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Challenging the Past: The Effects of Disconfirmatory Social Feedback on Memory Reports and Beliefs About Past Events

Lauren Wysman
University of Windsor

Challenging the Past: The Effects of Disconfirmatory Social Feedback on Memory Reports and Beliefs About Past Events

By

Lauren M. Wysman

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by

Lauren Wysman

APPROVED BY:

_____

W. Hirst, External Examiner
New School for Social Research

_____

B. Barrett
Social Work/Women's Studies

_____

C. Abeare
Psychology

_____

P. Timmons Fritz
Psychology

_____

A. Scoboria, Advisor
Psychology

June 16, 2016

DECLARATION OF ORIGINALITY

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ABSTRACT

This research program examined the experience of social challenges to autobiographical memories. The overarching goals of the research were to 1) obtain a general descriptive overview of challenges to memory and resulting outcomes; 2) test predictions derived from Scoboria's (2016) model of decision-making about belief in events and resulting communication that follows from challenges to memories; and, 3) examine the implications of the model within a specialized population of interest (the experience of challenge to memories of intimate partner aggression). In Study 1, a survey method was used to explore social challenges to memories in general (N = 285). This study revealed that social challenges resulted in a rich variety of decision-making processes and outcomes, and provided evidence supportive of the outcomes predicted by the model. Two additional studies explored social challenges within the context of intimate partner aggression. In Study 2, rich qualitative information was obtained from a sample of heterosexual women (N = 12) about their experience when memories for aggressive acts were disconfirmed by their aggressive partners or other people. The findings demonstrated that many concepts from the autobiographical memory literature are relevant to this context, and provided insights into the manners by which the women came to question, reduce, and/or defend their memorial beliefs, and the behavioural outcomes that resulted. Study 3 used survey methods similar to Study 1 to sample women who had experienced social challenges by intimate partners to memories of intimate partner aggression (N = 115), to examine the outcomes that resulted from challenges to memories about aggression. The results

supported the general applicability of the model, including ideas such as evidence about dissonance, alterations in memorial beliefs, and different behavioural outcomes in reaction to the challenge (i.e., agree/disagree). All of the studies highlighted the importance of expanding the model to account for the connection between social disconfirmation and belief in the accuracy of memories. All three studies supported the notion that vacillation in memorial beliefs is common when individuals experience social disconfirmation about their memories, and that such vacillation may be amplified as social consequences increase.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER 1

General Introduction

When recounting a memory to another person, it may be taken for granted that the person to whom the event is being recounted will believe or accept the memory to be true and accurate. However, there are times that individuals experience social challenge, also termed "disconfirmatory social feedback," when describing a memory, whereby individuals receive social input that in some way disconfirms and may cast doubt upon some aspect of their understanding of a past event. Some challenges are more explicit, such as being told that an event did not happen or happened in a different way. Other challenges may be less overt, such as one person (i.e., an informant) ignoring another person's claims or giving a disapproving look. What needs further study is what happens to beliefs and memories once someone encounters these different types of social challenge.

Social challenges to autobiographical memories (i.e., memories from one's own life) have been examined to a limited extent in the literature. Studies of twins who disagree about memory ownership (i.e., who was the main actor in a shared event; Sheen, Kemp, & Rubin, 2001) have demonstrated that memories are sometimes contested and much effort can go into protecting or defending one's memory. Other researchers (i.e., Wade, Nash, & Garry, 2014) have studied what people would do in hypothetical scenarios whereby one must verify past memories. This work notes that people select their memory verification strategies based in part on the perceived reliability and cost of using particular methods, and that turning to social sources is a common way to verify events from the past. Other research (i.e., Scoboria, Boucher, & Mazzoni, 2015) has also

been conducted specifically on instances in which people have chosen to reduce their belief in the occurrence of remembered events. Scoboria, Boucher, et al. (2015) documented that social input was the most commonly cited reason by participants for this reduction in belief. Furthermore, the authors found that the social feedback that led to altering belief in the occurrence of memories came in many forms. For example, this feedback included being unable to find another person able to corroborate the event and being invalidated by another person. Thus, this research demonstrates that social challenges do have consequences for people's memorial beliefs.

Scoboria (2016) proposed a model that describes the social and cognitive processes involved when one experiences a social challenge to an existing memory, and the potential effects of social challenge on belief in the occurrence of the challenged event (see Figure 1). The model posits that when an existing memory is challenged by disconfirmatory social feedback, two types of dissonance arise: intrapersonal and interpersonal. The resolution of intrapersonal dissonance involves weighing the quality of the feedback from the other person against the quality of one's memory. When the feedback is judged to be superior to the quality of the memory, belief in the occurrence of the event is reduced. When the feedback is judged to be inferior to the quality of the memory, belief in occurrence of the event is maintained. In contrast, the resolution of interpersonal dissonance is influenced by various factors, such as the power dynamics in the relationship, as well as how forcefully the disconfirmatory feedback is provided. These factors influence the perceived costs and benefits of agreeing or disagreeing, and the person whose memory has been challenged makes the choice to agree or disagree with the informant. Thus, the model posits four potential outcomes that result from

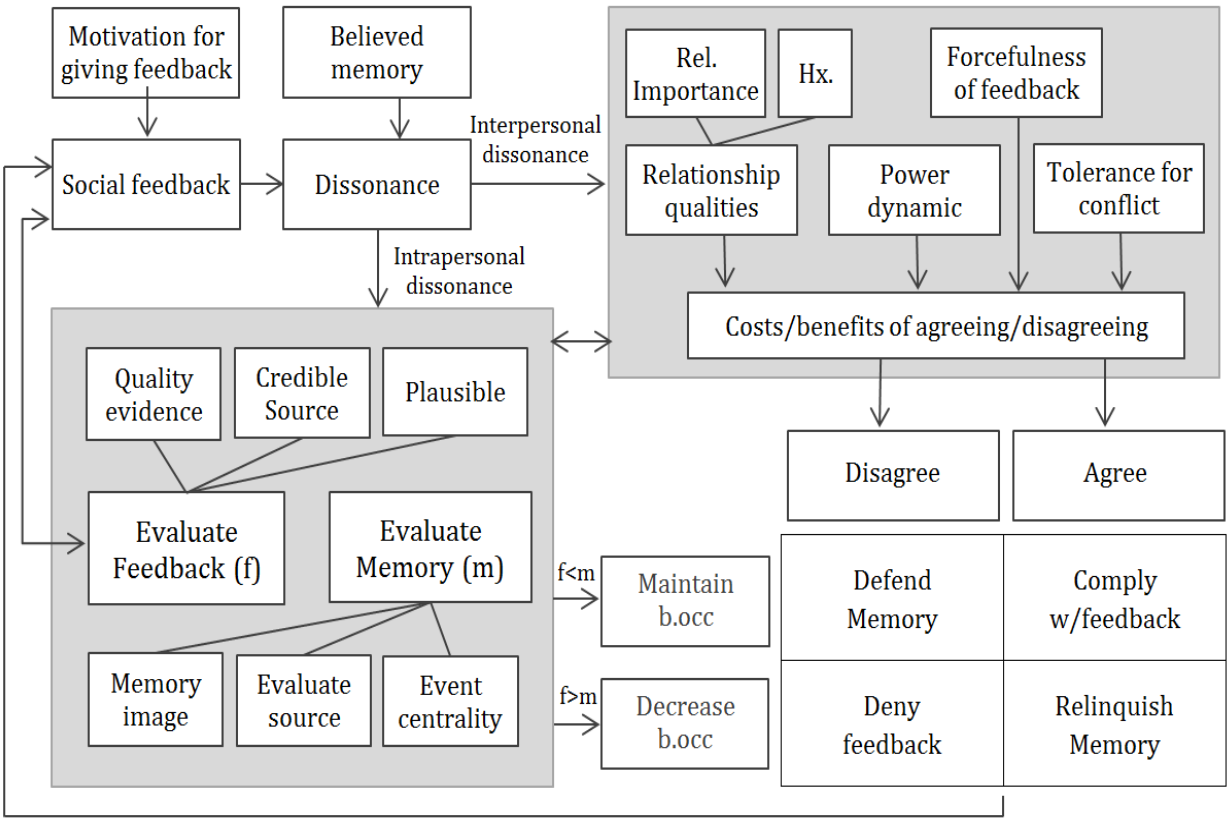

Figure 1. Scoboria's (2016) model.

crossing two factors: reduction/relinquishing belief in the past memory vs. maintaining belief in the memory, and the choice to agree vs. disagree.

Thus, prior research has examined instances in which memories for past events have been challenged by another person and belief in the memory is retained, as well as instances in which social challenges have led to the decision to reduce or withdraw belief in the memory. Recent theorizing has speculated that a variety of outcomes result from social challenges to memories. However, no research has addressed what exactly these outcomes of receiving disconfirmatory social feedback are, as well as how these outcomes are arrived at.

Studying these outcomes and how they are achieved is important because these decisions, whether conscious or unconscious, can affect one's behaviours, relationships, and understanding of oneself. One's beliefs about and memories for the past can influence these various facets of one's life. Thus, disconfirmatory social feedback may be highly influential across many contexts. Social challenges to memories can also take place in many contexts. One context in which the study of social feedback about memories may be particularly relevant is that of intimate partner aggression. Individuals experiencing aggression at the hands of an intimate partner are presumably influenced by the feedback they receive from their partners and/or others about the occurrence of past episodes of aggression. This feedback may lead to altered beliefs and/or reports about past experiences of abuse.

In order to map features of social challenges and related outcomes, three studies were conducted. One broad goal across the program of studies was to develop a more thorough understanding of the outcomes that result when memories for events are

challenged by other people. The first (Study 1) involved a broad sampling of cases in which people identified experiencing social challenge to their memories. Information about these social challenges was gathered from a relatively diverse online sample using open-ended questions and self-report measures. The narrative information provided by participants was coded to quantify outcomes of the social challenge as well as features of the challenge and the original event. Participants also responded to items about their experiences of social challenge, in order to explore which facets of the social challenge corresponded to different outcomes. This study helped to first develop an understanding about the different outcomes and facets of social challenge, and illuminate which aspects of the social challenge were connected to these different outcomes. This served to draw together the disconnected literatures on memory defense and memory relinquishment. A key question that was addressed in this study is which aspects of a challenge might be related to different outcomes (e.g., reduced belief in the occurrence vs. maintained belief in occurrence)?

The next two studies examined the experiences of women who had past experiences of intimate partner aggression (IPA) in their relationships. Research on this population (e.g., on silencing oneself, the dynamics of coercive control, etc.) suggests that women who experience IPA may experience a variety of disconfirmatory social challenges to their beliefs in the occurrence of and memories for past events. Such disconfirmatory social input can come from various sources, such as perpetrators, family members not wanting to discuss or wanting to deny abuse, as well as people encountered in the legal system. Studying social challenges to memory in this context is important because it may help to provide a clearer understanding of how disconfirmatory feedback

influences IPA survivors' beliefs about the occurrence of past aggression, as well as their reports to others. The way these reports about past events are articulated is important, for example, for prosecuting aggressive partners. Thus, understanding how disconfirmatory social input affects these reports is critical.

Study 2 examined social challenge to memories for past aggression using a qualitative content analysis of interviews with women who have experienced psychological or physical intimate partner aggression in heterosexual relationships. This study provided an in-depth look at the phenomenon of social challenge to memories for abuse experiences with these women who have experienced IPA in order to ascertain how this phenomenon takes place. The purpose of the qualitative approach was to gain an extensive understanding of related experiences in the words of the participants themselves without initially imposing my own views about the subject on participants and to hear about these experiences in participants' own words.

Study 3 combined knowledge gained from the two aforementioned studies in order to examine social challenges to memories within the context of relationship aggression, with a larger sample of women who have experienced IPA in heterosexual relationships, using methodology similar to Study 1. This study contributed to better understanding the experiences of women who have survived IPA by examining whether there are similarities in the content provided in both a small qualitative sample and a larger sample of women with experiences of IPA. Further, the study contributed to learning about the processes that underlie reacting to social challenge more generally. That is, given that Study 1 examined the experience of social challenge more generally

with a broad sample, Study 3 extended these findings through the application of a similar coding scheme to the data collected about social challenges to memories of IPA.

The use of different qualitative and quantitative methodologies with women who have survived IPA for Study 2 and 3 served to provide both depth and breadth of understanding of the experience of social challenge in this population. Further, Study 3 contributed to a better understanding of how the experience of social challenge in the context of IPA may be similar and different from social challenge to memories more broadly.

Together, this program of research provided novel findings with respect to social challenge to memory, both broadly and also within the context of IPA. There are implications for knowledge to be gained about basic processes related to beliefs, memories, and memory reports, which are discussed in each respective chapter. Research has focused on hypothetical ways participants would verify their memories for the past (e.g., Wade et al., 2014). Some research has focused on the retrospective experience of social challenge, but has been restricted to the examination of one specific outcome of the challenge (e.g., giving up belief for a past event; Scoboria, Boucher, et al., 2015). Obtaining a broader perspective of the potential outcomes of social challenge and the aspects of the challenge which contribute to these outcomes is vital to further understanding of these processes.

In addition to these novel findings with respect to basic research are also the implications that these projects have for understanding more about the experience of social challenge in the context of IPA. This research contributes to understanding how women make choices to agree or disagree with others, based on the social influences of

these other people. It also contributes to knowledge about how beliefs about past abuse may be altered by the influence of others. This research has the potential, for example, to inform both work in clinical settings and the legal system about why a survivor of IPA may talk about past episodes of abuse in a certain manner, or appear less confident in what she says, perhaps lending more credibility to survivors that they otherwise might not receive.

CHAPTER 2

The Experience of Social Challenge to Memories

Introduction

People often come to doubt their memories about past events. Challenges to memories can come from internal sources (e.g., believing that the image in one's mind was generated in a dream or fantasy) as well as external sources (e.g., another person questioning an individual's beliefs and memories, termed "disconfirmatory social feedback"). Of interest in this study is the experience of those individuals whose memories are challenged by another person. What do people do when they encounter disconfirmatory social feedback to existing memories, such as being told that they are misremembering the past? What happens to their beliefs in what they recall, or to appraisals of the content of their memories?

The current project examines the topic of social challenge to existing autobiographical memories. The study of this topic is important because people are compelled to make decisions about how to react to input from another person regarding past events. For example, sometimes people defend their memories and at other times they reduce their belief in the occurrence of past events or question the accuracy of their memories. The factors that influence these (sometimes conscious and sometimes unconscious) choices remain understudied. It is important to understand what motivates these decisions because these choices have implications for how information is recalled and reported to others by the individual who experiences the challenge.

Social input is important to memory recall and memory reports. Recall of information can be influenced by social factors, rather than simply being based in rote

retrieval (e.g., Echterhoff & Hirst, 2012). People frequently turn to others for help when attempting to retrieve unremembered information about an event (e.g., Wade & Garry, 2005). Other people may be motivated to have individuals remember events differently, and may exert pressure in various ways in order to foster the modification of memorial beliefs and memories. Further, the effects of social challenge on beliefs and memories are relevant not only from a basic research perspective, but also from an applied standpoint. For example, memory accuracy and consistency are viewed as vital in legal contexts, and social input about events is known to bias witness reports (Echterhoff & Hirst, 2009). Further, disconfirmatory social input may reduce one's confidence in the occurrence of a past event or the accuracy of one's memory, and witness confidence is known to influence mock juror decisions (Brewer & Burke, 2002).

At present, there is limited literature about the effects of disconfirmatory social feedback to existing memories, including the information that contributes to decisions and the outcomes that follow. Research from other relevant research areas will be reviewed: research on suggestion and social pressure, social aspects of remembering and reporting, false confessions, memory retraction, contested memories, and nonbelieved memories. Following this, I review theoretical frameworks that discuss the metacognitive appraisals that contribute to autobiographical remembering, including Rubin's basic systems model (2006), Johnson, Hashtroudi and Lindsay's (1993) source monitoring framework, and Koriat and Goldsmith's (1996) model of the strategic regulation of memory reports. I then present dissonance theory as relevant to remembering (Festinger, 1957) and Scoboria's (2016) social-cognitive model regarding the processing of social challenges to vivid memories. Following this review, I present a study which was

designed to extend knowledge about naturally occurring social challenge to existing memories.

For precision in language when discussing memory, several terms are defined. *Remembering* or *autobiographical memory* is used to refer to the whole experience of recalling personal past events. The term *recollection* refers "the episodic mental simulation of the event accompanied by a sense of re-experiencing" (Otgaar, Scoboria, & Smeets, 2013, p.718). *Belief in occurrence* (i.e., *autobiographical belief*) pertains to the truth attributed to the actual occurrence of an event to the self in the past (Mazzoni, Scoboria, & Harvey, 2010; Scoboria, Jackson, et al., 2014; Scoboria, Mazzoni, Kirsch, & Relyea, 2004). *Belief in accuracy* (Scoboria, Talarico, & Pascal, 2015) refers to the extent to which one perceives the mental representation of an event as actually reflecting the original details of the event as they were experienced.

The Power of Suggestion and Social Pressure in Remembering

Individuals' propensity to adjust their behaviour based on that of others has been established in seminal research, such as the research by Milgram (1963) and Asch (1956) on conformity in social interactions. Asch (1956) demonstrated that people tend to conform in group settings, and Milgram (1963) demonstrated that people sometimes comply with powerful others. In light of the power that social pressure and conformity have on immediate behaviour, it should be no surprise that social influences present when people remember events also affect the type of information that people recall and that they output.

The study of false memories demonstrates the power of social influence on subsequent memory reports. Interest in this topic commenced in the debate about whether

false memories (e.g., for childhood abuse) could be elicited by certain therapeutic procedures (see McNally & Geraerts, 2009). The potential implications of this debate were and remain far-reaching in terms of psychotherapeutic and investigative interviewing practice, and served as the impetus for experimental research on suggestive procedures that may elicit false memories. This research has demonstrated that different suggestive tactics can lead to the development of false memories. Procedures such as guided imagery (Hyman & Pentland, 1996) or the provision of information about events that is attributed to credible experts (e.g., parents; Scoboria, Wysman, & Otgaar, 2012) can help to elicit false beliefs that events occurred or complete false memories. In studies that examine efforts to implant complete false memories, approximately one-third of participants come to develop a false memory (Lindsay, Hagen, Read, Wade, & Garry, 2004; Scoboria et al., under review; Strange, Hayne, & Garry, 2008). In addition to the minority of participants developing false memories, many more participants in false memory studies develop false autobiographical beliefs for suggested events, without accompanying recollective experience (e.g., Hart & Schooler, 2006; Scoboria, Lynn, Hessen, & Fisico, 2007).

Suggestions can also lead to other consequences, such as changes in eating behaviour (Scoboria, Mazzoni, Jarry, & Bernstein, 2012) and false confessions to crimes (e.g., Kassin et al., 2010). Collectively, this body of research supports the idea that beliefs and memories are malleable and can be created and/or modified inside the research laboratory. Some research has also examined false memories that have developed outside of experimental contexts (e.g., memory retractors; see Ost, Costall, & Bull, 2001). The effects of these adjusted beliefs and memories can be far reaching. For example, a recent

mega-analysis documented that the development of false autobiographical belief plays a causal role in changing related attitudes and behavioral intentions; further, it demonstrated that belief in the occurrence of past events drives behaviour, regardless of the existence of associated recollection (Bernstein, Scoboria, & Arnold, 2015).

In the context of investigative interviewing, asking a witness a question twice may create implicit social pressure to change responses (e.g., Register & Kihlstrom, 1988; Wysman, Scoboria, Gawrylowicz, & Memon, 2014). Providing explicit negative feedback to witnesses about their performance can lead to further changes in responding (e.g., Gudjonsson, 1984). When participants are directed to intentionally confabulate about unseen material, they may report this information during subsequent retrieval as if they actually saw the material (e.g., Ackil & Zaragoza, 1998). Social pressure (to confabulate, in this instance) seems to be a factor in misreporting information, as it is in other studies in which participants may come to report fabricated past events (see Ost et al., 2001 for a review). In other words, social pressure can lead people to comply in altering their memory reports, and sometimes the memory itself may be revised.

Social Aspects of Remembering and Reporting

Some theorists have argued that autobiographical memory evolved in social contexts (e.g., Merlin, 1995). Autobiographical memory serves social functions, such as maintaining closeness, teaching, and eliciting engagement from others (e.g., Alea & Bluck, 2003; Pillemer, 1998). When recalling events, people turn to others for information to verify what they remember (Wade & Garry, 2005; Wade, Nash, & Garry, 2014). In the process of discussing past events with others, ownership of aspects of the event or of whole events can come into question, such as in the example of twins who

disagree about who was the main actor in a shared event (Sheen, Kemp, & Rubin, 2006). In laboratory-based research, other participants (e.g., Gabbert, Memon, & Allan, 2003; Wright, Self, & Justice, 2000) and confederates (Meade & Roediger, 2002; Reysen, 2005; Roediger, Meade, & Bergman, 2001) can supply information that affects the way material is remembered or reported, showing that social sharing of information can affect others' memories. Another example is when victims and witnesses of crimes discuss the crime with others, and their memories are influenced by these interactions (Ruback & Thompson, 2001). Thus, the act of discussing events that happened to oneself with others can serve to change the content of one's memories, even without the intentional presentation of misinformation from other interactants (see Echterhoff & Hirst, 2009 and Hirst & Echterhoff, 2012 for reviews). The information supplied by another person can be quite influential on what people subsequently recall.

False Confessions

False confessions in interrogative interviews (e.g., Kassin et al., 2010) are an example of a scenario that contains social pressure and disconfirmation of memory. False confessions are false claims that individuals make about their past (assumed to be criminal) behaviour, usually in response to strong social pressure. These claims made can have serious personal consequences, such as incarceration. Research on this topic illustrates that withdrawing belief in memory is not the only alternative in the face of disconfirmatory social input; compliance with another person without internalizing changes in memorial beliefs can also occur. The use of manipulative interrogation tactics and the interviewing of vulnerable suspects are two of the main factors that contribute to false confessions (Gudjonsson & Pearse, 2011). Noted contributing factors to creating a

false confession also include accusatory interviews that contain lies and repeated implied or more unequivocal threats (Kassin et al., 2010). Offering deals or minimizing the crime are other methods of eliciting confessions, as well as making interrogative situations unpleasant in order to facilitate confession to escape discomfort (Russano, Meissner, Narchet, & Kassin, 2005). Coercive, contextual aspects of these interviews, in combination with individual factors such as self-esteem and suggestibility, can lead to different types of false confessions.

Some false confessions are internalized after coercion (i.e., believed to be true by the confessor). Other confessions reflect compliance: the confessor does not believe it to be true (Kassin et al., 2010). This discussion points to the importance of considering issues of compliance and internalization in the more general area of social challenges to existing memories. Of note, however, is that false confessors are influenced to believe something happened despite their lack of recollection for the event, whereas people who have experienced the types of social challenge under study here experience the opposite. They are told that the memory they have is false or misrepresented, and as a result of this they may come to believe the other's report, or may merely comply with what the other person says.

It may be that some of the tactics used in interviews that elicit false confessions may be similar to those experienced when receiving disconfirmatory social input: isolating the individual from alternative viewpoints to the one being presented, verbal exchanges that are long and emotionally intense, repeatedly reminding the individual of things from his/her past to undermine confidence in memory (i.e., devaluing one's own beliefs and memories), and demands that the individual must accept the other person's

point of view, sometimes under conditions of threat (Kassin et al., 2010). These dynamics could occur in situations where the person presenting a challenge to another's memory has more power than the person whose memory is being challenged. Knowledge about the social dynamics surrounding false confessions is thus relevant to understanding decision-making and the outcomes that follow from social challenges to existing memories.

