

**The Effects of Cognitive Busyness and Question Wording:
Responses to an Intimate Partner Abuse Vignette**

by

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ABSTRACT

This study examined the effects of question wording and cognitive busyness on participant decisions to leave or stay in a hypothetical abusive relationship. Participants asked whether they would *leave* were expected to make decisions closer to ‘definitely leave’ than participants asked whether they would *stay*, with the effect being more pronounced for cognitively busy participants. Participants read an abuse vignette and then half were instructed to memorize numbers to manipulate busyness. All participants imagined they were in the victim’s position, tried to recall reasons from the vignette that were relevant to the decision, and indicated their decisions on a scale from ‘definitely stay’ to ‘definitely leave’. As predicted, male decisions were closer to ‘definitely leave’ when asked whether they would *leave* than when asked whether they would *stay*. The opposite pattern, however, was found for female participants, with decisions being closest to ‘definitely leave’ when asked whether they would *stay*.

DEDICATION

This thesis is dedicated to my parents, Gilles and Lorraine – mentors and friends.

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Introduction

Intimate partner abuse refers to a pattern of physical, psychological, and/or sexual abuse by an intimate partner (Tjaden & Thoennes, 2000). With victims of family violence accounting for 27% of all victims of violent crime in a Canadian sample (Statistics Canada, 2004), intimate partner abuse is widely acknowledged as a serious societal concern. Moreover, a significant proportion of women experience intimate partner abuse in more than one relationship over the course of their lives (Rodgers, 1994). The need to understand why and how women stay in violent relationships is a recurring theme in the literature (e.g., Herbert, Silver, & Ellard, 1991; Johnson & Ferraro, 2000). Many myths exist as to why women stay in abusive relationships. These myths focus on understanding the individual ‘pathology’ of women who stay in a violent relationship (Anderson & Saunders, 2003). Emphasizing the reasons women were ‘unable’ to leave abusive relationships, this literature perpetuated the misconception that most women stay in violent relationships. The reality is that most women do not stay in violent relationships (e.g., Campbell, Miller, Cardwell, & Belknap, 1994; Herbert et al., 1991; Holtzworth-Munroe, Smutzler, & Sandin, 1997; Johnson & Ferraro, 2000). For example, approximately 66% of the women who participated in the Herbert et al. study were no longer in the abusive relationship they described. Instead of questioning why women do not leave abusive relationships, research should try to understand why and how victims do leave (Johnson & Ferraro, 2000). Though this is a subtle distinction, the implication

for intimate partner abuse research is significant. In general, research to date has tended to promote stereotypical thinking about victims of intimate partner abuse and the decisions they make (Anderson & Saunders, 2003). Some research, however, indicates that there is no one 'appropriate' or 'healthy' response to partner violence (e.g., Campbell et al., 1994). For example, the decision to stay in the violent relationship may be an adaptive response because, in some circumstances, victims of intimate partner abuse can be in more immediate danger if they leave the relationship (e.g., Wilson & Daly, 1993). Contrary to popular belief, there may be a heightened risk of abuse after victims leave their partners (Campbell, Rose, Kub, & Nedd, 1998; McFarlane et al., 1999; Tjaden & Thoennes, 2000). Canadian data show that 19% of women experience violence after leaving a relationship and for 43% of these, the violence began or escalated after leaving (Statistics Canada, 1993). We need to better understand the complex internal and external influences that may affect victims' decision making, rather than presuming that their decision making is 'dysfunctional'.

In deciding whether to leave or stay in the relationship, victims of intimate partner abuse are involved in a dynamic process, assessing their circumstances and acting upon the information available in memory to determine a course of action. We can predict that the more distracted or cognitively 'busy' a decision maker is, the fewer cognitive resources are available to make a decision and the less information is accessible to inform that decision. Cognitively 'busy' refers to the state of attending to more than one thing at a time. It applies to anyone making a significant life decision and may be particularly relevant to victims of intimate partner abuse. In addition to daily life stressors, such as

work, children, and household tasks, victims must cope with the violence in their lives. In the decision-making process, they may choose among alternative courses of action (e.g., staying in the relationship or leaving) by recalling past experience, assessing its relevance, and weighing the possible outcomes of decision alternatives (e.g., “It might happen again if I stay, but I might not be able to pay my bills if I leave.”). Other issues and considerations also may influence victims’ decision making including social, economic, environmental, and psychological factors. Clearly, victims are not necessarily (or realistically) able to devote all of their cognitive resources to deciding whether to leave or stay in the relationship. They may not recognize that making a decision to leave or stay is an option if they are overwhelmed by coping with their day-to-day survival. Further, posttraumatic stress disorder, depression, and substance abuse can limit a victims’ abilities to leave or otherwise cope effectively (Carlson, McNutt, Choi, & Rose, 2002; Cascardi, O’Leary, & Schlee, 1999).

Throughout the process, victims may engage in self-dialogue, asking themselves questions such as “should I stay in the relationship?” or “should I leave the relationship?” as a means to access and interpret information that may be relevant to their decision. They also may be asked these questions by others who are aware of the abuse. Although “should I stay in the relationship?” and “should I leave the relationship?” may seem to be conceptually interchangeable, the words used in asking the questions (e.g., ‘stay’ or ‘leave’) may influence the decisions made, because the structure of the question can influence both the accessibility and organization of information retrieved and considered. Asking whether they will *leave* may facilitate recall of information that supports leaving

(i.e., the pros of leaving and the cons of staying). In contrast, asking whether they will *stay* may facilitate recall of information that supports staying (i.e., the pros of staying and the cons of leaving; see Dougherty, Gronlund, & Gettys, 2003).

In an experimental context, the present study examines the effects of cognitive busyness and question wording on the decision to leave or stay in a hypothetical abusive relationship. The information used to make this decision will be investigated as well. This introduction reviews research relevant to the present study's cognitive-busyness and question-wording manipulations, emphasizing the relevance of the research to our understanding of the decision to leave or stay in a violent relationship.

Cognitive Busyness

Cognitive busyness, the mental state that arises as a result of cognitive load (Gilbert & Osborne, 1989), hinders the use and availability of information, and consequently, impairs decision making (Ferrari & Dovidio, 2001). When investigating the effects of cognitive busyness or cognitive load, researchers make the distinction between automatic and controlled processes (Pontari & Schlenker, 2000). Automatic processes are those that occur outside of awareness, are effortless, independent of other processes, and involuntary (e.g., Fiske & Taylor, 1991). They are unaffected by cognitive load or cognitive busyness (e.g., Bargh & Thein, 1985; Gilbert & Osborne, 1989; Pontari & Schlenker, 2000). Controlled processes, on the other hand, require significant cognitive resources, and conscious effort and/or thought (Shiffrin & Schneider, 1977). Automatic

and controlled mental activities represent a continuum, not a dichotomy, of processing (Pontari & Schlenker, 2000). Memory and decision making can be automatic and unconscious in some circumstances and controlled and conscious in others (see Shiffrin & Schneider, 1977). However, as described in the present study, they are controlled or active processes because they demand mental effort and cognitive resources (Read, Connolly, & Turtle, 2001).

Higher cognitive load affects decision making (Brandstätter, Lengfelder, & Gollwitzer, 2001). Specifically, the attention captured by other tasks may restrict actions, by reducing the cognitive resources available for decision making (Härtel & Härtel, 1997). In the decision-making situation, cognitive busyness may produce stress and/or anxiety if decision makers are overloaded (e.g., Härtel & Härtel, 1997; Smart & Vertinsky, 1977). The effects of busyness are exacerbated if decision makers perceive the outcomes as being threatening, thus increasing their stress (Härtel & Härtel, 1997). To manage their stress and cognitive load, decision makers may attempt to reduce information flow (e.g., Härtel & Härtel, 1997; Pontari & Schlenker, 2000; Smart & Vertinsky, 1977), relying on provided rather than generated information, for example. In high stress and high cognitive-load situations, as is the case in most emotionally demanding situations, central cues are emphasized and peripheral cues are largely ignored (e.g., Härtel & Härtel, 1997; Smart & Vertinsky, 1977; Wachtel, 1968). Thus, the range of information and cues available to the decision maker from both external and internal sources is reduced (Smart & Vertinsky, 1977). Stress also may influence the perceived necessity of making a decision, which could have implications for decision

making in the context of intimate partner abuse. As previously discussed, the need to make a decision may not be obvious to victims of intimate partner abuse because they are overwhelmed by coping with day-to-day survival.

Researchers have investigated the influence of cognitive busyness on decision-making behaviour in varying contexts, such as that of organizational behaviour. For example, Ferrari and Dovidio (2001) experimentally manipulated cognitive load in decision making in their investigation of the role of individual differences in decisiveness. Ferrari and Dovidio (2001) gave participants an information board, consisting of a matrix of cards with information about the target stimulus. Rows represented stimuli about which participants could make a judgement and columns represented individual aspects of the stimulus. To gain information about the target decision, participants searched information by removing the cards one at a time, selecting cards from cells they believed relevant to the decision. For example, participants were asked to choose one college course from among a selection of courses. To inform their decision, participants could look at as many index cards as they wanted. The rows represented the different courses they could choose among and the columns represented features of each course, such as time-of-day and amount of work. Participants were categorized as decisive or indecisive, based on their score on the 'Decisional Procrastination' scale. Ferrari and Dovidio (2001) found that, compared to decisive participants, indecisive participants searched less information and shifted less often among dimensions under high cognitive-load conditions. Further, participants in general searched more within a given dimension and searched fewer dimensions overall under

conditions of high cognitive load (Ferrari & Dovidio, 2001), suggesting that cognitive busyness limits the range of information used. High cognitive load produced lower self-confidence and greater anxiety (Ferrari & Dovidio, 2001), suggesting the existence of a relation between cognitive load and stress.

