-efficacy increased, and BI decreased. Table 33 (p. 179) presents the three types of effects implied by the path diagram for distress/low self-efficacy. These three types of effects include causal direct effects, causal indirect effects, and non-causal effects or shared indirect effects. Table 33 (p. 179) also presents the zero-order correlations between the independent and dependent variables. The different types of effects sum across the rows to produce the correlations.

Figure 14 (p. 181) presents the path model for scene 4 describing the possible mediation of social support. Probability had a significant effect on social support ($p_{31} = .17, p < .05$). While the path between social support and BI was non-significant, it just missed significance ($p_{43} = -.15, p < .06$). Future research may find significance between social support and BI. The effects are not broken down further because the last path is non-significant.

Path analysis for scene 5 (self-relevant). Figure 15 (p. 182) presents the path model for scene 5 describing the possible mediation of distress/low self-efficacy between severity and probability (antecedents) and BI (consequence). As can be seen from this figure, neither severity nor probability directly affected BI. However, the paths between severity and distress/low self-efficacy and probability and distress/low self-efficacy were significant ($p_{31} = .45, p < .001$; $p_{32} = .18, p < .05$), as was the path between

Figure 14

Path model of causal relationships among severity, probability, social support, and BI for Scene 4 (commercial)



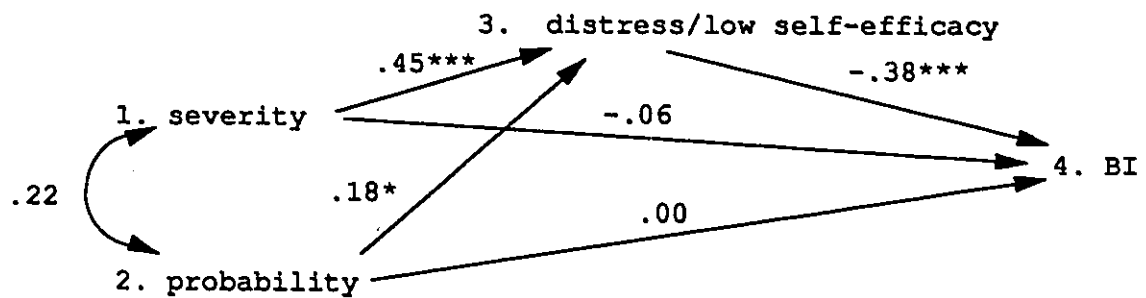
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 15

Path model of causal relationships among severity, probability, distress/low self-efficacy, and BI for Scene 5 (self-relevant)



* $p < .05$

** $p < .01$

*** $p < .001$

distress/low self-efficacy and BI ($p_{43} = -.38, p < .001$). Therefore, distress/low self-efficacy was a possible mediator. As severity and probability increased, distress/low self-efficacy increased, and BI decreased. Table 34 (p. 184) presents the three types of effects implied by the path diagram for distress/low self-efficacy. These three types of effects include causal direct effects, causal indirect effects, and non-causal effects or shared indirect effects. Table 34 (p. 184) also presents the zero-order correlations between the independent and dependent variables. The different types of effects sum across the rows to produce the correlations.

Figure 16 (p. 185) presents the path model for Scene 5 describing the possible mediation of social support between severity and probability (antecedents) and BI (consequence). Severity had a significant effect on social support ($p_{31} = .28, p < .001$), but there was no relationship between social support and BI, and therefore no possible mediation. The effects were not broken down further because there is no mediational model.

Percent of variance in BI accounted for by severity and probability across scenes. Something that has become more clear from the breakdown of effects for the path analysis models is the large differences from one scene to another as to how much variance is shared between severity and probability and BI for each scene. Table 35 (p. 186) provides the correlations between severity and probability

Table 34

Summary of path model causal effects and correlations for severity, probability, distress/low self-efficacy, and BI for scene 5 (self-relevant)

Dependent Variable: DISTRESS/LOW SELF-EFFICACY

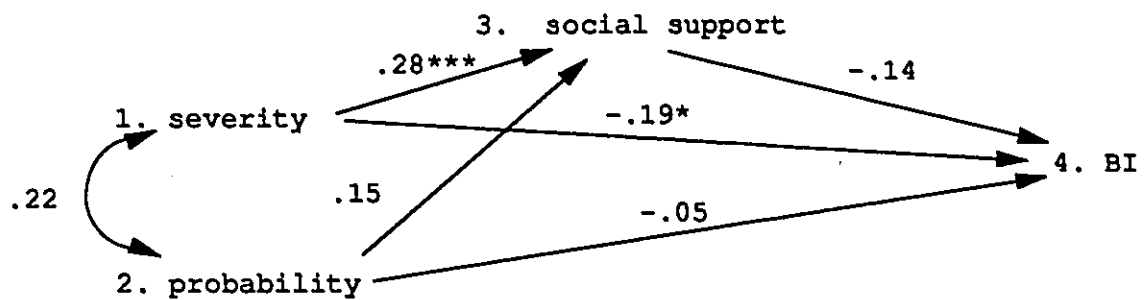
<u>Variables</u>	Direct	Shared	Correlation with Dependent Variable
	Causal Influence	Indirect Non-Causal	
severity	.45	.04	.49
probability	.18	.10	.28

Dependent Variable: BI

	<u>Causal</u>		<u>Non-Causal</u>		Correlation
			Shared		with
			Indirect	Unaccounted	Dependent
<u>Variable</u>	<u>Direct</u>	<u>Indirect</u>	<u>Non-causal</u>	<u>for</u>	<u>Variable</u>
severity	-.06	-.17	-.01	--	-.24
probability	.00	-.07	-.05	--	-.12
distress/low	-.38	--	--	-.02	-.40
<u>self-efficacy</u>					

Figure 16

Path model of causal relationships among severity, probability, social support, and BI for Scene 5 (self-relevant)



* $p < .05$

** $p < .01$

*** $p < .001$

Table 35

Correlation between severity and probability and BI for each scene, along with percent of shared variance

Scene	<u>Severity</u>		<u>Probability</u>	
	<u>r</u>	<u>r² as %</u>	<u>r</u>	<u>r² as %</u>
1 (close interpersonal)	.02	0%	-.19	4%
2 (peer)	-.40	16%	-.07	0%
3 (authority)	-.11	1%	.04	0%
4 (commercial)	-.35	12%	-.15	2%
5 (self-relevant)	-.25	6%	-.12	1%
Mean		7%		1.4%

and BI for each scene, along with the percent of shared variance. The percent of shared variance with BI for severity ranged from 0% to 16% and the percent of shared variance for probability ranged from 0% to 4%. In all cases except for scene 1 (close interpersonal), severity accounted for more variance than did probability.

4. The effects of personality (social desirability, tendency to ascribe positive characteristics to oneself as per the approach subscale of the MC-SDS, assertiveness, and trait anxiety) in moderating the effects of severity and probability on BI

A regression ANOVA was used to explore whether personality factors, specifically social desirability (MC-SDS), tendency to attribute positive characteristics to oneself (approach subscale of the MC-SDS), assertiveness (RAS), and trait anxiety (STAI), could moderate the effects of severity and probability on BI. The analysis was done using the SPSSX REGRESSION program. Since scene type could potentially affect the outcome, the analyses were performed separately for each scene. For each scene, the variables were entered in a hierarchical manner. In hierarchical regression, the order of variable entry is important, since variance is partialled out in the order in which variables are entered. Those variables entered first have a greater chance of reaching statistical significance. Cohen and Cohen (1975) recommend entering variables in the order of interest in

order to maximize power. This order recommended by Cohen and Cohen (1975) was followed, except that the demographic variables were entered first because demographics were expected to be unrelated to BI. Since the main hypothesis was that severity was more important than probability in predicting BI, the next variables entered were severity, then probability, then the severity by probability interaction. The personality variables (assertiveness, social desirability, the tendency to ascribe positive characteristics to oneself, and trait anxiety) were entered into their respective analyses before the interaction terms involving the personality variables with severity and/or probability. According to Cohen and Cohen (1975), all of the components of a multiplicative terms must be entered into the equation (i.e., partialled out) before the multiplicative term can become an interaction term. Since the effects of demographic variables and the severity and probability interactions have been already discussed, main effects and interactions involving personality variables will be discussed here.

Data screening for scenes 1 to 5, including personality variables. There were few missing data. The five participants over age 45 who were identified as outliers were dropped from the analysis. The only other univariate outlier was one case which was an outlier for trait anxiety. This participant was dropped for analyses involving trait anxiety, and was otherwise assessed using Cook's statistic. Cook's

statistic indicated that there were no univariate or multivariate outliers which affected the analyses. All personality variables were normally distributed. As already discussed, severity, probability, and BI sometimes deviated from normality. Data transformations did not generally improve the distributions. However, regression is robust to violations of its assumptions (Cohen & Cohen, 1975), and transformations in previous analyses in this thesis made no difference to the outcome. Therefore, the analyses were performed on untransformed data, and this is what is presented here.

A total of about 144 participants were used in each of the analyses with some slight variations in the number of participants due to missing data. Since the number of participants required for the regression analysis is five times the number of independent variables (Tabachnick & Fidell, 1990), there were adequate numbers of participants to perform the analysis.

Social desirability as a moderator for scenes 1 to 5. The results on social desirability as a moderator for scenes 1 to 5 are presented in Tables 36 to 40 (pp. 190 to 194). For all of the scenes, there was only one significant interaction involving social desirability, and that was for the severity by social desirability interaction for scene 2 (peer), ($F(1, 130) = 4.17, p < .05$). The post hoc analysis of the severity by social desirability interaction was graphed using the method described by Kerlinger and Pedhazur (1973), and is presented in Figure 17 (p. 195). The participants were

Table 36

Scene 1 (close interpersonal): Hierarchical regression assessing social desirability (MC-SDS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	FAR ²
1	age	.02	.00	.00	.02	.02	.08(1, 136)
2	years in university	.02	.00	.00	-.00	.00	.00(1, 135)
3	degree program	.22	.05	.05	.22	.22	6.78(1, 134)*
4	severity (SEV)	.22	.05	.00	.03	.04	.12(1, 133)
5	probability (PROB)	.30	.09	.04	-.21	-.19	5.78(1, 132)
6	SEV X PROB	.30	.09	.00	-.18	-.15	.44(1, 131)
7	MC-SDS	.30	.09	.00	.00	-.03	.00(1, 130)
8	SEV X MC-SDS	.30	.09	.00	.10	.00	.09(1, 129)
9	PROB X MC-SDS	.31	.09	.00	.07	-.15	.05(1, 128)
10	SEV X PROB X MC-SDS	.33	.11	.02	-1.44	-.14	2.42(1, 127)

Note. N = 138. For all variables, $F(10, 127) = 1.57$, $p > .05$.

*p < .05

**p < .01

***p < .001

Table 37

Scene 2 (peer): Hierarchical regression assessing social desirability (MC-SDS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	FAR ²
1	age	.05	.00	.00	-.05	-.05	.41(1, 137)
2	years in university	.08	.01	.00	-.06	-.06	.48(1, 136)
3	degree program	.12	.01	.01	.09	.08	1.08(1, 135)
4	severity (SEV)	.44	.20	.18	-.43	-.42	30.61(1, 134)***
5	probability (PROB)	.45	.20	.00	-.07	-.11	.71(1, 133)
6	SEV X PROB	.45	.20	.00	-.15	-.33	.38(1, 132)
7	MC-SDS	.47	.22	.01	-.12	-.10	2.31(1, 131)
8	SEV X MC-SDS	.49	.24	.02	-.65	-.39	4.17(1, 130)*
9	PROB X MC-SDS	.50	.25	.01	-.31	-.20	1.57(1, 129)
10	SEV X PROB X MC-SDS	.50	.25	.00	-.56	-.37	.61(1, 135)

Note. N = 139. For all variables, $F(10, 128) = 4.39$, $p > .001$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 38

Scene 3 (authority): Hierarchical regression assessing social desirability (MC-SDS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	B	r	F ΔR^2
1	age	.04	.00	.00	.04	.04	.18(1, 140)
2	years in university	.08	.01	.00	.07	.07	.62(1, 139)
3	degree program	.15	.02	.02	.13	.13	2.22(1, 138)
4	severity (SEV)	.19	.04	.01	-.12	-.11	1.93(1, 137)
5	probability (PROB)	.20	.04	.00	.06	.04	.61(1, 136)
6	SEV X PROB	.28	.08	.04	.64	.02	5.30(1, 135)*
7	MC-SDS	.28	.08	.00	.04	.03	.28(1, 134)
8	SEV X MC-SDS	.32	.10	.02	-.60	-.09	3.52(1, 133)
9	PROB X MD-SDS	.32	.10	.00	-.14	.02	.19(1, 132)
10	SEV X PROB X MC-SDS	.32	.10	.00	-.34	-.02	.15(1, 131)

Note. N = 142. For all variables, F(10, 131) = 1.52, p > .05.

*p < .05

**p < .01

***p < .001

Table 39

Scene 4 (commercial): Hierarchical regression assessing social desirability (MC-SDS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	F ΔR^2
1	age	.00	.00	.00	.00	.00	.00(1, 144)
2	years in university	.02	.00	.00	.01	.02	.03(1, 139)
3	degree program	.02	.00	.00	-.01	-.01	.01(1, 138)
4	severity (SEV)	.35	.12	.12	-.35	-.35	19.45(1, 137)***
5	probability (PROB)	.37	.14	.01	-.12	-.15	2.09(1, 136)
6	SEV X PROB	.39	.16	.02	-.34	-.35	2.81(1, 135)
7	MC-SDS	.39	.16	.00	.01	.03	.03(1, 134)
8	SEV X MC-SDS	.40	.16	.00	.25	-.23	.73(1, 133)
9	PROB X MC-SDS	.41	.16	.00	-.23	-.14	.72(1, 132)
10	SEV X PROB X MC-SDS	.41	.17	.00	.61	-.27	.71(1, 131)

Note. N = 142. For all variables, $F(10, 131) = 2.67$, $p < .01$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 40

Scene 5 (self-relevant): Hierarchical regression assessing social desirability (MC-SDS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	B	r	FAR ²
1	age	.01	.00	.00	.01	.01	.02(1, 132)
2	years in university	.04	.00	.00	.04	.04	.24(1, 131)
3	degree program	.14	.02	.02	-.13	-.12	2.22(1, 130)
4	severity (SEV)	.30	.09	.07	-.27	-.25	9.97(1, 129)**
5	probability (PROB)	.31	.10	.01	-.08	-.13	.91(1, 128)
6	SEV X PROB	.36	.13	.03	-.72	-.25	4.64(1, 127)*
7	MC-SDS	.38	.14	.01	.12	.15	2.04(1, 126)
8	SEV X MC-SDS	.38	.14	.00	-.03	-.04	.01(1, 125)
9	PROB X MC-SDS	.38	.14	.00	-.18	-.03	.30(1, 124)
10	SEV X PROB X MC-SDS	.38	.14	.00	.22	-.15	.04(1, 123)

Note. N = 134. For all variables, $F(10, 123) = 2.06$, $p < .05$.