Memory Retractors

Further evidence for the nuanced relationship between social feedback and recollective beliefs is found in the literature on memory retractors. The focus of this literature (e.g., Ost et al., 2001) is on individuals who had come to believe, usually through suggestive therapeutic practices implemented by a trusted therapist, that a family member abused them in their childhood. However, after being confronted by denials and social opposition by the alleged abuser and/or within their families, some individuals retract their abuse allegations. Even with this social disagreement, other individuals persist in claiming that they remember the past abuse, despite the potential for losing important social relationships. Thus, the willingness of some people to incur the social costs of declaring abuse allegations may resemble the willingness of some people to retain beliefs in the face of another person who disagrees. Those who maintain their abuse allegations in the memory retraction literature serve as an example of a group of people who make different choices in the face of social opposition where the objective facts are largely unknown: some choose to retract their newly found belief in the occurrence of past abuse and others choose to maintain belief in its occurrence.

Contested Memories

Studies of contested memories also show that memories are sometimes adhered to despite contradictory social input. When asked to provide memories, same-sex twins tended to generate at least one event that was contested or disputed, meaning that they disagreed as to who was the main actor in a shared event (Sheen, Kemp, & Rubin, 2001). The authors found this phenomenon to be fairly common, and memories that remained disputed over time tended to be those for which independent verification could not easily be achieved (e.g., no one else present to attest to how the event took place, no video recording of the event, etc.). Despite knowing that one twin in each dyad had a false memory, many of the memories remained contested by the twins without either person ceding ownership. Later studies demonstrated that memories that are disputed tend to be self-serving; memories of achievement are more likely to be declared as one's own, whereas memories of doing wrong are more likely to be attributed to one's twin (Sheen et al., 2006). Similarities between the experiences of twins, as well as low ratings of event importance also have been associated with memory disputes (Ikier, Tekcan, Gülgöz, & Küntay, 2003; Küntay, Gülgöz, & Tekcan, 2004). Events of lower importance often remain contested between two individuals, perhaps because events that are not central to one's life are more easily adopted by others and less easily supported by external evidence (e.g., photos, corroboration by others, etc.).

Nonbelieved Memories

The study of nonbelieved memories (NBMs) is also relevant to the examination of the effects of social challenge on belief in occurrence and memory. Nonbelieved memories are memories that people once believed represented an actual past event.

However, for some reason they came to doubt the veracity of the event - that the event did not actually transpire or transpired differently than recollected. Vivid recollective experience persists, despite the choice to reduce belief in the event (e.g., Mazzoni et al., 2010). Naturally occurring nonbelieved memories have been studied descriptively via retrospective reports (Mazzoni, Scoboria, & Harvey, 2010) and by indirect cueing of events (Scoboria & Talarico, 2013). Nonbelieved memories have also been generated experimentally using disconfirmatory social feedback following tasks that elicit false memories in the laboratory (Clark, Nash, Fincham & Mazzoni, 2012; Otgaar, Scoboria, & Smeets, 2013). These studies serve to support the idea that belief in occurrence and recollection are distinct constructs that are influenced by distinct underlying processes. Further, this body of work demonstrates that nonbelieved memories are not uncommon (see Otgaar, Scoboria, & Mazzoni, 2014, for a review). Recent research has also identified different subtypes of NBMs based on ratings of belief in occurrence, recollection, and belief in accuracy (Scoboria, Nash, & Mazzoni, under review).

Research on NBMs indicates that social feedback frequently influences the development of nonbelieved memories. (Scoboria, Boucher, et al., 2015). As a broad category, social feedback encapsulates many different behaviours that potentially invalidate an individual's memorial beliefs. Scoboria, Boucher, et al. (2015) reported three broad types of disconfirmatory social feedback. The first type included being told explicitly that one is incorrect (e.g., being told an event did not occur or occurred differently than remembered, that it is impossible or unlikely, or receiving non-verbal feedback that suggests one is incorrect). The second type of feedback involved being unable to obtain social corroboration (e.g., another person could not confirm the event,

confirmation was not pursued, or a central person was unavailable for confirmation). The third type involves invalidation of a memory due to social or personal motives (e.g., an informant refused to discuss an event or applied pressure to not discuss it because it might implicate him/her). This final category is noteworthy because this behaviour would likely be seen in cases of criminal behaviour (e.g., violence in relationships). Thus, social input and social challenge are important reasons for revisiting and subsequently defending belief or reducing belief in a memory.

The Consequences of Social Challenge

Reviewed up to this point are cases in which social pressure leads to false confessions to crimes; cases in which memories of abuse are created in one social context and subsequently withdrawn in another social context; cases in which social feedback leads to withdrawal of belief in vivid memories; and, cases in which people choose to defend memories, despite contradictory views held by others.

Also relevant is work that has studied the strategies that people may use to verify memories when challenged by others. Wade, Nash, and Garry (2014) examined what people said that they would do if a memory was challenged in order to verify whether or not the memory reflected a genuine occurrence. Participants described an event from their childhood, and then were asked about how they would verify it. They then completed ratings of the cost and reliability associated with each method of verification that they identified. Participants commonly suggested that they would look for physical proof or consult with other people. Other categories included looking for cues and using cognitive strategies such as trying to picture the event in one's mind. The results showed that people's hypothetical choices were influenced by the perceived reliability and

especially the low cost (in terms of effort required) of using particular methods. According to these results, seeking social feedback provides a more optimal cost/reliability trade-off than the other strategies that they discussed. One limitation is that Wade and colleagues' study focused on what people said they would do, rather than what they actually have done.

Although a taxonomy of reasons that people provide for reducing or withdrawing belief in memories has been developed by Scoboria, Boucher, et al. (2015), their study focused only on the circumstances in which social challenges to events led to the decision to reduce or withdraw belief. A more complete understanding of the influence of social challenges on remembering requires sampling the full breadth of the phenomenon. As reviewed above, prior work indicates that when a memory is challenged, people sometimes defend their existing beliefs about the memory (e.g., Sheen et al., 2006) and sometimes they revise their belief (Scoboria et al., 2014). What is needed is a study that broadly samples instances in which memories have been challenged by social input and examines the resulting consequences of such challenges. Such an approach has the potential to further understanding regarding the multiple potential outcomes that disconfirmatory social feedback has on memories. Having surveyed the phenomenon of social challenge and its effects on memories and memorial beliefs, a brief review of relevant theoretical models will help to situate the present study.

Basic Systems Model

In his Basic Systems model, Rubin (2006) posits that memories are generated by the cooperation between various systems, such as language, emotion, distinct perceptual systems, etc. Each system is unique, with distinctive structures, functions, underlying

neural processes, and memory systems. Rubin argues that autobiographical memory arises from the coordination of these systems, rather than from some kind of single general and abstract cognitive structure.

Rubin (2006) also argues that recollective processes and processes involved in determining the accuracy of recollections are distinct metacognitive judgments which also are rooted in distinct component systems. Rubin's references to "belief" map onto the concept of belief in accuracy of one's memory (i.e., rather than belief in the occurrence of the event represented in the memory). He argues that different variables predict both of the latent variables of recollection and accuracy distinctly. For example, Rubin notes that high levels of emotional reliving predict recollection. By demonstrating that belief in accuracy and recollection are separate processes, Rubin's model supports the idea that an individual may have a recollective experience that seems real and legitimate, but that this person may still not believe to be accurate.

Source Monitoring Theory

The source monitoring framework proposes that when people recall a memory, it is attributed to a source or multiple sources (e.g., Johnson et al., 1993); thus, the act of labelling a mental representation as a memory is a form of attribution. These memory attributions, and more generally, attributions of mental experiences to sources, are made at the time of retrieval, and can be made with different levels of both precision and confidence (Johnson et al., 1993). The confidence that one may hold for a piece of information may vary depending on how it was acquired (e.g., from a trusted research report or a stranger on the bus). Source monitoring decisions also include distinguishing external sources from other external sources (e.g., from whom did this information

come?), internal sources from other internal sources (e.g., was this information generated in a dream?), and external from internal sources (i.e., Scoboria, Boucher, et al., 2015).

According to Johnson et al. (1993), at times, source monitoring decisions are made quickly and without much conscious effort (heuristic processing). At other times, people must be deliberate in assessing the sources of their memories (systematic processing). Good source monitoring is contingent upon good encoding of memories, as well as good conditions of retrieval. Further, attributions about source depend on various factors, such as the demands of the situation (e.g., how important is it to be accurate?). Under certain circumstances, the demands of the situation may lead to using unreliable sources; for example, people reconstructing the events from a night in which they blacked out from alcohol consumption tend to make use of less reliable sources and lower their standards with respect to source monitoring (Nash & Takarangi, 2011). Source confusion has also been posited as a factor in social contagion of memories (that is, information related to a memory diffusing through social interactions; Hirst & Echterhoff, 2012; Mitchell & Johnson, 2009).

It seems likely that many social challenges will result in systematic deliberation about the source of the memory, and possibly lead the individual to question both the accuracy of their memory and the novel information. Upon having a memory challenged, one may become less confident in its attributed source (e.g., "what if I did just dream it up?" or "maybe I have an unreliable memory"). This in turn may lead to engaging in source re-attribution. In cases of nonbelieved memories, for example, an event may be disputed by another person. This dispute might reduce confidence in the attributed source

for the memory, and thus lead to source re-attribution (e.g., "maybe I did just dream it all up").

Strategic Regulation of Memory Beliefs

Koriat and Goldsmith (1996) provide a perspective on the social aspects of reporting information in their model of metacognition and decision-making processes that contribute to the regulation of memory reports. They posit that the information that one chooses to state may vary depending on costs associated with outputting the information in that environment, as well as how confident the individual feels in the information retrieved. If the costs of providing recalled information are low (e.g., saying something in a conversation with supportive friends), an individual is more likely to report something for which he/she is not highly confident. In contrast, in high cost scenarios, a person is more likely to withhold information, even if strongly confident. Thus, this person might comply with others. That is, if the costs of responding are high, a person may withhold a believed memory to avoid the consequences of disagreeing. Accordingly, whether information is output is determined in part by the characteristics of the retrieval environment. Mazzoni and Kirsch (2002) extended this model to include decision-making regarding belief in occurrence for events when recollection is absent.

Dissonance Theory

Dissonance theory can be applied to contexts of remembering and social challenge to memories. Festinger (1957) defined dissonance broadly as "the existence of nonfitting relations among cognitions" (p. 3) which results in discomfort. He understood cognition to encapsulate concepts such as knowledge, beliefs, or opinions. Thus, those times where cognitions are inconsistent lead to dissonance, and he argued that people

tend to be motivated to reduce this dissonance, either by changing a behaviour or a cognition to become more consistent.

Festinger (1957) also considered those times in which people are forced to comply with others in ways that may create dissonance. He argued that private beliefs may not change when one is forced to comply with the threat of some kind of punishment or when a reward is suggested for compliance. However, he noted that there are times where forced compliance has led to changes in private beliefs (i.e., accepting what one was initially forced to comply with). That is, in attempting to reduce the dissonance of having a private belief that is inconsistent with a (forced) behaviour, people do, at times, adjust their beliefs to be consistent with the forced behaviour. Festinger's model is relevant in that it proposes that beliefs and opinions may change to become more consistent with one's behaviour, or vice versa. Thus, in those cases where social input leads to dissonance, different results may ensue. The implications of dissonance theory to social challenges to memories are elaborated below.

Scoboria's Model of Processing Social Disconfirmation of Existing Memories

Observations arising from the study of nonbelieved memories led Scoboria (2016) to propose a preliminary model regarding the decision-making that results when memories are challenged by discrepant social feedback (see Figure 1). He posits that social disconfirmation of memories leads to cognitive dissonance of two types; intrapersonal and interpersonal, which leads to decision making about belief in occurrence and public behaviour.

Intrapersonal dissonance results from the discrepancy between the quality of one's memory and the new information received. Decision-making to resolve this aspect

of dissonance occurs via weighing evidence in favour of the memory against evidence in favour of the disconfirmatory social feedback. Elements that contribute to evaluation of the memory include factors such as the qualities of the memory image, the source of the memory, and whether the event was central to the person in question. Elements that contribute to evaluation of the feedback include the quality of the evidence provided by the other person, the credibility of this other person, and whether the feedback is plausible. The model posits that if the quality of the feedback exceeds the quality of the memory, the person will decrease belief in the occurrence of the event. In contrast, if the quality of the memory exceeds the quality of the feedback, belief in the occurrence will be maintained.

Interpersonal dissonance results from the conflict that arises between the two people due to their (perhaps temporary) disagreement about the veracity of the memory. The degree of interpersonal dissonance experienced is influenced by factors such as how important the relationship is to the person whose memory is being challenged, the history of the relationship, disparities in power between the two individuals, how forcefully the feedback is provided, and how well the person who is being challenged can tolerate conflict in this particular relationship. Efforts to resolve the interpersonal dissonance lead to an evaluation of the costs of agreeing vs. disagreeing with the other person.

Individuals are motivated to reduce dissonance (Festinger, 1957), but reducing both intrapersonal and interpersonal dissonance simultaneously may not be possible, leading the person in question to select the reduction of one over the other. For example, one may weigh the feedback provided with the quality of one's memory, and determine that he/she believes the event did in fact occur. However, potential undesirable

consequences of disagreeing with the other person may contribute to the person deciding to agree with the person who engaged in the social challenge. Thus, the two decisional processes (maintaining belief in occurrence vs. decreasing belief in occurrence; and consequences of disagreeing vs. agreeing) are weighed simultaneously, resulting in four potential outcomes: relinquishing belief (agree with informant and decrease in belief in occurrence), complying with feedback (agree with informant but maintain belief in occurrence), defending belief (disagree with informant and maintain belief in occurrence), or denying feedback with reduction in belief (disagree with informant but decrease belief in occurrence).

In two of these outcomes the two decisional processes are congruent. That is, the decision made to either maintain belief is consistent with disagreeing, or relinquishing belief is consistent with agreeing. In the other two outcomes the two decisional processes are incongruent. That is, the decision to maintain belief is not consistent with agreeing with the other person, or the decision to relinquish belief is not consistent with disagreement.

Goals, Research Questions, and Predictions

The research reviewed above illustrates that social input plays an important role in remembering. Although substantial research has focused on the characteristics associated with remembering and the verification of memories under typical circumstances, and on the development of novel false memories in response to social input, relatively little work has examined circumstances under which existing autobiographical memories are challenged by disconfirmatory social feedback. The bodies of work on contested memories and nonbelieved memories are small and have yet to be integrated. Hence there

is no comprehensive understanding of the outcomes that may result from social challenges to memories. Furthermore, no research has examined what factors are related to whether belief in vivid memories will be relinquished or defended in response to social feedback.

In this project, I extend the study of social challenge to existing memories by examining retrospective accounts in which participants describe an instance in which they experienced disconfirmatory social feedback to a memory. The main purpose is to map the landscape of outcomes that result from social challenges to memories. In light of the prior findings regarding reasons for withdrawing belief in memories, the central research questions are as follows: 1) what are the outcomes of social challenge to past events for beliefs and memory reports? And, 2) are these outcomes related to different aspects of the social challenge, memory, or memorial beliefs?

The primary focus of this project is descriptive; thus, I predicted the observation of certain categories in the data. With respect to the outcomes of social challenge, I expected to see the four outcomes predicted by Scoboria (2016). Specifically, I expected to identify instances of defended memories (i.e., maintained belief, disagree), compliance with feedback (i.e., maintained belief but agree), denials of feedback with reduction in belief (i.e., belief reduced but disagree), as well as relinquished/reduced belief in memories (i.e., belief reduced with agreement with others).

I anticipated identifying themes in the descriptions of socially challenged memories involving social dissonance (e.g., complying to avoid being in disagreement), perceived social consequences (e.g., how forceful was the person who engaged in the social challenge), the credibility of the feedback, the credibility of the person giving the

feedback, the credibility of oneself (e.g., how much did the participant trust his/her own memory), as well as the influence of others (e.g., how much access did the person have to corroboration, for example). I also coded for types of social challenge identified in prior work (i.e., Scoboria, Boucher, et al., 2015) to identify the different ways in which disconfirmatory social input was experienced, and examine the types of social influence that are associated with memory challenges and their outcomes.

Some predictions were made with respect to which factors may be related to different outcomes (i.e., relinquished/reduced belief, maintaining belief, etc.). I predicted that events in which participants report relinquished/reduced beliefs (i.e., memories that are identified in the coding and/or the self-report items as having lowered belief in occurrence ratings after some kind of challenge) would show ratings similar to prior work studying nonbelieved memories. That is, I anticipated that items measuring recollective features would be similar to control events (i.e., believed-remembered events), but with lower belief in occurrence ratings than these control events. Based on past research, I expected that relinquished/reduced beliefs would have lower ratings in terms of connectedness, event plausibility, and significance (i.e., Mazzoni et al., 2010) than believed-remembered events, but would have ratings of recollective characteristics similar to these believed-remembered events. I also predicted lower ratings of plausibility compared to believed-not-remembered control events. I anticipated that relinquished/reduced beliefs would have lower ratings for belief in occurrence as well as belief in accuracy compared to events for which participants maintained belief.

Additionally, a number of items were created for this study in an initial effort to explore key aspects of the model to provide preliminary quantitative ratings for facets of

the experience of social challenge. These items were examined through exploratory group contrasts in order to assess whether certain items were related to the decision to relinquish/reduce vs. maintain belief, and also to the decision to agree vs. disagree. Predictions regarding which variables would be related to relinquishing/reducing belief (vs. maintaining belief) were as follows: negative perceived consequences of disagreement, mistrust of one's own memory, being influenced by past events, low access to views of others, feeling threatened, high credibility of information and/or informant, high relationship importance, and feedback provided forcefully. Some possibilities in predicting variables related to agreement (vs. disagreement) with the person(s) providing the feedback about the memory were as follows: negative perceived consequences of disagreement, high importance placed on avoiding disagreement, feeling threatened, high relationship importance, and feedback provided forcefully. The aforementioned hypotheses were examined through either dichotomous comparisons or contrasts of different combinations of the four groups, depending on the patterns of the data.

Study 1

Method

Participants

The final sample for analysis included 285 respondents (*M* age = 32.96, *SD* = 9.79, range = 18-68 years; 56.5% female; 71.9% Caucasian, 8.4% Black/Caribbean, 4.9% Hispanic/Latin American, 4.2% Asian; 91.2% American; 25.6% high school education, 22.8% community college education, 36.8% bachelor's level education, 11.9% Master's level education). Participants were recruited using Amazon Mechanical Turk ("MTurk").

MTurk is a crowd-source tool whereby users can complete work tasks online for payment. When used for research, it permits access to a large number of participants from a variety of ethnic and educational backgrounds. Tasks are posted to MTurk for completion, and once completed the work is verified and the worker paid. MTurk has been used in recent research (e.g., Buhrmester, Kwang, & Gosling, 2011; Chandler, Mueller, & Paolacci, 2014) and has been demonstrated to gather similar results when replicating studies conducted with student samples (e.g., Boucher & Scoboria, 2014). Due to past studies in Scoboria's lab receiving unusable information from participants from certain countries (e.g., India), only individuals living in the United States were sampled. Given that MTurk workers are only identified by ID number, no directly identifying information was collected. Participants who had an experience of having had an autobiographical memory challenged by another person were eligible to complete the study.

Data were collected from 352 participants, in order to sample a wide range of social challenges to memories experienced in the general population. Of these, 3 voluntarily withdrew their participation and their data were removed. Upon removing participants who were off-topic (e.g., describing a time that their memory was "challenged" by a difficult test), the sample consisted of 314 participants. Of the 314, some had incomplete data, but provided sufficient partial information to be coded, and were thus retained in the data-set. Further, because the focus of the study was on cases in which the presence of memories were challenged, participants who described being challenged for a lack of a memory (e.g., being told that they did something for which they reported having no memory whatsoever) were not included.

Materials

Open-ended questions about social challenge. All materials were presented in a fixed order for participants. Participants provided open-ended descriptions of the challenged memory, how it was challenged, by whom, and what was the outcome of this process (see Appendix A for prompts).

Autobiographical belief (belief in occurrence). The three item scale developed by Scoboria et al. (2014) was used to measure belief in the occurrence of autobiographical events. The items (Appendix A) measure belief in the occurrence (1 = *definitely did not happen* and 8 = *definitely happened),* strength of belief in occurrence (1 = *no belief,* 3 = *weak belief,* 5 = *moderate belief,* and 7 = *strong belief),* and the extent to which the event is perceived as a true occurrence (1 = *not at all true* and 7 = *extremely true).* These items were also found to be valid indicators of belief in occurrence as a unique latent variable in Scoboria, Talarico, et al. (2015), with loadings above .90 in an MTurk sample. Cronbach's alphas in the current data ranged from $\alpha = .86$ to .88. Scales were calculated by summing scores and dividing by the number of items (i.e., calculating means). Higher scores indicated higher levels of the variable (i.e., higher ratings of belief in occurrence, recollection, centrality, etc.).

Recollection. The three item scale developed by Scoboria et al. (2014) was used to measure recollection. The items (Appendix A) measure the extent to which the participant remembers experiencing the event (1 = *no memory of event at all,* and 8 = *clear and complete memory of event*), strength of the memory (1 = *no memory,* 3 = *weak memory,* 5 = *moderate memory,* and 7 = *strong memory),* and remembering versus knowing the event (1 = *not at all,* 3 = *vaguely,* 5 = *distinctly,* 7 = *as much as any*

memory). These items were found to be valid indicators of recollection as a unique latent variable in Scoboria, Talarico, et al. (2015), with loadings above .84 in an MTurk sample. Cronbach's alphas in the current data ranged from α = .81 to .90.

Belief in accuracy. The three highest loading items from the belief in accuracy factor described by Scoboria, Talarico, et al. (2015) were selected. The items (Appendix A) measure belief in the accuracy of the details recalled about events (1 = *not at all confident,* and 7 = *completely confident*), the proportion of the memory that is accurate (1 = *not at all accurate*, and 7 = *100% accurate),* and whether there are any doubts about the accuracy of the memory (1 = *a great deal of doubts,* and 7 = *no doubts whatsoever*). These items were found to be valid indicators of belief in accuracy as a unique latent variable in Scoboria, Talarico, et al. (2015), with loadings above .84 in an MTurk sample. Cronbach's alphas in the current data ranged from .68 to .90. Belief in occurrence, recollection, and belief in accuracy items were presented in the same fixed, mixed order (that is, the three items of each of the three categories were mixed together).

Recollective phenomenology. Eight items measured different facets of recollective phenomenology (vividness, visual features, auditory features, reliving, mental time travel, and three items measuring spatial features). These and similar items are used extensively in the literature to measure phenomenological experience associated with the experience of remembering autobiographical events. These ratings have been shown to be related to memories for actual events vs. imagined events (Johnson et al., 1988), and were used in the current work to assess features associated with recollection. Per prior research (e.g., Scoboria, Boucher, et al., 2015) a scale was created for spatial items (i.e., spatial arrangement, location of people, location of objects; α in present study

ranged from .76 to .83) and for re-experiencing items (i.e., re-living, mental time travel; α in present study ranged from .83 to .91).