Despite the conceptual relevance of cognitive busyness to decision making in the context of intimate partner abuse, this relationship has not been tested experimentally. However, the intimate partner abuse literature has investigated victims' problem-solving, coping, and social skills (Holtzworth-Munroe et al., 1997). In fact, many researchers suggest that victims of intimate partner abuse have 'deficits' in their problem-solving abilities (Holtzworth-Munroe et al., 1997). Research has yet to distinguish whether these 'deficits' are characteristics of the victim, a result of the violence, or a combination of both. For example, Claerhout, Elder, and Janes (1982) found that victims of domestic violence generated fewer 'effective' solutions to hypothetical situations depicting spousal conflict than nonvictims. Launius and Jensen (1987) also found that victims of domestic violence produced fewer and less 'effective' alternatives for abusive and general hypothetical situations, when compared to both counselling and control groups. Similarly, Launius and Lindquist (1988) found that victims of domestic violence spent less time generating solutions to hypothetical family violence scenarios than did nonvictims. In contrast, Campbell (1989) found that 'battered' women actually generated and tried more solutions in their own relationship problems than did 'nonbattered' women, suggesting that the 'deficits' observed in earlier research may be at least partially attributable to the artificiality of the testing conditions. In fact, studies demonstrate that

many victims of intimate partner abuse are extremely resilient, use survival strategies, and engage in decision-making processes that lead to leaving (see Campbell et al., 1994). The present study aims to further our understanding of the dynamics of decision making that may be relevant to the context of intimate partner abuse by manipulating cognitive busyness.

Question Wording

In life, we make decisions and plan courses of action on a regular basis. As research has shown, how we frame the decision and possible courses of action can significantly influence the decisions we make. Moreover, the words we use in formulating questions to assess our situation also can influence our decisions. First introduced by Tversky and Kahneman (1981), the concept of framing acknowledges the influence that words can have on decisions, referring to bias introduced in the decision-making process by presenting an issue or situation in a certain manner. The information used to inform a decision can be presented as a gain or as a loss. Typically, the gain frame leads to risk-aversion behaviour, and the loss frame leads to risk-seeking behaviour. For example, Boon and Griffin (1996) investigated this effect in the context of romantic relationships, asking participants whether they would confront a hypothetical romantic partner after having a major argument. In the gain frame, Boon and Griffin told participants that if they confronted their partner, there was a 10% chance they would stay together forever (risky option), but if they chose not to confront their partner, the

relationship would last for only one more year (certain option). In the loss frame, participants were told that if they confronted their partner, there was a 10% chance they would not break up (risky option), but if they chose not to confront their partner, they would break up in one year (certain option). The results of the Boon and Griffin study support the framing effect predictions. That is, participants chose the risky option more often in the loss frame than in the gain frame.

To answer questions and make decisions, we have to bring to mind relevant information from memory (Collins, 2003). However, in order to recall relevant information, it must have been perceived and subsequently stored in the first place (Read et al., 2001). Central to all cognitive processes, memory is a complex process, involving the perception, processing, storage, and retrieval of information. After or at the time of retrieval, a decision maker then may act on the information to form a judgement and make a decision. When confronted with a decision task, we often look for ways to lessen the amount of cognitive or mental effort needed, through the use of heuristics (i.e., ‘rules of thumb’) or cues, for example. The framing effect describes how these cues may be drawn from the decision alternatives provided. Although the use of cues and heuristics can lead to more ‘efficient’ decision making, resulting in a faster and less stressful process, it also can introduce bias. Even if information was encoded in a nonbiased manner, retrieval processes can bias information activated in memory (Dougherty et al., 2003). For example, cueing specific categories of information has been shown to lead decision makers to base their decisions on the cued category, even if that information is not ‘appropriate’ or relevant to the decision (see Dougherty et al., 2003). Dougherty et al.

(2003) further argue that the activation of the “correct” information in memory is “crucial” to decision making (p. 142).

The traditional framing effect refers to bias introduced through the framing of choices. However, asking and answering questions can be an integral part of the decision-making process, and the wording of these questions can influence the decisions made (Plous, 1993), by affecting which memories are accessible and retrieved during the process (Kunda, Fong, Sanitioso, & Reber, 1993). The effects of question wording on decision making have been examined in a wide range of fields, from marketing to public opinion surveying. Like framing, question-wording effects generally are quite robust and significantly influence participant judgements (Plous, 1993). By rewording a question without explicitly changing its meaning or intent, we provide different retrieval cues which can change the answers given (e.g., Plous, 1993; Smith, 1987; Tanur, 1992). For example, Rugg (1941) found that asking respondents whether the United States should ‘forbid’ instead of ‘allow’ speeches against democracy significantly influenced endorsement of proposed legislation on the issue. Specifically, respondents were more likely to indicate ‘no’ when asked whether it should be allowed than they were to indicate ‘yes’ when asked whether it should be forbidden, suggesting that the use of the word ‘forbid’ underscored the threat to freedom of speech and reduced public support. Loftus and Palmer (1974) found that asking how fast cars were going when they ‘smashed’ each other produced higher speed estimates than asking how fast cars were going when they ‘contacted’ with each other. Similarly, Smith (1987) found that respondents were much

more likely to endorse increases in ‘assistance or caring for the poor’ than ‘spending on welfare.’ The policy implications are obvious.

The role of memory in question-wording effects also has been examined. For example, Kunda et al. (1993) investigated the effects of question wording on self-perceptions. In a series of experiments, Kunda et al. demonstrated that manipulating the wording of questions can influence the memories retrieved and used in answering questions about the self. For instance, participants rated themselves on how ‘happy’ they were with their social life, on a scale from -5 (extremely unhappy) to 5 (extremely happy). Half of the participants were asked how ‘happy’ they were and half were asked how ‘unhappy’ they were. Participants also listed memories (e.g., past events or feelings) related to the question. Both the answers and the memories reflected the direction of the question asked. That is, participants in the ‘unhappy’ condition gave lower happiness ratings overall and recalled more unhappy memories than did participants in the ‘happy’ condition. However, these directional question effects were only observed when views of the self were somewhat variable, as reflected in self-report ratings on 10-point scales and thought-listing tasks. Namely, question wording had little, if any, effect when participants had stable self-concepts or many consistent memories. In the context of intimate partner abuse, individuals may vary on these dimensions as a function of past abuse experiences, support systems, and beliefs, for example. Drawing from the framing and question-wording literature, the present study manipulated the wording of the question of leaving or staying in a hypothetical abusive relationship. That is, half the participants were asked whether they would *leave* and half were asked whether they would *stay*.

The Present Study

The purpose of this study is to examine the effects of question wording and cognitive busyness on decision making, within a 2 (Cognitive Busyness: busy vs. not busy) x 2 (Question Wording: stay vs. leave) between-subjects factorial design. Participants in the present study read a vignette describing an incident of physical and psychological abuse in a long-term heterosexual romantic relationship (the decision stimulus) and rated a list of reasons for leaving or staying in the relationship as being pro or con. To manipulate cognitive busyness, all participants then solved arithmetic problems, and participants in the busy condition were instructed to memorize the answers for later recall. Participants were asked to imagine that they were in the victim's (Lisa's) position. To manipulate question wording, half the participants were told that they had to decide whether to stay in the relationship (stay question-wording condition) and half were told that they had to decide whether to leave the relationship (leave question-wording condition). Participants recalled pros and cons that they thought were relevant to the decision of whether to leave or stay in the relationship, and indicated their decision on a 7-point scale (1 = definitely stay to 7 = definitely leave).

Predictions

Decisions

Because of the prevalence of public education campaigns and media focus on intimate partner abuse, I predict that, overall, participants will indicate that they would

leave the relationship, where scores between 4 (neutral) and 7 (definitely leave) represent leave decisions. However, a main effect of question wording on decision making is predicted in which participants who are asked whether they would *leave* the relationship (leave question-wording condition) make decisions higher on the decision scale (i.e., closer to 7 = definitely leave) than participants asked whether they would *stay* (stay question-wording condition). Furthermore, cognitive busyness is expected to interact with these variables, such that the question-wording effect will be more pronounced for busy participants, as is depicted in Figure 1. Cognitive busyness is hypothesized to reduce the cognitive resources available to complete the decision tasks and consequently, cognitively busy participants may rely more heavily on available cues, such as the wording of the question, in order to reach a decision. Conversely, participants who are not cognitively busy will have more cognitive resources available with which they can complete the decision tasks and should be less affected by the question-wording manipulation, but nonetheless demonstrate a smaller but significant effect of wording.

Participants also were asked to indicate what they thought the female partner depicted in the vignette (Lisa) would decide. There are no formal hypotheses for this item, as it was included for exploratory purposes. Society teaches us that no abuse should be tolerated in a relationship and participants may 'know' that leaving is the 'correct' answer. As previously explained, it is hypothesized that participant responses of what they would do will be positively biased towards leaving the relationship by social desirability concerns (i.e., saying the 'right' thing). However, the reality is that abuse is tolerated in some cases and some people do stay in violent relationships. By distancing

participants from the decision, responses of what they think *Lisa* would do may show fewer effects of social desirability. Decisions of what *Lisa* would do may reflect participants' willingness to consider staying in the relationship (i.e., "I wouldn't stay in the relationship because it's not the right thing to do, but this other person might stay, for these reasons...").

Memory

The memory task in the present study involves the recall of reasons presented in the intimate partner abuse vignette. A main effect of cognitive busyness on memory is expected, such that cognitively busy participants will recall fewer reasons than participants who are not cognitively busy. That is, busy participants should have fewer cognitive resources available with which to recall the reasons. A main effect of question wording is expected as well, such that participants asked whether they would *stay* in the relationship will recall more reasons that support staying (i.e., pro-stay reasons, such as "He'll be loving and supportive if I stay." and con-leave reasons, such as "I might end up alone if I leave.") and participants asked whether they would *leave* the relationship will recall more reasons that support leaving (i.e., pro-leave reasons, such as "I will have more freedom if I leave." and con-stay reasons, such as "He might hit me again if I stay."). That is, the words *stay* and *leave* are expected to be used as cues in the retrieval process, activating reasons related to staying and leaving, respectively.