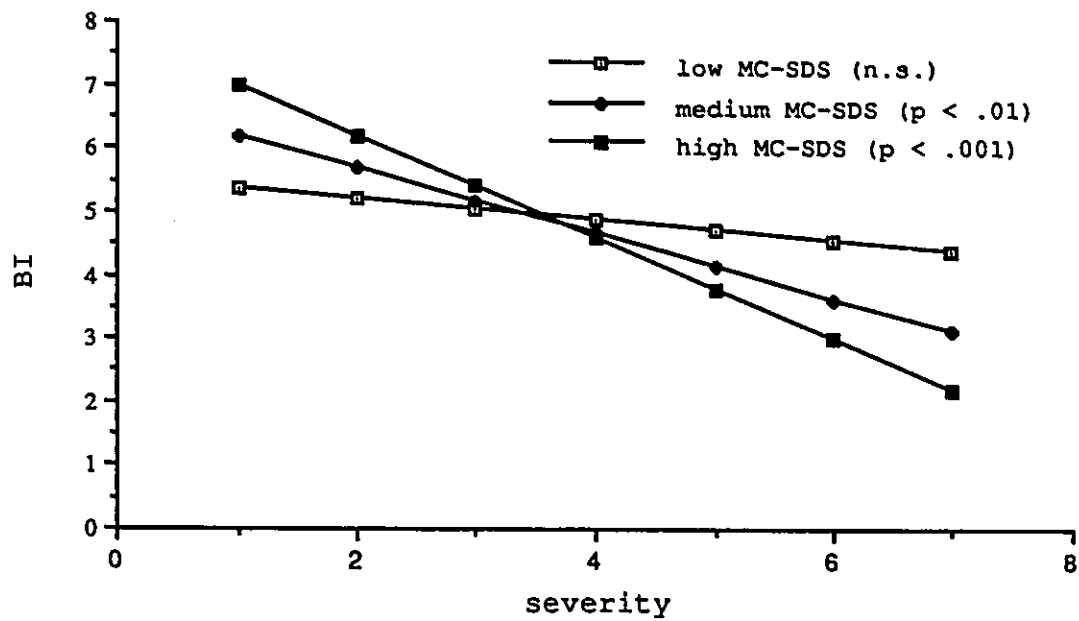
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 17

Graph showing the interaction effects of severity and social desirability (MC-SDS) for Scene 2 (peer)



divided into high, medium, and low social-desirability groups based on percentiles, with about one-third of the participants in each group. Regression lines were then calculated and plotted for the high, medium, and low social desirability groups. As can be seen from the graph for each subgroup, as severity increased, BI decreased. The rate of change was highest for the high-probability group, followed by the medium- then low-probability groups. This is what one would intuitively expect.

Tendency to ascribe positive characteristics to oneself (approach subscale of the MC-SDS) as a moderator for scenes 1 to 5. The results on approach as a moderator for scenes 1 to 5 are presented in Tables 41 to 45 (pp. 197 to 201). For all of the scenes, there was only one significant interaction involving the approach subscale of the MC-SDS, and that was for the severity by approach interaction for scene 2 (peer) ($F(1, 130) = 5.89, p < .05$). This finding is essentially the same as for the full scale score of the MC-SDS, in that only the Scene 2 severity by MC-SDS interaction was significant.

A graph of the interaction for severity by approach for Scene 2 (peer) is presented in Figure 18 (pp. 202). Severity is significantly related to BI for the medium- and high-approach subgroups. For all groups, as severity increased, BI decreased. The graph of the severity by approach interaction is very similar to the graph of the severity by MC-SDS interaction (See Figure 17, p.195). Again, it does not seem to make a difference if one uses the full MC-SDS

Table 41

Scene 1 (close interpersonal): Hierarchical regression assessing the tendency to ascribe positive characteristics to oneself (approach subscale of the MC-SDS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	F ΔR^2
1	age	.02	.00	.00	.02	.02	.08(1, 136)
2	years in university	.02	.00	.00	.00	.00	.00(1, 135)
3	degree program	.22	.05	.05	.22	.22	6.78(1, 134)*
4	severity (SEV)	.22	.05	.00	.03	.04	.12(1, 133)
5	probability (PROB)	.30	.09	.04	-.21	-.19	5.77(1, 132)*
6	SEV X PROB	.30	.09	.00	-.18	-.15	.44(1, 131)
7	approach (APPRO)	.31	.09	.00	-.04	-.04	.17(1, 130)
8	SEV X APPRO	.31	.09	.00	-.15	-.03	.19(1, 129)
9	PROB X APPRO	.31	.10	.00	-.04	-.17	.02(1, 128)
10	SEV X PROB X APPRO	.34	.12	.02	-1.54	-.17	3.11(1, 127)

Note. N = 138. For all variables, $F(10, 127) = 1.68$, $p > .05$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 42

Scene 2 (peer): Hierarchical regression assessing the tendency to ascribe positive characteristics to oneself (approach subscale of the MC-SDS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	FAR ²
1	age	.05	.00	.00	-.05	-.05	.41(1, 137)
2	years in university	.08	.01	.00	-.06	-.07	.48(1, 136)
3	degree program	.12	.01	.01	.09	.08	1.08(1, 135)
4	severity (SEV)	.44	.20	.18	-.43	-.42	30.61(1, 134)***
5	probability (PROB)	.45	.20	.00	-.07	-.11	.71(1, 133)
6	SEV X PROB	.45	.20	.00	-.15	-.33	.38(1, 132)
7	approach (APPRO)	.46	.21	.01	-.09	-.08	1.17(1, 131)
8	SEV X APPRO	.50	.25	.04	-.85	-.38	6.91(1, 130)*
9	PROB X APPRO	.52	.27	.02	-.48	-.18	3.62(1, 129)
10	SEV X PROB X APPRO	.52	.27	.00	-.41	-.37	.31(1, 128)

Note. N = 139. For all variables, $F(10, 128) = 4.81$, $p < .001$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 43

Scene 3 (authority): Hierarchical regression assessing the tendency to ascribe positive characteristics to oneself (approach subscale of the MC-SDS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR ²	B	r	FΔR ²
1	age	.04	.00	.00	.04	.04	.18(1, 140)
2	years in university	.08	.01	.00	.07	.07	.62(1, 139)
3	degree program	.15	.02	.02	.13	.13	2.22(1, 138)
4	severity (SEV)	.19	.04	.01	-.12	-.11	1.93(1, 137)
5	probability (PROB)	.20	.04	.00	.07	.04	.61(1, 136)
6	SEV X PROB	.28	.08	.04	.64	.02	5.30(1, 135)*
7	approach (APPRO)	.28	.08	.00	.07	.06	.67(1, 134)
8	SEV X APPRO	.31	.09	.01	-.41	-.07	1.89(1, 133)
9	PROB X APPRO	.32	.10	.01	-.30	.03	.98(1, 132)
10	SEV X PROB X APPRO	.32	.10	.00	-.16	-.00	.04(1, 131)

Note. N = 142. For all variables, $F(10, 131) = 1.46$, $p > .05$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 44

Scene 4 (commercial): Hierarchical regression assessing the tendency to ascribe positive characteristics to oneself (approach subscale of the MC-SDS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	B	r	F ΔR^2
1	age	.00	.00	.00	.00	.00	.00(1, 140)
2	years in university	.02	.00	.00	.01	.02	.03(1, 139)
3	degree program	.02	.00	.00	-.01	-.01	.01(1, 138)
4	severity (SEV)	.35	.12	.12	-.35	-.35	19.45(1, 137)***
5	probability (PROB)	.37	.14	.01	-.12	-.15	2.09(1, 136)
6	SEV X PROB	.39	.16	.02	-.34	-.35	2.81(1, 135)
7	approach (APPRO)	.40	.16	.00	.03	.04	.11(1, 134)
8	SEV X APPRO	.40	.16	.00	.02	-.25	.00(1, 133)
9	PROB X APPRO	.40	.16	.01	-.28	-.14	.93(1, 132)
10	SEV X PROB X APPRO	.41	.17	.01	.69	-.29	.81(1, 131)

Note. N = 142. For all variables, $F(10, 131) = 2.63$, $p < .05$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 45

Scene 5 (self-relevant): Hierarchical regression assessing the tendency to ascribe positive characteristics to oneself (approach subscale of the MC-SDS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	F ΔR^2
1	age	.01	.00	.00	.01	.01	.02(1, 132)
2	years in university	.04	.00	.00	.04	.04	.24(1, 131)
3	degree program	.14	.02	.02	-.13	-.12	2.22(1, 130)
4	severity (SEV)	.30	.09	.07	-.27	-.25	9.93(1, 129)**
5	probability (PROB)	.31	.10	.01	-.08	-.13	1.25(1, 128)
6	SEV X PROB	.36	.13	.03	-.72	-.25	3.90(1, 127)*
7	approach (APPRO)	.37	.14	.01	.09	.11	1.18(1, 126)
8	SEV X APPRO	.37	.14	.00	-.19	-.08	.22(1, 125)
9	PROB X APPRO	.38	.15	.01	-.42	-.07	1.16(1, 124)
10	SEV X PROB X APPRO	.39	.15	.00	.75	-.18	.24(1, 123)

Note. N = 134. For all variables, $F(10, 123) = 2.15$, $p < .05$.

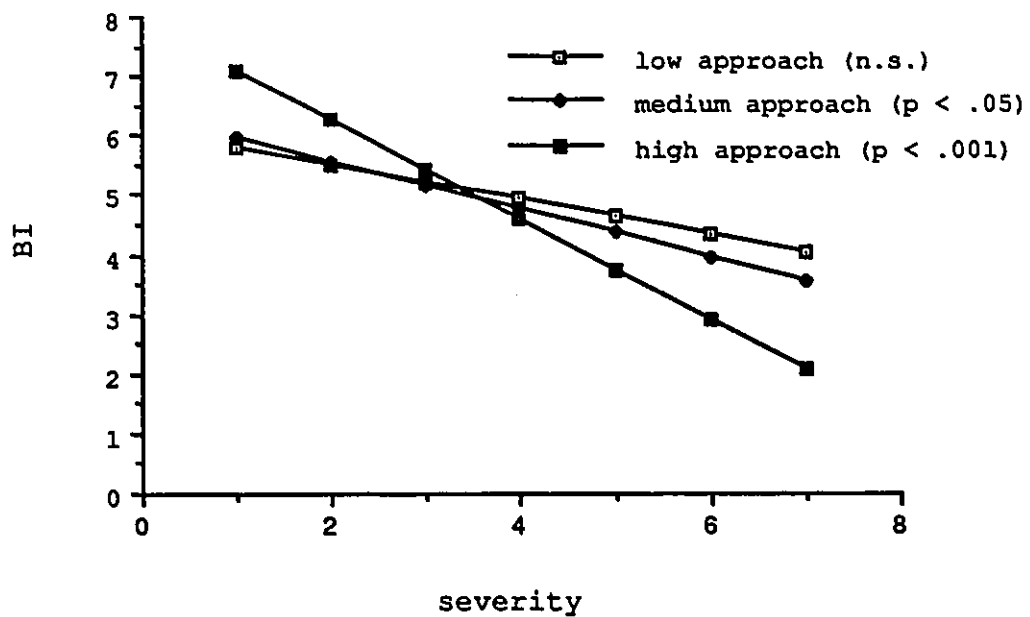
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 18

Graph showing the interaction effects of severity and the approach subscale of the MC-SDS for Scene 2 (peer)



score, or the approach subscale.

Assertiveness as a moderator for scenes 1 to 5. The results on assertiveness as a moderator for scenes 1 to 5 are presented in Tables 46 to 50 (pp. 204 to 208). The severity by probability by assertiveness interaction was significant for scene 1 (close interpersonal) ($F(1, 125) = 4.13, p < .05$). The graph of the interaction is presented in Figure 19 (pp. 209 to 210). If the regression lines are examined individually, severity had no significant effect on BI for any of these regression lines. The significant three-way interaction between severity and probability and assertiveness (RAS) probably reflects the marked differences in probability groups at various levels of assertion, including differences in slopes regarding the effects of severity on BI.

Assertiveness (RAS) and the use of one versus two dimensions. Since there was a significant severity by probability by RAS interaction, one can assume that participants differing in level of assertiveness use severity and probability in a different way. The question can be raised as to the number of dimensions (severity or probability or both) that high-, medium-, and low-assertiveness participants used in making decisions about BI. Separate regression equations were calculated for the high-, medium-, and low-assertiveness groups, and the F-test results for severity, probability, and the interaction are presented in Table 51 (p. 211). As can be seen from this table, the high-assertiveness group was not affected by severity or

Table 46

Scene 1 (close interpersonal): Hierarchical regression assessing assertiveness (RAS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	F ΔR^2
1	age	.02	.00	.00	.02	.02	.04(1, 134)
2	years in university	.02	.00	.00	-.00	.00	.00(1, 133)
3	degree program	.22	.05	.05	.22	.22	6.77(1, 132)**
4	severity (SEV)	.23	.05	.00	.05	.05	.29(1, 131)
5	probability (PROB)	.32	.10	.05	-.23	-.21	7.20(1, 130)**
6	SEV X PROB	.32	.10	.00	-.06	-.15	.04(1, 129)
7	RAS	.33	.11	.01	.09	.08	1.20(1, 128)
8	SEV X RAS	.33	.11	.00	.16	.09	.26(1, 127)
9	PROB X RAS	.34	.12	.01	.19	.10	.87(1, 126)
10	SEV X PROB X RAS	.38	.15	.03	1.22	.14	4.13(1, 125)*

Note. N = 136. For all variables, $F(10, 125) = 2.13$, $p < .03$

* $p < .05$

** $p < .01$

*** $p < .001$

Table 47

Scene 2 (peer): Hierarchical regression assessing assertiveness (RAS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	FAR ²
1	age	.06	.00	.00	-.06	-.06	.43(1, 135)
2	years in university	.08	.01	.00	-.06	-.07	.53(1, 134)
3	degree program	.13	.02	.01	.09	.08	1.18(1, 133)
4	severity (SEV)	.45	.20	.19	-.44	-.42	30.83(1, 132)***
5	probability (PROB)	.45	.21	.00	-.07	-.11	.78(1, 131)
6	SEV X PROB	.46	.21	.00	-.14	-.33	.37(1, 130)
7	RAS	.46	.21	.01	.08	.12	.87(1, 129)
8	SEV X RAS	.47	.22	.01	.27	.18	1.55(1, 128)
9	PROB X RAS	.48	.23	.00	.10	.11	.38(1, 127)
10	SEV X PROB X RAS	.50	.25	.02	.85	.21	3.70(1, 126)

Note. N = 137. For all variables, $F(10, 126) = 4.16$, $p < .001$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 48

Scene 3 (authority): Hierarchical regression assessing assertiveness (RAS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	B	r	FAR ²
1	age	.04	.00	.00	.04	.04	.23(1, 138)
2	years in university	.08	.01	.01	.07	.08	.74(1, 137)
3	degree program	.15	.02	.01	.12	.13	2.06(1, 136)
4	severity (SEV)	.19	.03	.01	-.11	-.10	1.75(1, 135)
5	probability (PROB)	.20	.04	.00	.07	.04	.57(1, 134)
6	SEV X PROB	.27	.07	.04	.63	.02	5.10(1, 133)*
7	RAS	.44	.19	.12	.36	.34	19.05(1, 132)***
8	SEV X RAS	.45	.20	.01	-.22	.25	1.46(1, 131)
9	PROB X RAS	.45	.21	.01	.18	.32	1.05(1, 130)
10	SEV X PROB X RAS	.45	.21	.00	.07	.25	.03(1, 129)

Note. N = 140. For all variables, $F(10, 129) = 3.35$, $p < .001$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 49

Scene 4 (commercial): Hierarchical regression assessing assertiveness (RAS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	B	r	F ΔR^2
1	age	.01	.00	.00	.01	.01	.02(1, 138)
2	years in university	.01	.00	.00	-.00	-.00	.00(1, 137)
3	degree program	.01	.00	.00	.01	.01	.01(1, 136)
4	severity (SEV)	.36	.13	.13	-.36	-.36	19.55(1, 135)***
5	probability (PROB)	.37	.14	.01	-.12	-.15	2.17(1, 134)
6	SEV X PROB	.40	.16	.02	-.34	-.35	2.88(1, 133)
7	RAS	.43	.19	.03	.17	.15	4.67(1, 132)*
8	SEV X RAS	.45	.21	.02	-.29	.09	3.09(1, 131)
9	PROB X RAS	.46	.21	.00	.06	.17	.18(1, 130)
10	SEV X PROB X RAS	.46	.21	.00	-.15	.09	.30(1, 129)

Note. N = 140. For all variables, $F(10, 129) = 3.41$, $p < .001$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 50

Scene 5 (self-relevant): Hierarchical regression assessing assertiveness (RAS) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	F ΔR^2
1	age	.00	.00	.00	.00	.00	.00(1, 130)
2	years in university	.03	.00	.00	.03	.03	.10(1, 129)
3	degree program	.12	.02	.01	-.12	-.12	1.89(1, 128)
4	severity (SEV)	.30	.09	.07	-.27	-.25	10.17(1, 127)**
5	probability (PROB)	.31	.10	.01	-.10	-.15	1.31(1, 126)
6	SEV X PROB	.36	.13	.03	-.74	-.27	4.94(1, 125)*
7	RAS	.40	.16	.03	.16	.20	3.68(1, 124)
8	SEV X RAS	.41	.17	.01	-.35	.16	1.51(1, 123)
9	PROB X RAS	.41	.17	.00	-.02	.19	.02(1, 122)
10	SEV X PROB X RAS	.42	.18	.01	-.79	.15	1.33(1, 121)

Note. N = 132. For all variables, $F(10, 121) = 2.59$, $p < .01$.