Centrality of events scale. The seven item short-form of the Centrality of Events Scale (Bernsten & Rubin, 2006) was used. This measure assesses current perceptions of how central a particular event is in one's life. The scale has been used extensively in the literature and has been found to be reliable with undergraduate samples (α = .88; Berntsen & Rubin, 2006). Cronbach's alphas in the current data ranged from α = .93 to .96.

Self-relevance and event plausibility. Three items measured other relevant self-related details pertaining to past events. Specifically, the items (Appendix A) measured personal plausibility (i.e., how possible is it that the event occurred; Scoboria et al., 2004; 1 = *not at all plausible,* and 8 = *extremely plausible*), the importance of the event (i.e., Johnson et al., 1988; 1 = *not at all,* and 7 = *very much),* and connectedness of the event to other aspects of one's life (i.e., Johnson et al., 1988; 1 = *not at all,* and 7 = *very much*). Event plausibility and connectedness have been found to be predictors of belief in occurrence, whereas importance has been demonstrated to predict recollection (i.e., Scoboria et al., 2014)

Items created for the study. Sixteen items were written for this study, based on Scoboria's (2016) model, as potential predictors of outcomes to social challenges to memories. These exploratory items can be grouped into themes: dissonance, perceived consequences of agreeing/disagreeing, importance of the relationship with the person applying social pressure, the credibility of feedback, the credibility of the person(s) providing the feedback, the credibility of oneself, the influence of others, and event

importance before the challenge. Items were measured on *1-7* Likert-style scales. See Appendix A for more detail.

Embedded validity checks. Participants answered two embedded validity checks (i.e., What is 2+3?; Please write the word "dog") to ensure participants were paying attention to the task at hand.

Procedure

MTurk workers read a brief description of the study on the website. They were informed that they were eligible to participate if they could think of a time when they experienced a social challenge to a memory. Individuals who were interested in participating clicked a link which directed them to the Turkitron website (Foster, Michael, & Garry, 2014). Participants filled in the questionnaire online, which took approximately 45 minutes. Participants were referred to the study website and read a letter of information (Appendix B). They then were asked to describe a socially challenged memory. The open-ended questions regarding the social challenge to the memory then followed. Participants were then asked to attempt to categorize themselves in terms of the outcome of the social challenge (i.e., defending, complying, relinquishing, denying, or other).

Participants then rated belief in occurrence, belief in accuracy, recollection, phenomenological ratings (vividness, visual features, auditory features, reliving, mental time travel, and three items measuring spatial features), event plausibility, importance, and connectedness, and the Centrality of Events Scale. Participants were then asked the questions about the dimensions of the social challenge to memory that were created for

this study. Given that these items have not been used before, they were placed last to avoid affecting the ratings of the items that have already been used in past research.

After responding in entirety about the socially challenged event, participants were asked to briefly describe and rate two control events. Specifically, they were asked to think of a believed memory (i.e., something that they believe happened to them that they can remember) from approximately the same time period as the challenged event, and a believed but not-remembered event (e.g., something they believe to be true by hearing about it through family stories, for example, but do not have a memory). For these events, they rated belief in occurrence, belief in accuracy, recollection, recollective phenomenology, event plausibility, importance, connectedness, and centrality of the event. Participants were paid $3.50USD for their participation.

Coding

Development of the coding scheme and coder training. The coding scheme that was created for this study was partially adapted from the coding scheme used by Scoboria, Boucher, et al. (2015) for nonbelieved memories (NBMs). The coding system was developed through an iterative process of idea generation, review, and elimination/condensing of items with experts in Scoboria's lab. See Appendix C for the coding manual.

Two research assistants completed the coding for this project. One conducted the coding for the first three sections. The second research assistant completed the coding that was added post-hoc. Research assistants were trained through meetings and discussion with examples with the PI. In person meetings took place with each coder to review the coding manual and to code example cases together (not included in the inter-

rater coding, approximately two hours each). I remained available to consult when coders had questions.

Descriptive coding. Seven categories were coded as part of the descriptive coding scheme. The rater coded the following: the relationship with the challenger (e.g., parent, sibling, friend, etc.); the number of people involved in the challenge; the modality of the challenge (e.g., face-to-face, over phone); whether input was sought from another person; whether evidence was sought; positive and/or negative emotion in relation to the challenge; and, whether the challenge was "active" or "passive." An active challenge is, for example, when a participant was recounting her memory and another person challenged it. A passive challenge, in contrast, was operationalized as when a challenger did not necessarily intend to challenge (e.g., a spouse telling a story as if an event happened to him, when the participant believes that the event happened to her).

Coding of features of the memory and memory challenge. Scoboria, Boucher, et al. (2015) devised a scheme for coding the reasons that people provide for choosing to withdraw belief in a memory. This system is comprised of eight primary code types (i.e., social feedback, event plausibility, alternative attributions, general beliefs, internal features, external evidence, notions of self/others, and motivation). These were adapted for the more general purpose in the current study of examining how people describe experiencing challenges to memory in general.

On initial reading of the current data, it was evident that some modifications to the coding scheme were needed. Namely, given that the original scheme was designed for times when people withdrew belief in an event, some categories and codes needed to be added that corresponded to other outcomes for memorial decisions (e.g., deciding to

maintain belief in occurrence). Further, codes were added that accounted for assumptions made about the self vs. others (e.g., attributing one's own memory to an external source vs. attributing the challenger's memory to an external source). Codes were also added or altered in some cases to account for when individuals indicated that a piece of information was in support of memory vs. in opposition to memory (e.g., finding evidence in support of one's memory vs. finding evidence in opposition to one's memory). See Table 1 for definitions and examples of the final categories.

Coding based on Scoboria's proposed model. In order to compare subjective categorization of the outcomes of events with the content of narratives, a trained assistant familiar with the concepts of belief in occurrence from her work on other projects coded whether she thought the participant maintained vs. reduced belief in occurrence, and whether the participant publicly agreed or disagreed. The coder noted whenever she felt as if she was guessing in those cases where participants' narratives were unclear or lacking in detail.

Categories added post-hoc. Following review of the transcripts, three additional concepts of interest emerged that were coded. These codes were as follows: presence of corroboration by another person; presence of doubt that corresponded to eventually maintaining belief in occurrence; and, presence of doubt that corresponded to remaining in a state of doubt.

Inter-rater reliability. The inter-rater coding was completed by the PI, who coded the transcripts for 54 randomly selected participants (Table 2). Note that kappa was not calculated in some cases when agreement was high (i.e., above 95% agreement).

Table 1

Coded Features of Challenged Memories: Brief Description and Examples from the Data

Category	Description	Brief example
Social feedback		
Told did not occur	Feedback that the event did not occur, and/or others deny event*	"…still claims it did not happen."
Told could not occur	Feedback that event could not have occurred*	"She swears that there was no way at that age I would have gotten so far from home without someone noticing"
Told not likely to have occurred	Feedback that the event could have occurred, but it is unlikely*	"She said things like "No, I don't remember that. I wouldn't do that. Are you sure?..."
Lack of corroboration	Feedback provided that the memory cannot be confirmed*	"my husband claims not to have remembered the incident…"
Told not there to witness	Feedback that was not present to witness event*	"…she said I was not at that wedding."
Told happened someone else	Feedback that the event (or event features) happened to someone else*	"My identical twin sister says that she won the contest."
Told happened differently	Feedback that details within the event happened differently*	"My mother claimed that the person who brought me home was someone different than the person I remember driving me home."
Pressured by another person	Feedback appears motivated (memory poses consequences for other)*	"If I told someone else about it, he might face criminal charges or a damage to his reputation."
Disconfirming non-verbal feedback	Intentional non-verbal feedback (e.g., look of disbelief, laughing, etc.)*	"I was telling the story to my friend and she just laughed…"
Others unavailable	Does not receive feedback because key other(s) unavailable*	"There is no third party to verify either person."
Refused to speak of event	Seeks feedback but other(s) refuse to provide (other may be motivated to avoid)*	"My father refuses to admit anything either…"
Another person did not provide feedback	Does not seek feedback and others do not provide it*	"They could stuff it and if they brought it up again they would get an earful from me"
Disconfirmatory external evidence		
Obtained	Seeks or confronted with evidence that threatens the validity of the memory*	"…he showed me some pictures proving that I was wrong."
Could not be obtained	Could not find evidence that threatens the validity of the memory	"I was fired and lost my job even though their[sic] was no proof."
Confirmatory external evidence		
Obtained	External evidence that validates the memory is obtained	"I went through the photos I had taken on this trip and sure enough there were photos of us in [city]."
Could not be obtained	External evidence that validates the memory is absent or cannot be obtained*	"After going through pictures and discovering that there weren't any, I am sticking to my guns on the memory…"

Category	Description	Brief example
Internal features		
Weak memory	Something unusual about memory (features disorganised, feels unreal, etc.)*	"The memory is still fuzzy."
Typical/vivid memory	Memory described as normal/vivid	"I just have a very vivid memory of the situation."
Subjective plausibility		
Implausible	States event is impossible/implausible based on feelings, tastes or opinions*	"it's really unlike me and I would not do such a thing no matter what."
Plausible	States that event is possible/plausible based on feelings, tastes, or opinions*	"It makes sense, and sounds like something my grandpa would have done…"
Objective plausibility		
Implausible	Event judged impossible/implausible for commonly accepted axioms of reality*	"…such a toy could never have been possible…"
Plausible	Event judged possible/plausible for commonly accepted axioms of reality*	(inferential based on coder's perceptions of whole narrative)
Internal attribution (self)		
Awake	Memory may have resulted from fantasy, imagination, etc.*	"…thought that I just had an overactive imagination."
Asleep	Memory may have resulted from a dream or nightmare*	"…it was no doubt just a dream."
Altered consciousness	Memory may have resulted from another cause (hallucination, substance, etc.)*	"…I had been drinking most of the night…"
Internal attribution (others)		
Awake	Challenger's memory may have resulted from fantasy, imagination, etc.*	"I felt completely sure they were dramatizing what was really done."
Asleep	Challenger's memory may have resulted from a dream or nightmare*	n/a in this data
Altered consciousness	Challenger's memory may have resulted from another cause (hallucination, substance, etc.).*	"…as she was on many drugs…"
External attribution		
Re. self	Participant's memory may have resulted from an external source (movie, T.V., book, etc.).*	"…they tell me I must have seen it on TV and then had a dream about it."
Re. other	Challenger's memory may have resulted from an external source (movie, T.V., book, etc.).*	n/a in this data
General beliefs (support)		
Memory and age	Belief memories cannot occur when very young or unreliable from childhood*	"I was a year older than her. I think that made me remember it better."

Category	Description	Brief example
Memory and behaviour	Belief that true memories should have an enduring influence*	"So to some extent, the event I described (and others like it) have indeed shaped my present behaviors with regard to attempting to remember events and issues accurately...."
Memory ability	Belief of his/her general ability to accurately recall events, or another person's general inability to better recall events.*	"It's like I'm the historian of the family…"
Memory integrity	Belief in general memory ability, quality of own memory; beliefs that memories can be false; can result from expectations; should be salient if "important", etc.*	"I think that my mom doesn't remember because it wasn't an important thing for her. But it was a big deal to me as a kid and something I'm more likely to remember."
General beliefs (in opposition)		
Memory and age	Belief memories cannot occur when very young or unreliable from childhood*	"…that my mom was right since I was only 12 years old at the time…"
Memory and behaviour	Belief that true memories should have an enduring influence*	"she has a deep hatred for my mother, and I imagine that this incident plays a strong part in that feeling…"
Memory ability	Belief of his/her general inability to accurately recall events, or another person's general ability to better recall events.*	"Even today, my mother is 92 (she also has a pretty good memory) and she maintains I never saw the police."
Memory integrity	Belief in general memory ability, quality of own memory; beliefs that memories can be false; can result from expectations; should be salient if "important", etc.*	"Now that I know that my memory can be blurred and changed over time without me being aware, it is a very scary feeling."
Self-image		
Inconsistent	States event (or features) is at odds with whom they regard themselves to be*	"I later blamed myself and was ashamed that I was so forgetful, but that was totally uncharacteristic of me…"
Consistent	States event (or features) is consistent with whom they regard themselves to be*	"When I was younger I would take more risk and gamble and try new things like start a new business…"
Image of other		
Inconsistent	States event (or features) is at odds with the image they hold of other(s)*	"My mom wouldn't lie to me, so I thought I must have made it up…"
Consistent	States event (or features) is consistent with the image they hold of other(s)*	"I also remember seeing this as typical of my Dad and Step-mom's way of dealing with things--critically and without much support."
Corroboration		
Confirms memory	Received feedback from others that confirms the memory.	"I also consulted with a few other friends who were present for the event to see if their memory matched with mine or the girl's, and all of their memories matched mine."
Confirms challenger perspective	Received social feedback that confirms the challenger's story	"I almost didn't believe it until a friend told me they could hear us from the other room."

Category	Description	Brief example
Doubt		
Doubted, maintained belief in occurrence	Participant noted feeling doubt/lowered confidence at some point in time, but maintained belief in occurrence	"[the challenge] made me question my own memory and doubt myself. I still believed however that I had indeed brought the blades back up to our apartment from my parents' house."
Doubted and still doubt	Participant described still being in a state of doubt	"She doesn't have a good memory herself, so it's possible she was mistaken, but it was such a big event, and I was so young, that I've started to doubt that it's real… I think I believe her, but I'm still not entirely certain."
Doubted and completely gave up belief	Participant described coming to doubt his/her memory and relinquishing belief in occurrence	"Once I talked to my sister, I started to see that perhaps it didn't happen as I remembered it. That I was wrong."

Note. Asterisk denotes that definition was taken either verbatim or somewhat altered from Scoboria, Boucher, & Mazzoni (2015, pp. 550-551). Brief examples come from the current data-set.

Table 2

Agreement Rate and Kappa for Coding

Category	Agreement rate	Kappa
Relationship with challenger	98.4%	
Number of people	98.1%	
Modality of the challenge	100%	
Seeking input	94.4%	.87
Seeking evidence	94.4%	.77
Presence of social feedback	100%	
Type of social feedback	90.1%-100%	.88, .84*
Disconfirmatory evidence	98.1%	
Confirmatory evidence	96.3%	
Internal features	85%	.70
Subjective plausibility	98.1%	
Objective plausibility	96.3%	
Presence of internal alternate attributions (self)	90.7%	.74
Presence of internal alternate attributions for others	96.3%	
External alternate attributions	100%	
General beliefs (in support)	81.5%	.64
General beliefs (in opposition)	81.5%	.71
Reduce vs. maintain belief in occurrence	92.6%	.77
Public agreement vs. disagreement	92.6%	.83
Corroboration	96.3%	
Doubt but eventually maintain belief in occurrence	96.3%	
Doubt and remain in doubt	96.3%	

Note: Kappa only calculated in cases where agreement was less than 95%. Asterisk indicates that kappa was calculated for social feedback categories with higher rates of disagreement.

Categories that were dropped from analyses due to low agreement or low kappas are as follows: challenge type, emotion, and motivation. In cases of disagreement, the main coder's (who coded the whole data set) codes were used (e.g., as per Bauer, Tasdemir-Ozdes, & Larkina, 2014).

Data Cleaning for Quantitative Data

Handling of missing data. Analyses were conducted using both SPSS v.22 and JASP 0.7.0 Beta3 (an open-source statistical program that runs analyses in R). For the belief in occurrence, belief in accuracy, recollection, spatial, re-experiencing, and centrality of event scales, individual participants' means on the remaining items of that scale were used to replace missing item responses. This procedure was deemed appropriate for scaled scores because of the low amount of missing data (i.e., 2.11% or lower per variable) and adequate Cronbach's alphas, as well as non-significant Little's tests with the exception of the CES. Five imputations were run to explore if the missing data held any implications for the use of the CES, and it was found that the imputed versions deviated from one another by no more than .001 on the scale.

Outliers. Outliers were analyzed for the quantitative analyses in several steps. First, I assessed that every participant retained in the sample passed the embedded validity checks. Second, to assess for response sets, I calculated each participant's standard deviation as a within subject variable. Only one case was noted to have an average within-subjects standard deviation below one, but was not removed from the quantitative analyses given that it was not corroborated by the following multivariate outlier analysis and did not influence the findings.

Next, Mahalanobis distance scores were calculated for the central dependent variables (i.e., three belief in occurrence items, three belief in accuracy items, and three recollection items for challenged events) and were examined with a cut-off of X^2 probability = .001. Twenty-one multivariate outliers were identified using this manner. Hypothesized and exploratory analyses were conducted with and without these cases, and inclusion did not affect the pattern of the results. Thus the outliers were retained as it is preferable to retain data whenever possible.

Results

First, I describe characteristics of the challenges and the information that participants used in their decision-making about the event. Then, I discuss participants' ratings of themselves into "outcomes" resulting from the challenge, as per Scoboria's model, followed by the independent coding related to these outcomes. Then, within-subjects event comparisons for participants who reduced belief in the occurrence of challenged events are described. Finally, I describe differences between the four outcome groups on variables related to memorial beliefs, recollection, the self, and the social challenge.

Features of the Memory and Memory Challenge

Characteristics of the challenge. With respect to who challenged the memory, the most frequently mentioned were immediate family (e.g., parent, sibling; *n* = 105) intimate partner (*n* = 85), and friend (*n* = 76; see Table 3 for frequencies). In most cases, the challenge was reported as coming from a single individual (*n* = 235) rather than multiple people. The most frequently mentioned way of seeking input was from another person (i.e., not the challenger; *n* = 46). The most common types of social challenge were

Table 3

Frequency of Endorsement of the Narrative Coding Variables: Descriptive Coding

Code	Subcode	Frequency of endorsement (%)
Who challenged the memory?	Intimate partner	85 (29.82%)
	Extended family	10 (3.51%)
	Sibling	38 (13.33%)
	Parent	108 (37.90%)
	Friend	76 (26.67%)
	Co-worker/classmate	12 (4.21%)
	Teacher/boss/authority figure	4 (1.40%)
	Other	17 (5.96%)
How many people were involved in challenging the memory?	One	235 (82.46%)
	Two	20 (7.02%)
	Three	5 (1.75%)
	Four	1 (0.35%)
	Unspecified multiple	23 (8.07%)
Input sought	Sought input (unspecified)	3 (1.05%)
	Sought input from person other than challenger	46 (16.14%)
	Sought input from challenger (later time)	8 (2.80%)
	Sought input from both	2 (0.70%)
Evidence sought	Sought evidence	47 (16.49%)

Note. $N = 285$. Percentages may not total 100%, as participants could receive multiple codes in many categories.

participants identifying that they were told that the event did not happen (n = 117) or happened differently than they remembered (n = 159; see Table 4 for frequencies).

Features that supported or opposed the challenge. Participants endorsed a wide range of influences. Some of these were frequent; others were less frequent, but nonetheless interesting. In 47 cases, participants described seeking evidence to help make their decision regarding their memory. In examining the types of evidence that were or were not obtained (i.e., disconfirmatory or confirmatory evidence), obtaining confirmatory evidence was the most frequently stated (n = 33). In addition to external evidence, some participants also commented on the quality of their memory as influencing their outcome. In some cases, participants mentioned having a typical or vivid memory (n = 91), and some described "weak" or "fuzzy" memory (n = 12). With respect to plausibility, the majority of events (n = 281) were deemed as being objectively possible, plausible, or logical by the coder.

Several attributions were made by participants about where a memory may have come from other than genuine experience. The most frequent was attributing the memory to altered consciousness (n = 15). Likewise, several attributions were made by participants about where the challenger's memory may have come from; the most frequent was also attributing the challenger's memory to altered consciousness (n = 21). External attributions (e.g., about a memory being derived from something such as a TV show) were not frequently reported (n = 2).

With respect to memories being consistent/inconsistent with the image of self, statements about events being consistent (n = 12) were numerically more frequent than statements about events being inconsistent (n = 5) with participants' self-image.

Table 4

Features of the Memory and Memory Challenge (Based on Statements Made by Participants)

Code	Subcode	Freq. (%)
Social feedback	Told did not occur	117 (41.05%)
	Told impossible	20 (7.02%)
	Told implausible	6 (2.11%)
	Lack of corroboration	27 (9.47%)
	Not witnessed	4 (1.40%)
	Told happened to someone else	16 (5.61%)
	Told happened differently	159 (55.79%)
	Pressured	60 (21.05%)
	Disconfirming non-verbal	3 (1.05%)
	Lack of feedback to confirm/deny	15 (5.26%)
Disconfirmatory external evidence	Obtained	5 (1.75%)
	Could not be obtained	4 (1.40%)
Confirmatory external evidence	Could not be obtained	6 (2.11%)
	Obtained	33 (11.58%)
Internal Features	Weak memory	12 (4.21%)
	Typical/vivid memory	91 (31.93%)
Subjective Plausibility	Impossible/Implausible/Illogical	16 (5.61%)
	Possible/Plausible/Logical	4 (1.40%)
Objective Plausibility	Impossible/Implausible/Illogical	3 (1.05%)
	Possible/Plausible/Logical	281 (98.60%)
Internal Attribution (Self)	Imagination/ Confabulation/ Exaggeration, etc.	10 (3.51%)
	Dream/Nightmare	11 (3.86%)
	Altered consciousness	15 (5.26%)
	Other	8 (2.81%)
	Some combination (of two of the above)	5 (1.75%)
Internal Attribution (Others)	Imagination/ Confabulation/ Exaggeration, etc.	6 (2.11%)
	Dream/Nightmare	0 (0%)
	Altered consciousness	21 (7.37%)
	Other	7 (2.46%)
	Some combination (of two of the above)	3 (1.05%)
External attributions	Re. self	2 (0.70%)
	Re. other	0 (0%)
General beliefs supporting participant's view	Memory and age	8 (2.81%)
	Memory and behaviour	8 (2.81%)
	Memory ability	47 (16.49%)
	Memory integrity	131 (45.97%)
General beliefs in opposition to participant's view	Memory and age	32 (11.23%)
	Memory and behaviour	2 (0.70%)
	Memory ability	16 (5.61%)
	Memory integrity	32 (11.23%)
Self-image	Inconsistent	12 (4.21%)
	Consistent	5 (1.75%)
Image of other	Inconsistent	8 (2.81%)
	Consistent	35 (12.28%)
Corroboration	Confirms memory	30 (10.53%)
	Confirms challenger's perspective	7 (2.45%)
Doubted, maintained belief in occurrence		74 (25.97%)
Doubted, remained in state of doubt	Doubted and still doubt	40 (14.04%)
	Doubted and completely gave up belief	23 (8.07%)

Note. N = 285. Percentages may not total 100%, as participants could receive multiple codes per category.

Participants also noted that events were more frequently consistent with their image of another person (n = 35), rather than inconsistent (n = 8). Participants also sometimes invoked general beliefs about memory abilities and memory integrity, both in support (n = 131) of and in opposition (n = 32) to their original memories, and also often commented on beliefs about memory ability and age in opposition to their original memories (e.g., stating that he/she would be too young to remember the event correctly; n = 32). With respect to statements made about doubt, 74 participants mentioned doubting themselves but coming to maintain belief in occurrence, 40 mentioned doubting and remaining unsure, and 23 noted doubting and then coming to relinquish belief in the occurrence of their memory.