Moreover, a significant cognitive-busyness by question-wording by reason-type interaction should qualify these main effects. As portrayed in Figure 2, busy participants

should rely more heavily on the wording cues and demonstrate a stronger question-wording effect, compared to not-busy participants. Busy participants asked whether they would *stay* in the relationship are expected to recall considerably more reasons that support staying than leaving (i.e., more pro-stay and con-leave reasons than pro-leave and con-stay reasons), and busy participants asked whether they would *leave* the relationship will recall significantly more reasons that support leaving (i.e., more pro-leave and con-stay reasons than pro-stay and con-leave reasons). Not-busy participants asked whether they would *stay* in the relationship also are expected to recall significantly more reasons that support staying than leaving, but the difference between the number of reasons recalled should not be as large as in the busy condition because they have more cognitive resources available for retrieval. Similarly, not-busy participants asked whether they would *leave* the relationship are expected to recall significantly more reasons that support leaving than staying, but again, this effect should be smaller than in the corresponding busy condition. Figure 2 illustrates these predicted symmetrical effects.

Memory and Decisions

The number and type of reasons recalled are hypothesized to predict the participant decisions. That is, participants will draw on the reasons they remembered in the pro/con recall task to inform their decisions. As participants recall more reasons that support leaving (i.e., pro-leave reasons plus con-stay reasons), they will make decisions higher on the decision scale (i.e., closer to 7 = definitely leave). Conversely, as participants recall more reasons that support staying (i.e., pro-stay reasons plus con-leave

reasons), they will make decisions comparatively lower score on the decision scale (i.e., closer to 1 = definitely stay).

Mediation Analysis

A mediation analysis is a statistical procedure which provides a means through which we can measure and statistically test indirect effects. A proposed mediator is a third variable that “represents the generative mechanism through which the focal independent variable is able to influence the dependent variable” (Baron & Kenny, 1986, p. 1173). A mediation analysis assumes a specific sequence of events. That is, a mediated process begins with an independent variable affecting a mediator variable, which in turn affects a dependent variable. Incorporating the predicted effects into a causal sequence, decision making is proposed to be a mediated process in the present study. That is, memory is the process through which cognitive busyness and question wording affect decision making. In the earlier description of victims’ decision making, a specific sequence of events was assumed. First, victims are asked the question (by themselves and/or by others) as to whether they will leave or stay in the relationship. Second, victims activate and retrieve information from memory that may inform this decision (e.g., reasons that support leaving and reasons that support staying). Finally, victims consider and act on that recalled information. Specifically, a cognitive-busyness by question-wording interaction is expected to affect number and type of reasons recalled (proposed mediator) which in turn are expected to affect participant decisions (see Figure 3).

Method

Participants

Participants were 184 (88 male and 96 female) Simon Fraser University undergraduate students between the ages 17 and 40 ($M = 19.58$; $SD = 2.93$) who signed up for the study online via the Department of Psychology website. Although the vignette described a female victim of intimate partner abuse, male and female participants were recruited for this study to explore the nature and robustness of cognitive-busyness and question-wording effects and to maximize the potential generalizability of the results. Participants were randomly assigned to the experimental conditions and received one research credit for their participation.

Procedure

When participants arrived at the lab, they received two copies of the consent form (see Appendix A) and an envelope containing the research package. The consent form explained that they would be completing a series of cognitive tasks that would take approximately half an hour to complete and that the information collected during the experiment was confidential and anonymous. Once consent forms were signed and returned, participants removed the research package from the envelope. The research package contained eight tasks: (1) intimate partner abuse vignette and reason rating, (2) cognitive-busyness manipulation, (3) filler task, (4) question-wording manipulation and

reason recall, (5) participant decision, (6) Lisa decision, (7) busyness manipulation check, and (8) demographic questionnaire.

Task 1: Intimate Partner Abuse Vignette and Reason Rating

Participants began the experiment by reading the intimate partner abuse vignette (see Appendix B). The first part of the vignette described a long-term heterosexual intimate relationship, including how the partners met, and how long they have been in the relationship. The second part of the vignette described an incident of intimate partner abuse that occurred during escalating conflict between the partners. The third part of the vignette consisted of reasons, written in the first person and attributed to the female partner (Lisa), that address whether she should leave or stay in the relationship. There were 12 reasons in total, constructed so that there were an equal number of pro and con, and stay and leave reasons. Of those 12 reasons, three are pro-stay (e.g., “He’ll be loving and supportive if I stay.”); three were con-stay (e.g., “He might hit me again if I stay.”); three were pro-leave (e.g., “I might have a chance for other relationships if I leave.”); and three were con-leave (e.g., “I won’t be able to pay my bills if I leave.”) reasons.¹ Participants were asked to imagine that they were in the victim’s position and that they were putting together a list of pros and cons to try to help them decide what to do. Participants rated each reason as either PRO (perceived positive outcome of that particular decision) or CON (perceived negative outcome of that particular decision).

¹ During a pilot study ($N = 17$), participants rated each reason as either pro or con at rates of agreement between 77% and 100%.

Participants completed these ratings for two reasons: (1) to ensure that participants actively attended to the reasons instead of skimming over the page, and (2) to obtain participants' subjective perception of each reason as pro or con. The use of these ratings is discussed further in the Results section of this study.

Task 2: Cognitive-Busyness Manipulation

Participants then solved a set of eight basic arithmetic equations. Participants in the busy condition were instructed to memorize the answers in order for recall at some point during the experiment, whereas participants in the not-busy condition only were instructed to complete the equations.

Task 3: Filler Task

Following the busyness manipulation, participants completed an unrelated filler task to distract participants from the vignette and to maintain the cover story that the project was investigating various cognitive processes. The filler task required participants to identify 12 differences between two highly similar images.

Task 4: Question-Wording Manipulation and Reason Recall

After the filler task, participants in the stay question-wording condition were asked to imagine that they were in the victim's position and that they had to decide whether to *stay* in the relationship. Participants in the leave question-wording condition were asked to imagine that they were in the victim's position and that they had to decide whether to *leave* the relationship. Participants in both conditions then were asked to list

from memory reasons from the third section of the vignette (i.e., those rated as pros and cons in Task 1) that are relevant to the decision.

Task 5: Participant Decision

After completing the reason recall task, participants were asked to indicate their decision on a 7-point scale (1 = definitely stay, 2 = probably stay, 3 = maybe stay, 4 = unsure, 5 = maybe leave, 6 = probably leave, and 7 = definitely leave).

Task 6: Lisa Decision

Participants then were asked to indicate what they thought the female partner in the vignette (Lisa) would do, using the same 7-point scale.

Task 7: Busyness Manipulation Check

To verify that busy participants attended to the cognitive-busyness manipulation instructions, participants were asked to recall the eight answers to the arithmetic equations completed in Task 2.

Task 8: Demographic Questionnaire

Following the number recall, participants completed the demographic questionnaire (see Appendix C) and returned the research package, at which time they were debriefed thoroughly (see Appendix D).

In order to regulate the amount of time spent on each task, participants were told how much time they had to complete a task (e.g., five minutes) and when they could move on to the next task. These time limits were pre-determined through pilot testing and generally afforded more than enough time to complete the task. Participants completed the experiment in approximately 20 minutes.

Results

Busyness Manipulation Check

Based on previous research using cognitive-busyness manipulations, participants' ability to recall the list of numbers should reflect the availability of cognitive resources during the decision task (e.g., Baumeister, Hutton, & Tice, 1989; Pontari & Schlenker, 2000; Tice, Butler, Muraven, & Stillwell, 1995). Thus, to demonstrate that the cognitive-busyness manipulation is effective, participants in the busy condition should recall more numbers than participants in the not-busy condition. The mean number of answers recalled by busy participants was 5.33 ($SD = 2.35$) and by not-busy participants was 1.57 ($SD = 1.34$). As expected, busy participants accurately recalled significantly more numbers than not-busy participants, $t(182) = 13.37, p < .001$.

Participant Decisions

Participant decisions were expected to demonstrate a bias towards leaving, indicating that they would leave the relationship (where 5 = maybe leave, 6 = probably leave, and 7 = definitely leave). This prediction was supported as the mean participant response was 4.90 ($SD = 1.66$) and the median response was 5.00, corresponding to a decision of 'maybe leave'. With a modal decision of 6.00, corresponding to a decision of 'probably leave', the distribution was slightly negatively skewed, providing further

support for a bias towards leaving. Participants, however, did make use of the entire scale as responses ranged from 1 (definitely stay) to 7 (definitely leave).

A 2 x 2 univariate analysis of variance was conducted on participant decisions to leave or stay in the relationship described in the intimate partner abuse vignette.

Independent variables were busyness (busy vs. not busy) and question wording (stay vs. leave). As Table 1 shows, the predicted main effect of question wording on decision was not found, nor was the predicted cognitive-busyness by question-wording interaction as the means were not significantly different across conditions (for F values, see Table 3). These results are depicted graphically in Figure 4.

Further examination of the data indicated that male and female participants responded in different ways, suggesting that gender interacts with the effects of cognitive busyness and question wording. For example, looking at the marginal means for question wording in Table 2, we see that male participants gave a mean response higher on the decision scale in the leave question-wording condition than in the stay question-wording condition. This pattern was reversed for female participants who gave a mean response higher on the decision scale in the stay question-wording condition than in the leave question-wording condition. To explore these differences further, gender was included as a between-subjects variable in subsequent analyses and results will be described for male and female participants separately.