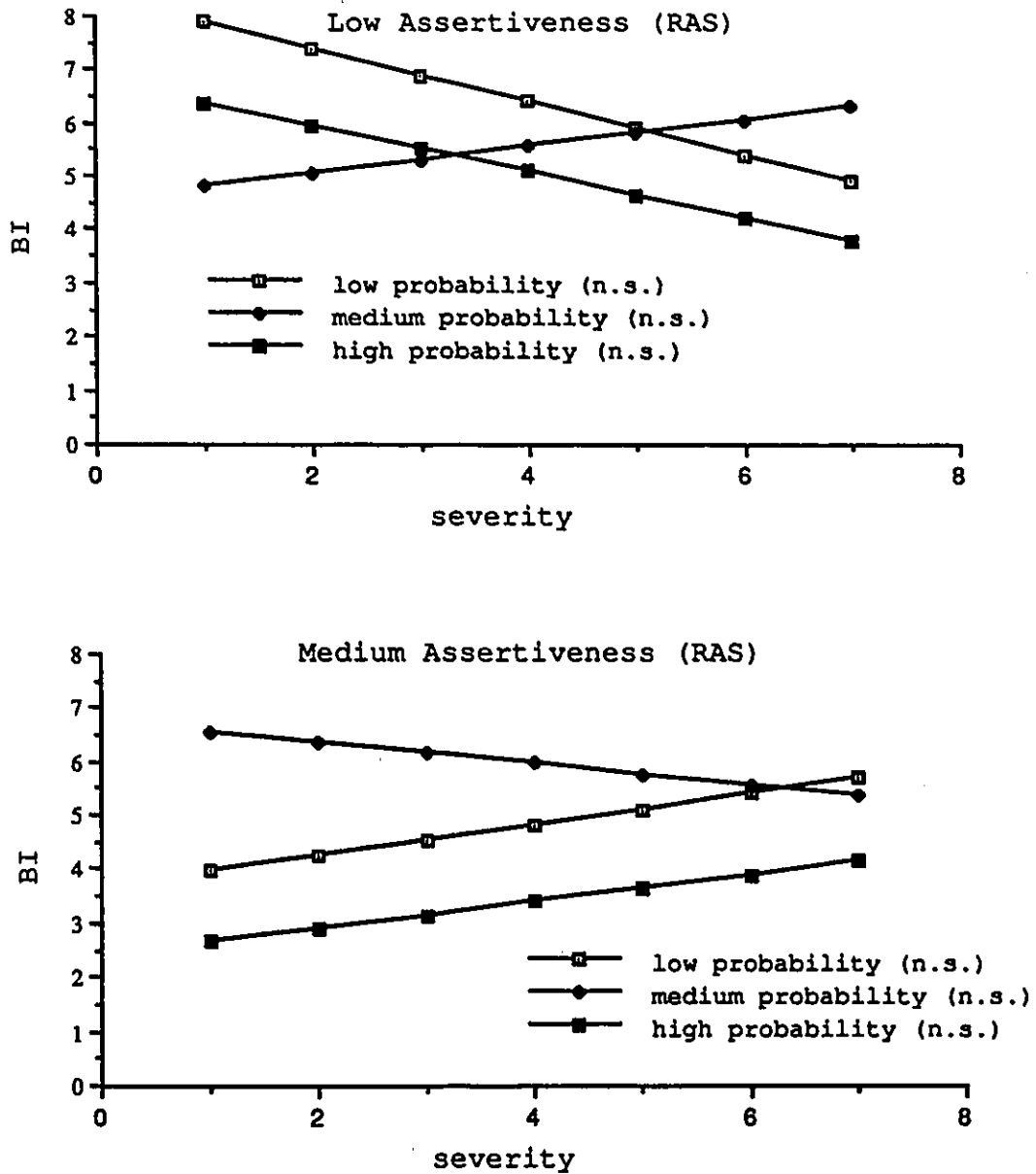
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 19

Graph of the interaction among severity, probability, and assertiveness (RAS) for Scene 1 (close interpersonal)



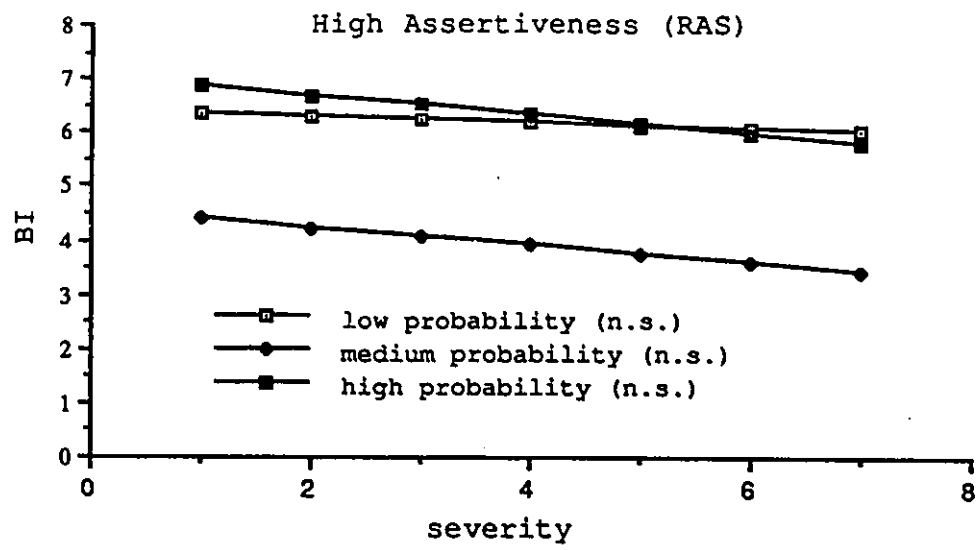


Table 51

Variables entered on each step of the hierarchical regression for low-, medium-, and high-assertiveness (RAS) groups for Scene 1 (close interpersonal) with F change and significance for each step

Low-Assertiveness Group		
Step	Variable	F Change and Significance
1	severity (SEV)	$F(1, 41) = 1.18, p > .05$
2	probability (PROB)	$F(1, 40) = 4.52, p < .05$
3	SEV X PROB	$F(1, 39) = .16, p > .05$
Medium-Assertiveness Group		
Step	Variable	F Change and Significance
1	severity (SEV)	$F(1, 45) = .00, p > .05$
2	probability (PROB)	$F(1, 44) = 4.14, p < .05$
3	SEV X PROB	$F(1, 43) = .72, p > .05$
High-Assertiveness Group		
Step	Variable	F Change and Significance
1	severity (SEV)	$F(1, 44) = .22, p > .05$
2	probability (PROB)	$F(1, 43) = .04, p > .05$
3	SEV X PROB	$F(1, 42) = .15, p > .05$

probability. Both the medium- and low- assertiveness groups were affected by probability. An examination of Figure 19 (pp. 209 to 210) for the low- and medium-assertiveness groups suggests some tendency in these groups for the higher the probability of negative consequences, the lower the BI.

Cognitive distortion versus rational choice models. Again, the results of this study tended to support the validity of both models. After the environmental factors were removed from the regression equations, assertiveness either played some role in BI, or there was a trend toward significance. Assertiveness had a significant main effect for scenes 3 (authority) and 4 (commercial), and there was a trend toward significance for scene 5 (self-relevant; $p = .03$). There was a significant severity by probability by assertiveness effect for scene 1 (close interpersonal), and there was a trend toward significance for this same 3-way effect for scene 2 (peer, $p = .06$). Hence, differences in level of assertiveness, and presumably how participants think, also differentiated these groups.

Trait anxiety as a possible moderator. The results on trait anxiety as a moderator for scenes 1 to 5 are presented in Tables 52 to 56 (pp. 213 to 217). Only one interaction was significant, and that was the severity by anxiety interaction for Scene 3 (authority; $F(1, 132) = 5.61, p < .05$). The severity by anxiety interaction is graphed in Figure 20 (p. 218). As can be seen from this graph, only the low-anxiety regression equation was significant. As severity increased, BI decreased for the low-anxiety group. The regression line

Table 52

Scene 1 (close interpersonal): Hierarchical regression assessing trait anxiety (STAI) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	B	r	F ΔR^2
1	age	.02	.00	.00	.02	.02	.05(1, 135)
2	years in university	.02	.00	.00	-.01	-.01	.02(1, 134)
3	degree program	.22	.05	.05	.22	.22	6.90(1, 133)**
4	severity (SEV)	.23	.05	.00	.04	.04	.19(1, 132)
5	probability (PROB)	.30	.09	.04	-.20	-.19	5.33(1, 131)*
6	SEV X PROB	.30	.09	.00	-.18	-.14	.47(1, 130)
7	anxiety (ANX)	.31	.09	.00	-.06	-.04	.45(1, 129)
8	SEV X ANX	.31	.10	.00	.16	.02	.11(1, 128)
9	PROB X ANX	.34	.11	.02	-.70	-.21	2.53(1, 127)
10	SEV X PROB X ANX	.37	.14	.03	2.73	-.15	3.67(1, 126)

Note. N = 137. For all variables, $F(10, 126) = 2.01$, $p < .05$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 53

Scene 2 (peer): Hierarchical regression assessing trait anxiety (STAI) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	FAR ²
1	age	.06	.00	.00	-.06	-.06	.45(1, 136)
2	years in university	.09	.01	.00	-.07	-.07	.59(1, 135)
3	degree program	.13	.02	.01	.09	.08	1.10(1, 134)
4	severity (SEV)	.44	.20	.18	-.43	-.42	30.15(1, 133)***
5	probability (PROB)	.45	.20	.00	-.06	-.10	.56(1, 132)
6	SEV X PROB	.45	.20	.00	-.13	-.32	.32(1, 131)
7	anxiety (ANX)	.45	.20	.00	.02	-.01	.11(1, 130)
8	SEV X ANX	.45	.20	.00	.08	-.34	.03(1, 129)
9	PROB X ANX	.45	.21	.00	-.22	-.07	.26(1, 128)
10	SEV X PROB X ANX	.45	.21	.00	-.28	-.29	.05(1, 127)

Note. N = 138. For all variables, $F(10, 127) = 3.29$, $p < .001$

* $p < .05$

** $p < .01$

*** $p < .001$

Table 54

Scene 3 (authority): Hierarchical regression assessing trait anxiety (STAI) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	FAR ²
1	age	.03	.00	.00	.03	.03	.14(1, 139)
2	years in university	.07	.00	.00	.06	.06	.46(1, 138)
3	degree program	.14	.02	.02	.13	.14	2.29(1, 137)
4	severity (SEV)	.19	.03	.01	-.12	-.11	2.00(1, 136)
5	probability (PROB)	.19	.04	.00	.05	.03	.39(1, 135)
6	SEV X PROB	.27	.07	.04	.64	.01	5.33(1, 134)*
7	anxiety (ANX)	.29	.09	.01	-.11	-.10	1.64(1, 133)
8	SEV X ANX	.35	.12	.04	.98	-.10	5.61(1, 132)*
9	PROB X ANX	.35	.12	.00	.06	.00	.02(1, 131)
10	SEV X PROB X ANX	.37	.14	.01	-1.82	.01	2.26(1, 130)

Note. N = 141. For all variables, $F(10, 130) = 2.08$, $p < .03$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 55

Scene 4 (commercial): Hierarchical regression assessing trait anxiety (STAI) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	B	r	F ΔR^2
1	age	.01	.00	.00	.01	.01	.01(1, 139)
2	years in university	.03	.00	.00	.03	.03	.09(1, 138)
3	degree program	.03	.00	.00	-.01	-.01	.01(1, 137)
4	severity (SEV)	.36	.13	.13	-.36	-.36	19.86(1, 136)***
5	probability (PROB)	.38	.14	.02	-.13	-.16	2.54(1, 135)
6	SEV X PROB	.40	.16	.02	-.34	-.36	2.93(1, 134)
7	anxiety (ANX)	.41	.17	.00	-.07	-.07	.68(1, 133)
8	SEV X ANX	.42	.18	.01	.51	-.33	1.46(1, 132)
9	PROB X ANX	.42	.18	.00	-.21	-.16	.21(1, 131)
10	SEV X PROB X ANX	.42	.18	.00	.74	-.34	.38(1, 130)

Note. N = 141. For all variables, $F(10, 130) = 2.84$, $p < .01$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 56

Scene 5 (self-relevant): Hierarchical regression assessing trait anxiety (STAI) as a possible moderator for the effects of severity and probability on BI

Step	Variable	R	R ²	ΔR^2	β	r	F ΔR^2
1	age	.02	.00	.00	.02	.02	.05(1, 131)
2	years in university	.06	.00	.00	.06	.06	.47(1, 130)
3	degree program	.15	.02	.02	-.14	-.13	2.38(1, 129)
4	severity (SEV)	.27	.08	.05	-.23	-.21	7.39(1, 128)**
5	probability (PROB)	.29	.09	.01	-.11	-.15	1.46(1, 127)
6	SEV X PROB	.33	.11	.02	-.61	-.23	2.86(1, 126)
7	anxiety (ANX)	.33	.11	.00	-.07	-.14	.63(1, 125)
8	SEV X ANX	.33	.11	.00	-.06	-.22	.01(1, 124)
9	PROB X ANX	.36	.13	.02	-.73	-.21	2.16(1, 123)
10	SEV X PROB X ANX	.37	.13	.01	1.93	-.26	1.19(1, 122)

Note. N = 133. For all variables, $F(10, 122) = 1.90$, $p < .05$.

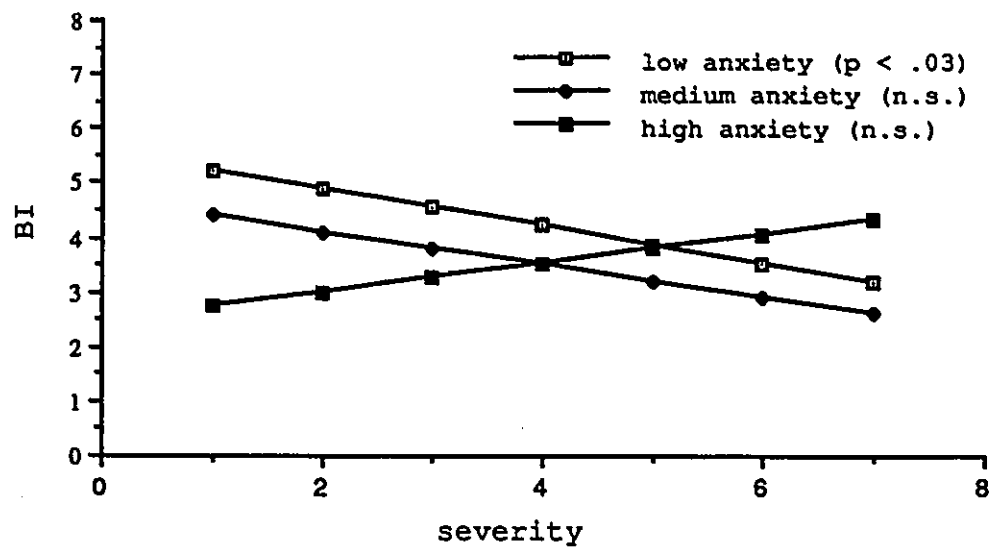
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 20

Graph showing the interaction effects of severity and anxiety (STAI) for Scene 3 (authority)



for the high-anxiety group, while positive and counterintuitive, was not significant.

Power analysis. The question can be raised as to whether there was sufficient power to detect an effect if there were one for the personality variables and the interaction between the personality variables and severity and probability. A power analysis for the regression ANOVA's indicated that there was an 81% chance of finding an effect size as small as .06 to .065 for the personality variables and their interaction terms. Hence, if a small to moderate effect for personality had been present, it likely would have been found.

5. Additional item on the importance of severity and probability on BI

The final item for each scene asked participants about how important severity versus probability was in making their decisions about BI and other judgments on the survey (e.g., about competence, worry, etc.). The purpose of this item was to assess participants' own perceptions of the importance of severity versus probability. For scenes 1 to 4, the question was administered in a forced choice format where participants had to choose severity or probability as the more important factor in influencing their judgments (about BI, worry, competence, etc.). They were not given the option to indicate that both severity and probability affected them equally, since it was felt that this would be the easiest

choice for participants to make. However, in Scene 5 (self-relevant), participants were given the option to indicate that both affected them equally, to see what they would do if they were given this option.