Items related to characteristics of the relationship and the challenge. Sixteen items measured participants' perceptions of the social challenges (see Table 5 for means and *SD*s). Items were rated on a seven-point Likert-scale. When looking at the overall ratings (i.e., not examining group differences), there were high mean ratings (i.e., above 5 on a 1-7 scale) for the following variables: being bothered by the memory disagreement, ease of disagreement, importance of the relationship with the challenger, trust of the challenger, trust of one's own memory, and discussion of the event with others. There were low mean ratings (i.e., below 3 on a 1-7 scale) for the following variables: wondering if memory came from an internal/external source and feeling like the challenger was attempting to threaten them.

Proposed Outcomes of Social Challenges to Memory

Self-ratings. Participants were asked to select one of four categories, or "other" when the four options did not capture their experience. See Figure 2 for participant's self-

Table 5

Means and Standard Deviations of Exploratory Items

Item	M (SD)	Skew.	Kurt.
1. At the time, how much did it bother you that your memory disagreed with what the other person(s) said or did?	5.62 (1.62)	-1.12	0.53
2. Currently, how much does it still bother you that your memory disagreed with what the other person(s) said or did?	3.84 (2.09)	0.06	-1.30
3. At the time, how easy was it for you, in general, to disagree with the person(s) who challenged your memory?	5.51 (1.82)	-1.05	-0.01
4. How much did your past experiences with the person(s) who challenged your memory influence your behaviour, such as what you said or did in reaction to the challenge?	4.61 (1.99)	-0.50	-0.83
5. How forceful was the challenge the person(s) made?	4.72 (1.79)	-0.50	-0.68
6. How important was it for you to avoid disagreeing with the other person(s)?	3.34 (2.09)	0.42	-1.12
7. How important was your relationship with the person(s) who challenged your memory at that time?	5.62 (1.79)	-1.27	0.63
8. How credible was the information that the person(s) provided when challenging the memory?	3.46 (1.96)	0.24	-1.03
9. How credible was the person(s) who provided the social challenge?	4.78 (1.88)	-0.53	-0.71
10. At the time that the person(s) challenged your memory, in general how much did you trust him/her/them?	5.11 (1.82)	-0.81	-0.24
11. How much did you trust your own memory, in general, at the time the other person challenged your memory?	6.06 (1.35)	-1.56	1.93
12. To what extent did you wonder if your memory might have come from some source other than personal experience? Some examples of other sources include having been told about it by someone else, from your imagination, a dream, or from a TV show?	2.19 (1.71)	1.28	0.40
13. How much did you seek out information from anyone else after your memory was challenged?	3.15 (2.31)	0.49	-1.34
14. How much did you discuss the event with others after your memory was challenged?	5.03 (1.79)	-0.43	-0.96
15. To what extent did you feel like the person(s) who challenged your memory was/were attempting to threaten you?	2.21 (1.67)	1.17	0.17
16. How important was this memory to you before it was challenged?	4.23 (1.98)	-0.13	-1.12

Note. $N = 285$. All ratings ranged from 1-7. This information is included to describe the characteristics of these newly written items.

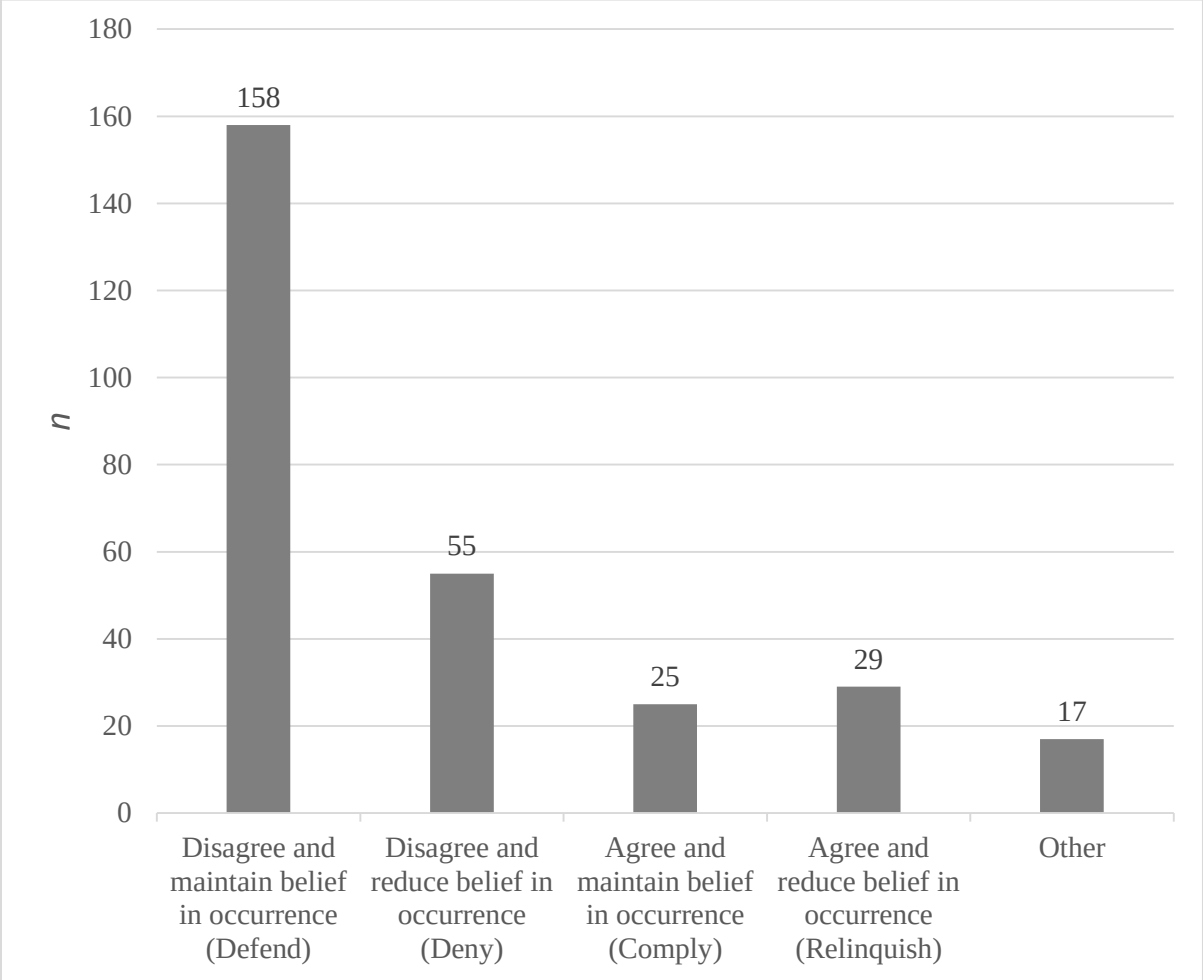

Figure 2. Participants' self-endorsed outcomes of social challenge.
Note. n = 284 (missing data for one participant).

ratings. Of note, participants endorsed all of the categories. Participants chose to describe experiences leading to reduction and maintenance of belief in occurrence, and public agreement and disagreement, respectively. As noted above, in two of these groups, the private belief and public behaviour were consonant. One of these groups contained the majority of participants (n = 158; 56%), where participants indicated that they maintained belief in occurrence and disagreed with the challenger. The other consonant group contained twenty-nine participants (10%) who indicated that they reduced belief in occurrence and agreed. In contrast, in two of these outcome groups, the private belief and public behaviour were discordant. Fifty-five participants (19%) described themselves as reducing belief in occurrence internally but that they expressed disagreement. Twenty-five participants (9%) indicated that they maintained belief in occurrence but agreed. Overall, 28% of the sample endorsed some kind of dissonant outcome.

Only 6% of participants categorized their experience as "other." They were asked to provide a description of their perceived outcome. Some of the descriptions involved a lack of output: for example, the event was never discussed (n = 1), and participants did not have any public reaction (n = 2). Many of these narratives contained some description of agreeing to disagree/not argue: for example, the relevant parties agreed to disagree (n = 1), they noted that the result was not of consequence (n = 3), they opted not to argue (n = 1), and they left room for people to have different "realities" (n = 2). Such cases potentially indicate minimization of the meaning of the event within the context of the relationship. Some of the participants noted that they still felt confused (n = 2). Because of the small size of this group, it is not included in subsequent analyses.

Self-ratings compared to coder's ratings. The coded ratings of maintenance/reduction of belief in occurrence, and expressions of agreement/disagreement were compared to the ratings made by participants (see Table 6). As can be seen, the research assistant's coding matched up well for maintaining belief in occurrence (178 matches, 5 mismatches), and public agreement (52 matches, 2 mismatches). The coding for public disagreement matched participants' self-codes at a lower but still acceptable level (i.e., 191 matches, 22 mismatches).

There was a more substantial number of discrepancies with respect to coding for reduction in belief in occurrence (i.e., 38 coding matches, 46 coding mismatches). In order to assess whether these coding mismatches were more common in certain groups, participants' ratings of themselves into one of the four outcomes were compared with the independent coder's ratings (see Table 6). Participants who identified *disagreeing and reducing belief in occurrence* were often judged by the rater as *disagreeing but maintaining belief in occurrence*. One possible explanation for the disagreement between the coder's ratings of belief in occurrence vs. participants' own codes is that participants may not have given as much overt detail in their narratives regarding these decisions to reduce belief, hindering the coder's ability to note these thoughts or behaviours. This is not surprising, as decisions regarding belief are theorized to be internal and thus can be expected to be difficult to perceive within general event descriptions.

Features of the Memory and Memory Challenge: Within-Subjects and Group Comparisons

Reduced belief in occurrence events vs. control events. Here, analyses were focused on the ratings of people who self-endorsed reducing belief in occurrence for

Table 6

Four Outcome Group Ratings: Participants Codes Compared to Independent Rater's Codes

	Self-rating				
Coder's code	Disagree & Maintain B.occ	Disagree & Reduce B.occ	Agree & Maintain B.occ	Agree & Reduce B.occ	Total
Disagree & Maintain B.occ	144	38	0	0	182
Disagree & Reduce B.occ	1	8	0	2	11
Agree & Maintain B.occ	13	5	21	3	42
Agree & Reduce B.occ	0	4	4	24	32
Total	158	55	25	29	267

Note. $n = 267$ because participants who rated themselves as "other" were not included in this analysis. Belief in occurrence abbreviated to "B.occ."

challenged events (called "challenged-reduced events," n = 84). Note that for paired sample comparisons (i.e., whereby repeated measures data are examined), standard deviations and correlations between items/scales are used in effect size calculations in order to avoid over-estimation of effect size (i.e., Dunlop, Cortina, Vaslow, & Burke, 1996, as cited in Becker, 2000). Thus, Cohen's *d* scores were calculated using Wiseheart's (2013) formula, derived from Morris and DeShon's (2002) equations to account for the correlation between repeated measures items. Also note that in general, in these analyses and the analyses to follow, rather than using null hypothesis significance testing, I have examined mean differences, 95% confidence intervals (CI) of the difference, and effect sizes, as recommended by Cumming (2012). This approach is especially appropriate for some of the contrasts below (e.g., contrasting one group with the pooled remaining three groups), due to their violation of the assumptions of ANOVA of equal cell sizes and homogeneity of variance. All 95% CIs are based on 1000 bootstrap replicates. See Tables 7 and 8 for within-subjects comparisons.

Recollection and belief in occurrence ratings were higher for believed memories compared to challenged-reduced events: recollection (M_{diff} = 0.83, 95% CI_{diff} [0.52, 1.15], Cohen's d = 0.60); belief in occurrence (M_{diff} = 1.08, 95% CI_{diff} [0.69, 1.48], d = 0.63), as predicted. See Tables 7 and 8 for *M*s and *SD*s. Belief in accuracy ratings were also higher for believed memories (M_{diff} = 1.81, 95% CI_{diff} [1.45, 2.17], d = -1.15). When comparing these events, means for some recollective characteristics were similar (i.e., spatial, auditory, re-experiencing). However, vividness and visual detail ratings were higher for believed memories compared to challenged-reduced events: vividness (M_{diff} = 0.66, 95% CI_{diff} [0.05, .45], d = -0.41), and visual details (M_{diff} = 0.55, 95% CI_{diff} [0.31, 0.90], d = -

Table 7

Within-Subjects Comparisons for People who Identified Themselves as Reducing Belief in Occurrence with Believed Remembered Events

Dependent Variable	Outcome Group	*Mean*	*SD*	*95% CI*
*Recollection (*n* = 83)	Challenged-reduced event	5.51	1.34	5.21, 5.80
	Believed remembered event	6.35	0.90	6.14, 6.52
Vividness (*n* = 82)	Challenged-reduced event	5.16	1.54	4.83, 5.50
	Believed remembered event	5.82	1.10	5.57, 6.06
Visual details (*n* = 83)	Challenged-reduced event	5.46	1.40	5.16, 5.74
	Believed remembered event	6.01	1.22	5.75, 6.27
Sound (*n* = 82)	Challenged-reduced event	4.50	2.13	4.05, 4.97
	Believed remembered event	4.31	2.10	3.82, 4.77
*Location/ Spatial (*n* = 83)	Challenged-reduced event	5.23	1.29	4.97, 5.50
	Believed remembered event	5.57	1.19	5.33, 5.81
*Re-experiencing (*n* = 83)	Challenged-reduced event	5.00	1.60	4.64, 5.34
	Believed remembered event	5.40	1.27	5.12, 5.65
*Belief in occurrence (*n* = 83)	Challenged-reduced event	5.94	1.66	5.59, 6.28
	Believed remembered event	7.02	0.75	6.83, 7.17
*Belief in accuracy (*n* = 83)	Challenged-reduced event	4.54	1.45	4.20, 4.87
	Believed remembered event	6.35	0.89	6.15, 6.53
Connectedness (*n* = 82)	Challenged-reduced event	4.34	1.99	3.90, 4.77
	Believed remembered event	4.56	1.97	4.12, 4.99
Plausibility (*n* = 80)	Challenged-reduced event	6.78	2.00	6.29, 7.20
	Believed remembered event	7.54	0.86	7.34, 7.70
Importance (*n* = 83)	Challenged-reduced event	4.05	1.92	3.52, 4.37
	Believed remembered event	3.96	2.04	3.68, 4.46
*Centrality of event (*n* = 83)	Challenged-reduced event	2.42	1.05	2.19, 2.66
	Believed remembered event	2.42	1.17	2.17, 2.68

Note. An * indicates that this is a scale (not individual item).

Table 8

Within-Subjects Comparisons for People who Identified Themselves as Reducing Belief in Occurrence with Believed Not-Remembered Events

Dependent Variable	Outcome Group	*Mean*	*SD*	*95% CI*
*Recollection (*n* = 83)	Challenged-reduced event	5.51	1.34	5.19, 5.80
	Believed not remembered event	2.07	1.24	1.81, 2.34
Vividness (*n* = 80)	Challenged-reduced event	5.15	1.56	4.79, 5.48
	Believed not remembered event	1.71	1.28	1.44, 2.01
Visual details (*n* = 83)	Challenged-reduced event	5.46	1.40	5.14, 5.76
	Believed not remembered event	2.21	1.57	1.89, 2.56
Sound (*n* = 81)	Challenged-reduced event	4.51	2.14	4.07, 4.95
	Believed not remembered event	1.62	1.35	1.37, 1.93
*Location/ Spatial (*n* = 83)	Challenged-reduced event	5.23	1.29	4.94, 5.48
	Believed not remembered event	2.31	1.61	1.97, 2.65
*Re-experiencing (*n* = 83)	Challenged-reduced event	5.00	1.60	4.64, 5.35
	Believed not remembered event	2.01	1.54	1.68, 2.35
*Belief in occurrence (*n* = 83)	Challenged-reduced event	5.94	1.66	5.58, 6.31
	Believed not remembered event	5.44	1.55	5.12, 5.78
*Belief in accuracy (*n* =83)	Challenged-reduced event	4.54	1.45	4.22, 4.85
	Believed not remembered event	3.05	1.21	2.79, 3.31
Connectedness (*n* = 83)	Challenged-reduced event	4.36	1.99	3.90, 4.76
	Believed not remembered event	2.71	2.01	2.28, 3.16
Plausibility (*n* = 81)	Challenged-reduced event	6.74	2.01	6.31, 7.14
	Believed not remembered event	6.28	1.87	5.91, 6.67
Importance (*n* = 83)	Challenged-reduced event	4.05	1.92	3.67, 4.48
	Believed not remembered event	1.96	1.60	1.64, 2.33
*Centrality of event (*n* = 83)	Challenged-reduced event	2.42	1.05	2.19, 2.66
	Believed not remembered event	1.46	0.74	1.31, 1.64

Note. An * indicates that this is a scale (not individual item).

0.35), which is not unusual considering past research (i.e., despite meaningful statistical differences, visual ratings and vividness ratings are still fairly high for NBMs; e.g., Scoboria, Mazzoni, & Boucher, in press). I also predicted that challenged-reduced events would be lower than believed-remembered events on variables such as connectedness, plausibility, importance, and centrality. The only difference observed for these variables was for the plausibility item, with believed-remembered events being rated higher (M_{diff} = 0.76, 95% CI_{diff} [0.28, 1.24], d = 0.38). Thus, in these data, challenged events for which people reported reduced belief in occurrence were not readily differentiated from believed-remembered events by ratings of centrality, connectedness, or importance.

I also predicted that challenged-reduced events would be lower on plausibility for believed-not-remembered events. The plausibility ratings had one of the only differences upon comparing the data with outliers retained vs. removed. That is, with outliers removed, the 95% CI of the mean difference of plausibility ratings did not overlap with zero. However, means appeared to be quite similar between outliers being retained (challenged-reduced M = 6.74; believed-not-remembered M = 6.28) and outliers being removed (challenged-reduced M = 6.92; believed-not-remembered M = 6.36). Given that this particular finding is not central to the study, the decision was made to continue looking at the data with outliers retained.

Challenged-reduced events vs. challenged-maintained events. Between-groups comparisons were conducted and as predicted, challenged-reduced events had lower belief in occurrence ratings (M = 5.91, SD = 1.67 vs. M = 7.01, SD = 0.83, 95% CI_{diff} [0.80, 1.40], d = 0.95) and belief in accuracy ratings (M = 4.52, SD = 1.45 vs. M = 6.46, SD = 0.93, 95% CI_{diff} [1.64, 2.22], d = 1.73) than challenged events for which

participants identified maintaining belief in occurrence. Challenged-reduced events looked somewhat like NBMs in past literature, but not for items such as belief in occurrence, which is not meaningfully lower than recollection for any of the four outcome groups in the present study. In other studies (e.g., Scoboria et al., 2014), recollection ratings tended to exceed belief in occurrence ratings for NBMs. This is not the case for the challenged-reduced events, which are the events that I thought would most closely mirror NBMs from other research. However, interestingly, belief in accuracy was lower than recollection for these challenged-reduced events (M_{diff} =-0.97, 95% CI_{diff} [-1.25, -0.69]. d = -0.78), suggesting that it was belief in accuracy that was more readily targeted/undermined by social challenge in the data collected.

Four outcome group comparisons. Due to patterns observed in the data, additional comparisons were conducted with the four self-selected outcome groups. See Table 9 for means, *SD*s, and 95% CIs.

The following comparisons were made between the agreed/reduced group and remaining three groups combined. Predictably, those in the agreed/reduced group had lower ratings of belief in occurrence (M = 4.95 vs. M = 6.87, 95% CI_{diff} [-2.35,-1.48], d = -1.71). Similarly, this group also had significantly lower ratings of belief in accuracy (M = 3.36 vs. M = 6.15; 95% CI_{diff} [-3.23, -2.35], d = -2.44). Other differences on the ratings of items from past literature were compared. As above, participants who agreed/reduced had lower ratings of recollection (M = 4.75 vs. M = 6.37, 95% CI_{diff} [-1.23, -2.01], d = -1.61) as well as lower ratings of subjective plausibility (M = 5.55 vs. M = 7.62, 95% CI_{diff} [-2.56, -1.58], d = -1.63).

Table 9

Between-Subjects Comparisons for Belief in Occurrence, Belief in Accuracy, Recollection and Memory Characteristics

Dependent Variable	Disagreed/ Maintain B.occ (Defend) *n* = 158 *M (SD)* [95% CI]	Disagreed/ Reduce B.occ (Deny) *n* = 55 *M (SD)* [95% CI]	Agreed/ Maintain B.occ (Comply) *n* = 25 *M (SD)* [95% CI]	Agreed/ Reduce B.occ (Relinquish) *n* =29 *M (SD)* [95% CI]
*Belief in occurrence	7.07 (0.76) [6.90, 7.24]	6.42 (1.00) [6.13, 6.70]	6.61 (1.15) [6.18, 7.04]	4.95 (2.20) [4.56, 5.35]
*Belief in accuracy	6.58 (0.74) [6.42, 6.73]	5.13 (1.06) [4.87, 5.40]	5.69 (1.51) [5.31, 6.08]	3.36 (1.40) [3.00, 3.72]
*Recollection	6.58 (0.79) [6.42, 6.73]	5.89 (0.85) [5.63, 6.15]	6.13 (1.03) [5.75, 6.52]	4.75 (1.74) [4.39, 5.10]
*Vividness	6.06 (1.14) [5.86, 6.27]	5.44 (1.18) [5.10, 5.79]	5.76 (1.56) [5.25, 6.27]	4.59 (1.96) [4.11, 5.06]
*Visual details	6.28 (1.10) [6.09, 6.47]	5.69 (1.20) [5.37, 6.01]	6.04 (1.21) [5.57, 6.51]	4.97 (1.64) [4.53, 5.41]
*Sound	4.92 (1.97) [4.60, 5.23]	4.83 (1.92) [4.30, 5.37]	5.33 (2.01) [4.53, 6.14]	3.86 (2.34) [3.13, 4.60]
*Location/Spatial	6.12 (0.96) [5.95, 6.28]	5.44 (1.03) [5.16, 5.72]	6.17 (0.87) [5.76, 6.59]	4.10 (1.61) [4.42, 5.19]
*Re-experiencing	5.53 (1.45) [5.30, 5.76]	5.37 (1.16) [4.98, 5.76]	5.58 (1.38) [5.00, 6.16]	4.26 (2.03) [3.72, 4.79]
Centrality of event	2.58 (1.24) [2.40, 2.77]	2.46 (1.02) [2.15, 2.78]	2.87 (1.18) [2.41, 3.34]	2.29 (1.13) [1.86, 2.72]
*Subjective plausibility	7.75 (0.81) [7.55, 7.95]	7.34 (1.16) [7.00, 7.68]	7.40 (1.26) [6.90, 7.90]	5.55 (2.68) [5.09, 6.01]
*Connectedness	4.77 (2.03) [4.46, 5.09]	4.67 (1.82) [4.14, 5.21]	4.12 (2.09) [3.33, 4.91]	3.76 (2.15) [3.03, 4.49]
Importance	4.54 (2.15) [4.21, 4.87]	4.13 (1.84) [3.57, 4.69]	4.72 (2.26) [3.89, 5.55]	3.79 (2.13) [3.03, 4.56]

Note. The following dependent variables are scales: belief in occurrence, belief in accuracy, recollection, location/spatial, re-experiencing, and centrality of event. Asterisk indicates this variable is discussed in text due to substantial effect/non-overlapping 95% CI.