A 2 x 2 x 2 univariate analysis of variance was performed on participant decisions to leave or stay in the relationship described in the intimate partner abuse vignette. Independent variables were cognitive busyness (busy vs. not busy), question wording

(stay vs. leave), and gender (male vs. female). Looking at the middle column of Table 3, we see that although the main effect of gender was not significant, gender interacted with cognitive busyness and question wording both alone and together. Separate ANOVAs were completed for female and male participants to clarify these interactions with gender.

Female Participants

As with the decisions of participants overall, female participants also supported the prediction that decisions would be on the ‘leave’ end of the scale ($M = 5.09$, $SD = 1.54$; median = 5.50; and mode = 6.00). Question wording was expected to affect decisions, such that participants would be more likely to indicate that they would leave than stay in the relationship when asked whether they would *leave* and would be more likely to indicate that they would stay in the relationship than leave when asked whether they would *stay*. There was a main effect of question wording on decision for female participants, $F(1, 92) = 3.98$, $p < .05$, $\eta^2 = .04$. However, looking at Figure 5, we see that the effect was a reversal of the expected pattern of results. Female participants’ decisions were closer to ‘definitely leave’ (end-point of 7 on the decision scale) when asked if they would *stay* ($M = 5.39$, $SD = 1.27$; median = 6.00; mode = 6.00) than when asked if they would *leave* ($M = 4.79$, $SD = 1.73$; median = 5.00; mode = 3.00).

Cognitive busyness also was expected to interact with the effect of question wording. Although a significant interaction effect of cognitive busyness and question wording emerged, $F(1, 92) = 8.01$, $p < .01$, $\eta^2 = .08$, the decisions of female participants did not support the prediction that the question-wording effect would be more

pronounced for busy participants than for not-busy participants. Comparing Figures 1 and 5, we see that the question-wording effect was found for female participants who were not cognitively busy. These participants indicated that they would ‘probably leave’ the relationship ($M = 5.98$, $SD = 0.70$; median = 6.00; and mode = 6.00) when asked whether they would *stay* in the relationship, but responses were closer to ‘definitely stay’ (endpoint of 1 on the decision scale) when asked whether they would *leave* ($M = 4.54$, $SD = 1.82$; median = 4.00; and mode = 3.00), $t(46) = 3.62$, $p < .001$. In striking contrast, the decisions of female participants who were busy did not differ significantly as a function of question wording.

Male Participants

The results for male participants also were biased towards leaving ($M = 4.70$, $SD = 1.77$; median = 5.00; and mode = 6.00) and supported the prediction that question wording would influence decisions, as a main effect of question wording emerged, $F(1, 84) = 3.78$, $p < .05$, $\eta^2 = .04$. However, unlike female participant decisions, male participant decisions supported the predicted pattern of results, as is depicted in Figure 5. Male participants gave responses higher on the decision scale (closer to 7 = definitely leave) when asked whether they would *leave* ($M = 5.06$, $SD = 1.73$; median = 6.00; and mode = 6.00), compared to male participants asked whether they would *stay* in the relationship ($M = 4.34$, $SD = 1.76$; median = 5.00; and mode = 3.00). Male participant decisions did not support the cognitive-busyness prediction, as a significant question-wording by cognitive-busyness interaction was not found. Overall, these results

corroborate the earlier observation that male and female participants responded in different ways.

Memory

Recalled reasons provided for two descriptive dimensions: (1) outcome and (2) perceived valence. Outcome refers to whether the reasons described potential outcomes of *staying* in the relationship (e.g., “He’ll be loving and supportive if I stay.” or “He might hit me again if I stay.”) or *leaving* the relationship (e.g., “I will have more freedom if I leave.” or “I might end up alone if I leave.”). Perceived valence refers to whether participants rated the reason as either PRO (perceived positive outcome of that particular decision) or CON (perceived negative outcome of that particular decision) in the first task of the experiment. Table 4 shows the means and standard deviations for reasons recalled across conditions. Overall, participants recalled 1.22 pro-stay ($SD = 0.90$), 1.37 pro-leave ($SD = 0.88$), 1.28 con-stay ($SD = 0.80$), and 1.50 con-leave ($SD = 0.95$) reasons. Using outcome and perceived valence, recalled reasons were grouped according to whether they supported staying (i.e., pro-stay plus con-leave reasons) or supported leaving (i.e., pro-leave plus con-stay reasons).

A 2 x 2 x 2 x 2 mixed-factorial analysis of variance was conducted with cognitive busyness (busy vs. not busy), question wording (stay vs. leave), and gender as between-subjects factors, and reasons recalled (supporting staying vs. leaving) as the within-subjects factor. Table 5 shows that the results did not support the hypothesized effects of

cognitive busyness and question wording on recalled reasons (see also Figure 6). There was no significant effect of question wording on reasons recalled, nor was there a significant interaction effect of question wording and cognitive busyness. Further, there was no significant effect of gender, nor did gender interact with the other variables in the model.

Memory and Decisions

To evaluate the prediction that participants who recalled more reasons that support leaving (i.e., pro-leave reasons plus con-stay reasons) would make decisions higher on the decision scale (where 1 = definitely stay and 7 = definitely leave) than participants who recalled more reasons that support staying (i.e., pro-stay reasons plus con-leave reasons), a multiple regression was performed with participant decisions as the predicted variable and the number of reasons recalled that support leaving and staying in the relationship as the two predictor variables. Table 6 displays the means, standard deviations, and correlations for participant decisions and the number of reasons recalled that support leaving and staying in the relationship. Looking at Table 6, we see that participants recalled 2.65 ($SD = 1.20$) reasons that support leaving and 2.72 ($SD = 1.38$) reasons that support staying in the relationship. Participant decisions were significantly correlated with the number of recalled reasons that support leaving ($r = .28, p < .001$) and the number of recalled reasons that support staying ($r = -.29, p < .001$). As participants recalled more reasons that support leaving (i.e., pro-leave reasons plus con-stay reasons),

they made decisions higher on the decision scale, closer to the ‘definitely leave’ end-point (7 on the decision scale). As participants recalled more reasons that support staying (i.e., pro-stay reasons plus con-leave reasons), they made decisions comparatively lower on the decision scale, closer to the ‘definitely stay’ end-point (1 on the decision scale).

The regression model was significant, $F(2, 181) = 12.08, p < .001$. Together, the number of reasons recalled that support leaving and staying accounted for 12% of the variation in participant decisions of whether they would leave or stay in the relationship described in the intimate partner abuse vignette. The number of reasons recalled that support leaving explained 4% of the variance in participant decisions and the number of reasons recalled that support staying in the relationship explained 5% (see Table 7). As participants recalled more reasons that support leaving and fewer reasons that support staying in the relationship, they were more likely to make decisions higher on the decision scale, approaching the ‘definitely leave’ end-point. Conversely, as participants recalled more reasons that support staying and fewer reasons that support leaving, they were more likely to make decisions that were comparatively lower on the decision scale, shifting away from ‘definitely leave’ closer to ‘definitely stay’.

Mediation Analysis

In an attempt to isolate a specific sequence of events in the decision making process, a mediation analysis was conducted. As indicated in the introduction, memory was expected to mediate the effects of cognitive busyness and question wording on

decision making. That is, the recall of reasons was proposed to be the mechanism through which cognitive busyness and question wording influenced decisions. The mediation analysis followed the guidelines established by Baron and Kenny (1986). The first step of testing whether memory mediates the relationship between the independent variables (i.e., cognitive busyness and question wording) and the dependent variable (i.e., participant decision) establishes that the relationship between the independent variables and dependent variable exists. As discussed earlier, the cognitive-busyness by question-wording interaction significantly affected female participant decisions, meeting the first criterion of statistical mediation. Only question wording affected male participant decisions. The second step requires that a relationship exists between the independent variables (i.e., cognitive busyness and question wording) and the proposed mediator (i.e., number of reasons recalled that support leaving and number of reasons recalled that support staying). This criterion was not met as factorial analysis did not reveal any significant effects. Even though reasons recalled predicted the decisions of both male and female participants, no effects of cognitive busyness and question wording on reasons recalled were observed. Therefore, the third step of examining the effect of the independent variables (i.e., cognitive busyness and question wording) *and* proposed mediator (reasons recalled) *on* the decisions was not conducted. Despite the observed associations between (1) cognitive busyness, question wording, and decisions, and (2) recalled reasons and decisions, memory does not appear to mediate the effects of cognitive busyness and question wording on decision making, as manipulated, measured and analysed in this study.

Exploratory Analyses: Lisa Decisions

Participants responded that Lisa would ‘maybe stay’ in the relationship ($M = 3.35$, $SD = 1.31$; median = 3.00; and mode = 3.00). As with participant decisions of what they would do, decisions of what Lisa would do ranged from definitely stay (1 on the decision scale) to definitely leave (7 on the decision scale). Pairwise comparisons showed that the overall decisions of what participants would do were significantly different from the decisions of what Lisa would do, $t(183) = 10.91$, $p < .001$. Shown in Table 8, participants, as a group, responded that they would leave the relationship, but that Lisa would stay.

Separate univariate analyses were conducted with participant responses of the decision Lisa would make as the dependent variable (1 = definitely stay to 7 = definitely leave) and cognitive busyness (busy vs. not busy), question wording (stay vs. leave), and gender (male vs. female) as the independent variables. As shown in Table 8, the decisions made for Lisa did not differ significantly as a function of the independent variables, nor were they predicted by the reasons recalled.

Discussion

Examining the effects of question wording and cognitive busyness on memory and decision making, the present study integrated concepts from general decision-making literature and social cognitive theory. The goal was to demonstrate that very basic cognitive demands and external influences can affect decision making in response to a hypothetical intimate partner abuse vignette. The results of this study were in partial support of the research hypotheses.