Chi-square was used for each scene to test which factor played the more important role from the participants' perspectives. Table 57 (p. 221) summarizes the findings. As can be seen from this table, for scenes 1 to 4, only scene 1 (close interpersonal) showed a significant difference between severity and probability, with severity being perceived as the more important factor. For scenes 2 to 4, severity and probability were chosen equally. For scene 5 (self-relevant), participants did indeed indicate that severity and probability were equally important.

Table 57

The number of participants selecting probability or severity as the more important factor, with chi square as the test of significance

<u>Scene</u>	<u>Factor of Greater Perceived Importance</u>			<u>Chi Square</u>
	<u>Severity</u>	<u>Probability</u>	<u>Equal</u>	
1 (close interpersonal)	83 (58.9%)	58 (41.1%)	-	4.43*
2 (peer)	79 (5.2%)	64 (44.8%)	-	1.57
3 (authority)	76 (54.3%)	64 (45.7%)	-	1.57
4 (commercial)	63 (44.4%)	79 (55.6%)	-	1.80
5 (self-relevant)	33 (23.9%)	19 (13.8%)	86 (62.3%)	54.30***

* $p < .05$

*** $p < .001$

Chapter 7

Discussion of Study 1 and Study 2

1. Relative importance of severity versus probability in Study 2

Which factor had more impact on women's decision to act assertively in refusing an unreasonable request? In study 2, both severity and probability affected BI. In most cases, as severity and probability increased, BI decreased. However, for most scenes, severity influenced BI more than did probability.

Direct effects for study 2. In study 2, whether severity or probability or both exerted direct effects on BI depended on the scene. Two scenes (peer and commercial) showed only a direct effect for severity, two scenes (authority and self-relevant) showed an interaction effect for severity and probability, and one scene (close interpersonal) showed a direct effect for probability. In almost all cases, as severity and/or probability increased, BI decreased.

Indirect effects for study 2 through level of distress/low self-efficacy. In study 2, severity and/or probability may have exerted indirect effects through distress/low self-efficacy. Severity and probability affected distress/low self-efficacy for scenes 2 to 5 involving peer, authority, commercial, and self-relevant scenes, while severity alone

affected level of distress/low self-efficacy for scene 1 (close interpersonal). As distress/low self-efficacy (incompetence, worry, low self-esteem, and sense of unfairness) increased, BI decreased. This finding is consistent with Bandura's (1977) theory in that BI was related to outcome expectancy (severity and probability) and self-efficacy expectations (which formed part of the distress/low self-efficacy component).

Study 2 extends the findings of Welburn (1989), who followed-up a group of people who had completed assertiveness training. In Welburn's (1989) study, participants whose skills had not generalized to the environment one year after treatment had higher expectations of negative consequences and lower self-efficacy than those subjects whose skills did generalize to the environment. What study 2 suggests is that these two factors (self-efficacy and outcome expectancy) may not be independent; rather they may be related. Self-efficacy (competence) formed part of the distress/low self-efficacy component. As severity and probability (outcome expectations) increased, self-efficacy/level of distress increased, and BI decreased. This finding is an extension of Welburn's (1989) finding in suggesting that outcome expectations may affect self-efficacy, and that the two factors may be related rather than independent. If a woman learns to expect negative consequences for asserting herself due to negative contingencies in the environment, then her self-efficacy (i.e., sense of competence) may suffer. Even

though she is capable and competent in acting assertively, she may judge herself as incapable/incompetent because of the negative consequences that she received in the past or expects to receive. Women may not be able to discriminate that just because they receive a negative consequence does not mean that they are incapable of performing assertiveness appropriately.

Percent of variance accounted for by severity versus probability in study 2. One interesting finding was that the percent of variance accounted for by severity and probability varied according to scene, with a range of 0% to 16% for severity and a range of 0% to 4% for probability. Hence, the importance of severity (and probability) varied according to scene type.

Comparison between study 1 and study 2. While study 1 and study 2 both agree that as severity and probability increased, BI decreased, the two studies differed in terms of which paths may have mediated the effect. In study 1, severity exerted a direct effect on BI, and probability exerted an indirect effect through unfairness/need for support. In study 2, severity and/or probability exerted a direct effect on BI, and severity and/or probability exerted an indirect effect on BI through distress/low self-efficacy. What could account for the differences in the specific potential indirect paths?

First of all, different items were used to measure the possible coeffects/mediators in study 1 versus study 2, with study 1 containing more items than study 2. If direct

comparisons were to be made between the two studies, then identical items should have been used. Although the use of identical items was planned, some items were dropped from study 2 due to the amount of time required to complete the questionnaires in study 2. With the presence of different items, three components emerged in study 1, and two components emerged in study 2. The three components in study 1 were anxiety, negative self-evaluation, and unfairness/need for support. The two components in study 2 were distress/low self-efficacy and social support. However, the underlying constructs that emerged were quite similar. Anxiety and negative self-evaluation from study 1 were quite similar to distress/low self-efficacy in study 2. Unfairness/need for support from study 1 and social support in study 2 were quite similar. However, different names were given to the components in study 1 and study 2 because different questionnaire items were used, and either three or two components emerged. Some comparisons can be made between the two studies based on these logical/theoretical similarities among components.

Perhaps anxiety and negative self-evaluation did not act as potential mediators (indirect paths) in study 1 due to the relatively impersonal nature of the experimental manipulations which seem to have weakened the impact of severity and probability on BI. Study 1 was a laboratory study in which participants had to imagine themselves in a situation where the potential negative consequence was a

specific negative consequence portrayed by a specific person on videotape. Informal comments by participants suggested that this scene was meaningful to some, but not others. Some students said that they could see someone they knew acting in the manner portrayed, while other students thought that the severe negative consequence was unrealistic, and would not be carried out by anyone they knew. Hence, the experimental manipulation may not have involved participants emotionally in the same way that a personally meaningful consequence would. In contrast, in study 2, participants were able to select a negative consequence that was personally meaningful to them. In study 2, distress/low self-efficacy, which was similar to the anxiety and negative self-evaluation components from study 1, could serve as a mediator between severity and probability and BI. Other studies have shown that when participants wrote their own scenes, they selected more negative consequences, performed less well, and felt more discomfort compared to when the experimenter wrote the scene (Arisohn et al., 1988; Chiauuzzi et al., 1985). It is felt that the results from the second study more closely reflects what happens in the real world, since study 2 more closely approximates naturalistic conditions and participants were able to select consequences which were meaningful to them. In the real world, level of distress/low self-efficacy probably mediates the effects of severity and probability on BI.

The other difference in potential mediating paths between severity and probability and BI was that in study 1, social

evaluation (unfairness, unreasonableness of request, and high need for support) could mediate the effect of severity and probability on BI, whereas in study 2 the comparable component, social support (mainly costs outweighing benefits and needing support from one's friends), did not show such a potential mediating effect. One explanation might be that in study 2, social support was not adequately measured. There were several indicators which point to inadequate measurement, including: (1) difficulties in reliability for one scene; (2) the poles of the need for support item switching places, instead of appearing consistently with positive or negative wordings of other items (e.g., high need for support loaded with costs outweighing benefits for scene 4 (commercial), but high need for support loaded with benefits outweighing costs for scene 2 (peer)). In future studies, more items could be used to measure social support concepts, and a more reliable component would likely result.

Another difference between the two studies was the percent of variance accounted for by severity and probability, with much more variance being accounted for by these factors in study 2 compared to study 1. It is quite likely that there was a stronger manipulation of the variables of interest in study 2.

Beck's model of assertiveness. In terms of theoretical models, the findings from the principal component analysis and the path analysis for studies 1 and 2 fit quite nicely with the model of anxiety disorders proposed by Beck et al.

(1985). Beck et al. (1985) include assertiveness issues as part of their model of anxiety disorders, which includes social anxiety. According to Beck et al. (1985), anxiety is what we experience when we are dealing with a possible threat. A possible threat is a negative consequence which may or may not happen to us. The model proposed by Beck and colleagues would apply if the severity and probability were accurately assessed or if they were exaggerated.

According to Beck and colleagues, a number of different types of cognitions may be set in motion when a person is confronted with a threat and the fear that accompanies it. Examples of such cognitions are: "Should I retreat (BI)? Can I perform competently despite the danger (self-efficacy/competence)?" People experience a sense of what Beck and colleagues call "vulnerability", including self-doubts, low self-efficacy, seeing oneself as a "weakling", down-grading one's own skills, etc. Beck et al. (1985) contrast "vulnerability" with "self-confidence". While they do not go so far as to define the two terms as opposites, they view the two constructs as working in opposition to each other. As vulnerability increases, self-confidence decreases, and people's cognitions reflect this vulnerable state. Furthermore, two other specific types of cognitions come into play when people are faced with a threat: (1) availability of external aids, such as people who can support or help, or the availability of tools that can help; and (2) one's own power and abilities (competence/self-efficacy).

The findings of the two studies fit Beck et al.'s (1985)

model. In the two studies, two or three components emerged reflecting (1) anxiety; (2) negative self-evaluation or distress/low self-efficacy, which is similar to the vulnerability concept in Beck's model; and (3) unfairness/need for support or social support, which is similar to the external aids concept in Beck's model. While anxiety and negative self-evaluation could not be potential mediators between severity and probability and BI in study 1, the distress/low self-efficacy component (vulnerability) could have mediated results for study 2. The lack of findings in study 1 may be related to weak manipulation of the variables of interest. The social support (external aids) component could have moderated the effects of severity and probability on BI for study 1. The lack of findings in study 2 may be related to inadequate measurement. Hence, the results of these studies provide some support for Beck et al.'s (1985) model of anxiety disorders.

2. Coeffects for study 2

Some of the potential coeffects/mediators measured were affected by severity and probability, or affected BI without acting as a potential mediator (a mediator would have to both be affected by severity and probability, and affect BI). In this section, coeffects for study 2 will be considered.

Social support in scene 4 (commercial) and scene 5 (self-relevant). In scene 4 (commercial), as probability

increased, social support (for this scene, costs outweighing the benefits and needing support from friends) increased. For scene 5 (self-relevant), as severity increased, social support (for this scene, costs outweighing benefits and unfairness) increased. In both scenes, social support did not affect BI, and therefore social support could not be considered to be a potential mediator. The general findings about social support are consistent with theory. Bowlby suggested that we need support from others in times of stress (Bowlby, 1988), and it is not surprising that as the severity or probability of a negative consequence increased, that participants needed more social support. The unfairness item is consistent with the just world hypothesis. If we act assertively, as we have been told by media and other sources that women are entitled to do, then we expect a positive outcome. If there is a possibility that we may be punished for acting assertively, then we see the situation as being unfair.

3. Personality as a moderator in study 2

Personality sometimes acted as a moderator of the effect of severity and probability on BI. Need for approval as measured by the full scale score of the MC-SDS, and also the tendency to ascribe positive characteristics to oneself as measured by the approach subscale of the MC-SDS, moderated effects for scene 2 (peer). The higher one's need for

approval, the higher the rate of change when the effect of severity on BI was graphed. In other words, the higher one's need for approval, the more one was affected by severity, at least for the peer scene. The approach subscale of the MC-SDS provided essentially identical results.

Assertiveness as measured by the RAS acted as a moderator for scene 1 (close interpersonal). The high-assertiveness group was not affected by severity or probability. However, the low- and medium-assertiveness groups were affected by probability. For the low- and medium-assertiveness groups, there was a tendency towards the higher the probability, the lower the BI, especially at medium to high levels of severity.

Anxiety as measured by the STAI moderated the results for Scene 3 (authority). As severity increased, BI decreased for the low- and medium-anxious participants, although the regression equation for the medium-anxious participants missed significance ($p < .08$). High-anxious participants were not affected by severity. One possible interpretation is that in this scene involving authority figures, the high-anxious participants were so anxious that they did not pay attention to consequences.

In conclusion, all four personality variables (need for approval, tendency to attribute positive characteristics to oneself, trait anxiety, and assertiveness) moderated the effects of severity and probability on BI for some scenes, but not others. It is not clear why these three personality variables would affect some scenes and not others. Perhaps

elements of the scenes had more emotional pull for some personality types compared to others. For example, need for approval might be more relevant to the peer scene in which the potential benefits of the relationship are approval, as opposed to something else (e.g., monetary gain, status). Need for approval might be less relevant to other scenes, such as a commercial scene in which the people involved may never see each other again; or an authority scene, which might elicit more fear. Need for approval might be less important than other factors to the close interpersonal scene, in which a woman said no to allowing her boyfriend to move in with her. While she may want her boyfriend's approval, other considerations may have been more important (e.g., living in an unhappy relationship). Any personality interactions found in this study should be regarded as speculative, however, since no consistent effects were found, and many analyses were performed. However, more research needs to be done to see if scene type is related to whether or not personality moderates the effects of severity and probability on BI.

Another reason why more personality moderation was not found may be related to statistical power. The tests of personality effects in this study were conservative, in that six other variables (three demographic variables and three severity/probability variables) had already entered the regression equation before personality factors were considered. Since those variables entered first are more

likely to be significant than later variables, the test used was conservative. However, the power analysis suggested that treatment effects as small as .06 to .065 would have been detected with the analysis done in this study. Thus, there was a reasonable chance that personality effects would have been found if they existed, although mild effects would have been missed by the analysis. More research on the role of personality in moderating the effects of severity and probability on BI is needed.

4. Cognitive distortion versus rational choice models

The findings of study 2 provided some support for the validity of both the cognitive distortion and rational choice models of assertiveness. The rational choice model argues that women do not act assertively because they expect negative consequences to occur, expectations that are seen as being realistic, since negative consequences sometimes do befall women who act assertively. The results of the regression analyses showed that BI was related to the expected severity and probability of negative consequences. One limitation of this conclusion is that in study 2, it is not known whether women accurately perceived the severity and probability of the consequences, since there was no way of measuring the actual severity and probability of the consequences in the participant's actual environment. However, this same conclusion was made in study 1, and thus study 1 and study 2 agree on the importance of severity and

probability. The limitation of not knowing actual severity and probability was not present in study 1, since the severity and probability were given on the videotape.

In study 2, after severity and probability had entered the regression equation predicting BI, assertiveness as measured by the RAS predicted BI, or there was a trend toward significance (either with RAS alone or in combination with severity and probability). This finding supports the cognitive distortion model. Presumably, one of the differences between high- and low-assertive women had to do with differing cognitions. There is an extensive and growing literature showing that assertive versus non-assertive women differ in such cognitions as defining a request as reasonable or unreasonable (Chiauzzi & Heimberg, 1986), seeing themselves as competent to perform an assertive response or not (Welburn, 1989), and holding Ellis' irrational beliefs (Lohr et al., 1984). Because cognitions differ between low- and high-assertive women, and assertion as measured by the RAS predicted BI after environmental contingencies had been entered into the regression equation, there was indirect support for the cognitive distortion model in study 2.

Comparison with Study 1. Study 2 agreed with study 1 in finding support for both the rational choice and cognitive distortion models. The findings from study 1 were somewhat stronger in support of the rational choice model, because all participants were presented with equivalent severities and probabilities of consequences via videotape presentation.

The presentation of consequences on videotape ruled out the possibility that low-assertive participants "distorted" the probability and severity. These two studies differed from other studies which took either the rational choice or cognitive distortion approach. These two studies suggest the validity of both the rational choice and cognitive distortion models.

5. Participant perceptions of the importance of severity and probability for study 2

In most cases in study 2, participants did not feel that either severity or probability was more important to them. The exception was scene 1 (close interpersonal), where severity was felt to be more important than probability. It is interesting that participants felt that severity was more important for scene 1 (close interpersonal) since the statistical analysis indicated that probability was more important for this scene only.

6. Methodological issues related to study 2

Study 2 had certain methodological strengths and limitations. One strength included reliably measuring distress/low self-efficacy as indicated by high correlations between alternate component scores and good consistency in items loading on this component across scenes. As in study 1, BI was predicted by the RAS, which tended to support the

validity of the BI measure.