Phenomenology ratings showed a similar pattern. Those who agreed/reduced made lower vividness, visual detail, sound, spatial, and re-experiencing ratings. Statistical comparisons were as follows: vividness (M = 4.59, vs. M = 5.89, 95% CI_{diff} [-1.81, -0.79], d = -0.99), visual details (M = 4.97 vs. M = 6.12, 95% CI_{diff} [-1.63, -0.68], d = -0.95), sound (M = 3.86 vs. M = 4.94, 95% CI_{diff} [-1.86, -0.30], d = -0.54), spatial (M = 4.81 vs. M = 5.97, 95% CI_{diff} [-1.58, -0.74], d = -1.07), and re-experiencing (M = 4.26 vs. M = 5.50, 95% CI_{diff} [-1.81, -0.67], d = -0.85). For centrality and importance, there were no notable group differences. Further comparisons indicated that those who agreed/reduced had lower ratings of connectedness than those who disagreed/maintained (M = 3.76 vs. M = 4.77, 95% CI_{diff} [-0.20, -1.83], d = -0.49).Thus, it appears that those who agreed/reduced did not rate items like believed memories, and appeared to have reported memories of lower quality in general with lower connectedness to other events.

Characteristics of social challenges to memory. Exploratory comparisons between the four groups were conducted for the items that were created to examine facets of the social challenge. Only variables that demonstrated statistically meaningful differences are discussed (see Table 10 for descriptive statistics for all of the variables).

Agreed/reduced. Many of the group differences were driven by this group. Comparisons here were made between this group and the other three groups combined. These participants had lower ratings of how much it presently bothered them to have disagreed with their challenger (M = 3.03 vs. M = 3.96, 95% CI_{diff} [-1.73, -0.13], d = -0.45). They also reported experiencing interestingly less forceful challenges than the

Table 10

Between-Subjects Comparisons for Characteristics of Social Challenge to Memory

Dependent Variable	Disagreed/ Maintain (Defend) *n* = 158 *M (SD)* [95% CI]	Disagreed/ Reduce (Deny) *n* = 55 *M (SD)* [95% CI]	Agreed/ Maintain (Comply) *n* = 25 *M (SD)* [95% CI]	Agreed/ Reduce (Relinquish) *n* =29 *M (SD)* [95% CI]
Bothered by disagreement (past)	5.62 (1.66) [5.40, 5.89]	5.85 (1.39) [5.42, 6.28]	5.84 (1.38) [5.22, 6.46]	5.29 (1.54) [4.70, 5.87]
*Bothered by disagreement (present)	3.80 (2.25) [3.48, 4.13]	4.33 (1.78) [3.78, 4.89]	4.16 (1.80) [3.35, 4.97]	3.03 (1.64) [2.28, 3.79]
*Ease of disagreement	6.18 (1.43) [5.93, 6.43]	5.06 (1.66) [4.62, 5.49]	4.24 (2.03) [3.61, 4.88]	4.48 (2.03) [3.89, 5.07]
Influence of past experiences	4.66 (2.01) [4.35, 4.96]	5.07 (1.61) [4.56, 5.58]	4.88 (1.83) [4.12, 5.64]	3.90 (2.11) [3.19, 4.60]
*Forcefulness of challenge	4.94 (1.67) [4.67, 5.21]	4.69 (1.74) [4.23, 5.15]	5.08 (1.68) [4.40, 5.76]	3.71 (2.07) [3.07, 4.36]
*Importance of avoiding disagreement	3.13 (2.05) [2.81, 3.44]	3.22 (1.81) [2.69, 3.76]	5.04 (2.11) [4.25, 5.83]	3.04 (1.93) [2.29, 3.78]
Importance of relationship with challenger	5.54 (1.93) [5.26, 5.83]	5.51 (1.67) [5.03, 5.99]	6.08 (1.15) [5.37, 6.79]	5.62 (1.74) [4.96, 6.28]
*Credibility of information from challenger	2.74 (1.72) [2.48, 3.00]	4.02 (1.46) [3.57, 4.46]	3.64 (2.02) [2.98, 4.30]	5.62 (1.52) [5.01, 6.24]
*Credibility of challenger	4.42 (1.99) [4.13, 4.71]	4.95 (1.57) [4.45, 5.44]	4.68 (1.89) [3.96, 5.40]	5.93 (1.22) [5.26, 6.60]
Trust of challenger	4.87 (1.90) [4.59, 5.15]	5.22 (1.74) [4.74, 5.69]	5.48 (1.69) [4.78, 6.18]	5.62 (1.21) [4.97, 6.27]
*Trust of one's own memory	6.56 (0.87) [6.37, 6.75]	5.53 (1.44) [5.21, 5.84]	5.72 (1.67) [5.25, 6.19]	4.66 (1.63) [4.22, 5.09]
*Speculation re. internal/external source	1.72 (1.33) [1.46, 1.97]	3.09 (1.98) [2.66, 3.52]	2.36 (1.96) [1.72, 3.00]	3.24 (1.98) [2.65, 3.83]
Sought information from others	3.05 (2.29) [2.69, 3.41]	3.76 (2.54) [3.14, 4.38]	3.04 (2.09) [2.13, 3.95]	3.14 (2.18) [2.29, 3.98]
Discussion with others	4.96 (1.83) [4.68, 5.23]	5.07 (1.67) [4.60, 5.54]	4.80 (1.66) [4.10, 5.50]	4.93 (1.75) [4.28, 5.58]
Threatened	2.42 (1.76) [2.16, 2.69]	2.33 (1.74) [1.88, 2.78]	1.92 (1.44) [1.26, 2.58]	1.66 (1.29) [1.04, 2.27]
Importance of this memory	4.10 (2.09) [3.79, 4.41]	4.51 (1.59) [3.99, 5.03]	4.76 (2.07) [3.99, 5.53]	4.14 (1.83) [3.42, 4.86]

Note. Asterisk indicates this variable is discussed in text due to substantial effect/non-overlapping 95% CI.

other three groups (M = 3.71 vs. M = 4.90, 95% CI_{diff} [-1.86, -0.50], d = -0.68). They reported the highest ratings of the credibility of the challenger (M = 5.93 vs. M = 4.57, 95% CI_{diff} [0.65, 2.08], d = 0.74), and provided the lowest ratings of trusting one's own memory (M = 4.66 vs. M = 6.23, 95% CI_{diff} [-2.07, -1.09], d = -1.25).

When comparing ratings of the credibility of information from challengers, those who disagreed/reduced (M = 4.02) and those who agreed/maintained (M = 3.64) did not significantly differ from each other; thus, these groups were combined and were found to be significantly lower than those who agreed/reduced (M = 5.62, 95% CI_{diff} [1.03, 2.42], d = 1.06). Thus, overall, people who agreed and reduced belief in occurrence differed in the factors that may have influenced their decision: not wanting to disagree, perceiving the challenge to be less forceful, perceiving the challenger to be generally credible, not feeling particularly trusting of their own memory, and seeing the information coming from the challenger as credible.

Agreed/maintained. Participants who agreed/maintained reported higher scores on importance of avoiding disagreement than other groups combined (M = 5.04 vs. M = 3.14, 95% CI_{diff} [1.08, 2.73], d = 0.96).

Disagreed/maintained. Participants who disagreed/maintained reported feeling it was easier to disagree with their challengers than other groups combined (M = 6.18 vs. M = 4.71, 95% CI_{diff} [1.07, 1.86], d = 0.90). They also reported lower ratings of the credibility of information from their challengers (M = 2.74, 95% CI_{diff} [-1.62,-0.70], d = -0.68), compared to those who disagreed/reduced (M = 4.02) and those who agreed/maintained (M = 3.64) who did not differ.

Maintain vs. reduce belief in occurrence. A comparison was made between those who maintained vs. reduced belief in occurrence. Participants who endorsed maintaining had lower levels of speculation regarding whether their memory came from an internal or external source (e.g., TV) when compared to those who reduced (M = 1.80 vs. M = 3.14, 95% CI_{diff} [-1.76, -0.92], d = -0.83).

Discussion

This study provided an initial examination of social challenges to existing memories. The study revealed characteristics of such experiences, outcomes, and factors associated with these outcomes. It provided an initial assessment of the validity of Scoboria's (2016) model which describes potential outcomes resulting from social challenges to memories, and expanded the understanding of factors related to these outcomes.

A variety of interpersonal and intrapersonal pieces of information were reported as being used by participants in making their decisions about their memorial beliefs. For example, similar to Scoboria, Boucher, et al.'s (2015) findings, being told that an event did not occur or occurred differently were common types of interpersonal feedback received when a memory was challenged. In other cases, participants found social corroboration for their story or the challenger's story. People reported relying on and being influenced by the reports of others even in cases where social feedback was not sought outright. This reliance on the feedback of others is consistent with other research (Nash & Takarangi, 2011; Wade, Nash, & Garry, 2014).

Research has also noted that people consider physical evidence to be a reliable source of information for memory verification (e.g., Nash & Takarangi, 2011; Wade &

Garry, 2005). Seeking physical evidence was something that participants reported doing in this study. In the present study, some participants were able to discover confirmatory or disconfirmatory evidence (n = 33 and n = 5, respectively). In some cases, confirmatory or disconfirmatory evidence could not be obtained (n = 6 and n = 4, respectively). Thus, one can see the different ways in which physical evidence (or a lack thereof) can be a factor that informs the decisions that are made about a memory.

In these data, plausibility also appears to be relevant to decisional processes about memorial beliefs and behaviours. Most events were deemed by the coders to be objectively plausible (i.e., possible or logical in general). Of interest were those times (n = 16) where participants noted that an event in memory was not plausible. In some cases, the event was objectively plausible, in general, but identified as implausible by that particular participant. In other cases, the event was both objectively and subjectively implausible. An interesting example of this is a participant reflecting on a vivid memory he had for a toy that enabled him to float in the air:

> I began to realize that this toy is impossible. There is no way a seven year old boy could float around the house in an air balloon that is smaller than he is. There is no substance you could inflate the balloon with that would make it that light. My memory says the toy was floating around the house, but logic says this is impossible.

This case highlights how plausibility, coupled with disconfirmatory social feedback (in this case, from a parent), led to reduction in belief in the occurrence of an otherwise vivid memory. This is consistent with research noting that memorial beliefs can be affected by plausibility judgments (e.g., Ghetti & Alexander, 2004).

Attributions about the source of memories, namely internal sources (e.g., imagination, dreams, altered consciousness) were made by participants for both themselves (n = 54) and others (n = 40). Source monitoring theory's (e.g., Johnson et al., 1993) views about the inferential nature of decisions about the source of one's memory is consistent with the present study's finding that many participants spoke of attributing their memories to one source at one time (i.e., their experiences), only to re-attribute the memories to another source at another time.

There were far fewer attributions made about external sources (e.g., TV; n = 2). That more memories were reattributed to internal rather than external sources is also consistent with other research (e.g., Scoboria, Boucher, et al., 2015). Considering the interpersonal nature of many of the memories reported in the present study, it makes sense that there are more source confusions with internal sources (e.g., Did I exaggerate? Was my memory altered by my intoxication?) rather than external sources, because these external sources tend to not be as interpersonal in nature (e.g., Did I see this product on TV?). As noted by Johnson et al. (1993), the more similar two sources are (e.g., imagination and actual perception), the more difficult it is to discriminate between these sources. Because imagination and fantasy, for example, are more similar to a memory than say, reading a passage in a book, it is consistent that this data-set had more discussion of confusion with internal sources.

With regard to views of self and others, more statements were made about behaviours being consistent with participants' views of others (n = 35) than inconsistent with participants' views of others (n = 8). In contrast, more statements were made about behaviours being inconsistent with participants' views of themselves (n = 12) than

consistent with participants' views of themselves (n = 5). The small number of participants speaking of self-inconsistency may be because self-inconsistent memories may compromise people's views of themselves as coherent and consistent (e.g., McAdams, 2001). A proposed function of memory is to see oneself as coherent (e.g., Bluck, Alea, Habermas, & Rubin, 2005). Thus, perhaps the infrequency of codes related to self-consistency is a function of this implicit (rather than obvious and explicit) goal of coherence guiding much of their autobiographical memory retrieval.

With respect to assessing the validity of Scoboria's (2016) model of outcomes of social challenge, the fact that all but 17 participants chose to select from a list of supplied outcomes suggests that these categories derived from Scoboria's proposed model are compatible with their experiences of interpersonal challenges to a memory. Given that Scoboria's model is still in development, these themes that did not readily fit into the Scoboria model, such as "agreeing to disagree" and expressions of persisting doubt will need to be considered and accounted for within his model.

As mentioned in the results, some of the coding was duplicated by the participants themselves; that is, each participant chose an "outcome" that described the four categories of Scoboria's proposed model. These outcomes can be broken down into two dichotomous decisions: maintain vs. reduce belief in occurrence, and agree vs. disagree with the challenger publicly. An independent rater coded each narrative for these two dichotomous categories. For narratives that did not give enough detail, the rater was encouraged to take her "best guess" as to how the participants might have coded themselves. As noted above, the rater's coding matched well for maintaining belief in occurrence and public agreement. There were more coding disagreements for reducing

belief in occurrence and public disagreement, with the most difficulty coding reduction of belief in occurrence. Perhaps less detail was given regarding these facets of the challenge. Further, it may be more typical in the way people speak to refer to maintaining belief in occurrence rather than reducing belief in occurrence. For example, according to research on confirmation bias, people tend to look for and remember information that confirms their beliefs (e.g., Nickerson, 1998). Perhaps it is easier or more common to speak about these reified beliefs, thus leading to clearer and more obvious statements about belief maintenance. Further, especially considering that this group experiences dissonance between its internal beliefs and public behaviour, it seems consistent that disagreeing vocally but decreasing belief internally may not be readily visible to others, for example, study coders. Being able to elicit enough information for coders to be able to properly assess for reductions in belief based on written narratives will need additional work.

Some within-subjects findings were consistent with predictions/prior literature. Challenged-reduced events had lower belief in occurrence ratings than believed and remembered events, similar to Scoboria et al.'s (2014) findings. Believed-remembered events had higher plausibility ratings than challenged-reduced events, supporting the connection between plausibility and belief (e.g., Hart & Schooler, 2006, Scoboria et al., 2014). Challenged-reduced events were rated lower than believed-remembered events on recollection, in a pattern similar to that of Scoboria et al. (2014) whereby NBMs had lower ratings of recollection than believed memories. Further, these challenged-reduced events also had lower ratings of vividness and had similar ratings of some other phenomenological features when compared with believed-remembered control events (consistent with Mazzoni et al., 2010).

Some of the findings for within-subjects comparisons for challenged-reduced events and control events differed from findings in past research and/or predictions. For example, visual details ratings were higher for believed memories. Further, based on the findings of Mazzoni et al. (2010), it was predicted that challenged-reduced events would be lower than believed-remembered on importance, connectedness, and centrality. A different pattern emerged from these data, whereby the challenged-reduced event had more similar ratings to the believed-remembered control events on these variables. Given that this prediction was made based on NBM literature, I wonder how these challenged and subsequently reduced events in the present study differed from the typical NBMs reported in past studies. For example, mean belief in occurrence ratings for NBMs in Scoboria et al. (2014) were below 4 (scale ceiling = 7.33). In contrast, reduced-challenged events in the present study, belief in occurrence ratings were higher (almost 6, scale ceiling = 7.33). Perhaps these reduced-challenged memories are more similar to believed-remembered events than NBMs in Scoboria's prior work. Further, the prompts used to elicit these NBMs are different than the ones used in this study (i.e., describe a *nonbelieved memory* vs. describe a *challenged event*). Additionally, despite the fact that recollection did not meaningfully exceed belief in occurrence for challenged-reduced events, recollection ratings did exceed belief in accuracy ratings. As already suggested, this indicates that in the present data, belief in accuracy seems to be more important than belief in occurrence in differentiating outcome groups.

Interesting differences between the four self-identified outcome groups emerged. Participants in the agreed/reduced belief group had the following profile compared to the three other groups combined: lower ratings of belief in occurrence, belief in accuracy,

recollection, vividness, visual details, sound, location/spatial arrangement, and re-experiencing. The agreed/reduced group gave ratings that suggest poor memorial characteristics in many areas (i.e., low ratings of memorial beliefs and phenomenological ratings compared to the other three groups). They also gave lower ratings of connectedness when compared to those who disagreed/maintained. Thus, overall it seems as if the confluence of both variables (decisions about belief in occurrence and public behaviour) is important to the relationship with these memorial variables. It is of interest that this group often had notably different ratings of these items compared to the other reduction of belief group (i.e., disagreed/reduced belief in occurrence). Of note, the disagreed/reduced belief in occurrence group likely experienced some kind of dissonance with their outcome, for their behaviour (disagreeing with the challenger) is not consistent with their actual beliefs about the occurrence of the event (reduced belief in occurrence). As noted earlier, the two types of dissonance (intrapersonal and interpersonal) remain in tension for two of the groups, including this one. Whereas in the other two groups, the two forms of dissonance are (wholly or partially) resolved. In line with dissonance theory (e.g., Festinger, 1957), to resolve dissonance, one must either change one's behaviours to match his/her beliefs, or change one's beliefs to match his/her behaviour. Perhaps those who reduced belief in occurrence but opted to disagree with their challengers (i.e., one of the dissonance groups) had higher rated levels of belief in occurrence as a way to resolve this dissonance, so that their beliefs were more consistent with their behaviour (that is, disagreeing publicly). Or perhaps the strong recollective phenomenology for memories reported by the disagreed/reduced belief in occurrence group was dissonant with the decision to reduce belief in occurrence, leading to higher ratings of this variable (or, on

the contrary, weaker ratings of recollective phenomenology might have made it easier for those in the agree/reduce belief in occurrence group to resolve dissonance by reducing belief in occurrence). The group that was lower than the rest (the reducers who publicly agreed) had less dissonance to resolve; they were challenged, they were convinced by their challengers, and accordingly reduced their belief in the occurrence of the event. These ideas must be examined in further detail in future studies, for the other dissonance group (people who agreed with their challengers but privately maintained belief in occurrence) did not tend to surpass the other non-dissonance group (people who disagreed with their challenger and maintained belief in occurrence) in many ratings. Further study may also shed light on the temporality of these ratings (were these vivid memories to begin with, or did ratings of vividness diminish after receiving disconfirmatory feedback?).

There was also an interesting absence of group differences for variables measuring importance of the memory and centrality of the event. In past research, NBMs received lower ratings on items measuring similar variables (e.g., event significance) compared to control events, so it is interesting that these comparisons were essentially flat for all four groups. For the participants in this study, attributions about the significance of the event was not an important variable. Perhaps this again could be attributed to the differences in prompts used in NBM studies (asking for a nonbelieved memory) compared to the present study (asking for any challenged event of the participant's choosing). It would be of interest to see if altering prompts leads to eliciting more or less "important" events in future research.

Exploratory items indicated general patterns in the data. Ratings for being bothered by the disagreement, ease of disagreement, importance of the relationship with the challenger, trust of the challenger, trust of one's own memory, and discussion of the event with others were all relatively high (i.e., rated above 5 on a 1-7 scale). Importantly, there were low ratings (i.e., below 3) on variables measuring wondering if the memory came from an internal/external source, and feeling as if the challenger was attempting to threaten the participant. This last finding is of particular interest going in to Study 3, where I anticipate higher ratings of this variable.

Eight exploratory items created for this study had significant group differences. Findings from these comparisons should be considered with caution due to imbalanced cell sizes and their exploratory nature. To summarize, participants who agreed with their challenger and reduced belief in occurrence had lower ratings of forcefulness of challenger, higher credibility of the challenger, higher ratings of credibility of information from the challenger, and lower trust of one's own memory. They also had lower ratings of being bothered by the disagreement, but this comparison's effect size and confidence interval were significantly impacted by the removal of outliers, and thus will not be commented on until further study. The following discussion should help to contextualize the findings for participants who agreed with their challengers and reduced belief in occurrence.

Research has shown the potentially negative effects of forceful challenges to memory reports. In particular, research on false confessions (e.g., Kassin et al., 2010) and memory retractors (e.g., Ost et al., 2001) shows how malleable beliefs, memories, and memory reports are to suggestions and pressures from others. It would make sense for

ratings of forcefulness to be higher in situations where the participant agreed with the challenger, as in situations of compliance or false internalization of beliefs. Notably, participants who described agreeing and reducing belief in occurrence had lower ratings of forcefulness of the challenge. Perhaps other factors that are more important in the decision to agree vs. disagree (e.g., personality factors, suggestibility, self-esteem) can be measured in future research to better understand this finding.

Further, past studies have shown the influence of credible suggestion from credible sources on false belief formation (e.g., Scoboria, Wysman, & Otgaar, 2012). In situations of social remembering, the perception of the credibility of others relative to one's self-perceived credibility can influence whether participants accept misleading information (i.e., French, Garry, & Mori, 2011). Mistrust of one's own memory also has been examined in research, showing that, for example, holding negative stereotypes about memory abilities and age (namely, older age) is connected to actual poor memory performance (e.g., Levy, Zonderman, Slade, & Ferucci, 2011). The present study is not measuring memory performance; rather, it gathers information on participants' metamemory appraisals. These metamemory appraisals (e.g., in this case, that one's memory is not trustworthy) may be related to actual poorer memory performance, and perhaps susceptibility to suggestions of others (i.e., if a person perceives her memory to be poor, she may actually have poor memory performance, and these factors may contribute to seeing others as more credible and better informed).

Participants who disagreed and maintained belief in occurrence endorsed higher ease of disagreement and lower credibility of information from the challenger. As noted above, credibility of suggestions is an important influence on memorial beliefs (i.e.,

Scoboria, Wysman, & Otgaar, 2012). In high-stakes situations, memory reports may be influenced by people with whom it is hard to disagree, such as police officers. It is thus not surprising that this study observed a connection between memory defense and ease of disagreement and low credibility of information pertaining to a challenge.

Participants who agreed but maintained belief in occurrence (one of the dissonant conditions) reported the highest scores on the importance of avoiding disagreement. This finding is interesting because it highlights that the importance of avoiding disagreement is connected to compliance. In false confession research, confessions are differentiated by whether they are internalized (i.e., the person actually believes that she committed the accused offense) or compliant (i.e., the person says she committed the offense, but does not truly believe it; e.g., Kassin & Kiechel, 1996). These findings are consistent with theory, such as Koriat and Goldsmith's (1996) research that documents that when there are high costs of reporting, people are less likely to report information, even if they feel confident in it. Perhaps in this case, the high costs of reporting are represented by these ratings of importance of avoiding disagreement. On the other hand, it is possible that these participants who made the choice to agree but privately maintain belief in occurrence tend to be compliant in general. Future research may shed light on this finding.

Last, a comparison showed that people who reduced belief in occurrence had higher levels of speculation about their memory coming from an internal/external source than those who maintained belief in occurrence. This speculation about a memory coming from an internal vs. external source has been labelled "reality monitoring" by Johnson and Raye (1981). This comparison shows that there is a relationship between

participants who made metamemorial appraisals about poorer reality monitoring and reducing belief in occurrence. It is of interest that there was an effect related to (internal and) external attributions whereas there were minimal codes for external attributions in the participants' written accounts. Perhaps without the "priming" of being asked a question, speculations about external sources do not come to mind, or perhaps participants rating this variable were primarily focused on internal sources. Further, the Likert-style item asks about *speculations* regarding internal/external sources; participants might not have said anything explicit about external attributions prior to this if they only have noncommittal speculations about external attributions and were not directly prompted to comment on them.