Decisions

The hypothesis that participants would demonstrate a bias towards making decisions to leave the relationship was supported. Although participant gender was not originally a variable of interest in this study, preliminary results suggested that the responses of female and male participants were differentially affected by cognitive busyness and question wording. Accordingly, analyses of the effects of question wording and cognitive busyness were completed for female and male decisions separately.

Female decisions did not support the predicted effects of question wording and cognitive busyness (i.e., that cognitively busy participants asked whether they would *leave* would make decisions closest to 'definitely leave'). In contrast, female participants who were not busy and were asked whether they would *stay* made decisions closest to 'definitely leave'. However, female decisions seem to be consistent with no tolerance

policies and perspectives on domestic violence. Asking female participants to decide whether they would *stay* in the relationship may have led them to consider the implications of staying, and specifically to consider why this would not be a good choice, particularly in the not-busy condition where they had the greatest opportunity to consider such implications. Additionally, female participants may have perceived the potential biasing effects of the word 'stay' and engaged in judgement correction in the opposite direction (i.e., leaving; e.g., Lepore & Brown, 2002; Wegener & Petty, 1995).

Although the results for male participants did not support the cognitive-busyness prediction, their decisions supported the predicted main effect of question wording on decision making. Male decisions were closer to 'definitely leave' when asked whether they would *leave* than when asked whether they would *stay*. Generally, the more personally relevant the decision, the more effort is used to make that decision (McElroy & Seta, 2003). It may have been difficult for male participants to empathize with the female victim or to imagine themselves in her situation. Subsequently, male participants may have been less motivated to complete the decision task, relying heavily on cues provided in the question (i.e., wording as either *stay* or *leave*). Alternatively, men may be more skeptical about abuse allegations in general. For example, research suggests that women are generally more pro-victim in judgements of sexual assault cases than men (e.g., Quas, Bottoms, Haegerich, & Nysse-Carris, 2002). Finally, male participants may have considered the abusive incident to be less aggressive than did female participants (see Stewart-Williams, 2002) and thus, were more willing to consider both staying and leaving as viable options.

Memory

Despite demonstrating that participants engaged in the busyness task, the results did not support the hypothesized effects of cognitive busyness and question wording on recalled reasons. As noted by Schwarz (1999), words have different meanings for different people. In the reason recall task, participants were instructed to “list from memory reasons... that are relevant to this decision”. Participants may have differentially interpreted this instruction. Had participants been instructed to (1) list all the reasons they could recall, and (2) rate the relevance of each decision, the expected effect of cognitive busyness may have emerged. Further, the memory task used may not have been sensitive to the manipulations. Instead of measuring participants’ recall of the reasons presented in the vignette, the task may have reflected previously held stereotypes about intimate partner abuse. The activation of stereotypes facilitates recall of stereotype-consistent information and inhibits recall of stereotype-inconsistent information (Dijksterhuis & van Knippenberg, 1996). Stereotypes about intimate partner abuse may have been activated as participants read the vignette and reasons that were consistent with stereotypic beliefs may have received more attention and rehearsal than reasons inconsistent with participant beliefs. Alternatively, participants may have constructed their own reasons for leaving and staying in the relationship while reading the vignette and/or at the time of the recall task.

Memory and Decisions

The hypothesis that participants would draw on the reasons recalled to make their decision was supported. Together, the number of reasons recalled in support of leaving and staying explained 12% of the variability in decisions. Participants who recalled more reasons that supported leaving and fewer reasons that supported staying were more likely to indicate that they would leave the relationship. Alternatively, as participants recalled more reasons that supported staying and fewer reasons that supported leaving, they were more likely to decide to stay in the relationship. This finding makes intuitive sense – the more reasons we recall that support a particular decision, the more likely we are to make that decision. Although 12% is substantial, this model was unable to account for 88% of the variation in participant decisions, underlining the complexity of decision-making processes.

Judgements can be influenced by both the content and ease of recall (Schwarz & Vaughn, 2002). For example, Schwarz, Bless, Strack, Klumpp, Rittenauer-Schatka, and Simons (1991) found that participants who recalled 12 examples of assertive behaviour (difficult) viewed themselves as less assertive than participants who recalled six examples (easy), suggesting that judgements reflect recalled content only if recall was easy. Similarly, Belli, Winkeilman, Read, Schwarz and Lynn (1998) found that participants based judgements of the completeness of childhood memory on ease of retrieval, rather than actual number of events recalled. For example, some participants may have been differentially motivated to retrieve as many reasons as possible that

support staying, resulting in a subjectively difficult experience of recall: “If it’s this difficult to recall reasons that support staying in the relationship, leaving is likely the better choice.”

Mediation Analysis

Even though some associations between the independent variables (cognitive busyness and question wording), the proposed mediator (memory), and the dependent variable (decisions) were established, the findings did not support the hypothesis that memory mediates the effects of cognitive busyness and question wording on decision making. Question wording, and cognitive busyness in the case of female participants, significantly affected decisions. Although there were no significant effects of cognitive busyness and question wording on reasons recalled, these reasons *did* predict decisions, suggesting that this task was related to the decision-making process. Phenomena beyond simple memory limitations may mediate the relationship between cognitive busyness, question wording, and decision making. That is, in the absence of the cognitive-busyness and question-wording manipulations, we still would expect to observe the predictive effect of reasons recalled on decision making.

Exploratory Analyses: Lisa Decisions

Analyses did not reveal significant effects of cognitive busyness, question wording, or gender on responses of what Lisa would do. This finding is inconsistent with

past research that has shown that participants in low-relevance decision conditions are more affected by wording than participants in high-relevance decision conditions (McElroy & Seta, 2003). One would assume that deciding what they would do is more relevant to participants than deciding what Lisa would do. Accordingly, participant decisions should have been less affected by the manipulations than responses of what Lisa would do; however, this was not found. While reading the abuse vignette, participants may have formed a stereotypic view of Lisa as being weak and helpless that was consistent enough to be resistant to the manipulations (see Kunda et al., 1993). That is, they may have perceived her as the ‘typical’ victim who would persist and stay in the relationship no matter what.

As hypothesized, however, responses of what Lisa would do were consistently lower than decisions of what participants would do, for both male and female participants across conditions. Again, participants may have made stereotypical judgements about Lisa (e.g., weak or helpless). Alternatively, as suggested in the introduction, making the decision of what someone else would do may have afforded participants the distance to acknowledge the possibility of staying in the relationship. Future research could use the decisions participants make for others to examine the variables and motivations involved in *staying*.

Potential Limitations of the Study

One limitation of this study is the sample used. The present study investigated university students' decisions about a fictional other's relationship. University students generally invest less in dating relationships than other populations and they may have greater relationship alternatives than other populations because of the university campus and lifestyle (Truman-Schram, Cann, Calhoun, & Vanwallendael, 2000). This may have reduced participants' ability to empathize with the victim's evaluation of relationship alternatives. Future research should sample from different populations. Additionally, the nature and dynamics of the relationship described (i.e., male perpetrator and female victim) may have hindered participants' ability to empathize with the victim and imagine they were in her situation. The complexities of violence in homosexual relationships and violence by women in heterosexual relationships were not examined in the present study, but should be addressed in future research.

As previously discussed, stress reduces decision-making strategies available (e.g., Payne, Bettman, & Johnson, 1992). Despite efforts to ensure that participants had enough time to complete the tasks, the time limits may have been stress inducing, reducing the number of alternatives available for recall. Further, time pressures have been found to impair the recall process, increasing reliance on the most accessible information (Schwarz, Strack, Hippler, & Bishop, 1991). Consequently, participants may have made decisions before considering all alternatives. Future research could examine the

association between reasons recalled and decisions made when participants are not under time pressure.

The present study certainly does not capture the complexity of the decision to leave or stay in an abusive relationship. The extent to which decisions expressed in response to an intimate partner abuse vignette transfer to real-world settings is questionable at best. For example, in the 'real world', the victim of intimate partner abuse may leave and return to the abuser several times before leaving for good (e.g., Sullivan, Basta, Tan, & Davidson II, 1992). This decision alternative was not presented in this study and therefore, participant responses may not represent the 'ultimate' decision.

Conclusions and Future Research Directions

This study demonstrates that basic cognitive demands and external influences can affect decision making. In all significant life decisions, we are faced with evaluating our current situation, as well as projecting the possible consequences of making a particular decision. Victims of intimate partner abuse live with the reality of violence, in addition to the demands of daily life and thus, may experience high cognitive load. Limits on cognitive resources may be intensified by further complexities and demands in the victims' lives, such as children.

This study also highlights the importance of the possible external introduction or imposition of bias into the decision-making process of victims of intimate partner abuse. In addition to asking themselves what they should do, victims may be asked by others

who are aware of the abuse, including friends, family, police officers, counsellors, and staff at hospitals or shelters. By wording the question in terms of *leaving* or *staying* in the relationship, a well-meaning intervener may be imposing his or her expectations of what the victims *should* do, which may hinder the victims' ability to make a decision that is appropriate for them. The process of decision making is important for the victims' ability to cope with their decision and the outcomes of making that decision.

Seeming discrepancies between abuse allegations and victim actions are often assumed to indicate lack of credibility, without consideration given to external demands and influences. Repeated leaving and returning to the relationship, for example, should not undermine the credibility of abuse allegations. By demonstrating that these basic cognitive demands can influence decision making, my purpose is to demonstrate that cognitive deficits are not necessarily inherent, but instead may be the product of the situation. The next step may be to extend these findings to more realistic forms of busyness and wording, and to examine these in real-life situations.

The efficacy of policies and interventions depend on our understanding of the problems and solutions they were designed to address (Mears, 2003). This study demonstrated that cognitive busyness, question wording, and gender can influence decisions. Victim decisions to leave or stay in abusive relationships and choices about how to cope with the abuse appear to be influenced by a combination of social, economic environmental, as well as psychological factors (e.g., Anderson & Saunders, 2003). These influences on the decision making of intimate partner abuse victims are external and internal, dynamic and stable, and warrant continued research efforts. Future research

should include and compare responses to scenarios of male and female victims.