With respect to limitations, one limitation of study 2 was that we do not know if the paths in this study will generalize to scenes of the same type. In other words, will two commercial scenes have the same paths? Will two authority scenes have the same paths? Although study 2 did not answer this question directly, there was some indirect evidence suggesting common potential mediational paths across scenes. In almost all scenes, regardless of scene type, severity and probability mediated effects on BI through distress/low self-efficacy. Hence, there is probably a common mediational path regardless of scene type, which would also apply across scenes within the same scene type. However, this conclusion should be confirmed with further research involving repeated measures of the same scene type.

A second limitation was that we do not know if the findings of this study will generalize to other types of subjects. As is common in psychology, the subjects used in this study were students, and more specifically, were female students. It is now known if the findings would apply to male students, or to other populations.

A third limitation of study 2 was that in retrospect, the commercial scene selected for this study was probably not a good example of a commercial scene type. The scene used was that of a little boy selling chocolate bars for a class trip. This scene might have brought out more nurturing, motherly tendencies, and not been a fair test of how women react in a

more neutral, commercial situation.

A fourth limitation had to do with the path analysis. It was not possible to say whether the potential mediators came before BI, after BI, or were present at the same time as BI. Thus, when the conclusion was drawn that distress/low self-efficacy (or whatever) could mediate between severity, probability, and BI, the emphasis should be on "could". Mediation is not a certainty. However, mediation was a *possible* model. This is useful information to have, since what was not possible in the context of these studies was delineated (e.g., state anxiety was not a possible mediator in study 1).

Some would argue that test-retest reliability was inappropriate in this study because test-retest reliability is only appropriate if measuring a trait or a stable characteristic. Therefore, some would argue that the use of a one-item BI measure was a limitation of the study, since no other reliability measures could be calculated on one item. An improvement on the measurement of BI might be to include a multiple-item measure of BI and to calculate an internal consistency reliability (e.g., cronbach's alpha). Some would argue that in the two studies, reliability is unknowable, and the findings might have been stronger with a multiple-item test.

7. Treatment implications of the two studies

Some treatment recommendations can be made based upon the findings of these two studies. These treatment recommendations will be discussed under the following headings: (a) creating positive consequences in the environment, (b) targeting cognitive distortions, and (c) other treatment considerations.

(a) Creating positive consequences in the environment

The intention to act assertively is inversely related to expected severity and probability of negative consequences in the environment. One way to increase the chances that women will act assertively is to increase the chances that people in the women's environment will react positively to women's assertiveness. One way to achieve this goal is to teach the client what we know about when women's assertiveness is or is not positively received. Such information could aid a woman in making a decision about when to act so that positive outcomes are received. For example, Kern et al. (1985) found that women's assertiveness was devalued by men with conservative, traditional attitudes towards women, but not by men with liberal attitudes towards women. Cianni-Surridge and Horan (1983) found that some assertive behaviors displayed during a job search were valued positively by potential employers, while other assertive behaviors were assessed negatively by potential employers. Other factors

which may moderate the social evaluation of assertiveness includes whether the type of assertion used is basic or empathic assertion (Wildman & Clementz, 1986; Zollo, Heimberg & Becker, 1985), and whether the response class studied is considered male or female sex-role stereotypic (Schroeder, Rakos & Moe, 1983).

Another way to encourage the positive acceptance of women's assertiveness is to include the target of the assertiveness in treatment. Epstein and associates (Epstein, 1981; Epstein et al., 1978) have outlined procedures for conducting assertiveness training for couples. The rationale for the inclusion of both partners (spouses, boyfriends, etc.) is that whether the partner is acting aggressively or passively, then both partners need to learn to communicate assertively. As in traditional assertiveness training, Epstein and associates use procedures such as instructions, modelling, role-playing, feedback, cognitive restructuring, and homework to teach clients to be assertive. In addition, Epstein and associates understand that a male partner may not be receptive to an assertive response from his female partner (or vice versa), and that the traditional training procedures (e.g., instructions, feedback, etc.) may not address this issue. If the male partner is not receptive, the issue is addressed explicitly and explored further. For example, the male partner may require cognitive restructuring to deal with irrational beliefs that his female partner's assertive behavior triggers (e.g., "If my wife works, I am less of a

man.") Alternatively, if the male and female partners clearly state their needs and wants, and the two people disagree on core values and needs, then the viability of the relationship is in doubt. Divorce may occur at this point. However, divorce should not be viewed as a failure if the issues causing the marital distress have been clarified, and the relationship has been dissolved so that the individuals involved can get their needs met with another person (Epstein, 1981).

Therapists who do assertiveness training usually hold a cognitive-behavioral orientation to treatment. However, in recent years, there has been an increasing trend towards eclecticism (Norcross, 1986). Some non-behavioral approaches to couples therapy might encourage the expression of a woman's assertiveness and at the same time deal with the negative reactions of the male partner. One example of a non-behavioral approach which would encourage a woman's assertions and deal with a male partner's rejection of assertions is Greenberg and Johnson's emotionally focused therapy for couples (EFT; Greenberg and Johnson, 1988). While explaining how to do this therapy is beyond the scope of this thesis, what is relevant to the current thesis is that it offers a possible method for observing and altering couple interactions. The method itself is based on bonding theory, experiential psychotherapy, and systems theory. Part of what happens in EFT is that a female partner is encouraged to express her needs and wants to her male partner. If the male partner reacts in a negative manner, the pattern is

described to the couple, and the emotional, cognitive, and behavioral effects on each partner is experientially explored. What the therapist wants to access is how their current interaction pattern keeps the couple emotionally distant. By processing emotions, the couple discovers what they need to do to become emotionally close (e.g., the female partner needs to be able to express what she wants and have her needs respected by her male partner).

While the above description is by necessity much oversimplified, the point is that non-behavioral approaches to couple counselling may offer something to those of us who wish to encourage assertiveness in women. Perhaps successful EFT would result in increased assertiveness for women within a close interpersonal relationship, and greater acceptance of a women's assertiveness by her male partner. No empirical studies were found on how EFT affects assertiveness, but this research issue would be an important one to address.

In summary, positive consequences for assertion can be accomplished by: (1) teaching women when and where assertiveness is likely to be valued; and (2) directly including the target of the assertiveness in treatment, where feasible. Techniques used to encourage assertiveness in a couples context could be adapted for other close relationships (e.g., teenage daughter and mother).

(b) Cognitive distortions

The results of the two studies supported the validity of both the rational choice and cognitive distortion models. Hence, part of assertiveness training should involve identifying and altering cognitive distortions. Stefanek and Eisler (1983) reviewed cognitive factors related to assertiveness, and the reader can refer to this article for a review. Examples of cognitions which have been shown to differentiate high- versus low-assertive women include irrational beliefs as outlined by Ellis (Lohr et al., 1984), and judgments about reasonableness of request (Chiauzzi & Heimberg, 1986).

Several specific points about cognitive restructuring were suggested by the results of these two studies. First of all, cognitive restructuring around probability alone (e.g., Lucock & Salkovskis, 1988) may not be that useful, since severity also deters BI and usually plays a greater role in deterrence than does probability. Hence, in some way, the severity issues needs to be addressed.

Should we try to cognitively restructure by teaching clients that a given consequence that they imagine is not that severe and/or not that probable? The answer to that would be "it depends". For one thing, trainers should not automatically assume that clients are exaggerating the severity and/or probability of consequences. There is ample empirical and anecdotal evidence to suggest that women do sometimes receive negative consequences for acting

assertively. Perhaps the client, with the therapist's help, can consider what could happen if the client asserts herself. The client could be challenged as to whether any of the consequences could be exaggerated, but the ultimate decision as to what is realistic and what is not should be up to the client.

Sometimes one is left with a feeling from reading the literature that trainers do not validate enough of the negative consequences that could occur, and the real emotional upset that could arise from these negative consequences. For example, Epstein (1981), in giving an example of how he would apply Ellis' rational emotive therapy to assertiveness training in couples, cognitively restructured a cognition as, "It is unpleasant that my spouse is treating me this way, but it is not terrible and I can stand it". When I read this restructured statement, I wonder if we are cutting off the client's emotional experience about how her husband is treating her, and encouraging her to "stand it". Perhaps it would be more useful to let her get in touch with how it feels to be treated "this way" by her husband, and to use her emotional experience as a cue to act (e.g., to tell him how she feels, or to realize that she does not want to be in the relationship unless he changes, or whatever). As therapists, we need to be more cautious about what we cognitively restructure.

Another type of cognitive distortion suggested by the findings is that as severity and probability increase,

distress/low self-efficacy increases. Distress/low self-efficacy could mediate BI. Female clients need to be taught that just because negative consequences could occur if they act assertively, it does not necessarily mean that their choice to be assertive or their delivery of an assertive response was incompetent.

(c) Other treatment considerations

Social support/social evaluation. In scene 2 (commercial) of study 2, as probability increased, social support (costs outweighing benefits and needing support) increased. In study 2 scene 5 (self-relevant) of study 2, as severity increased, social support (costs outweighing benefits, and unfairness) increased. In both scenes, social support did not affect BI, and therefore social support could not be considered to be a mediator. However, if social support had been better measured, perhaps mediational effects would have been found. In fact, mediation for unfairness/need for support was found in study 1.

The question remains: If there really is no mediational effect for social support, but social support is affected by severity or probability, how can this information be used for treatment? Should this information be used for treatment? What women are telling us is that when severity or probability increase, they feel a need for support, conclude that the costs of acting assertively outweigh the benefits, and feel that the situation is unfair. If clients are

experiencing these negative internal cognitions and emotions, then these cognitions/emotions could be addressed, even if they do not mediate BI.

Beck et al.'s (1985) theory suggests that people are more likely to act under conditions of threat if they have social support. Perhaps in assertiveness training we need to help clients find social support. Such support might come from the social skills training group itself, particularly if such groups continue over a more long-term basis. Another possibility is to identify people in the client's natural environment who can provide social support for assertiveness. In some instances, perhaps a person who wants to act assertively could take a supportive friend along for moral or verbal support.

Distress/low self-efficacy. In study 2, as severity and/or probability increased, distress/low self-efficacy increased, and BI decreased. The distress/low self-efficacy component was generally comprised of items reflecting worry, incompetence, and low self-esteem, and sometimes one other item. Distress/low self-efficacy could serve as a mediator for BI. These findings suggest the importance of helping clients to anticipate and deal with possible negative consequences which could befall them if they decide to act assertively. As already mentioned, clients could be taught that their competence and self-esteem need not be tied in with how others react to them. Clients need to consider possible negative consequences and how they can avoid them or

how they will deal with them if they should occur. Clients can talk about their concerns, and do role-plays about negative consequences, if such consequences involve the reactions of another person. Also, if the possible consequences are that severe, and have reasonable probability, clients may want to consider alternative courses of action to acting assertively.

8. Suggestions for future research

(a) Possible methodological changes for future studies -- measurement issues

In studies 1 and 2, potential coeffects/mediators were measured by defining what these possible coeffects/mediators were, and then designing questionnaire items to measure them. The state anxiety portion of the STAI was also included as a standardized measure of anxiety in Study 1. The resulting Post Videotape Questionnaire (PVQ) and Assertiveness Consequences Questionnaire (ACQ) were relatively adequate in measuring the variables of interest. Although the test-retest reliability coefficient for the BI item was lower than expected as indicated in Study 1, adequate reliability for the BI item was demonstrated by explaining the nature of the variation as mostly small random variation about the mean, plus explained variation due to learning. There was adequate reliability for the components (anxiety, negative self-

evaluation, and unfairness/need for support) derived from the PVQ plus the state anxiety (STAI) measure, as well as the distress/low self-efficacy component from the ACQ. There were indications of validity with respect to the BI item, in that the assertiveness measure (RAS) predicted BI for both studies. Also, the standardized state anxiety test (STAI), when subjected to PCA, loaded with the anxiety and worry items on the PVQ, as one would expect. One improvement on the PVQ and ACQ might have been to have included more items, including several BI items. If more items had been included, perhaps other and better components would have emerged. For example, perhaps the reasonableness of request item would have emerged as a separate factor, instead of loading with the unfairness/need for support component on the PVQ. The value in further refining the PVQ or ACQ lies in the fact that the items seem to be tapping into variables delineated in Beck et al.'s (1985) theory of social anxiety. Such an instrument could prove useful in future research on social anxiety/assertiveness.

Future research might want to use different tests, and possibly more standardized tests, to tap possible mediators between severity and probability and BI. The advantage of using more standardized tests is that the researcher is not left to determine reliability and validity. The use of standardized tests would also tap into some variables which are different from the ones measured in this study. Some ideas which might be considered include: (1) measures of irrational beliefs, (2) some variation on the thought-

listing technique, and (3) tests measuring specific self-statements.

One standard test which measures irrational beliefs is the Irrational Beliefs Test (IBT) developed by Jones (1969). The IBT is designed to measure Ellis' (1962) irrational beliefs. The question can be raised as to whether the endorsement of Ellis' (1962) irrational beliefs is related to variations in cognitions between severity and probability of an anticipated negative consequence and BI.

Another option for measuring cognitions between severity and probability and BI would be to use some variation on the thought-listing technique. This technique involves asking participants to list all of the thoughts that occur in response to a stimulus situation. For example, participants might be asked to list thoughts which occur to them while waiting for a friend who acts aggressively towards them. Although there are variations on the thought-listing technique, participants are generally asked to record each separate thought in a boxed area on a specially designed thought-listing form. Participants are asked to be honest, to list all thoughts, and to ignore spelling, punctuation, and grammar. The thoughts listed are scored as positive self-statements, negative self-statements, or neutral self-statements. Some of the variations used in this method include whether specific or general instructions are given, the number of thoughts that participants are asked to list, and whether the experimenter or the participant rates the

thoughts as positive, negative, or neutral (Heimberg et al., 1985; Heimberg, Nyman, & O'Brien, 1987). If this technique were to be used in exploring the effects of severity and probability on BI, then other specific categories of thought might be coded, such as whether participants considered probability or not, or whether specific cognitive or emotional variables which could mediate between severity and probability and BI were present (e.g., statements concerning competence or anxiety).

Another type of cognitive measure which might prove useful in investigating cognitions between severity and probability and BI would be tests involving specific self-statements. One example of a specific test designed to measure self-statements in assertiveness situations was developed by Glass, Merluzzi, Biever, and Larsen (1982). Glass et al. (1982) developed the Social Interaction Self-Statement Test (SISST) to measure specific cognitions about difficult social interactions. Their 30-item test contains 15 positive (facilitative) and 15 negative (inhibitory) self-statements. These 30 statements were factor analyzed, and produced four components reflecting self-depreciation, positive anticipation, fear of negative evaluation, and coping. It would be interesting to compare high- and low-assertive participants' responses to this test under differing anticipated severity and probability conditions.

(b) Other suggestions for future research

A number of suggestions can be made about ideas for future research based upon the two studies. There is the question of how to get people in the women's environment to be receptive to a women's assertiveness. Alternative methods of encouraging environmental support for assertiveness could be compared. For example, one could compare directly teaching assertiveness to couples as advocated by Epstein (Epstein, 1982; Epstein et al., 1979) to EFT (Greenberg & Johnson, 1988).

Further research could be done on how reactions to severity and probability differ according to one's personality. Of particular interest is how people varying in characteristic levels of assertiveness use and are affected by information on severity and probability. For example, do high assertives see themselves as being more skilled with dealing with aggressive people than do low assertives, or do they see themselves as equally skilled (but standing up for self is more important than a negative interpersonal consequence)? A related and perhaps more important question is whether high- versus low-assertive women differ in practical skills and coping skills for dealing with possible negative consequences of asserting themselves. Some specific questions along these lines are: Do high- versus low-assertive women differ in their knowledge of how to deal with aggressive people? Do high- versus low-assertive women

differ in self-efficacy expectations about how to deal with aggressive people? If confronted with different types of negative consequences for assertiveness (e.g., being disliked, being disregarded, being fired), are high- versus low-assertive women's coping skills different?

There is still a lack of information on whether non-assertive women receive more negative feedback from their environment for acting assertively than do assertive women. Perhaps one way to get at this issue would be to study the recipients of assertiveness in the clients' environment. Questionnaires could be developed concerning how spouses/significant others react to assertiveness. Alternatively, a study could be done to determine if more spouses of non-assertive women compared to assertive women hold traditional, conservative attitudes towards women's roles.