Limitations and Future Directions

There are some limitations to this study. First, given that the data were collected from participants' retrospective accounts, and were largely descriptive, causal connections cannot be made and data may not be accurate due to poor recollection of events from the past. Further, there are other variables that could account for participants' noted reactions to challenges and what they chose to report. Items related to social desirability were not collected due to length of the study and given that hypotheses related to social desirability were not central to the project. However, in future research, if one seeks to be able to make generalizations about frequencies of outcomes to social challenge in the general population, accounting for social desirability would be useful, as would be other variables, such as gender, age, cultural variables, suggestibility and other personality data (e.g., dominant vs. submissive personality characteristics).

Another limitation, as mentioned throughout the text, is the uneven cell sizes for comparisons. Given that this was a first attempt to study social challenges to memories in this way, I sought to give participants the opportunity to select the events about which they would reflect and write. As anticipated, many participants chose to write about times that they maintained belief in occurrence and disagreed with their challengers. Perhaps future studies can ask participants to reflect on a certain type of event (e.g., prompt participants to reflect on a time they reduced belief in occurrence and agreed with a challenger, etc.).

Also of note is that the prompt used in this study, specifically the word "challenge" may tend to elicit certain types of events. I wonder if using different language may lead to different frequencies of the reported outcomes to social challenge. For example, in future, participants could be asked to write about a time their memory was "corrected," or a time where they were reminiscing with a friend and the friend had a different memory than the participant.

Another limitation of this project is the large number of codes used, sometimes leading to difficulties for raters to keep in mind all of the potential codes that could be used. In future research, and particularly in Study 3 where a similar style of coding has been conducted, conciseness must be a goal that is kept in mind.

Last, and critically, it is important to consider the language used for participant ratings of the outcome groups to which they belong. Particularly, regarding belief ratings, participants rated the following: "my belief that the event occurred as I remembered it was lower than it was before the challenge" vs. "maintained my belief that the event occurred as I remembered it." Although these outcomes are referred to throughout as

related to belief in occurrence, it is important to acknowledge that this language is not a pure assessment of only belief in occurrence, and participants may have perceived this as more of an assessment of the accuracy of their memories, rather than an assessment of whether they believed the memory actually occurred. This may help to explain why belief in accuracy is an important variable in differentiating belief maintenance vs. belief reduction in these data. Although the language for these ratings has been retained for Study 3 to be able to facilitate comparisons, it is important to acknowledge that different, more sharply defined language for these outcome ratings may have led to different outcome group ratings. Further, the importance of belief in accuracy in this data-set lends support to the claim that Scoboria's proposed model needs to be able to account for belief in accuracy in addition to belief in occurrence when considering the outcomes of social challenges to existing memories.

CHAPTER 3

Content Analysis of the Narratives of Survivors of Physical and Psychological Intimate Partner Aggression Combined with a Broader Survey

Introduction

People often receive input from others regarding past events. Sometimes this social input is consonant with one's beliefs and memories for the past. At other times, the information provided by others may be inconsistent. This social challenge may lead a person to question his/her beliefs about whether past events occurred, or occurred the way that he/she remembers. Social challenge to past events (i.e., disconfirmatory social input) has been established as a key reason for questioning and eventually altering belief in past events (e.g., Scoboria, Boucher, et al., 2015).

The types of events that receive input from others can vary. Sometimes mundane events with insignificant consequences may be challenged, such as twins arguing over who actually bought a shared article of clothing. In this example, perhaps the twins agree to disagree and continue to share this garment. In contrast, sometimes social challenges to more significant events occur, and sometimes these challenges may lead to negative consequences. The present studies focus on social challenges to memories that people may experience when living with violence or other types of aggressive or controlling behaviour at the hands of intimate partners.

Psychological and physical intimate partner aggression (IPA) refers broadly to violence or aggressive behaviour experienced from an intimate partner in a relationship, which can include physical, verbal, and sexual abuse, as well as other behaviours such as stalking (Perilla, Lippy, Rosales, & Serrata, 2011) and coercive control (Carney &

Barner, 2012). Those who conduct research in the area of IPA tend to agree that there is not one uniform type or pattern of battering (see Lehmann, Simmons, & Pillai, 2012). Coercive control, for example, is one type of IPA behaviour but is not present to the same extent in all relationships with aggression (Carney & Barner, 2012). IPA thus can involve various behaviours, such as emotional abuse, physical abuse, sexual assault, stalking, intimidation, isolation, manipulation, etc. For the purpose of the current study, a broad definition of abuse and control is used, rather than strictly examining physical violence, thus using the terminology of psychological and physical intimate partner aggression (IPA).

IPA has social, economic, health, and psychological impacts for survivors, perpetrators, and the larger community (White, Koss, & Kazdin, 2011). According to the World Health Organization (WHO), IPA accounts for a large segment of worldwide violence, regardless of country, class, or culture (2002). Worldwide, 8% to 67% of women are physically abused by a partner, with most countries estimating 20% as lifetime prevalence (Aldarondo & Fernandez, 2008).[1] Physical violence, sexual abuse, and psychological aggression have negative effects on mental and physical health, quality of life, and correspond with engaging in risky behaviour (Coker, Williams, Follingstad, & Jordan, 2011). The American Psychological Association (APA) has developed an agenda

[1] As noted by Sylaska and Edwards (2014), much research that studies the dynamics of intimate partner aggression has focused on certain demographic groups, which includes focusing on female survivors (vs. males). Men may experience aggression in heterosexual relationships, and men and women in LGBTQ relationships may experience IPA as well. It is possible that the dynamics of intimate partner aggression and the disclosure surrounding IPA may differ by sex, gender, and/or sexual orientation Although it is certainly of value to study the dynamics of social challenge regarding memories for IPA for other sexes, genders, and sexual orientations, a thorough understanding of the experiences of all of these groups is beyond the scope of this project. For the purpose of this work, the focus is on the experience of biological women in heterosexual relationships, thus the use of the pronoun "she" in much of the text in reference to survivors of abuse, and "he" as perpetrator.

for decreasing this violence (i.e., Koss et al., 1994). However, the issue is still quite prevalent.

Survivors of IPA and Their Beliefs and Memories for Past Abuse

How survivors of IPA form and adjust beliefs and memories regarding past episodes of abuse is an interesting yet understudied phenomenon. Women in relationships marked with IPA may be pressured to doubt the accuracy or even the occurrence of their memories for past events. They may also be pressured to be silent regarding abuse. This experience of social pressure may explain why survivors of IPA may not remember or articulate details of past episodes of abuse in ways that people would expect. In legal contexts, witness confidence holds an important influence on the perceptions that jurors have of witness credibility (Brewer & Burke, 2003). It is possible that disconfirmatory social input can lead survivors of abuse to appear less confident and thus less credible in court. This forthcoming review of the literature describes different areas of research that may shed light on this phenomenon.

The approach taken in the present studies builds upon a view of decision-making about memories that arises out of the study of instances in which people's memories are challenged and they decide to maintain or reduce autobiographical belief, as well as either agree with others (i.e., comply but privately maintain belief) or disagree with and defend their memories to others. Building upon preceding findings in Study 1, two separate but related projects were conducted. The first study (Study 2) involved in-depth qualitative interviews with small number of women who have had past relationships characterized by IPA, in order to gain understanding of whether/how this phenomenon takes place in this context. The second study (Study 3) surveyed a larger group of women

who reported experiences of IPA in the context of heterosexual relationships in order to study how they experienced social challenge to their memories for past aggression and permit a degree of generalization.

Although IPA has been studied in depth from certain research perspectives, there is minimal research examining the experiences of women who have survived IPA from an autobiographical memory standpoint. Thus, it is important to gain a better understanding of the effects of social pressure on the qualities of and one's decisions about reporting beliefs about the occurrence of events (e.g., "Did he actually hit me?"), beliefs about the accuracy of one's memories (e.g., "Did I really say 'stop' out loud?"), and memories for past episodes of abuse. Of note, for the present study, a distinction must be drawn between this aforementioned material (i.e., belief in occurrence, belief in accuracy, and recollection) and interpretations of how meaningful events were. Although it may be of interest to examine the way events are interpreted and the way meaning is created for survivors of IPA, a thorough examination of event interpretation is beyond the scope of this project.

A variety of areas of research are reviewed in order to situate these studies. These areas include social perspectives on autobiographical memory, issues of concordance in reporting of IPA, help-seeking in the context of IPA, and perspectives explaining why a person might have altered beliefs, memories, or reports for past abuse. Following this, I briefly review Scoboria's (2016) social-cognitive model which describes the processing and outcomes that result from challenge to vivid memories for past events, and then outline the specific goals and research questions for the two studies in this chapter.

Autobiographical Memory: Social Dynamics and Accuracy

There are several reasons why the study of IPA survivors' autobiographical beliefs and memories is important. Of particular interest in this research project is gaining a better understanding how people remember and talk with others about past experiences of aggression in intimate relationships. Social dynamics such as minimizing, denying, or questioning, for example, could potentially contribute to survivors of IPA appearing to be uncertain or inconsistent when reporting about their experiences with abuse.

Autobiographical memory develops in social contexts and serves social functions (e.g., Alea & Bluck, 2003; Pillemer, 1998). For example, what information is output about remembered events and how it is organized varies based on to whom one is speaking (Hyman, 1994). People often turn to others when in need of verification about past events (e.g., Wade & Garry, 2005), and in doing so, the accuracy of memories for past events may be brought into question (e.g., Sheen, Kemp, & Rubin, 2001). Conversation with others can influence the way people remember or report the past (e.g., Gabbert, Memon, & Allan, 2003; Meade & Roediger, 2002; Reysen, 2005; Roediger, Meade, & Bergman, 2001; Wright, Self, & Justice, 2000). Discussion with others, even without the intent to supply misinformation, can affect the accuracy of the details that are remembered or reported (e.g., Echterhoff & Hirst, 2009). Further, power differences can make people more apt to take in the information supplied by more powerful others (Skagerberg & Wright, 2008).

Memory accuracy is another important area of study, and the legal system is one place in which the ability to recount events from personal past experience in an accurate way is imperative (e.g., Herlihy, Jobson, & Turner, 2012). The study of autobiographical

memory must be made useful for those in the legal system who handle the testimony of vulnerable witnesses or victims of crime. Without this knowledge being conveyed to and understood by those for whom it is relevant, assumptions might be made about memory's functional abilities that may not be well-founded. For example, some laypeople may assume that if a memory has been stored, it will inevitably be retrieved (Kornell, 2015). They may not understand that individuals who have experienced repeated events, for example, the repetitive violence perpetrated by an intimate partner, may develop an overall schema for this type of event which lacks the precision of memories for one specific incident (e.g., Hartwig, Dawson, Wred, & Ask, 2012). Laypeople may also misunderstand that the quality of memory for events typically changes over time and that encoding under conditions of stress may be troublesome for memory quality (e.g., Valentine & Mesout, 2009).

The study of social challenge to memory for events, both broadly and within the context of IPA survivors' memory, has the potential to help facilitate links between empirical research and knowledge in the legal system, as well as the potential to inform the more general study of social influence and remembering. Furthermore, it has been noted that much research on IPA has focused on the behaviours of survivors rather than their interpretations of their experiences (Liang, Goodman, Tummala-Narra, & Weintraub, 2005). An examination of beliefs and memories of previous episodes of abuse is critical for developing a better understanding of the processes that underlie women's choices to stay in abusive partnerships, or potential difficulties they may have in accurately remembering or reporting past abusive episodes.

Concordance of Reporting Between Perpetrators and Survivors

An interesting phenomenon in IPA research is that survivors and perpetrators of IPA and psychological aggression tend to have low levels of concordance in reporting past episodes of abuse, and there have been challenges in finding consistent causes of this lack of concordance (see Marshall, Panuzio, Makin-Byrd, Taft, & Holtzworth-Munroe, 2011 for a review). For example, gender and status (i.e., victim or perpetrator) have not been found to predict inconsistencies in reporting (Marshall et al., 2011). Higher education has been found to correlate with lower reporting, which has been speculated to occur because of social desirability and avoidance of shame (Caetano et al., 2002). Regardless of the source of discordance, inconsistent reporting between parties is especially problematic for IPA and psychological aggression, given that these behaviours tend to occur in private (Marshall et al., 2011). A more thorough understanding of the factors that influence beliefs about events, memories, and reports made in these contexts is warranted.

Help-Seeking by Survivors of IPA

A growing body of research focuses upon the supports that may be sought out by women who experience IPA (e.g., Barrett & St. Pierre, 2011; Bosch & Bergen, 2006; Coker, Watkins, Smith, & Brandt, 2003; Leone, Lape, & Xu, 2014; Sylaska & Edwards, 2014). These supports can be categorized as "formal" (e.g., police, doctors, counsellors) and "informal" (e.g., friends, family; Barrett & St. Pierre, 2010). The help-seeking behaviours of women in relationships marked with aggression, as well as the behaviours of those to whom they may disclose this aggression, are relevant influences that are examined in the Studies 2 and 3.

A representative Canadian survey analyzed by Barrett and St. Pierre (2010) showed that women often seek out both informal and formal support when experiencing aggression in intimate relationships, with some demographic groups using more of both types of support (e.g., women who are First Nations, low SES, minorities, etc.). This general tendency to seek support is consistent with Sylaska & Edwards' (2014) review of the literature, in which they noted that the majority of people who experience IPA typically disclose at a minimum to one informal supporter. Other researchers (e.g., Bosch & Bergen, 2006) note that fear of escalating violence may be a factor in refraining from disclosing to formal sources of support. Higher rates of help-seeking have also been found to be related to certain demographic factors (e.g., female, White, high SES, young), as well as other situational factors such as a lower sense of shame, severe or frequent aggression, as well as having witnesses available at the time of aggression (i.e., Sylaska & Edwards, 2014). Some research has found that people in relationships marked with dynamics of "intimate terrorism" (i.e., not situational violence; a pattern of systemic and severe violence and control to hold power over a partner) were less or equally likely to look for informal support, but more likely to attempt to find formal support (Leone, Johnson, & Cohan, 2007). With this information in mind about the types of support that women seek, and correlates of seeking support, a relevant question then, is what types of support are considered helpful or unhelpful when one discloses having experienced aggression?

Research shows that the provision of emotional support, as well as access to information or services, can be helpful for women seeking to leave abusive partners (e.g., Bosch & Bergen, 2006). Bosch and Bergen also note, on the other hand, that the

provision of conditional support (i.e., with "strings attached"), blaming women, or being otherwise physically or emotionally non-supportive may hinder women from leaving abusive partners. Another researcher (Lempert, 1997) also observed that disbelief was often noted as an unhelpful reaction by survivors of aggression. The present studies explore how often some of these "helpful" and "unhelpful" support behaviours are noted by women who experienced aggression, and also explores how these support behaviours correspond to different outcomes related to beliefs about memories.

Altering Beliefs about, Memories for, and Reports of Abuse

Although the principal focus of this work is on subjective appraisals of events and interpersonal factors that lead to changing beliefs, memories, and/or reporting about previous abuse episodes, these facets intersect with other important influences.

Cultural, economic, and feminist interpretations. An individual's perception of a situation can be very much influenced by another person (e.g., Lempert, 1997). Further to this, interpretations of abusive behaviour are influenced by broader social, economic, and cultural factors (e.g., Liang et al., 2005). When women stay with abusive partners or are in disbelief regarding abuse, structural issues regarding institutions such as marriage may be factors in this choice (DeKeseredy, 2011). Patriarchal social structures, like marriage, allow men their "natural" dominance over women and children (Lammers, Ritchie, & Robertson, 2005). Women are relegated to the role of care-giver and subordinate to men, whose thoughts and beliefs may take authority over their own. This historical deference to men is reinforced by gendered customs such as marriage and child-rearing (White, Koss, & Kazdin, 2011). Women have also been found to silence themselves in relationships to maintain harmony (Belenky, Clinchy, Goldberg, & Tarule,

1986). Deferring to an abuse perpetrator's interpretations of and explicit statements about past episodes of abuse may be encouraged by these types of structures and phenomena. This deference is presumably more pronounced in relationships with extreme abusive dynamics such as in cases of "intimate terrorism" (e.g., Leone, Johnson, & Cohen, 2007), marked with over-control and disparities in levels of power.

Other social and historic factors have been posited for IPA and serve as possible explanations for choices made by people who experience abuse, such as being rewarded for modeled behaviour from families of origin (i.e., social learning theories), the transmission of violence through generations in families, and low socioeconomic neighbourhoods as having a "culture of violence" (Meloy & Miller, 2011). Furthermore, other cultural factors must be considered. For example, acculturation status may affect how one interprets IPA (Liang et al., 2005), indicating that being exposed to a new culture may contribute to alterations in beliefs about IPA. Pragmatic factors, such as one's immigration status, could also affect reports or interpretations of the damaging effects or appropriateness of IPA. Further, research has documented that there may be cultural differences in compliance, with participants from a collectivist culture complying more with others, but an absence of differences for internalization (i.e., people from a collectivist culture did not internalize attitudes from challenges any more than people from an individualist culture; Oh, 2013).

Psychological factors. There is much psychological research that can help to explain why women may adjust their beliefs about or reports of abuse they have experienced from their partners, whether intentionally or automatically. First, relevant research on suggestibility and social pressure is reviewed. Then, research on the

relationship between emotion and memory is discussed followed by research on nonbelieved memories and the dissociation between belief in occurrence and memory. This is followed by research conducted specifically in the realm of IPA.

Suggestibility and social pressure. The effects of suggestibility and social pressure have been studied at length. This research dates back to seminal work studying conformity with others (e.g., Asch, 1956; Milgram, 1963). The concepts of suggestibility and social pressure may shed light on the social dynamics and pressure in relationships that contain IPA, especially given that many of the research programs in these areas of study have common threads of power differences, coercion, and internalized beliefs that contribute to changes in beliefs about memory and/or memories. Some relevant areas of literature are those examining social influence on memory in the context of false confessions and retractors of former abuse allegations.

As noted above, research on social influences on memory demonstrates that people can affect the memory reports of others. Further to this research, "real-life" examples such as false confessors and memory retractors demonstrate the importance of social input on memory reports for people who are suggestible to this input. Research on false confessions demonstrates that a variety of social tactics can lead people to comply with or internalize accusations that they have committed a crime (e.g., Kassin et al., 2010). The tactics used to elicit false confessions, such as accusations, implied or explicit threats, and uncomfortable interrogative settings may be similar to some of the tactics used by abusive intimate partners to undermine the beliefs and memory reports of their partners. Memory retractors are another example of social influence; in this case, they are an example of the social influence of a trusted therapist. Through techniques such as

guided imagery, clients may develop a "recovered" memory of past abuse. However, upon facing social pressure within his/her family, sometimes the recovered memory is retracted. In other cases, the recovered memory may be maintained in the face of disconfirmatory social input (e.g., Ost, Costall, & Bull, 2001).

Emotion and memory. Research on the effects of emotion on memory demonstrates some variability. Although it may be assumed that extremely intense events are remembered well, it has been shown that the memories of individuals who have suffered extreme trauma (e.g., Holocaust survivors) were generally fairly good, but with many both specific and critical pieces of information being forgotten (Wagenaar & Groeneweg, 1990). Forgetting occurs in recall of normative events as well. Attention to only some central features at the expense of peripheral details is another facet of memory encoding for threatening events; for example, weapon-focus at the expense of encoding much information about an assailant's face (e.g., McNally, 2005). Some researchers (e.g., Yuille & Daylen, 1998) note that when a person is stressed, which is the case when emotional memories are encoded, the individual may become narrow in what she focuses upon. Thus, if she is focused upon internal cues (e.g., emotional reactions, thoughts), she may struggle to remember facets of the external situation. Others (e.g., Berntsen & Rubin, 2007) have noted that trauma can be central to a person's identity, and that this enhanced integration may be predictive of post-traumatic symptoms. Thus, high emotionality at the time of encoding, which is present at times of abuse, may contribute to challenges in accurate recall.

Nonbelieved memories. Research on the phenomenon of nonbelieved memories is conceptually relevant to individuals who have faced intimate partner aggression. To

situate this work, it is necessary to first discuss the dissociation between beliefs and recollection within remembering. To disambiguate terminology, the terminology proposed by Scoboria et al., 2014, is used here. "Recollection" refers to mental re-experiencing of an event, whereas "remembering" refers to the whole experience of retrieving, and perhaps reporting, past events. "Belief in occurrence" refers to the truth attributed to whether a past event occurred, whereas "belief in accuracy" refers to the perception that the details recalled are accurate. Recent work (e.g., Mazzoni, et al., 2010; Scoboria & Pascal, in press; Scoboria, Talarico, et al., 2015) makes the case for the dissociation of autobiographical belief from recollection; that is, the statement that one believes something happened reflects non-memorial decisional processes which occur whether or not a recollective image exists for the event. Deciding that something happened in the past may be influenced by recollection, but also by information acquired through social transmission and the social influence of others (Clark, Nash, Fincham & Mazzoni, 2012; Mazzoni et al., 2010; Otgaar, Scoboria & Smeets, 2013). Recollection, belief in occurrence, and belief in accuracy have been disambiguated in empirical work (Scoboria, Talarico, et al., 2015) and each of these attributions about autobiographical events is relevant to this project.

Nonbelieved memories are memories for which there are typical recollective features corresponding to the event, but belief in the occurrence of the event is reduced or withdrawn. Studies of naturally occurring nonbelieved memories have revealed that one of the most prevalent reasons for withdrawing or reducing belief for a past event is due to social feedback (Scoboria, Boucher, et al., 2015). Thus, the work on nonbelieved memories demonstrates that interactions with others are highly influential when revising

decisions about truth status of remembered events, as well as whether present mental experience corresponds to past perceptual experience.

Research has also revealed that individuals tend to rate nonbelieved memories in such a way that suggested that the memories were "devalued" (e.g., with lower ratings of personal significance and connectedness of these events within memory; Mazzoni et al., 2010). This finding can be interpreted in two manners: that these events were either less important to the individual to begin with, or were rendered less important following the choice to reduce belief in the event. If social feedback does in fact lead to the devaluation of memories, this has clear implications for the study of IPA because social feedback may alter, for example, the interpretation of the severity of remembered events. Of particular interest for the current project, Scoboria, Boucher, et al. (2015) documented instances of social feedback in which participants expressed altering belief in their memory based on feedback from others that appeared to serve the motives of the other person. Specifically, they documented occurrences in which others spoke or behaved in ways that appeared to reflect a desire for the individual who remembered the event to stop believing that a past event occurred (or at minimum, that they would stop talking about it). Situations such as this are examples of times in which a challenger is not seeking to create an accurate shared reality with the rememberer (Hirst & Echteroff, 2012). From the point of view of the person remembering the event, the other person would not validate the truth status of the memory, because there would be some cost to that other person for doing so. An example would be discouraging discussion of an event because the person might then be implicated for a crime.

Thus, when a survivor of abuse is told that her beliefs about abuse are untrue, (e.g., "I did not do that to you" or "he would never do that to someone"), or minimized (e.g., "you are exaggerating what happened"), this negation or minimization may automatically and implicitly affect either her confidence in the accuracy of her memory and/or potentially her belief that the event took place at all. The point here is not that such challenges to experiences of abuse will cause these beliefs to be completely undermined (shift from 100% confidence to 0% confidence), but that the beliefs may be shaken (shift from 100% to 80%). Further, as noted above, a person may be perceived as less credible in legal settings if she does not appear confident in her reporting (Brewer & Burke, 2003).