Researchers also should explore the effects of victim ethnicity, education, previous victimization, or previous 'leaving' behaviour, among other factors. Lastly, this study addresses two of many judgement biases and tendencies implicated in the decision-making process. Future research should continue to explore decision making in the context of intimate partner abuse, examining, for example, the influences (unique and interactive) of other decision-making heuristics, such as hindsight bias or the sunk cost effect.

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Appendix A. Consent Form

The purpose of the project is to understand the mechanisms involved in various cognitive tasks. We may also use the data to study other issues. You will be reimbursed one research credit for your time.

This form and the information it contains are for your protection. Your signature on this form will demonstrate that the researchers have informed you of the procedures, possible risks, and benefits of this research project. Please feel free to ask questions at any time during the study. Your signature confirms that you have had an adequate opportunity to consider the information, and that you voluntarily agree to participate in the project. You have the right to withdraw from the study at any time.

You will complete a series of separate cognitive tasks that will take approximately half an hour total. You also will complete a questionnaire, so that we can collect demographic information as well as information about past experiences. The information collected during the experiment is confidential. We will record responses as a participant number and we will keep copies of signed informed consent forms separate from the questionnaires so that no one will be able to identify you. We will store materials in a secure location. When we write up the results of the evaluation, we will not include the identity of individual participants. Rather, we will present the overall results.

SFU and those conducting this project subscribe to the ethical conduct of research and to the protection at all times of the interests, comfort, and safety of participants. Should you wish to obtain information about your rights as a participant in research, or about the responsibilities of researchers, or if you have any questions, concerns, or complaints about the manner in which you were treated in this study, please contact the Director, Office of Research Ethics by email at hweinber@sfu.ca or phone at 604-268-6593.

Invited by Sarah Desmarais and Dr. J. Don Read of the Department of Psychology, SFU to participate in this research project, I have read and understand the procedures specified in this document. I also understand that I may register any complaint I may have about the project with any of the researchers named above or with the Director of the Office of Research Services, SFU.

I acknowledge that I agree to participate in this research project and that I have received a copy of the consent form for my own records.

NAME (please print): _____

SIGNATURE: _____

DATE: _____

Appendix B. Intimate Partner Abuse Vignette

Tom and I started dating in our first year of university. He was my roommate’s friend. We met at a party one night and hit it off right away. It was love at first sight. Sounds corny I know, but we’ve been together ever since. Wow – it’s hard to believe we’ve been together for four years already. He’s funny and smart, and ambitious too. I have never met anyone who can make me laugh as much as Tom. Oh – and he’s such a romantic... He spoils me rotten. He tells me everyday how much he loves me and wants to marry me. He proposed this past Christmas, and of course, I said yes.

The other night we went to a get together at our friend’s house. Everyone was having a great time. A few hours into the night, Tom saw me talking to a guy from work and thought we were flirting. Tom can get jealous sometimes. He came over and told me it was time to leave. I could see how upset Tom was, so I agreed. When we got home, Tom was pretty angry and accused me of cheating on him, which of course isn’t true. I got upset with Tom for thinking that I would cheat on him. We were both getting more and more angry, yelling louder and louder... When he hit me.

It’s been a few days since it happened. Tom has told me a million times how sorry he is and promises that it will never happen again. I can’t stop thinking about what happened. We’ve gotten in arguments and fights before, and sure, he’s shoved me or grabbed my arm... But, it’s never gone this far before. I don’t know what to do. I even put together a list of pros and cons to try to help me figure things out.

Instructions: Sometimes when people are having trouble making a decision, they write a list of the pros and cons of each choice. Imagine you were in Lisa’s position and you were putting together a list of pros and cons to try to help you decide what to do. Please rate each of the following statements as either PRO (perceived positive outcome of that particular decision) or CON (perceived negative outcome of that particular decision):

- I might have a chance for other relationships if I leave. _____
- He might hit me again if I stay. _____
- I might end up alone if I leave. _____
- I can stop being scared if I leave. _____
- People will think I’m a failure if I leave. _____
- We can have the future we’ve dreamed about if I stay. _____
- I won’t be able to pay my bills if I leave. _____
- He’ll be loving and supportive if I stay. _____
- He promised it wouldn’t happen again if I stay. _____
- I will have more freedom if I leave. _____
- Things between us might get worse if I stay. _____
- I might not feel safe with him if I stay. _____

6. **Excluding** your current relationship (if you are in one), please indicate the number of romantic relationships you have had, as well as the length of each relationship.

- 0. None
- 1. ___ months ___ years
- 2. ___ months ___ years
- 3. ___ months ___ years
- 4. ___ months ___ years
- 5. ___ months ___ years
- 6. ___ months ___ years
- 7. ___ months ___ years
- 8. ___ months ___ years
- 9. ___ months ___ years
- 10. ___ months ___ years

7. Has a romantic partner ever yelled at, sworn at, insulted, or called you names? (Please circle one.)

1 = Yes; 0 = No.

8. Have you ever yelled at, sworn at, insulted, or called a romantic partner names? (Please circle one.)

1 = Yes; 0 = No.

9. Has a romantic partner ever shoved, grabbed, slapped, punched, or kicked you? (Please circle one.)

1 = Yes; 0 = No.

10. Have you ever shoved, grabbed, slapped, punched, or kicked a romantic partner? (Please circle one.)

1 = Yes; 0 = No.

11. Before the age of 19, did you witness or otherwise have knowledge of any yelling, swearing, insulting, or name-calling between your parents (guardians)? (Please circle one.)

1 = Yes; 0 = No.

12. Before the age of 19, did you witness or otherwise have knowledge of any shoving, grabbing, slapping, punching, or kicking between your parents (guardians)? (Please circle one.)

1 = Yes; 0 = No.

***Thank you for completing this questionnaire. ***

Appendix D. Debriefing and Second Consent Form

The purpose of this study is to examine the effects of question wording and cognitive busyness on decision making, using a domestic violence scenario as the decision stimulus. Domestic violence is not a limiting circumstance. The cognitive mechanisms that encourage and/or inhibit the decision to leave a violent relationship may involve processing impairments that are not unique to the experience of domestic violence. The victim must make a risk-taking decision, the risk of either staying in or leaving the relationship. For example, the cognitive processes involved in a depressed individual's decision to seek help may very well be the same as those implicated in the battered woman's decision to leave. Thus, general decision biases and heuristics, such as cognitive busyness and question-wording effects, may apply.

We predict a significant cognitive busyness by question-wording interaction effect on the statements recalled by participants. We also expect a significant cognitive busyness by question-framing interaction effect on the stay/leave decision. We predict that memory mediates the effect of question wording on decision, such that the number and wording of statements recalled affect the decision.

If you have any questions or you would like more information about this study, please contact Sarah Desmarais at sldesmar@sfu.ca. We expect to complete the study in Spring/Summer 2005.

Due to the nature of the questions, some participants may become emotionally upset during and/or following completion of the questionnaire. We encourage you to share those feelings with the researcher who will be glad to provide you with referrals to counselling services and/or any other health or social services you desire.

If you have any questions, concerns, or complaints about the manner in which you were treated in this study, please contact the Director, Office of Research Ethics by email at hweinber@sfu.ca or phone at 604-268-6593.

Thank you for your time and for not discussing details of the study with others until the study is complete.

I acknowledge that I agree that the data obtained from my participation be used for the real purpose of this research project as described above and that I have received a copy of this debriefing/second consent form for my own records.

NAME (please print): _____
SIGNATURE: _____
DATE: _____

Table 1

Means and Standard Deviations for Participant Decisions as a Function of Cognitive Busyness and Question Wording

Cognitive-Busyness Condition	Question-Wording Condition								
	Stay			Leave			Overall		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	
Busy	46	4.80	1.54	5.13	1.69	92	4.97	1.62	
Not Busy	46	4.97	1.68	4.71	1.74	92	4.84	1.71	
Overall	92	4.89	1.61	4.92	1.72	184	4.90	1.66	

Note. 1 = Definitely Stay; 2 = Probably Stay; 3 = Maybe Stay; 4 = Unsure; 5 = Maybe Leave; 6 = Probably Leave; 7 = Definitely Leave.

Table 2

Means and Standard Deviations for Participant Decisions as a Function of Cognitive Busyness, Question Wording, and Gender

Cognitive-Busyness Condition	Question-Wording Condition						Overall		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	
Decisions									
Male Participants	44	4.34	1.76	5.06	1.73	88	4.70	1.77	
Busy	22	4.82	1.68	5.23	1.80	44	5.02	1.73	
Not Busy	22	3.86	1.75	4.87	1.68	44	4.38	1.77	
Female Participants	48	5.39	1.27	4.79	1.73	96	5.09	1.54	
Busy	24	4.79	1.44	5.04	1.63	48	4.92	1.53	
Not Busy	24	5.98	0.70	4.54	1.82	48	5.26	1.54	
Overall	92	4.89	1.61	4.92	1.72	184	4.90	1.66	
Busy	46	4.80	1.54	5.13	1.69	92	4.97	1.62	
Not Busy	46	4.97	1.68	4.71	1.74	92	4.84	1.71	

Note. 1 = Definitely Stay; 2 = Probably Stay; 3 = Maybe Stay; 4 = Unsure; 5 = Maybe Leave; 6 = Probably Leave; 7 = Definitely Leave.

Table 3
Between-Subjects Effects for Decision Analyses

Variable	Decision	
	For Participant	For Lisa
	<i>F</i> (1, 176)	<i>F</i> (1, 176)
Busyness (B)	0.42	0.18
Wording (W)	0.07	0.10
Gender (G)	2.75	0.63
B x W	1.30	0.27
B x G	4.45*	1.14
W x G	7.76**	0.10
B x W x G	5.99*	0.12

* $p < .05$; ** $p < .01$.