Some researchers, such as Maddox, Norton, and Stoltenberg (1986) view self-efficacy and outcome expectance as independent and nonredundant in predicting BI. Study 2 suggests that outcome expectancy may affect self-efficacy expectations. Further research would help to clarify this point.

9. Contributions of the two studies

These two studies have contributed significantly to the assertiveness literature in a number of ways. The two studies clarified the relative contributions of severity and

probability in deterring assertive behavior. The two studies thus begin to address Bellack et al.'s (1989) criticism that therapists and researchers tend to recommend one problem-solving strategy over another without understanding how people problem-solve naturally. As applied to these two studies, the focus was on how women use severity and probability information without specific instructions as to what information to use (i.e., severity or probability or both). Possible mechanisms through which severity and probability might exert an influence, specifically through level of distress/low self-efficacy or social support, were delineated.

In addition, study 1 used a methodology which kept expected environmental consequences constant. This methodology involved showing an expected consequence on videotape, along with a stated probability. This methodology is important in that a confusing aspect of the literature on cognitive distortions in assertiveness has been the assumption that low-assertive women distort expected severities and probabilities of consequences in their environment. While it might not be possible to follow participants around in their environment to determine actual severities and probabilities of consequences, study 1 suggested a method for studying differential reactions to environmental consequences for high- and low-assertive women. This methodology allowed the experimenter to call the severities and probabilities realistic in study 1, since they were givens and could not

have been "distorted" by the participants. It was possible to demonstrate the importance of both the rational choice and the cognitive distortion models of assertiveness by showing that RAS influenced BI after environmental factors had been entered into a regression equation predicting BI.

Presumably, differences in assertiveness as measured by the RAS reflected underlying differences in cognitive processes. Pointing out the validity of both models is important in that treatment models tend to focus on cognitive distortion, with less attention being given to possible negative consequences. These two studies underline the importance of two factors in treating low-assertive women: (1) creating positive consequences for assertiveness in the natural environment, and (2) targeting cognitive distortions, which does not necessarily mean severity and probability, for change.

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Appendix A

Script

Scene: Helen is in a University of Ottawa student lounge, reading a magazine. She stops reading, looks up, and seems to be lost in thought.

Narrator: (off-camera; voice only) This is Helen, an undergraduate student at the University of Ottawa. She is sitting in a Student Lounge, waiting for her friend, Phyllis. As she waits for Phyllis, we hear her thoughts.

Helen (thinking -- Her lips don't move, but we hear her voice). I'd really like to stand up to Phyllis. I'd hate to damage our friendship, though. We've been friends since high school, and most of the time I really enjoy her company. I can talk to her about my problems, and we do a lot of things together. And I really don't know very many other people at university. It's so hard to find new friends who like to do the same things that I like to do. It really bothers me, though, that she's always asking me to do favors for her, and I don't really want to do them. I remember the time that I loaned her my hair dryer, and she said she'd bring it right back, and I didn't see it for three days. I hate to say no, though, to any of these requests. I wonder what she would do if I did say no to something that she

requests? Perhaps it might be something like this...

Narrator: (off-camera; voice only) At this point, Helen is daydreaming about what it would be like to assert herself with Phyllis...(Screen fades to white, and then becomes normal again. Phyllis arrives.)

Phyllis: Hi, Helen.

Helen: Hi, Phyllis. It's good to see you.

Are you still coming over tonight? I rented that movie that we talked about. I'm really looking forward to it. I think it should be funny.

Phyllis: Yes, I'm still planning on coming over tonight. I'm really looking forward to the movie, too. It's so nice to have a night off from studying. I've had a really hard week.

By the way, I saw John today, and he got the part-time job that he had applied for. He was really pleased.

Helen: Great! I'm so glad for him. He really wanted that sales job because he felt that he would like to work for that company when he graduates.

Phyllis: That's true. Anyway, he starts this weekend. Are you planning on keeping your job?

Helen: I'm planning to. I'd like to work full-time in the summer. Mr. McIntosh, the manager, said he will need extra clerical help in the summer, and he will probably hire me.

Phyllis: Sounds good. (Pause).

By the way, Helen, I wanted to ask you about Marriott's class. Have you been going lately?

Helen: Yes, I go fairly regularly. You know what Marriott is like. He covers a lot of material that isn't in a text anywhere, and I hate to miss any of his classes.

Phyllis: As you know, Helen, I haven't been to the last three classes, and I'd like to ask if I could borrow your notes. I know the mid-term is in a week, and I am sure that Marriott will ask questions about Catcher in the Rye. I can take the notes with me tonight, and I'll bring them back in a couple of days.

Helen: (Pause, slight stutter initially). Well, I'd like to help you out, but I need to the notes myself to study for the exam next week. I'm sorry, but I really can't loan them to you.

High-severity consequence⁶:

Phyllis: (annoyed and angry) Oh, come on, Helen. You can loan them to me. I depend on you to come through for me. If you don't loan me your notes, then I won't do well on the exam.

Helen: I'd like to help you out, Phyllis, but with the exam only a week away, I can't loan my notes.

Phyllis: (angry and upset) This isn't fair. I'm your friend, and what do I get? I get nothing. You're really a jerk.

Helen: Well, I'm sorry, I can understand how you feel, but I absolutely need my notes myself.

Phyllis: You're such a jerk. I really don't understand why you can't help me out. I'll return your notes in a few days and you can still study. You really disgust me. If that's the way that you are, then I don't want to be your friend any more. (Scene turns white, and then normal again. Phyllis picks up her magazine, and then puts it down. She is lost in

⁶The scripts given to the subjects were only for the condition that they actually saw. They had no information that their scene was considered to have a high-severe or low-severe consequence, or that other people saw a scene with a different probability. This labelling is done here for convenience and to avoid copying the script four times in this manuscript.

thought).

Low-severity consequence:

Phyllis: Well, that's a disappointment. I really hoped you would help me out.

Helen: I'd like to help you out, Phyllis, but with the exam only a week away, I really can't loan my notes to you.

Phyllis: I don't know what I'm going to do. (Screen fades to white, and then becomes normal again.)

Ending (for both high- and low-severity conditions)--
probability manipulation

Narrator: (off-camera; voice only). Now Helen has just finished imagining what it would be like to say no to Phyllis, and she continues to think about the situation.

Helen: (Thinking. Her lips do not move, but we hear her voice.) Now would it really be like that if I refused Phyllis something? Would it go the way that I just imagined it? (Pause.) Well, I think there is a 20% (or 80%) chance that it would be like that. (Pause.) Is that a reasonable estimate, 20% (or 80%)? (Pause.) Yes, I think it would be. I think there's about a 20% (or 80%) chance of it happening that way.

Appendix B

Manipulation Check Questionnaire⁷Background Information

Sex: Male ____ Female ____

Age: ____

How many years of full-time university have you completed?
Please circle your answer.

0 1 2 3 4 5+

What degree program are you registered in?

Arts ____

Science ____

Administration ____

Social Sciences ____

Engineering ____

Other (please specify)

Instructions

On the following pages you will find several questions about your opinions regarding the interaction depicted on the videotape. You will be asked to make

⁷Title given to students was "Post Videotape Questionnaire"

judgments on a series of descriptive scales. If your opinion is very closely, strongly, or extremely related to one end of the scale, you should place your mark as follows:

happy X : ____ : ____ : ____ : ____ : ____ : ____ sad
 1 2 3 4 5 6 7

or

happy ____ : ____ : ____ : ____ : ____ : ____ : X sad
 1 2 3 4 5 6 7

If your opinion is quite closely related to one end of the scale (but not extremely), you should place your mark as follows:

happy ____ : X : ____ : ____ : ____ : ____ : ____ sad
 1 2 3 4 5 6 7

or

happy ____ : ____ : ____ : ____ : ____ : X : ____ sad
 1 2 3 4 5 6 7

If your opinion is only slightly related to one side or the other, then you should make your mark as follows:

Questions

(1) Phyllis' reaction to Helen's refusal was⁸

mild ____ : ____ : ____ : ____ : ____ : ____ : ____ severe
 1 2 3 4 5 6 7

(2) The probability that Phyllis will act as imagined was stated on the videotape as ____%.

(3) Assume that Helen is accurate, and there really is a(n) ____% chance (insert % as stated in number 2 above) that Phyllis will act as imagined. Do you see ____% (insert % as stated in number 2 above) as a low or high number? I am not asking if Helen's guess is accurate, but I am asking whether you see the percentage itself as a low or high number. Where would it fit on a 7-point scale?

low ____ : ____ : ____ : ____ : ____ : ____ : ____ high
 1 2 3 4 5 6 7

⁸Item 1 was presented as the third item on one-half of the questionnaires

Appendix C

Post Videotape Questionnaire⁹Background Information

Sex: Male _____ Female _____

Age: _____

How many years of full-time university have you completed?

Please circle your answer.

0 1 2 3 4 5+

What degree program are you registered in?

Arts _____

Science _____

Administration _____

Social Sciences _____

Engineering _____

Other (please specify)

⁹In the body of the questionnaire, one-half of students received the self items first, and one-half received the other-person items first.

Instructions

On the following pages you will find several questions about your opinions regarding the interaction depicted on the videotape. You will be asked to make judgments on a series of descriptive scales. If your opinion is very closely, strongly, or extremely related to one end of the scale, you should place your mark as follows:

happy X : ___ : ___ : ___ : ___ : ___ : ___ sad
 1 2 3 4 5 6 7

or

happy ___ : ___ : ___ : ___ : ___ : ___ : X sad
 1 2 3 4 5 6 7

If your opinion is quite closely related to one end of the scale (but not extremely), you should place your mark as follows:

happy ___ : X : ___ : ___ : ___ : ___ : ___ sad
 1 2 3 4 5 6 7

or

happy ___ : ___ : ___ : ___ : ___ : X : ___ sad
 1 2 3 4 5 6 7

- (2) Be sure to answer every item. Please do not omit any.
- (3) Never put more than one check mark on a single scale.

Part 1

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

The following questions assume that HELEN is thinking about refusing to loan her notes to Phyllis, and that Phyllis will ask HELEN to borrow her notes. Assume that HELEN'S anticipation is accurate, and that the consequence depicted has a(n) _____% (insert % as stated on the videotape) chance of happening. Please answer the following questions from HELEN's perspective. From all of the information that you have:

- (1) How likely is it that HELEN will loan Phyllis the notes?

likely _____ : _____ : _____ : _____ : _____ : _____ : _____ unlikely
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

(2) How worried is Helen that the consequence shown will occur?

worried _____ : _____ : _____ : _____ : _____ : _____ : _____ calm
 1 2 3 4 5 6 7

(3) How anxious does Helen feel about refusing Phyllis' request?

anxious _____ : _____ : _____ : _____ : _____ : _____ : _____ calm
 1 2 3 4 5 6 7

(4) How competent does Helen feel in acting assertively and refusing the request?

competent _____ : _____ : _____ : _____ : _____ : _____ : _____ incompetent
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

(5) What is the level of Helen's self-esteem?

high self-esteem _____ : _____ : _____ : _____ : _____ : _____ : _____ low self-
 1 2 3 4 5 6 7 esteem

(6) How fair or unfair is it for Helen to be in this situation?

fair _____ : _____ : _____ : _____ : _____ : _____ : _____ unfair
 1 2 3 4 5 6 7

(7) To what extent do you agree or disagree with the following statements?

(a) Helen would very much like to have the support of her other friends in refusing Phyllis the notes.

agree _____ : _____ : _____ : _____ : _____ : _____ : _____ disagree
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

(b) Helen feels that the costs of refusing the request outweigh the benefits.

agree ___ : ___ : ___ : ___ : ___ : ___ : ___ disagree
 1 2 3 4 5 6 7

(8) How likely is it that Helen will have the resources she needs to cope with Phyllis' response?

likely ___ : ___ : ___ : ___ : ___ : ___ : ___ unlikely
 1 2 3 4 5 6 7

(9) In Helen's opinion, how reasonable is Phyllis' request?

unreasonable ___ : ___ : ___ : ___ : ___ : ___ : ___ reasonable
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

(10)

(a) In Helen's opinion, Phyllis' reaction to Helen's refusal was

mild _____ : _____ : _____ : _____ : _____ : _____ : _____ severe
 1 2 3 4 5 6 7

(b) How certain does Helen feel about her rating of the severity in question #10a?

uncertain _____ : _____ : _____ : _____ : _____ : _____ : _____ certain
 1 2 3 4 5 6 7

(11) When you were answering the questions in this questionnaire from Helen's perspective, how important was the SEVERITY of the consequence in influencing your opinion?

unimportant _____ : _____ : _____ : _____ : _____ : _____ : _____ important
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

(12)

(a) The probability that Phyllis will act as imagined was stated on the videotape as ____%. Does Helen see ____% (insert % as stated in the videotape) as a low or high number? I am not asking if Helen's guess is accurate, but I am asking whether Helen sees the percentage itself as a low or high number. Where do you think Helen would put it on a 7-point scale?

low _____ : _____ : _____ : _____ : _____ : _____ : _____ high
 1 2 3 4 5 6 7

(b) How certain does Helen feel about her rating of the probability in question #12a?

certain _____ : _____ : _____ : _____ : _____ : _____ : _____ uncertain
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

(13) When you were answering the questions in this questionnaire from Helen's perspective, how important was the PROBABILITY of the consequence in influencing your opinions?

unimportant __ : __ : __ : __ : __ : __ : __ important
 1 2 3 4 5 6 7

Part 2Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7

extremely quite slightly neither slightly quite extremely

Assume that YOU are in Helen's place. Assume that YOU are thinking about refusing to loan YOUR notes to Phyllis, and that Phyllis will ask YOU to borrow YOUR notes. Assume that the consequences depicted on the videotape has a(n) _____ % (insert % as stated on the videotape) chance of happening to YOU. Please answer the following questions from YOUR perspective. From all of the information that you have:

(1) How likely is it that YOU will loan Phyllis your notes?

likely _____ : _____ : _____ : _____ : _____ : _____ : _____ unlikely
 1 2 3 4 5 6 7

(2) How worried are YOU that the consequence shown will occur?

worried _____ : _____ : _____ : _____ : _____ : _____ : _____ calm
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

(3) How anxious do YOU feel about refusing Phyllis' request?

anxious _____ : _____ : _____ : _____ : _____ : _____ : _____ calm
 1 2 3 4 5 6 7

(4) How competent do you feel in acting assertively and refusing the request?

competent _____ : _____ : _____ : _____ : _____ : _____ : _____ incompetent
 1 2 3 4 5 6 7

(5) What is the level of your self-esteem?

high self-esteem _____ : _____ : _____ : _____ : _____ : _____ : _____ low self-
 1 2 3 4 5 6 7 esteem

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

(6) How fair or unfair is it for you to be in this situation?

fair _____ : _____ : _____ : _____ : _____ : _____ : _____ unfair
 1 2 3 4 5 6 7

(7) To what extent do you agree or disagree with the following statements?

(a) I would very much like to have the support of my other friends in refusing Phyllis the notes.

agree _____ : _____ : _____ : _____ : _____ : _____ : _____ disagree
 1 2 3 4 5 6 7

(b) I feel that the costs of refusing the request outweigh the benefits.

agree _____ : _____ : _____ : _____ : _____ : _____ : _____ disagree
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

(8) How likely is it that you will have the resources you need to cope with Phyllis' response?

likely _____ : _____ : _____ : _____ : _____ : _____ : _____ unlikely
 1 2 3 4 5 6 7

(9) In your opinion, how reasonable is Phyllis' request?

unreasonable _____ : _____ : _____ : _____ : _____ : _____ : _____ reasonable
 1 2 3 4 5 6 7

(10)

(a) In your opinion, Phyllis' reaction to Helen's refusal was

mild _____ : _____ : _____ : _____ : _____ : _____ : _____ severe
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7

extremely quite slightly neither slightly quite extremely

(b) How certain do you feel about you rating of the severity in question #10a?

uncertain _____ : _____ : _____ : _____ : _____ : _____ : _____ certain
 1 2 3 4 5 6 7

(11) When you were answering the questions in this questionnaire from your perspective, how important was the SEVERITY of the consequence in influencing your opinion?

unimportant _____ : _____ : _____ : _____ : _____ : _____ : _____ important
 1 2 3 4 5 6 7

(12)

(a) The probability that Phyllis will act as imagined was stated on the videotape as _____. Do you see _____% (insert % as stated in the videotape) as a low or high number? I am not asking if Helen's guess is accurate, but I am asking whether you see the percentage itself as a low or high number. Where would you put it on a 7-point scale?

low ___ : ___ : ___ : ___ : ___ : ___ : ___ high
 1 2 3 4 5 6 7

Key:

(___ : ___ : ___ : ___ : ___ : ___ : ___)
 1 2 3 4 5 6 7
 extremely quite slightly neither slightly quite extremely

(b) How certain do you feel about your rating of the probability in question #12a?

certain ___ : ___ : ___ : ___ : ___ : ___ : ___ uncertain
 1 2 3 4 5 6 7

(13) When you were answering the questions in this questionnaire from your perspective, how important was the PROBABILITY of the consequence in influencing your opinions?

unimportant ___ : ___ : ___ : ___ : ___ : ___ : ___ important
 1 2 3 4 5 6 7

Appendix D

State Anxiety Questionnaire from the State-Trait Anxiety Inventory

(Self-Evaluation Questionnaire)

Note. The second page (trait anxiety) of this questionnaire was crossed out with a pencil line across the diagonal so that participants were aware that they did not have to complete page two.