Research on Memorial Beliefs, Memories, and Reporting: From an IPA Perspective

Laypeople interviewed in research have speculated that both survivors and perpetrators of IPA may come to believe the things that are stated repeatedly (Armstrong et al., 2001). Further, research participants reported that they believed some survivors of IPA refrain from endorsing events as having happened in order to prevent potentially negative consequences. The question is whether these women fail to report abuse without any changes in belief, or if their beliefs regarding the occurrence or accuracy of their memories are actually undermined or enhanced. It has been noted that women sometimes silence themselves in the context of relationships in order to avoid conflict, or at an extreme, violence (Woods, 1999). Those who grow up in abusive homes in childhood may learn to be secretive about experiences of abuse as adults (Belenky et al., 1986). Silencing oneself may contribute to not receiving important validation or corroboration. Further to silencing oneself, another important variable to consider in the context of IPA

is that of coercive control, whereby a person poses a significant threat to his partner if she is non-compliant (see Dutton & Goodman, 2005). There are different facets of coercion: making demands, surveillance, engaging in threats, and responses made to demands. The concept of coercive control illustrates that physical force is not the only way in which one can be abusive (Lehmann, Simmons, & Pillai, 2012), or facilitate having a partner behave in a certain way. From other literature, for example that of false confessions, one can see that coercive tactics can lead to compliance. Coercive tactics can also lead to individuals internalizing untrue aspects of an event (Kassin et al., 2010) while simultaneously not reporting or even forgetting what actually occurred instead. Thus, the presence of coercive control in relationships may also lead to similar compliance or internalization of false aspects of an event.

Relationship satisfaction is another important variable to consider in the experience and reporting of abusive behaviour (Marshall et al., 2011). Individuals who feel contented in their relationships may make different attributions about their partners' behaviours (e.g., to perceive them more positively; Fincham, Bradbury, Arias, Byrne, & Karney, 1997), even if those relationships have some components of IPA. Further to this, in interviews with men and women who did and did not have histories of IPA, participants were encouraged to speculate about why they thought there were differences in reports of abuse within some couples. Participants indicated themes that men and women recall information differently (Armstrong et al., 2001). Further to this, there were themes related to areas that are more relevant to the social and cognitive psychology cited in this project; namely, that survivors and perpetrators start to believe things that are stated repeatedly, that both survivors and perpetrators may be in denial about what has

transpired, and that men tend to minimize abusive behaviour (Armstrong et al., 2001). Research also supports the idea that confusion about the source of information can arise from repeated recall (Henkel, 2004). Based on this literature, one could speculate that an individual could forget the source of information regarding abuse; she may not realize that the source of information was her partner, rather than her own actual experience, because he has repeatedly stated to her his perspective on the situation. It has also been hypothesized that the underreporting of IPA could be attributed to different facets of social desirability, which is composed of both impression management (i.e., lying) and self-deception (i.e., really believing deception; Armstrong et al., 2001). For perpetrators, the latter can occur due to motivation to safeguard self-esteem (Armstrong et al., 2001). This need to disregard the negative and claim positive facets of a relationship could be another explanatory factor regarding discordance in beliefs about and, in turn, reporting of IPA.

When abusers are verbally and/or physically violent, this can contribute to survivors doubting themselves and restructuring remembered abusive episodes, never being entirely sure that the abuser's perspective of the situation is not actually the correct one (Lempert, 1997); more specifically, this may reflect the reinterpretation/reconstruction of memory due to social influence. For example, in interviews with professionals working with IPA survivors, some interviewees noted that their clients came to believe the statements the abusers made (Dutton & Goodman, 2005). In fact, in some cases studied in depth through qualitative analyses by Lempert (1997), initial episodes of IPA were first processed with a sense of uncertainty about whether the violence had actually occurred. Even if acts were not ambiguous, they appear to have

been reconstructed in such a way as if they were. Or, women questioned their beliefs (in either accuracy or occurrence) and memories. For example, a woman recounted a violent episode, noting "…And the first time, there wasn't any bruising so I kind of thought maybe I was imagining what he did" (Lempert, 1997, p.163), which could be interpreted as a questioning of belief in occurrence and reattribution of the source of the mental representation (i.e., reattributing the source to her imagination). The reconstruction of violent episodes can occur not only because of abuser behaviour, but also because of the words and actions of people who belong to the survivor's social network (e.g., shock, lack of validation, challenging the point of view of the survivor). Furthermore, because the men were significant others of the women who experienced IPA in this research, the women accorded a certain degree of legitimacy to their partners' view. The more isolated that women were, the more central the abusive partners' input could become. Thus, Lempert's research supports the view that autobiographical belief is highly sensitive to social input. The degree of truth attributed to event representations appears to be easily swayed by disconfirmatory social input.

Another psychological factor potentially at play in the modification of one's beliefs about IPA is dissonance (Festinger, 1957). Individuals may comply or conform with others for many reasons: to maintain harmony or to foster a positive view of oneself, for example (Cialdini & Goldstein, 2004). It is possible, then, that one's motivation to be close to others may outweigh the desire to be accurate or one's need to have ownership over an event. This conflict may be between one's need to be accurate and the need to remain close with someone who disagrees; or, that one may have a vivid memory present that does not coincide with her other motives. These types of conflict can create cognitive

dissonance. Dissonance has been quantified and its implications for behaviour change has been studied with teenagers who perpetrated dating violence (Schumacher & Slep, 2004). Qualitative work (e.g., Enander, 2011) has examined the experience of dissonance in female survivors of IPA. Enander's (2011) argument sheds light on the potential denial of abuse that can be elicited by dissonance, and how entangled motivation and belief in the accuracy of recollections are in abusive relationships. Her research demonstrates that the more convinced a survivor is of her partner's power and her inability to function without him, the higher her motivation to retain the relationship, even if it is a relationship built around fear and mistrust. However, in Enander's examples, as violence and negative consequences increased, so did the dissonance between IPA survivors' actual felt emotions and those emotions she felt she ought to have had in the relationship. As hope for change dissipated, conceptualizations of the abusers changed as well, and decisions were made to resolve the dissonance (i.e., leaving an abusive partner).

Past memories of the relationship as a positive one (i.e., pre-abuse) also may undermine beliefs about the occurrence/extent of current abuse, and motivate the survivor to hope for a return to that happy relationship (Enander, 2011). One of the interviewees in Enander's qualitative study stated that she was "fooling" herself, potentially indicating that she at one point had internalized the belief that the abuse was not as bad as she thought, or that her partner would change and return to his more loving, pre-abuse demeanour. Enander (2011) also posited that dissonance can vary depending on the quality of the abuse: one participant described sudden physical violence as being an obviously dissonant experience that led to leaving her partner very quickly. In contrast, when that same woman later experienced a relationship with less sudden and non-

physical aggression, the dissonance was not necessarily as glaring given that the abuse was perhaps more subtle and insidious, thus leading to staying with her partner for a longer period of time. Interestingly, dissonance theory (e.g., Festinger, 1957) also predicts that as social pressure increases, sometimes attitudes are internalized, whereas at other times, they might not privately shift to match those of the person who has applied the pressure. The current project sheds light on which facets might contribute to one result vs. the other.

Scoboria's Model of Processing Social Disconfirmation of Existing Memories

The reasons why a survivor of IPA may comply with another person's perspective and discount her own experience of an event are varied: cultural, social, economic, and psychological. Scoboria's (2016) model, as applied to social challenge in IPA, sees the experience of dissonance as central. He proposes that social challenges to existing memories result in intrapersonal and interpersonal dissonance. Intrapersonal dissonance arises from the discrepancy between the feedback received from another person and one's own memory. To resolve intrapersonal dissonance, the individual must weigh the quality of the memory against the quality of the feedback received from the other person. The quality of the feedback is assessed by evaluating factors such as the quality of the evidence, the credibility of the source, and the plausibility of the feedback. The quality of the memory is assessed by reflecting on factors such as the qualities of the episodic memory image (if present), the reliability of the source (i.e., one's own memory), as well as the centrality of the event to one's life. In cases where the quality of the memory is judged to exceed the quality of the feedback, belief in the occurrence of the past event is

maintained. In cases where the quality of the feedback is judged to exceed the quality of the memory, belief in occurrence will be reduced to some degree.

At the same time, interpersonal dissonance arises because there is disagreement between the two people regarding the event. Decisions about whether to agree or disagree with the other person are influenced by factors such as the importance of that relationship, the relationship history, the power dynamics of the relationship, how forcefully the feedback is being provided, and the individuals ability to tolerate conflict. These facets help demarcate the costs and benefits of agreement or disagreement with the other person.

Scoboria (2016) observes that in certain cases it is not possible to resolve both of these forms of intrapersonal and interpersonal dissonance simultaneously. Two decisions must be made, consciously or unconsciously: to reduce belief in occurrence or maintain belief in occurrence, and to agree with the informant, or disagree with the informant. He posits four potential outcomes in cases of social challenge to past events, as a result of these decisional processes. Two of the outcomes are congruent, whereby the two decisions are consistent with each other, and two are incongruent, whereby the decisions are inconsistent with each other. In cases where the cost of disagreement is low, an individual may disregard the feedback and defend her belief in her memory (i.e., memory defenders), or she may defend her memory but privately reduce her belief in its occurrence (i.e., deny feedback). In cases where the costs of disagreement are high, as would typically be the case in coercive or abusive relationships, she has the choice to comply with feedback from her partner (without internalizing it) or reduce belief in the occurrence of the recollected event (i.e., relinquish; Scoboria, 2016). These outcomes

provide a starting framework for this project, but can be modified if other outcomes are uncovered.

Goals, Predictions, and Research Questions

Of interest in this project is gaining a better understanding of how this process of social challenge to memories for experiences of intimate partner aggression takes place, and learning more about the situations that produce internalization of or compliance with external feedback about experiences of abuse. The findings could have implications that inform the legal system about some of the cognitive processes involved in revoking one's beliefs an event as well as compliance. Furthermore, it may help provide validation and normalize that it may not be uncommon to experience doubt about the accuracy and occurrence of even the most salient and important personal events.

To accomplish the goals of this component of this research project, two studies were conducted (i.e., Study 2 and 3). Study 2 consisted of in-depth qualitative interviews with women who have had past abusive relationships in order to learn about their experiences of social challenge in relation to their memories for past experiences of partner abuse. Data were collected in participants' own words, but with a specific focus on memory of experiences of IPA, in order to discover if alterations in belief and memory take place in these relationships. The interviews of Study 2 began with open-ended opportunities for the interviewees to discuss their experiences related to doubt and social pressure in abusive relationships, in order for the participants to give their narratives about past abusive experiences without the influence of my theoretically-driven questions. Following the open-ended narrative from interviewees, participants were asked more specific interview questions.

Because this project requires a theory-driven type of content analysis, the questions I asked in interviews, and the categories I initially anticipated were based in my readings in this area. Specifically, I anticipated seeing themes of others explicitly and implicitly undermining participants' beliefs regarding past events. I expected to see that abusive partners often undermine survivors' beliefs about past events, given that they are always privy to the knowledge that aggression transpired (unlike other people, who may be unaware of the abuse). I anticipated observing cases in which belief in accuracy (e.g., "I believed that we fought, but questioned if he actually called me those terrible names") as well as belief in occurrence (e.g., "I started to believe that I was wrong and that he did not hit me at all") were undermined (but not necessarily eliminated) due to partner feedback. I also predicted themes of compliance (e.g., "I just told him what he wanted to hear"). I also anticipated seeing themes related to dissonance regarding the choice to stay with the partner in question.

Study 3 combined the broad knowledge gained in Study 1 regarding social challenges to memory in general, with the in-depth knowledge from Study 2 regarding women who have experienced IPA. Study 3 included a broader, survey-style questionnaire which was administered to women who experienced IPA in the context of heterosexual relationships. The purpose of this study was to examine whether the findings of Study 2 generalize beyond the initial small sample, and to gain more extensive knowledge of the phenomenon with both a larger sample and a refined understanding of which items from Study 1 are most relevant to the phenomena of interest. Study 3 gives a preliminary understanding of some of the differences in the experiences of social challenge in the context of IPA vs. social challenge more generally.

Study 3 attempted to answer the research questions of a) what are the outcomes of social challenge in the context of IPA as related to beliefs and/or memories about past episodes of abuse?; and, b) are these outcomes related to different facets of the social challenge, memory, or memorial beliefs? The first question was analyzed descriptively by applying the coding system developed in Study 1 and augmented using themes the emerged in Study 2. This coding also permitted for a comparison between the results of providing a general cue for social challenge in the general population vs. providing specific cues about memory experiences in the context of abuse with an IPA sample. The second research question was analyzed with contrasts as per Study 1, whereby participants' self-selected outcomes served as grouping variables. Similar to Study 1, I predicted that relinquishing/reducing belief (vs. maintaining belief) would be related to the following variables: negative perceived consequences of disagreeing, mistrust of one's own memory, being influenced by past events, low access to views of others, feeling threatened, high credibility of information and/or informant, high relationship importance, low sense of connectedness to the event, and feedback provided forcefully. Similarly, some variables that may be related to agreeing (vs. disagreeing) are as follows: negative perceived consequences of disagreement, high importance placed on avoiding disagreement, high power of informant, feeling threatened, high relationship importance, and feedback provided forcefully. In addition to testing these predictions, I assessed which other items collected differentiated these outcomes through exploratory comparisons.

Of note are some of the theoretical assumptions that underlie my design and my interpretation of results in Studies 2 and 3. I have assumed that at times, people comply

with others by avoiding discussion about abusive or aggressive behavior within a relationship. The research was also predicated on the assumption that inconsistencies in reporting may be due in some cases to different motivations as well as different interpretations of the meaning of events. I have assumed that disconfirmatory social input, both direct and indirect, may have effects on the memorial beliefs (e.g., in accuracy and occurrence) and memories of people who have experienced IPA. I assume that beliefs about memories are affected in many instances of IPA, but in the following studies sought more information about how beliefs about the occurrence and/or accuracy of memories are defended, reduced, completely relinquished, or suspended.

In Study 2, participants were given the opportunity to engage in recall of past events before being asked questions more specific to these themes. However, the theory which impelled this project was considered during the interpretive work of Study 2's qualitative analysis. In Study 3, these theoretical assumptions underlie the design of the questions that were asked, and the information that was inevitably noticed and coded. The involvement of multiple researchers in developing and adjusting the coding scheme ensured that different interpretations of the data were considered.

Study 2

Method

Sample and Recruitment

Sixteen university-level women were screened for the study through a university Psychology Participant Pool. Participants on the Psychology Pool received bonus credits for their courses in exchange for research participation. Of these screened participants, four chose not to participate in the interview for various reasons (e.g., still involved with

partner, did not want to be audio-recorded, did not read study advertisement). Twelve university-level women (*M* age = 21.1 years; 8 Caucasian, 4 Black/African/Caribbean, Asian, or Biracial) participated in the interview. These women dated how long it had been since their aggressive relationship ended, which ranged from 2 months to 3 years, with a mean relationship length of 17.55 months (*SD* = 12.30 months). The interviews ranged in length from 16 minutes to 70 minutes (*M* length = 32.67 minutes).

Procedure

A posting to an academic participant pool (Appendix D) recruited women who identified as heterosexual and who had experienced dating violence/psychological aggression. Participants signed up for an individual screening session (0.5 bonus credits).

Screening. In our initial screening meeting, I began by reviewing consent forms, which included a discussion of the topic of the study, how I intended to study it, limitations to confidentiality (i.e., duty to report), potential risks and benefits of participation, and how I would attempt to manage these risks. I also assessed eligibility by asking a series of questions. I gave participants the opportunity to ask questions. Potential participants were fully informed of the nature of the study so that women who did not want to reflect on past abuse were able to self-select out from participating, given that the objectives and nature of the interview questions were quite transparent. Upon agreeing to participate, we arranged a time to have the interview, which in most cases was immediately after the screening meeting, and could last up to 1.5 hours (1.5 bonus credits). I offered to call or email participants if they preferred time to think about whether they would like to participate. Participants received 0.5 bonus credits for the screening session, regardless of their participation in the actual interview. Consent forms

were signed by all participants, regardless of participation in full interview. See Appendix E for more detail.

Interview. The interviews were semi-structured, and questions were developed based on the themes reviewed above. As per best practice interview techniques (e.g., Memon, Meissner, & Fraser, 2010), participants were given an opportunity to speak freely about their experiences in the relationship before being asked more specific questions in line with the themes of the reviewed literature. Specifically, the interview began by reminding the participant of what I intended to study (as previously mentioned to her in the screening session) and asking for her thoughts on that topic with respect to her own experiences. This permitted the participant to share her reflections on the topic before my questions could potentially lead her to different ideas, and provided her a reminder about the broad theme of the project, rather than being interviewed without any context. After this open-ended discussion, the interview moved to reflecting on issues related to beliefs about memories and memories in this relationship. This included questions about explicit pressure, implied pressure, doubts, support received from others, self-motives, times when she may have defended her memories, and present perceptions of her experiences. As the interview was semi-structured, these questions were asked at times when they seemed most relevant and in ways that related to the narrative she was telling me in her own words. I attempted to have every question answered, provided the answer had not already been given at another point in the interview. For participants who were not verbose, the questions were asked in an order that closely approximated that in Appendix F. This order covered topics that were most central to the project first, thus providing the participants with even more information about the themes of the project,

which was intended to help them to be able to generate events from their past that were relevant to the topic. Demographic information was also collected from participants in the interview.

At the end of the interview, through unstructured conversation, I attempted to ensure that the participant's mood was satisfactory, given that they were discussing potentially upsetting material. As a Ph.D. candidate in a clinical psychology program, I felt capable of assessing whether the participant appeared to be at risk of harming herself or others at the end of the study while working in conjunction with my supervisor, who is a registered clinical psychologist in the province of Ontario. He remained available to consult as needed. All participants were given crisis numbers and other resources (e.g., on campus mental health services and safety planning sheets) in case they were feeling upset after talking about this material. Interviews also only took place during university business hours so that I could accompany a participant to the Student Counselling Centre on campus if a participant appeared to be at risk of harming herself or others (which did not happen). See Appendix G and H for resource sheets.

Further, given that participant reflection is an important aspect of qualitative research, I asked participants if they agreed to be contacted for an optional follow up to have the study results explained to them and to have them reflect and give their thoughts on these results. This optional follow-up was for a different form of compensation (e.g., gift card for Tim Horton's) given that participants might not have been in eligible courses for bonus points, especially given that these interviews took place during the summer. All participants consented to be contacted, and email addresses were collected. Three participants attended follow-up meetings, and their reflections are considered in the

results and discussion below. Throughout the project, data were collected and analyzed with best practice considerations from Tracy (2010) in mind (e.g., reflexivity about values, ethical data collection, etc.).

Transcription

Two trained research assistants transcribed the interviews with participants. They were instructed to transcribed audio verbatim. I then listened to these audio recordings while reading along in order to make any corrections and re-familiarize myself with the interviews. While transcribing, I also took brief notes on interesting content of the interviews.

Coding and Analysis

For coding the transcripts of the qualitative interviews, I used the methods of directed content analyses (see Hsieh & Shannon, 2005, for a review). Content analysis is a flexible approach to take a large body of text and generate themes, categories, or patterns. Specifically, directed content analysis permits the researcher to work from a theoretical standpoint and allows for a detailed investigation of specific relevant aspects of the data, which was appropriate for this project given that many of the questions that were used in the interviews were generated with theory in mind and the analysis focused particularly on those aspects of the data that reflect the research topic of the dissertation. This method of analysis was chosen because of the respective pre-existing IPA and memory literature that informed some of my thoughts on what content would be found in these interviews.

Given that my approach to content analysis was directed, it was appropriate that I had already engaged with some of the literature in this area before commencing my

analysis. In addition to using direction from Hsieh & Shannon (2005) and Esterberg (2002), I also reflected on Braun and Clarke's (2006) guidelines for thematic analysis given that their steps also encourage thoughtful analysis of qualitative data. As noted above, I read the transcripts while listening to the audio in order to verify the transcriptions, as well as become increasingly familiar with the data. While doing this, I made notes about some initial ideas that I had for codes. Based on this and my review of the literature, I created my initial codes which are small statements (see Appendix I) that identify interesting aspects of the data. Where needed for clarity, I made further notes to operationalize the codes. I attempted to organize these codes by over-arching categories where possible. I then read through each transcript, "coding" pieces of text. Transcripts were coded using QDA Miner 4 Lite software. I added codes that appeared relevant to the intersection of memory and IPA whenever these topics arose in the transcripts, enabling me to code for these topics in other transcripts. After coding was completed, I assessed which codes were more or less common across transcripts, as well as similarities and differences across interviews. I focused on codes that were more frequent across interviews in order to discuss commonalities in the data-set. Some of these codes were condensed or grouped with other thematically-related codes for further clarity and simplification. See Appendix I for the final list of codes 75 codes, broken down into general categories. These general categories were used to help structure my thinking during coding, and included overall categories such as belief in accuracy, belief in occurrence, direct social feedback, indirect social feedback, etc. Some of the codes were observed widely in the data-set, whereas others were unique to certain participants. Six hundred and ninety-four pieces of text were given codes.

Given that this qualitative work was primarily exploratory, it was not guided by specific hypotheses. Rather, the primary purpose of this study was to gather information about the experiences of women who have experienced IPA in order to see if their past abuse experiences were consistent with some of the features of the literature. Namely, I examined the qualitative data to learn about experiences around social feedback in relation to beliefs and memories for abuse and to see if the content in the data mirror those discussed in prior work and in Study 1. I sought to examine the commonalities across all interviews with participants, so note that codes that were used infrequently are not be focused upon in the following analyses. See Table 11 for categories, codes, example quotations from participants, and the number of participants who spoke about relevant coded content. The Results section reviews some of the principle categories and common codes from the data.

Follow-up Interviews

Three participants attended follow-up interviews where I briefly explained Scoboria's (2016) proposed model and the observations I made from the interviews. We discussed the codes with which they identified, as well as whether they believed anything important was missing from the analyses. These participants were compensated with $10 gift cards for Tim Hortons.

Results

Categories and Codes

Categories and codes are presented below. In some cases, illustrative examples are included in text. For additional examples for categories without illustrative examples in text, refer to Table 11.