Table 4

Means and Standard Deviations for Reasons Recalled across Conditions

Condition	N	Reasons Recalled							
		Stay				Leave			
		Pro		Con		Pro		Con	
	M	SD	M	SD	M	SD	M	SD	
Male Participants									
Stay Question-Wording	44	1.14	0.91	1.36	0.98	1.27	0.90	1.32	0.91
Busy	22	1.18	0.96	1.59	0.85	1.18	0.91	1.05	0.95
Not Busy	22	1.09	0.87	1.14	0.89	1.36	0.90	1.59	0.80
Leave Question-Wording	44	1.18	0.92	1.39	0.72	1.41	0.95	1.52	1.07
Busy	22	1.18	0.91	1.32	0.78	1.45	0.86	1.59	1.22
Not Busy	22	1.18	0.96	1.45	0.67	1.36	1.05	1.45	0.91
Total	84	1.16	0.91	1.38	0.81	1.34	0.92	1.42	0.99
Busy	44	1.18	0.92	1.45	0.82	1.32	0.88	1.32	1.12
Not Busy	44	1.14	0.91	1.30	0.80	1.36	0.97	1.52	0.85
Female Participants									
Stay Question-Wording	48	1.15	0.83	1.38	0.87	1.46	0.77	1.65	1.00
Busy	24	1.42	0.78	1.13	0.74	1.50	0.83	1.75	0.94
Not Busy	24	0.87	0.80	1.62	0.92	1.42	0.72	1.54	1.06
Leave Question-Wording	48	1.40	0.94	1.02	0.67	1.33	0.93	1.50	0.80
Busy	24	1.46	1.02	1.00	0.59	1.58	0.97	1.54	0.78
Not Busy	24	1.33	0.87	1.04	0.75	1.08	0.83	1.46	0.83
Total	96	1.27	0.89	1.20	0.79	1.40	0.85	1.57	0.90
Busy	48	1.44	0.90	1.06	0.67	1.54	0.90	1.65	0.86
Not Busy	48	1.10	0.86	1.33	0.88	1.25	0.79	1.50	0.95
Overall									
Stay Question-Wording	92	1.14	0.86	1.37	0.87	1.37	0.84	1.49	0.97
Busy	46	1.30	0.87	1.35	0.82	1.35	0.88	1.41	1.00
Not Busy	46	0.98	0.83	1.39	0.93	1.39	0.80	1.57	0.94
Leave Question-Wording	92	1.29	0.93	1.20	0.72	1.37	0.93	1.51	0.93
Busy	46	1.33	0.97	1.15	0.70	1.52	0.91	1.57	1.00
Not Busy	46	1.26	0.91	1.24	0.74	1.22	0.94	1.46	0.86
Total	184	1.22	0.90	1.28	0.80	1.37	0.88	1.50	0.95
Busy	92	1.32	0.91	1.25	0.77	1.43	0.89	1.49	1.00
Not Busy	92	1.12	0.88	1.32	0.84	1.30	0.87	1.51	0.90

Table 5

Analysis of Variance Results for Independent Variables and Reasons Recalled

Source	<i>F</i> (1, 176)
Between Subjects	
Cognitive Busyness (B)	1.04
Question Wording (W)	0.01
Gender (G)	0.41
B x W	0.46
B x G	1.50
W x G	3.11
B x W x G	0.01
Within Subjects	
Reasons Recalled (R)	0.14
R x B	0.09
R x W	1.20
R x G	1.57
R x B x W	0.17
R x B x G	1.40
R x W x G	0.64
R x B x W x G	3.55

Table 6

Means, Standard Deviations, and Correlation among Participant Decisions and Reasons Recalled

Variable	<i>M</i>	<i>SD</i>	<i>r</i>
Participant Decision	4.90	1.66	--
Predictors in Regression Model:			
1. Reasons that Support Staying (Pro-Stay plus Con-Leave)	2.72	1.38	-.29***
2. Reasons that Support Leaving (Pro-Leave plus Con-Stay)	2.65	1.20	.28***

*** $p < .001$.

Table 7

Regression Analysis Summary for Reasons Recalled Predicting Participant Decisions

	B	SEB	β	<i>t</i> value	<i>sr</i> ²	<i>pr</i> ²
Predictors in Regression Model:						
1. Reasons that Support Staying						
(Pro-Stay plus Con-Leave)	-0.27	.09	-.22	-3.05**	.05	.05
2. Reasons that Support Leaving						
(Pro-Leave plus Con-Stay)	0.29	.10	.21	2.82**	.04	.04

***p* < .01.

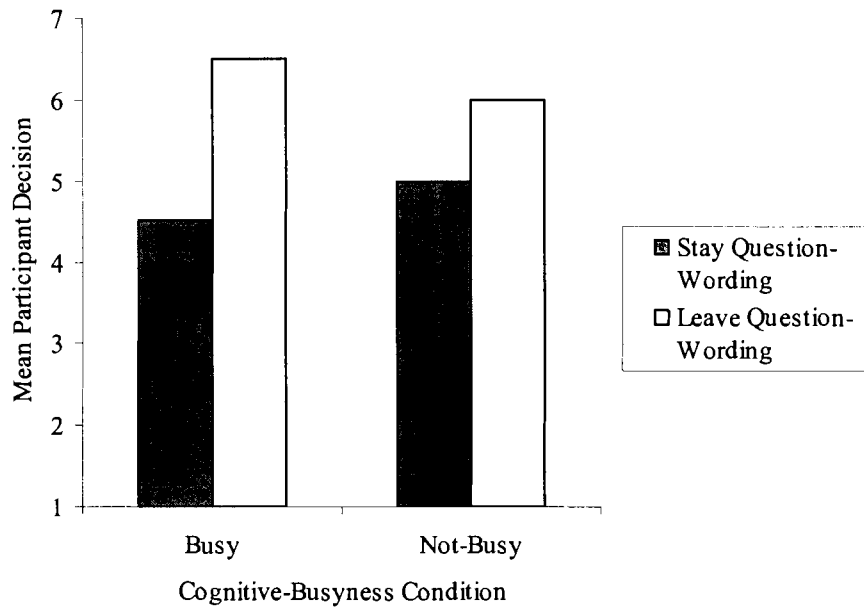
Table 8

Means and Standard Deviations for Lisa Decisions as a Function of Cognitive Busyness, Question Wording, and Gender

Cognitive-Busyness Condition	Question-Wording Condition						Overall		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	
Decision for Lisa									
Male Participants	44	3.36	1.22	3.49	1.48	88	3.43	1.35	
Busy	22	3.32	1.32	3.41	1.59	44	3.36	1.45	
Not Busy	22	3.41	1.14	3.57	1.38	44	3.49	1.26	
Female Participants	48	3.27	1.23	3.27	1.32	96	3.27	1.27	
Busy	24	3.50	1.35	3.33	1.34	48	3.42	1.33	
Not Busy	24	3.04	1.08	3.21	1.32	48	3.13	1.20	
Overall	92	3.32	1.22	3.38	1.39	184	3.35	1.31	
Busy	46	3.41	1.33	3.37	1.45	92	3.39	1.38	
Not Busy	46	3.22	1.11	3.38	1.35	92	3.30	1.23	

Note. 1 = Definitely Stay; 2 = Probably Stay; 3 = Maybe Stay; 4 = Unsure; 5 = Maybe Leave; 6 = Probably Leave; 7 = Definitely Leave.

Figure 1. Predicted Interaction Effect of Cognitive Busyness by Question Wording on Participant Decisions



Note. 1 = Definitely Stay; 2 = Probably Stay; 3 = Maybe Stay; 4 = Unsure; 5 = Maybe Leave; 6 = Probably Leave; 7 = Definitely Leave.

Figure 2. Predicted Interaction Effect of Cognitive Busyness by Question Wording on Memory

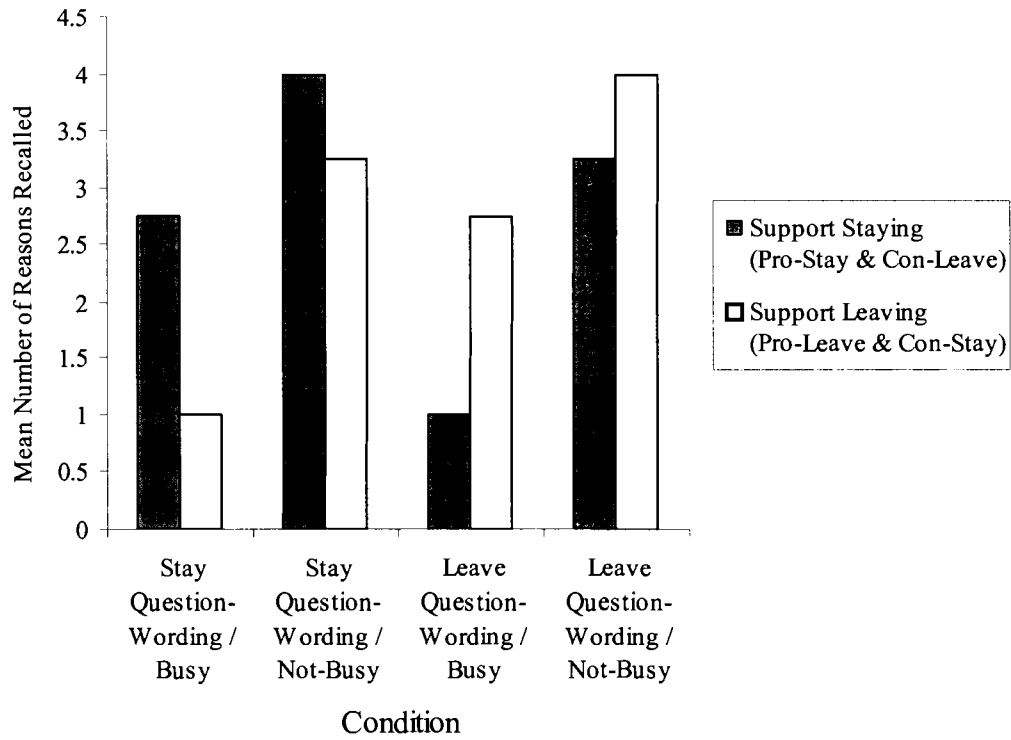


Figure 3. Predicted Role of Memory as Mediating the Association between the Manipulations and Participant Decisions