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pp. 304 & 354 Self-evaluation Questionnaire

Consulting Psychologists Press Inc.

3803 E. Bayshore Road,
Palo Alto, CA 94303

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Appendix E

Actor-Evaluation Questionnaire

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the number to the right of the statement to indicate how HELEN feels right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but given the answer which seems to describe her present feelings best.

Key: 1 not at all
 2 somewhat
 3 moderately so
 4 very much so

- | | | | | | |
|----|--|---|---|---|---|
| 1. | She feels calm..... | 1 | 2 | 3 | 4 |
| 2. | She feels secure..... | 1 | 2 | 3 | 4 |
| 3. | She feels tense..... | 1 | 2 | 3 | 4 |
| 4. | She feels strained..... | 1 | 2 | 3 | 4 |
| 5. | She feels at ease..... | 1 | 2 | 3 | 4 |
| 6. | She feels upset..... | 1 | 2 | 3 | 4 |
| 7. | She is presently worrying over possible
misfortune..... | 1 | 2 | 3 | 4 |
| 8. | She feels satisfied..... | 1 | 2 | 3 | 4 |

Key: 1 not at all
2 somewhat
3 moderately so
4 very much so

- | | | | | | |
|-----|-------------------------------|---|---|---|---|
| 9. | She feels frightened..... | 1 | 2 | 3 | 4 |
| 10. | She feels uncomfortable..... | 1 | 2 | 3 | 4 |
| 11. | She feels self-confident..... | 1 | 2 | 3 | 4 |
| 12. | She feels nervous..... | 1 | 2 | 3 | 4 |
| 13. | She feels jittery..... | 1 | 2 | 3 | 4 |
| 14. | She feels indecisive..... | 1 | 2 | 3 | 4 |
| 15. | She feels relaxed..... | 1 | 2 | 3 | 4 |
| 16. | She feels content..... | 1 | 2 | 3 | 4 |
| 17. | She feels worried..... | 1 | 2 | 3 | 4 |
| 18. | She feels confused..... | 1 | 2 | 3 | 4 |
| 19. | She feels steady..... | 1 | 2 | 3 | 4 |
| 20. | She feels pleasant..... | 1 | 2 | 3 | 4 |

Appendix F

Rathus Assertiveness Schedule

Directions: Indicate how characteristic or descriptive each of the following statements is of you by using the code given below.

- +3 very characteristic of me, extremely descriptive
- +2 rather characteristic of me, quite descriptive
- +1 somewhat characteristic of me, slightly descriptive
- 1 somewhat uncharacteristic of me, slightly
nondescriptive
- 2 rather uncharacteristic of me, quite nondescriptive
- 3 very uncharacteristic of me, extremely nondescriptive

- _____ 1. Most people seem to be more aggressive and assertive than I am.
- _____ 2. I have hesitated to make or accept dates because of "shyness".
- _____ 3. When the food served at a restaurant is not done to my satisfaction, I complain about it to the waiter or waitress.
- _____ 4. I am careful to avoid hurting other people's feelings, even when I feel that I have been injured.
- _____ 5. If a salesman has gone to considerable trouble to

Key:

- +3 very characteristic of me, extremely descriptive
- +2 rather characteristic of me, quite descriptive
- +1 somewhat characteristic of me, slightly descriptive
- 1 somewhat uncharacteristic of me, slightly
nondescriptive
- 2 rather uncharacteristic of me, quite nondescriptive
- 3 very uncharacteristic of me, extremely nondescriptive

show me merchandise which is not quite suitable,
I have a difficult time in saying "No."

- _____ 6. When I am asked to do something, I insist upon
knowing why.
- _____ 7. There are times when I look for a good, vigorous
argument.
- _____ 8. I strive to get ahead as well as most people in
my situation.
- _____ 9. To be honest, people often take advantage of me.
- _____ 10. I enjoy starting conversations with new
acquaintances and strangers.
- _____ 11. I often don't know what to say to attractive
persons of the opposite sex.
- _____ 12. I will hesitate to make phone calls to business
establishments and institutions.
- _____ 13. I would rather apply for a job or for admission to
a college by writing letters than by going through

Key:

- +3 very characteristic of me, extremely descriptive
- +2 rather characteristic of me, quite descriptive
- +1 somewhat characteristic of me, slightly descriptive
- 1 somewhat uncharacteristic of me, slightly
nondescriptive
- 2 rather uncharacteristic of me, quite nondescriptive
- 3 very uncharacteristic of me, extremely nondescriptive

with personal interviews.

- _____ 14. I find it embarrassing to return merchandise.
- _____ 15. If a close and respected relative were annoying me, I would smother my feelings rather than express my annoyance.
- _____ 16. I have avoided asking questions for fear of sounding stupid.
- _____ 17. During an argument I am sometimes afraid that I will get so upset that I will shake all over.
- _____ 18. If a famed and respected lecturer makes a statement which I think is incorrect, I will have the audience hear my point of view as well.
- _____ 19. I avoid arguing over prices with clerks and salesmen.
- _____ 20. When I have done something important or worthwhile, I manage to let others know about it.
- _____ 21. I am open and frank about my feelings.
- _____ 22. If someone has been spreading false and bad stories about me, I see him (her) as soon as

Key:

- +3 very characteristic of me, extremely descriptive
- +2 rather characteristic of me, quite descriptive
- +1 somewhat characteristic of me, slightly descriptive
- 1 somewhat uncharacteristic of me, slightly
nondescriptive
- 2 rather uncharacteristic of me, quite nondescriptive
- 3 very uncharacteristic of me, extremely nondescriptive

possible to "have a talk" about it.

- _____ 23. I often have a hard time saying "No."
- _____ 24. I tend to bottle up my emotions rather than make a scene.
- _____ 25. I complain about poor service in a restaurant and elsewhere.
- _____ 26. When I am given a compliment, I sometimes just don't know what to say.
- _____ 27. If a couple near me in a theatre or at a lecture were conversing rather loudly, I would ask them to be quiet or to take their conversation elsewhere.
- _____ 28. Anyone attempting to push ahead of me in a line is in for a good battle.
- _____ 29. I am quick to express an opinion.
- _____ 30. There are times when I just can't say anything.

Appendix G

Social Desirability Scale

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally. Answer "T" for "true" and "F" for "false".

- _____ 1. Before voting I thoroughly investigate the qualifications of all the candidates.
- _____ 2. I never hesitate to go out of my way to help someone in trouble.
- _____ 3. It is sometimes hard for me to go on with my work if I am not encouraged.
- _____ 4. I have never intensely disliked anyone.
- _____ 5. On occasion I have had doubts about my ability to succeed in life.
- _____ 6. I sometimes feel resentful when I don't get my way.
- _____ 7. I am always careful about my manner of dress.
- _____ 8. My table manners at home are as good as when I eat out in a restaurant.
- _____ 9. If I could get into a movie without paying for it and be sure I was not seen, I would probably do it.
- _____ 10. On a few occasions, I have given up doing

something because I thought too little of my ability.

- _____ 11. I like to gossip at times.
- _____ 12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
- _____ 13. No matter who I'm talking to, I'm always a good listener.
- _____ 14. I can remember "playing sick" to get out of something.
- _____ 15. There have been occasions when I took advantage of someone.
- _____ 16. I'm always willing to admit it when I make a mistake.
- _____ 17. I always try to practice what I preach.
- _____ 18. I don't find it particularly hard to get along with loud mouthed, obnoxious people.
- _____ 19. I sometimes try to get even, rather than forgive and forget.
- _____ 20. When I don't know something I don't at all mind admitting it.
- _____ 21. I am always courteous, even to people who are disagreeable.
- _____ 22. At times I have really insisted on having things my own way.
- _____ 23. There have been occasions when I felt like smashing things. •

- _____ 24. I would never think of letting someone else be punished for my wrongdoings.
- _____ 25. I never resent being asked to return a favor.
- _____ 26. I have never been irked when people expressed ideas very different from my own.
- _____ 27. I never make a long trip without checking the safety of my car.
- _____ 28. There have been times when I was quite jealous of the good fortune of others.
- _____ 29. I have almost never felt the urge to tell someone off.
- _____ 30. I am sometimes irritated by people who ask favors of me.
- _____ 31. I have never felt that I was punished without a cause.
- _____ 32. I sometimes think when people have a misfortune they only got what they deserved.
- _____ 33. I have never deliberately said something that hurt someone's feelings.

Appendix H

Recruitment Instructions

"My name is (experimenter or assistant's name), and I am a graduate student in clinical psychology. This is (name of other assistant(s)). Professor (name) has kindly permitted me to conduct a study in your class today. My study is about people's reactions to certain types of social interactions, and I would like to invite you to participate in my study. Your participation is totally voluntary. The study involves viewing a brief 3 to 5 minute film about two people interacting. You will be required to watch the film, and then complete a questionnaire about your opinions, ideas, and feelings concerning the interaction. I will be dividing the class into 4 groups to view different videotapes. The study will take about 45 minutes of your time. You will not put your name on the questionnaires so that your answers can remain anonymous and confidential. I feel that you can benefit from the study by finding out what it is like to be a subject in an experiment, and you will be contributing to research. However, you may chose not to participate and your grade in the course will not be affected by your participation or your non-participation. You will be able to get feedback about the overall study by leaving us your name and address on a piece of paper when the testing is finished. Are there any questions?"

Appendix I

Consent Form

I, _____,
agree to participate in a study of people's reactions to
different types of interpersonal behavior. This
investigation is being carried out by Dr. M. McCarrey,
principle investigator, and Ms. L. Andrews of the School of
Psychology.

I understand that I will be asked to fill out a
questionnaire regarding my opinions and my own ideas and
feelings about an interpersonal interaction that I will view
on videotape. This study will require about 45 minutes of my
time.

I understand that the responses I give will be regarded as
confidential and that the results reported will not identify
me personally as a participant. I have been assured that my
participation in this study is totally voluntary and that I
may withdraw from participation at any time. My
participation or non-participation will have no bearing on my
marks in this course. When this study is completed (early
next year), we will arrange to send out feedback on the
overall study to those who request it.

In the event that I have concerns or complaints about this study, I have been told that I may express my concerns to Dr. M. McCarrey (564-9165), School of Psychology, University of Ottawa.

Signed _____

Date _____

To the participant:

A consent form is a standard requirement for all studies involving the School of Psychology, University of Ottawa. The use of a consent form does not imply that the study is potentially hazardous or embarrassing; its use simply acknowledges the concern of the School for the rights of the individual participant. If you have agreed to participate, then we thank you for your cooperation.

Appendix J

Instructions on the sheet between the PVQ/SEQ and PVQ/AEQ

If the PVQ/SEQ was completed first, then the sheet read:

INSTRUCTIONS

Imagine that HELEN is about to meet Phyllis in real life, and that HELEN believes that Phyllis will ask to borrow her notes. Given the expectancies that you have seen on the videotape, answer the following questions from HELEN'S perspective. How would HELEN respond to the following questionnaire?

Note: Please read the questionnaire instructions also.

Do not fill in your name.

If the PVQ/AEQ was completed first, then the sheet read:

INSTRUCTIONS

Imagine that YOU are about to meet Phyllis in real life, and that YOU believe that Phyllis will ask to borrow YOUR notes. Given the expectancies that you have seen on the videotape, answer the following questions from YOUR perspective. How would YOU respond to the following questionnaire?

Note: Please read the questionnaire instructions also.

Do not fill in your name.

Appendix K

Assertiveness Consequences QuestionnaireBackground Information

Sex: Male ____ Female ____

Age: ____

How many years of full-time university have you completed?

Please circle your answer.

0 1 2 3 4 5+

What degree program are you registered in?

Arts ____

Science ____

Administration ____

Social Sciences ____

Engineering ____

Other (please specify) _____

Instructions

On the following pages you will find several

questions about your opinions regarding some situations that you may find yourself in with other people. You will be asked to make judgments on a series of descriptive scales. If your opinion is very closely, strongly, or extremely related to one end of the scale, you should place your mark as follows:

happy X : ____ : ____ : ____ : ____ : ____ : ____ sad
 1 2 3 4 5 6 7

or

happy ____ : ____ : ____ : ____ : ____ : ____ : X sad
 1 2 3 4 5 6 7

If your opinion is quite closely related to one end of the scale (but not extremely), you should place your mark as follows:

happy ____ : X : ____ : ____ : ____ : ____ : ____ sad
 1 2 3 4 5 6 7

or

happy ____ : ____ : ____ : ____ : ____ : X : ____ sad
 1 2 3 4 5 6 7

- (2) Be sure to answer every item. Please do not omit any.
- (3) Never put more than one check mark on a single scale.

* * * * *

Instructions

Imagine yourself in the following situations with someone else even if it has never happened to you. Pretend that you really have to say no to the person, or refuse their request. Put down whatever comes into your mind first, and do not spend too much time with any one question.

Note: In all of the vignettes, you will be asked to describe a possible negative consequence that might occur if you say no to someone making a request. The negative consequence might be something tangible and concrete (e.g., I could lose my friend) or it might involve your feelings or thoughts (e.g., I would feel guilty if the other person lost money because of my actions; I would think of myself as an unkind person).

* * * * *

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

#1 You have been dating your boyfriend/girlfriend for about a year. You feel quite close to him/her, but are not certain as to whether this is the person that you want to spend the rest of your life with. Your boyfriend/girlfriend wants to move in with you, but you don't feel ready.

What is a possible negative consequence that might occur if you do say no and tell your boyfriend/girlfriend that they can't move in with you?

(a) How severe is this possible consequence?

severe _____ : _____ : _____ : _____ : _____ : _____ : _____ mild
 1 2 3 4 5 6 7

(b) In terms of a percentage (e.g. 10%, 40%, 70%, etc.), what are the chances that this possible consequence would occur? _____ %

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(c) How likely is it that you would tell your
 boyfriend/girlfriend that he/she can't move in?

likely _____ : _____ : _____ : _____ : _____ : _____ : _____ unlikely
 1 2 3 4 5 6 7

(d) How worried or calm would you be about saying that your
 boyfriend/girlfriend can't move in?

calm _____ : _____ : _____ : _____ : _____ : _____ : _____ worried
 1 2 3 4 5 6 7

(e) How competent would you feel in telling your
 boyfriend/girlfriend that he/she can't move in?

incompetent _____ : _____ : _____ : _____ : _____ : _____ : _____ competent
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(f) How high or low would your self-esteem be in telling your boyfriend/girlfriend he/she can't move in?

high self-esteem _____ : _____ : _____ : _____ : _____ : _____ : _____ low self-
 1 2 3 4 5 6 7 esteem

(g) How fair would it be for you (not your boyfriend/girlfriend) to be in this situation?

fair _____ : _____ : _____ : _____ : _____ : _____ : _____ unfair
 1 2 3 4 5 6 7

(h) To what extent would you agree or disagree with the following statements?