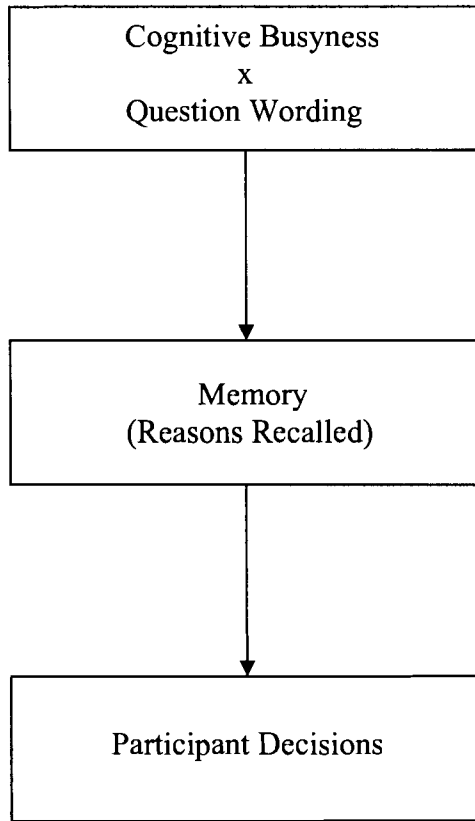
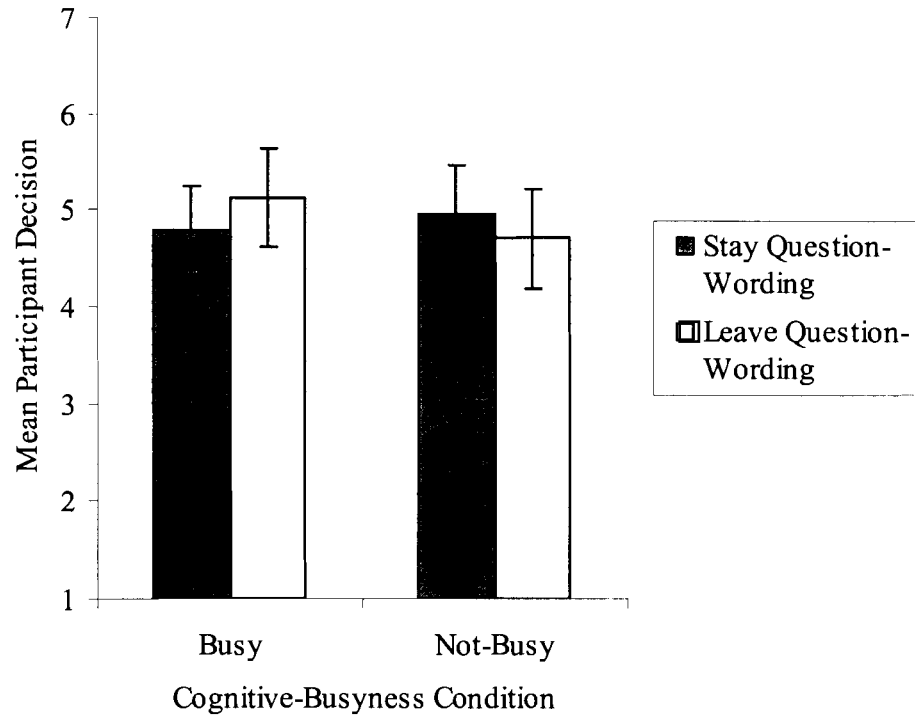


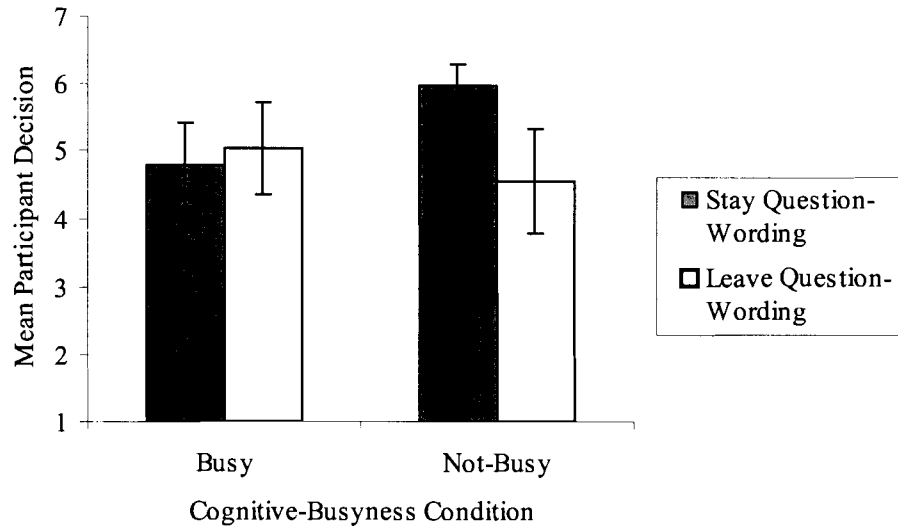
Figure 4. Means and 95% Confidence Intervals for Participant Decisions across Conditions



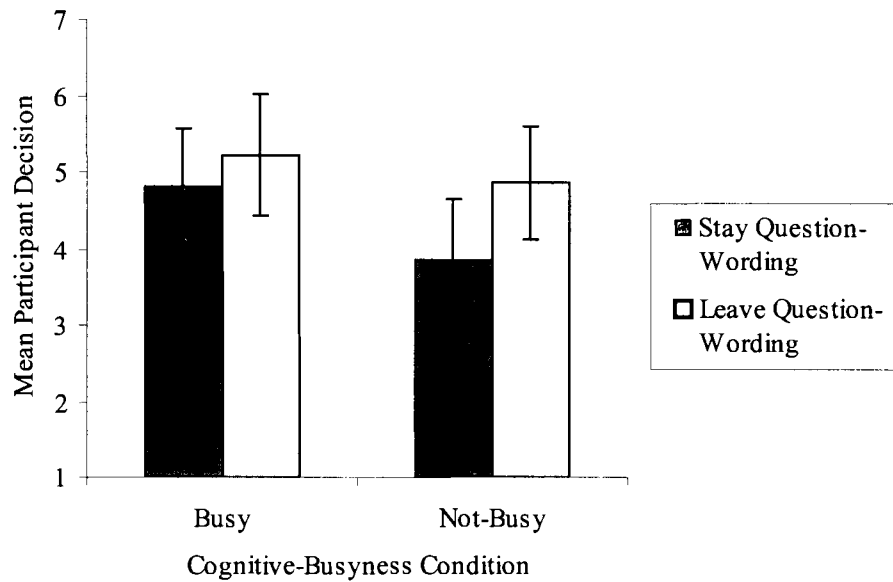
Note. 1 = Definitely Stay; 2 = Probably Stay; 3 = Maybe Stay; 4 = Unsure; 5 = Maybe Leave; 6 = Probably Leave; 7 = Definitely Leave.

Figure 5. Means and 95% Confidence Intervals for Female and Male Participant Decisions across Conditions

Female Participants



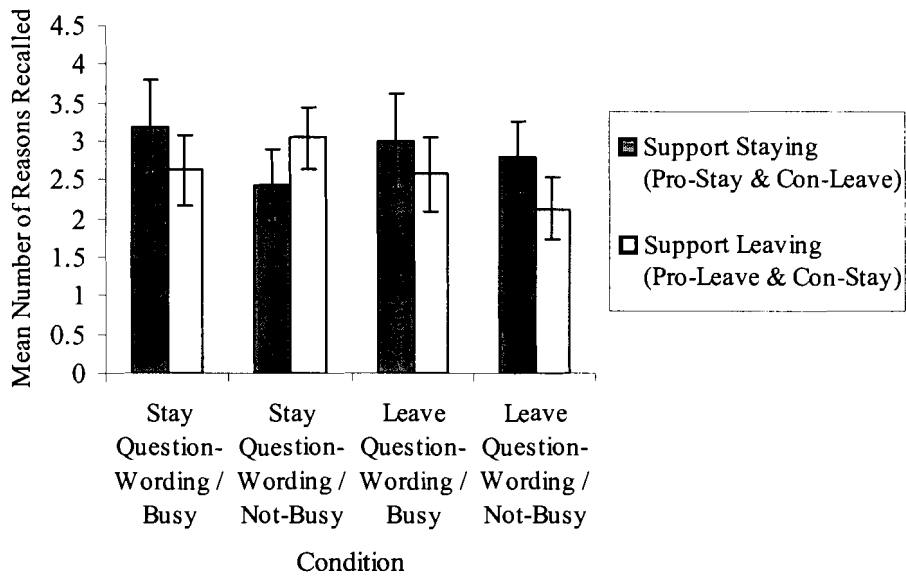
Male Participants



Note. 1 = Definitely Stay; 2 = Probably Stay; 3 = Maybe Stay; 4 = Unsure; 5 = Maybe Leave; 6 = Probably Leave; 7 = Definitely Leave.

Figure 6. Means and 95% Confidence Intervals for Reasons Recalled by Female and Male Participants

Female Participants



Male Participants