(1) I would like to have the support of my friends in telling my boyfriend/girlfriend that he/she can't move in with me.

agree _____ : _____ : _____ : _____ : _____ : _____ : _____ disagree
 1 2 3 4 5 6 7

Key:

(	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	)
	1		2		3		4		5		6		7	
	extremely		quite		slightly		neutral		slightly		quite		extremely	

(2) I feel that the costs of telling my boyfriend/girlfriend that he/she can't move in would outweigh the benefits.

agree	___	:	___	:	___	:	___	:	___	:	___	:	___	disagree
	1		2		3		4		5		6		7	

(i) Instructions

Question (i) in all of the vignettes will ask about whether your feelings (of anxiety, self-esteem, etc.) and opinions in each vignette were more influenced by the severity or the probability of a possible negative consequence. For example, maybe you said in this first vignette that a possible negative consequence would be that you would have an argument with your boyfriend/girlfriend, which you rated as 4 on the severity scale. Perhaps you said that this possible negative consequence has about a 20% chance of happening. If you feel that your anxiety, self-esteem, competence, etc. was more affected by the severity of the negative consequence, you would answer like this:

- ☒ (a) severity was more important than probability
- (b) probability was more important than severity

If your feelings (of anxiety, self-esteem, etc.) and opinions were more influenced by the probability of the consequence (i.e., that the consequence only had a 20% chance of happening), then you would answer like this:

- (a) severity was more important than probability
- ☒ (b) probability was more important than severity

(i) When you were considering your feelings and opinions in this vignette, how important was the severity of the consequence in comparison to the probability of the consequence? Please circle your answer.

- (a) severity was more important than probability
- (b) probability was more important than severity

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

#2 A friend that you have known since high school, Marilyn, is in your French class. You see Marilyn socially, and consider her a fairly good friend. Marilyn is having trouble learning French, and has asked you if you could tutor her for half an hour a week. You do not feel that you have the time or the interest to tutor her in French.

What is a possible negative consequence that might occur if you tell Marilyn that you can not tutor her in French?

(a) How severe is this possible consequence?

mild _____ : _____ : _____ : _____ : _____ : _____ : _____ severe
 1 2 3 4 5 6 7

(b) In terms of a percentage (e.g. 10%, 40%, 70%, etc.), what are the chances that this possible consequence would occur? _____ %

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(c) How likely is it that you would tell Marilyn that you can't tutor her in French?

unlikely ___ : ___ : ___ : ___ : ___ : ___ : ___ likely
 1 2 3 4 5 6 7

(d) How worried or calm would you be about telling Marilyn that you can't tutor her in French?

calm ___ : ___ : ___ : ___ : ___ : ___ : ___ worried
 1 2 3 4 5 6 7

(e) How competent would you feel in telling Marilyn that you can't tutor her in French?

competent ___ : ___ : ___ : ___ : ___ : ___ : ___ incompetent
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(f) How high or low would your self-esteem be in telling Marilyn that you can't tutor her in French?

low self-esteem _____ : _____ : _____ : _____ : _____ : _____ : _____ high self-
 1 2 3 4 5 6 7 esteem

(g) How fair would it be for you (not Marilyn) to be in this situation?

unfair _____ : _____ : _____ : _____ : _____ : _____ : _____ fair
 1 2 3 4 5 6 7

(h) To what extent would you agree or disagree with the following statements?

(1) I would like to think that my friends would support me in telling Marilyn that I can't tutor her in French.

agree _____ : _____ : _____ : _____ : _____ : _____ : _____ disagree
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(2) I feel that the costs of telling Marilyn that I can't tutor her in French outweigh the benefits.

disagree _____ : _____ : _____ : _____ : _____ : _____ : _____ agree
 1 2 3 4 5 6 7

(i) When you were considering your feelings and opinions in this vignette, how important was the severity of the consequence in comparison to the probability of the consequence? Please circle your answer.

- (a) severity was more important than probability
- (b) probability was more important than severity

* * * * *

#3 You are approaching the end of the first month of a course in criminology. The professor often complains that students don't want to work and that he feels overburdened with a class this size. He seems to be generally negative and critical. There are about 70 people in your class, and

the professor wants to divide you into 10 small groups to do group research on a topic. A paper on the topic will be prepared and submitted, and everyone in the group will be given the same grade. You would like to tell the professor that you would prefer to work by yourself and be graded on your own work.

What is a possible negative consequence that might occur if you tell the professor that you want to work alone?

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(a) How severe is this possible consequence?

mild _____ : _____ : _____ : _____ : _____ : _____ : _____ severe
 1 2 3 4 5 6 7

(b) In terms of a percentage (e.g., 10%, 40%, 70%, etc.), what are the chances that this possible consequence would occur? _____ %

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(c) How likely is it that you would tell the professor that you would prefer to work alone?

unlikely _____ : _____ : _____ : _____ : _____ : _____ : _____ likely
 1 2 3 4 5 6 7

(d) How worried or calm would you be about telling your professor that you would prefer to work alone?

worried _____ : _____ : _____ : _____ : _____ : _____ : _____ calm
 1 2 3 4 5 6 7

(e) How competent would you feel about telling your professor that you would prefer to work alone?

competent _____ : _____ : _____ : _____ : _____ : _____ : _____ incompetent
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(f) How high or low would your self-esteem be in telling your professor that you prefer to work alone?

low self-esteem _____ : _____ : _____ : _____ : _____ : _____ : _____ high self-
 1 2 3 4 5 6 7 esteem

(g) How fair would it be for you (not your professor) to be in this situation?

fair _____ : _____ : _____ : _____ : _____ : _____ : _____ unfair
 1 2 3 4 5 6 7

(h) To what extent would you agree or disagree with the following statements?

(1) I would like to have the support of my friends in telling my professor that I prefer to work alone.

disagree _____ : _____ : _____ : _____ : _____ : _____ : _____ agree
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(2) I feel that the costs of telling my professor that I prefer to work alone would outweigh the benefits.

disagree _____ : _____ : _____ : _____ : _____ : _____ : _____ agree
 1 2 3 4 5 6 7

(i) When you were considering your feelings and opinions in this vignette, how important was the severity of the consequence in comparison to the probability of the consequence? Please circle your answer.

- (a) severity was more important than probability
- (b) probability was more important than severity

* * * * *

#4 You hear knock on the door, and open the door to find a little boy, who appears to be about 10 years old, with chocolate bars in his hand. He asks you to buy a chocolate bar, which he explains is to help his class raise funds for an educational trip to Quebec City. You have had these

chocolate bars before and you know you don't like them.

What is a possible negative consequence that might occur if you do not buy the chocolate bar from the little boy?

Key:

(	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	)
	1		2		3		4		5		6		7	
	extremely		quite		slightly		neutral		slightly		quite		extremely	

(a) How severe is this possible negative consequence?

mild	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	severe
	1		2		3		4		5		6		7	

(b) In terms of a percentage (e.g. 10%, 40%, 70%, etc.), what are the chances that this possible consequence would occur? _____%

c) How likely is it that you would tell the little boy that you won't buy a chocolate bar?

unlikely	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	likely
	1		2		3		4		5		6		7	

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(d) How worried or calm would you be about telling the little boy that you do not wish to buy a chocolate bar?

calm _____ : _____ : _____ : _____ : _____ : _____ : _____ worried
 1 2 3 4 5 6 7

(e) How competent would you feel about telling the little boy that you do not want to buy a bar?

competent _____ : _____ : _____ : _____ : _____ : _____ : _____ incompetent
 1 2 3 4 5 6 7

(f) How high or low would your self-esteem be in telling the little boy that you do not want to buy a chocolate bar?

high self-esteem _____ : _____ : _____ : _____ : _____ : _____ : _____ low self-
 1 2 3 4 5 6 7 esteem

Key:

(	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	)
	1		2		3		4		5		6		7	
	extremely		quite		slightly		neutral		slightly		quite		extremely	

(g) How fair would it be for you (not the little boy) to be in this situation?

unfair	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	fair
	1		2		3		4		5		6		7	

(h) To what extent would you agree or disagree with the following statements?

(1) I would like to think that my friends would support me in telling the little boy that I do not wish to buy a chocolate bar.

agree	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	disagree
	1		2		3		4		5		6		7	

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(2) I feel that the cost of telling the little boy that I do not wish to buy a chocolate bar would outweigh the benefits.

agree ____ : ____ : ____ : ____ : ____ : ____ : ____ disagree
 1 2 3 4 5 6 7

(i) When you were considering your feelings and opinions in this vignette, how important was the severity of the consequence in comparison to the probability of the consequence? Please circle your answer.

- (a) severity was more important than probability
- (b) probability was more important than severity

* * * * *

#5 Please describe briefly in about 3 to 5 lines a situation in your own life in which you have difficulty saying no to someone or have difficulty refusing someone's request. You do not need to give the person's name or any

identifying details. (You can write on the back if you run out of space.)

What is a possible negative consequence that might occur if you say no or refuse the request?

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)

1	2	3	4	5	6	7
extremely	quite	slightly	neutral	slightly	quite	extremely

(a) How severe is this possible negative consequence?

severe	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	mild
	1		2		3		4		5		6		7			

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(b) In terms of a percentage (e.g. 10%, 40%, 70%, etc.),
 what are the chances that this possible consequence would
 occur? _____ %

(c) How likely is it that you would say no or refuse the
 request?

unlikely _____ : _____ : _____ : _____ : _____ : _____ : _____ likely
 1 2 3 4 5 6 7

(d) How worried or calm would you be about saying no or
 refusing the request?

worried _____ : _____ : _____ : _____ : _____ : _____ : _____ calm
 1 2 3 4 5 6 7

(e) How competent would you feel about saying no or refusing
 the request?

competent _____ : _____ : _____ : _____ : _____ : _____ : _____ incompetent
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(f) How high or low would your self-esteem be in saying no or refusing the request?

low self-esteem _____ : _____ : _____ : _____ : _____ : _____ : _____ high self-
 1 2 3 4 5 6 7 esteem

(g) How fair would it be for you (not the other person) to be in this situation?

unfair _____ : _____ : _____ : _____ : _____ : _____ : _____ fair
 1 2 3 4 5 6 7

(h) To what extent would you agree or disagree with the following statements?

(1) I would like to think that my friends would support me in saying no or refusing the request.

agree _____ : _____ : _____ : _____ : _____ : _____ : _____ disagree
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(2) I feel that the cost of saying no or refusing the request would outweigh the benefits.

agree _____ : _____ : _____ : _____ : _____ : _____ : _____ disagree
 1 2 3 4 5 6 7

(i) When you were considering your feelings and opinions in this vignette, how important was the severity of the consequence in comparison to the probability of the consequence? Please circle your answer.

- (a) severity was more important than probability
- (b) probability was more important than severity
- (c) severity and probability were equally important

* * * * *

(INSERT PERSONALITY QUESTIONNAIRES HERE)

Assertiveness Consequences Questionnaire (cont.)

Please complete the following scenarios, just as you did at the beginning of the questionnaire.

#6 Please describe briefly in about 3 to 5 lines a situation in your own life in which you have difficulty saying no to someone or have difficulty refusing someone's request. You do not need to give the person's name or any identifying details. (You can write on the back if you run out of space.)

What is a possible negative consequence that might occur if you say no or refuse the request?

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(a) How severe is this possible negative consequence?

mild _____ : _____ : _____ : _____ : _____ : _____ : _____ severe
 1 2 3 4 5 6 7

(b) In terms of a percentage (e.g. 10%, 40%, 70%, etc.),
 what are the chances that this possible consequence would
 occur? _____ %

(c) How likely is it that you would say no or refuse the
 request?

likely _____ : _____ : _____ : _____ : _____ : _____ : _____ unlikely
 1 2 3 4 5 6 7

(d) How worried or calm would you be about saying no or
 refusing the request?

worried _____ : _____ : _____ : _____ : _____ : _____ : _____ calm
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(e) How competent would you feel about saying no or refusing the request?

incompetent _ : _ : _ : _ : _ : _ : _ competent
 1 2 3 4 5 6 7

(f) How high or low would your self-esteem be in saying no or refusing the request?

high self-esteem _ : _ : _ : _ : _ : _ : _ low self-
 1 2 3 4 5 6 7

(g) How fair would it be for you (not the other person) to be in this situation?

unfair _ : _ : _ : _ : _ : _ : _ fair
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(h) To what extent would you agree or disagree with the following statements?

(1) I would like to think that my friends would support me in saying no or refusing the request.

disagree _____ : _____ : _____ : _____ : _____ : _____ : _____ agree
 1 2 3 4 5 6 7

(2) I feel that the cost of saying no or refusing the request would outweigh the benefits.

agree _____ : _____ : _____ : _____ : _____ : _____ : _____ disagree
 1 2 3 4 5 6 7

(i) When you were considering your feelings and opinions in this vignette, how important was the severity of the consequence in comparison to the probability of the consequence? Please circle your answer.

- (a) severity was more important than probability
- (b) probability was more important than severity

* * * * *

#7 Please describe briefly in about 3 to 5 lines a situation in your own life in which you have difficulty saying no to someone or have difficulty refusing someone's request. You do not need to give the person's name or any identifying details. This time, think of a situation in which a possible consequence would be low in severity, but high in probability¹⁰. (You can write on the back if you run out of space.)

What is a possible negative consequence that might occur if you say no or refuse the request?

¹⁰or high in severity, low in probability

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(a) How severe is this possible negative consequence?

mild _____ : _____ : _____ : _____ : _____ : _____ : _____ severe
 1 2 3 4 5 6 7

(b) In terms of a percentage (e.g. 10%, 40%, 70%, etc.),
 what are the chances that this possible consequence would
 occur? _____%

(c) How likely is it that you would say no or refuse the
 request?

unlikely _____ : _____ : _____ : _____ : _____ : _____ : _____ likely
 1 2 3 4 5 6 7

(d) How worried or calm would you be about saying no or
 refusing the request?

calm _____ : _____ : _____ : _____ : _____ : _____ : _____ worried
 1 2 3 4 5 6 7

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

(e) How competent would you feel about saying no or refusing the request?

incompetent _____ : _____ : _____ : _____ : _____ : _____ : _____ competent
 1 2 3 4 5 6 7

(f) How high or low would your self-esteem be in saying no or refusing the request?

low self-esteem _____ : _____ : _____ : _____ : _____ : _____ : _____ high self-
 1 2 3 4 5 6 7 esteem

(g) How fair would it be for you (not the other person) to be in this situation?

fair _____ : _____ : _____ : _____ : _____ : _____ : _____ unfair
 1 2 3 4 5 6 7

(h) To what extent would you agree or disagree with the following statements?

(1) I would like to think that my friends would support me

Key:

(_____ : _____ : _____ : _____ : _____ : _____ : _____)
 1 2 3 4 5 6 7
 extremely quite slightly neutral slightly quite extremely

in saying no or refusing the request.

agree _____ : _____ : _____ : _____ : _____ : _____ : _____ disagree
 1 2 3 4 5 6 7

(2) I feel that the cost of saying no or refusing the request would outweigh the benefits.

agree _____ : _____ : _____ : _____ : _____ : _____ : _____ disagree
 1 2 3 4 5 6 7

(i) When you were considering your feelings and opinions in this vignette, how important was the severity of the consequence in comparison to the probability of the consequence? Please circle your answer.

- (a) severity was more important than probability
- (b) probability was more important than severity

* * * * *

Appendix L

Consent Form -- Survey Study

I, _____, agree to participate in a study of people's reactions to different types of interpersonal behavior. This investigation is being carried out by Dr. M. McCarrey, principle investigator, and Ms. L. Andrews of the School of Psychology.

I understand that I will be asked to fill out a questionnaire regarding my opinions and my own ideas and feelings about an interpersonal interaction that I will view on videotape. This study will require about 20 minutes of my time.

I understand that the responses I give will be regarded as confidential and that the results reported will not identify me personally as a participant. I have been assured that my participation in this study is totally voluntary and that I may withdraw from participation at any time. My participation or non-participation will have no bearing on my marks in this course. When this study is completed, we will arrange to send out feedback on the overall study to those who request it.

In the event that I have concerns or complaints about this

study, I have been told that I may express my concerns to Dr. M. McCarrey (564-9165), School of Psychology, University of Ottawa.

Signed _____

Date _____

To the participant:

A consent form is a standard requirement for all studies involving the School of Psychology, University of Ottawa. The use of a consent form does not imply that the study is potentially hazardous or embarrassing; its use simply acknowledges the concern of the School for the rights of the individual participant. If you have agreed to participate, then we thank you for your cooperation.

Appendix M

Trait Anxiety Questionnaire from the State-Trait Anxiety Inventory

(Self-Evaluation Questionnaire)

Note. The second page (state anxiety) of this questionnaire was crossed out with a pencil line across the diagonal so that participants were aware that they did not have to complete page two.

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