Table 11

Common Content Codes, Organized Thematically

Category	Code	Example	*n* (%)
Questioning beliefs	Intent	"I started believing that he really didn't do it on purpose."	5 (42%)
	Severity	"And then you'd think about it and you're like, maybe he's not doing something wrong, maybe I'm just… overplaying it, maybe, you know?" "Like, like if he had like shoved me or anything or like, like even like, like grabbed my wrist really hard and like, like shake me sometimes too… And I'd just be like oh like, like the next day I'd be thinking about it and I'm like oh like he didn't actually like do it that hard like, like there's no like marks or anything… "	10 (83%)
	Accuracy	"I'm like did, is that the way it went down?"	3 (25%)
	Occurrence	"…maybe I'm just imagining it…"	4 (33%)
	Other beliefs	***My fault/I deserve it:** "Just because of him. Like he made me, yeah he made me think like it was my fault so I ended up apologizing." ***Too sensitive:** "Yeah then I'd say maybe I'm just being a baby" ***I liked it:** "So I mean, like his I guess technically what he's saying kind of makes sense, like "oh after that I mean…You still agreed to hook up with me, we were still hanging out" or whatever… Like "if you didn't want it, then why would you agree to more?" Right…"	11 (92%)
Not questioning beliefs	Intent	n/a	0
	Severity	"What, when he, when he, um, grabbed my arm, and made the bruises. That was like when, like I said when I left and when I was like no, it did get that severe. Like I have bruises, like that's pretty much the only time that I was like never question, never doubted myself, never nothing."	2 (17%)
	Accuracy	"Maybe I was flirting but I, I know I wasn't."	1 (08%)
	Occurrence	"… I just knew it was wrong and I knew what happened and I wasn't gonna make up a different story for what happened."	9 (75%)
	Other beliefs	***Believe it is bad:** "But then afterwards when he wasn't around, I would be like, no it was that bad." ***Believe it is not her fault:** "Um, so talking with a counsellor really really helped me believe like it was not my fault."	4 (33%)
Social factors	Validation	"And then when she pulled me aside and was like "I see how he treats you and you don't need to be in this relationship anymore." From his mother. That was kind of validating."	9 (75%)

	Lack of validation	"Wait, it's kind of like when you're the only one in the room, and everyone's telling you you're wrong. And you kinda get mad… Maybe I am… Like maybe it's just me."	5 (42%)
	Negative influence of important other	"I, I like look like my brothers are a lot, like they're older than me so, they, like I, if they think I'm overreacting I take that really to heart because they're my older brothers and stuff."	8 (67%)
	Indirect social feedback (e.g., others like him, others ignored/did not intervene)	*__Others like him:__ "…And like I felt like, like even if I had told her like she wouldn't believe me or she'd be like "Oh like, he's not that bad." Like she'd always like tell me like how great he is and that and like…" *__Others ignored/did not intervene:__ "And so I'm thinking, I-I kind of have some thoughts to pretty much like, if his mom knows then maybe he's only abusive a little bit."	9 (75%)
	Direct social feedback (e.g., told her fault, other people questioned her decisions, normalized/minimized, disbelief/denying).	*__Told her fault:__ "'You decided to have that beer in your hand so like, technically what happened is your fault.'" *__Questioning her decisions:__ "Yeah. 'Cause like she was kinda like being like "oh like you should get back together" like that…" *__Normalizing/minimizing: "__When I was like called him out on it or tell him to leave my house, his friends were like "oh you're making a bigger deal out of it, you know like it's normal for a guy to like kinda like put his woman in check" type thing…" *__Disbelief/denying:__ "Um, none of that even happened, I never said that to you…"	12 (100%)
Internal strategies/ factors	Maintain self-image/image of relationship	"But I kept telling myself 'this might be a bad situation but it'll get better.'"	12 (100%)
	Vivid memory	"L: Why do you think you didn't, you didn't come to doubt your memory? P: Uh, just 'cause it was so vivid."	6 (50%)
	Try not to remember/ wish it did not happen	"I'd rather not remember it."	8 (67%)
External evidence		"…And like for a while I actually like documented what would happen… Just in case things got like out of hand and I needed to take that to the police. But it never got to that."	6 (50%)
Ideas re. intimate partner aggression	Needs to be severe/ not "obscure"	" 'Cause like you hear like about all these abusive stories and then you're like okay like it's not that bad, like I shouldn't just talk about it because like, like I didn't have like a broken nose or anything."	3 (25%)
	Needs to be physical	"Um, I thought that maybe I might have been not, I don't know 'cause I feel like with, with abuse like it's easy to identify as being physically or sexually abused because there's actually an act but with emotional abuse and things like that you don't really know, you know?"	3 (25%)

Behaviour	Comply/Agree	"Um, but in the end it was also just me giving in. Right it's like 'yeah you're right, it's my fault,' all that."	11 (92%)
	Defend/Disagree	"Um, normally I defended myself. Just because at first, I was 100% this is what happened, I know it happened and you weren't there but I was and I know this is what happened. And I'm not exaggerating, I'm not lying about anything."	11 (92%)

Questioning and not questioning beliefs. Ten codes are discussed from the general category of questioning and not questioning beliefs. They are presented in five groupings in which the presence and absence of each were coded (e.g., questioning and not questioning belief in occurrence grouped together, etc.). Many participants spoke of questioning various beliefs, and also fluctuating between periods of doubt or questioning what has happened, and periods of not doubting and feeling firm in their beliefs about their memories.

Questioning/not questioning intent. These statements reflected participants' thoughts about the objectives of their ex-partners' behaviour. Often these statements reflected when the participant believed their ex-partner had meant to upset/harm them "on purpose." Five participants (42%) made comments reflecting questioning intent. Of note is that no participant commented on *not* questioning intent; comments on the intent of their partners only arose when participants did wonder whether their partner meant to harm them.

Questioning/not questioning severity. Beliefs about the severity of aggression experienced had to do with an interpretation of the meaning of what is remembered. Beliefs about the severity of their ex-partners' behaviour were commonly commented upon; ten of the interviewees (83%) noted that they did question the severity of their ex-partners' behaviour. An example from Participant 11 was as follows:

> Like, like if he had like shoved me or anything or like, like even like, like grabbed my wrist really hard and like, like shake me sometimes too… And I'd just be like oh like, like the next day I'd be thinking about it and I'm like oh like he didn't actually like do it that hard like, like there's no like marks or anything…

Only two (17%) explicitly noted that they did not question the severity of some of their ex-partner's actions.

Questioning/not questioning accuracy. Accuracy, although similar to severity in that both constructs pertain to perceptions of the quality of what is remembered, was operationalized as wondering if a detail is misremembered, whereas severity is related more so to the perception of a detail (e.g., "Was I grabbed or pushed?" [question regarding accuracy] vs. "I was grabbed, but was it as hard as I am remembering?" [question regarding severity]). Comments specifically regarding beliefs in the accuracy of participants' memory were less frequent; three (25%) participants noted questioning their beliefs about the accuracy of their memories, and only one (8%) commented on specifically not questioning the accuracy of their memories.

Questioning/not questioning occurrence. Belief in occurrence was questioned by four participants (33%). Some examples of this questioning were as follows, coming from Participant 1 and Participant 10: "…maybe I'm just imagining it." "Maybe it's just me seeing bruises and marks, maybe it's not even from him;" "So I was kinda like talking myself through it not actually happening even though it did."

Nine participants (75%) noted at some point refraining from questioning the occurrence of aggressive behaviour. An example of not questioning the occurrence of the aggression was stated by Participant 5, who said the following: "…I guess I just knew it was wrong and I knew what happened and I wasn't gonna make up a different story for what happened." This phenomena (i.e., participants noting explicitly that they did not question belief in occurrence) is interesting because in all other belief types, there are more examples of participants questioning beliefs, rather than not questioning them (e.g.,

in accuracy, severity, intent). As discussed below, this was an interesting facet of this particular sample, and may correspond to the types of intimate partner aggression experienced by this sample and/or the fact that all of these relationships had ended at the time of this interview.

Questioning/not questioning other beliefs. Eleven participants (92%) commented on questioning other beliefs, such as questioning whether it was her fault (i.e., that she "deserves" his behaviour), that she was "too sensitive" to his behaviour, and that she must have "liked it" if she "let" his behaviour continue. These shared the content of being on the topic of self-blame. An example of questioning whether she "liked it" came from Participant 2:

> So I mean, like his I guess technically what he's saying kind of makes sense, like "oh after that I mean…You still agreed to hook up with me, we were still hanging out" or whatever… Like "if you didn't want it, then why would you agree to more?" Right…

In contrast, four participants (33%) commented on not questioning such beliefs, such as being "firm" in their beliefs that their partner's aggression was, in fact, "bad," or believing that it was not her fault that he was aggressive. Again, these beliefs seem to be part of an iterative process, whereby, for example, a woman may have blamed herself, but upon speaking with others, came to believe that his behaviour was not her fault.

Social factors. The social factors category described the interpersonal factors that influenced participants' thoughts, feelings, and decisions regarding their experiences of aggression. There were five overarching social factors categories that had codes across many interviews.

Validation/lack of validation. Nine participants (75%) described experiences where others validated their beliefs and memories; that is, others attempted to convey to the participants that their ex-partners were behaving in aggressive or otherwise unacceptable or problematic ways. For example, Participant 12 described the following: "And then when she pulled me aside and was like "I see how he treats you and you don't need to be in this relationship anymore." From his mother. That was kind of validating."

In contrast, five participants (42%) described a lack of validation, or failing to receive this support from others. For example, one woman (Participant 6) said the following in relation to how the lack of feedback she received from others who witnessed her partner's aggression contributed to her questions about the accuracy of her memory: "Wait, it's kind of like when you're the only one in the room, and everyone's telling you you're wrong. And you kinda get mad… Maybe I am… Like maybe it's just me." In this case, this lack of validation seemed to contribute to this participant questioning her memorial beliefs; namely whether she is misperceiving the aggression she is experiencing.

Negative influence of important other(s). Of note, eight participants (67%) commented on "important others" having negative influences on their beliefs or behaviours. That is, the participants described a person whom they respect or with whom they have a close relationship saying something or behaving in such a way that did not validate their experiences. An example of this came from Participant 9. After telling her brothers about an embarrassing aggressive incident with her boyfriend, they laughed at her. Here, she commented on the effect that this laughter had on her beliefs: "I, I like look like my brothers are a lot, like they're older than me so, they, like I, if they think I'm

overreacting I take that really to heart because they're my older brothers and stuff." Text coded as such revealed the particular importance of things said or done by those people considered close to the participant.

Indirect social feedback. This category was defined as subsuming any comments about social feedback that did not involve directly telling the participant that her views are incorrect. Nine participants (75%) spoke of some experience of indirect social feedback. Two common codes from this category are as follows. The first included others telling the participant that they "like" her ex-partner, which the participant experienced as invalidating personal thoughts about her ex-partner. Participant 11 gave an example of this: "…And like I felt like, like even if I had told her like she wouldn't believe me or she'd be like "Oh like, he's not that bad." Like she'd always like tell me like how great he is and that…" Here, one can see that this other person talking about how much she "liked" the participant's ex-partner made the participant assume that this other person would not believe that the participant's ex-partner was aggressive. The second common code from this category captured those times when others ignored the participants' ex-partner's behaviour, or failed to intervene in those situations where others witness his aggressive behaviour.

Direct social feedback. Invalidating messages about the occurrence of events or the recalled contents of events were common in the reports of women interviewed for this study. This category included reports that others directly told the participant something that questioned or invalidated her experiences. All participants made mention of some sort of direct social feedback. This category included the following: participants being told that it was "her fault" that she experienced this aggression; others questioning the

decisions of the participants (e.g., questioning her decision to break-up with a partner); others normalizing or minimizing the aggressive behaviours of participants' ex-partners; or, others conveying their disbelief or outright denial that the participants' ex-partner would behave in such a way. These examples could also be directly from the ex-partner, such as in the case of Participant 10, where she reported that her ex-partner stated the following: "Um, none of that even happened, I never said that to you…" Comments including explicit disbelief were noted by 33% of the participants. Of note is that 92% of the participants (11 of 12) stated that their ex-partner had provided some kind of invalidating direct social feedback at some point in time.

Internal strategies/factors. The categories described below focus on intrapersonal influences that contributed to participants' belief or decisions.

Maintaining self-image/image of relationship. In this category, participants commented on some type of denial, making excuses, covering up, or otherwise attempting to maintain a certain image of themselves in the relationship. An example of this came from Participant 8: "But I kept telling myself 'this might be a bad situation but it'll get better.'"

Vivid memory. Half of the participants commented on their vivid memory, usually mentioned as being a form of support for their beliefs about the occurrence of past aggression.

Try not remember/wish it did not happen. Eight participants (67%) spoke of trying to not remember the event or wishing in some way that it did not happen.

External evidence. Seeking external evidence involved the acquisition of proof from the environment. Half of participants commented on how they sought out or

actively created external evidence (e.g., documenting aggression in a journal). As with the "vivid memory" category, this evidence was often used as support for their beliefs about the occurrence of past aggression.

Ideas about abuse/IPA. Half of participants commented on how aggression must be severe, not obscure, and/or physical to be considered "abuse." This seems to be informed by, and inform, relevant interpersonal and intrapersonal factors. For example, some of these participants spoke of how they came to develop these ideas about what constitutes "abuse" and how, given that their experiences of "abuse" did not fit the prototype that they had in mind, they came to doubt their experience or would be less apt to defend themselves. An example shows how Participant 12 felt it easier to question memorial beliefs about abuse without the evidence that may come from physical acts: "… I feel like with, with abuse like it's easy to identify as being physically or sexually abused because there's actually an act but with emotional abuse and things like that you don't really know, you know?"

Behaviour. This category examined the behaviours that participants noted, in line with Scoboria's (2016) proposed model of outcomes of social challenge. Scoboria posits two behavioural outcomes of note: agreeing with a challenger, or disagreeing with a challenger (i.e., defending one's memory). Of these participants, eleven (92%) noted agreeing or complying with others, sometimes described as "giving in" and eleven (92%) commented on defending their memories at some point, whether to a challenger or another person.

Interestingly, these aforementioned numbers point to the fact that many women interviewed in this study endorsed both complying and defending their memories at

different times and depending on their circumstances (e.g., perspective might change with the support of a validating social support). An example of this fluctuation between defending and complying came from Participant 3: "I would defend it here and there, but eventually if he fought it enough I would just give in because I was so scared of losing the relationship." Various iterations of these fluctuations were present in the interviews. Sometimes participants described moving from defending to complying over time; other times, participants described initially defending, then complying, then moving on to defend once more (for example, after speaking with a supportive person who validated their perspective). Further, the relationship between these behaviours and judgments about memorial beliefs in this data-set was quite complex. As noted above, many participants questioned beliefs other than belief in occurrence (i.e., beliefs regarding severity, accuracy of their memory, etc.).

In the data, only one participant (Participant 6) only spoke of agreeing/complying with her partner and others. This participant spoke of the reactions (or lack thereof) of her ex-partner's mother, ex-partner's friends, as well as her partner. In this case, it appears that she may not have engaged in much defense of her perspective in part because she internalized some of the normalizing and minimizing that took place, and also because these people who were engaged in the challenging were not necessarily her own close friends or family. Although at the time of the interview, she had broken up with this previous partner and now maintained belief in the severity of the abuse she experienced, at the time she merely internalized the belief that this aggression was not "as bad" as she thought, or complied with others to avoid an argument.

In contrast, one participant (Participant 9) noted only defending her perspective. In this case, she never explicitly stated that she complied/agreed with her partner or others. She noted sometimes wondering if she was exaggerating the severity of what had happened, but that friends then validated her and reaffirmed her position. Further, she commented on receiving apologies from her partner and then making the choice to "drop it" or "forget about it" without necessarily having a mutual agreement about how the particular events took place.

Follow-up Interviews

As discussed further below, some participants attended follow-up interviews and discussed with me the results of the study. Some interesting comments included the following: emphasis on the fluctuations between feeling doubt and feeling confident in one's memorial beliefs, the effects that social challenge had on questioning memorial beliefs other than belief in occurrence, and the importance of lack of validation in contributing to questioning one's memory.

Discussion

Much of the content present in these interviews is consistent with ideas present in the model that Scoboria (2016) proposed regarding outcomes of social challenge to memory. Namely, participants commented on processes that contribute to dissonance, such as social feedback, and their decisions to either disagree or agree with challengers, as well as decisions around memorial beliefs.

In these data, I was struck by the recursive nature of these experiences/episodes, which is consistent with other perspectives on IPA, observing the changing nature of women's ways of understanding the abusive situations in which they live (e.g., Lempert,

1997). In some cases, participants quickly moved away from speaking about specific events and rather spoke in generalities regarding their experiences. It seems somewhat artificial to speak at length about isolated episodes of aggression and the ensuing challenge to memory. One's beliefs about personal memories when challenged by others often seems to be in flux, and memories for repeated events can become schematic rather than detail-specific (e.g., Hartwig et al., 2012). It is for this reason, for example, that it would be hard to divide this data-set into people who defend their memories vs. people who comply, or people who reduce belief in occurrence vs. people who maintain belief in occurrence because these categories are far from mutually exclusive in many cases in this data-set.

One participant commented on this in the follow-up interview, noting that she felt that it was important to capture how much fluctuation occurs between doubting and not doubting oneself. Connected to this was the challenge in coding something more theoretical like "dissonance," especially in these events that are quite recursive. This perhaps explains why other qualitative researchers who have focused on the process of change (e.g., Enander, 2011) have been able to comment more readily on patterns with respect to IPA survivors' growing dissonance and the subsequent termination of aggressive relationships. Further, the types of dissonance described in Scoboria's (2016) model are different from the type of emotional dissonance described in Enander's (2011) model (e.g., examining the actual emotion participants felt towards partner vs. feigned). The present study attempted to focus more on isolated incidents of challenges to memories for experiences, rather than focusing on the process of feeling and then resolving dissonance (i.e., dissonance regarding the difference between held beliefs and

behaviour). Thus, instead, many of the interviews contained information that supported how participants may have attempted to *resolve* dissonance. Of course, dissonance resolution must be inferred from changes in attitudes about events and the self, because participants are unlikely to talk about dissonance directly, especially considering the retrospective nature of the data. For example, the process of questioning beliefs about the severity of the aggression may serve to reduce a person's sense of dissonance. That is, by altering her beliefs in order to think the aggression was "not so bad," she reduces the dissonance between her behaviour (i.e., staying in this relationship) and her beliefs about how relationships *should* be (i.e., partners should be respectful towards one another). After experiencing much aggression, the decision to defend one's memories and potentially end a relationship is another way to resolve that same dissonance.

The types of memorial beliefs that were and were not questioned are also of interest. Certain types of beliefs were frequently questioned, and some were not. For example, 83% of the participants described questioning the severity of the aggression they experienced, and 33% of the participants commented on questioning the occurrence of past aggression in some instance. In contrast, 17% of the participants stated that, at some point, they did not question the severity of the aggression they experienced, and 75% of participants noted that at some point, they did not question the occurrence of this aggression. Thus, in this small sample, I observed that certain types of beliefs were more amenable to questioning (e.g., interpretation of severity) than are others (e.g., occurrence). Of course, there are instances of relinquishing belief in occurrence in vivid memories (i.e., NBMs), but as observed in the challenges to general and sometimes benign memories in Study 1, belief in accuracy appeared to be more readily undermined

than belief in occurrence. This makes sense, considering that it can be easier to change the perception of the meaning of a past event or perception of a detail, rather than change a belief about whether an event is a genuine part of the past, especially when the original event is distinctive, as is the case in Study 2. For example, when faced with disconfirmatory feedback, confidence about a detail can be undermined without relinquishing belief that the overall event occurred. One participant in the follow-up meetings commented on this finding (i.e., not doubting occurrence, but doubting other memorial beliefs), noting that she felt it was consistent with her experience. This may be a function of the awareness that these participants may have, having been out of the relationship for some time. Awareness is considered to be an important factor in motivating women to leave intimate relationships marked with aggression (Chang et al., 2010). Future research may examine these same constructs in discussions with women who are still in relationships marked with aggression, or relationships marked with patterns of intimate terrorism (i.e., Leone, Johnson, & Cohan, 2007). The greater the degree of control a partner has, the more likely that epistemic beliefs might be undermined. Perhaps in these interviews, there would be more doubt surrounding the occurrence of aggressive behaviours. Although I may not expect belief in occurrence to be completely undermined and relinquished in these situations, ratings may be lower (e.g., subtle shift from 7 to 5 on a Likert-style scale).

The importance of the influence of social factors on memorial beliefs and decisions about behaviour was highlighted in the data. Many participants noted various types of social support, and on the other hand, the absence of support, or outright direct social feedback that was in conflict with the participants' perspectives. Although

intrapersonal factors were used as support of participants' perspectives (e.g., vivid memories, external evidence), interpersonal factors were mentioned in more interviews and in various capacities, both in support of and in conflict with the participants' thoughts and feelings. This is consistent with research stating that survivors of intimate partner aggression typically disclose their experience to at least one other person (e.g., Sylaska & Edwards, 2014), which naturally elicits responses that can be categorized as helpful or unhelpful. Further, in these interviews, some participants identified that this validation was what helped them come to more fully believe their memories for past aggression, which is also consistent with literature stating the importance of emotional support when experiencing IPA (e.g., Chang et al., 2010; Coker, Watkins, Smith, & Brandt, 2003). The types of "invalidating" social feedback that were stated in this study (e.g., disbelief, minimizing, blame, questioning decisions, etc.) is also consistent with types of feedback that were reported as "unhelpful" in past research (e.g., Bosch & Bergen, 2006). These social factors, namely lack of validation, were noted by one participant in her follow-up meeting as being quite influential on her thoughts and feelings about the aggression she experienced. This is also consistent with research in the more general memory literature that has noted the connection between lack of social verification and low ratings of confidence in memory accuracy (e.g., Arbuthnott, Kealy, & Ylioja, 2008). Further, many participants identified "important" others, such as ex-partners or friends or family members, who challenged their beliefs about what had happened. It seems that the feedback given by these important others may have been incorporated into some women's perceptions of what had happened because these are significant people in their lives, consistent with other research (e.g., Lempert, 1997).

Interestingly, some research indicates that women may begin altering interpretations of aggressive situations (especially ambiguous ones) through internal dialogue (e.g., Lempert, 1997). I noticed in the data that 50% of participants mentioned being influenced by thoughts about aggression/abuse (e.g., abuse has to be physical, severe, and not "obscure"). Arguably, these thoughts about abuse and aggression are shaped by one's cultural and social environment. Further, in situations where participants created excuses or hid the aggression from others in their life, it could be argued that they had expectations that others would blame them for the aggression, because of cultural views about women being homemakers who are the ones responsible for the climate in one's home (e.g., Lempert, 1997).

Further, in 50% of the interviews, participants mentioned external evidence, whether it was lack thereof, or use of external evidence as a memory aid. The act of trying to create memory aids (i.e., through journals, photo evidence, etc.) is consistent with research documenting that creating external memory aids can be a deliberate decision (e.g., Catal & Fitzgerald, 2004). Lempert (1997) noted that, in some cases, in the absence of tangible evidence (e.g., bruising), victims of violence are able to question whether an aggressive episode took place. Many of the aggressive episodes described in the present study did not avail to physical evidence (e.g., shouting, name-calling). This lack of evidence appears to give women space to question different memorial beliefs about what exactly took place, confirming work such as Scoboria, Boucher, et al. (2015) which highlights that being unable to find confirmatory evidence may undermine belief in the occurrence of past events. Although the present data do not indicate that belief in

occurrence was frequently challenged by lack of evidence, other memorial beliefs may have been challenged.

Limitations and Future Directions

Future directions may involve studying the perceived motives of others when they challenge women's memories for intimate partner aggression. There is much research (e.g., on false confessions, see Kassin et al., 2010; on memory retractors, see Ost, Costall, & Bull, 2001) whereby the motives of others have an effect on memory reports and behaviour. Although beyond the scope of this project, identifying the perceived motives of others, or further, gathering information from challengers about why they challenged the memories of others, would be of great interest.

With respect to shortcomings of the data, it is important to acknowledge the limitations in terms of some demographics of the participants: sex (i.e., all cis-gender women), sexual orientation (i.e., all identifying as heterosexual), educational level (i.e., all current university students), participants being primarily Caucasian, and typically focusing on only certain types of abuse (i.e., very limited discussions of physical violence and sexual violence). Thus, one must be cautious in generalizing to other demographics on the basis of this project. Further, one of the participants in the follow-up interview also commented on another limitation that I highlighted earlier; namely, that participants in this type of study may have a certain level of awareness and may have already committed a certain amount of focus on processing what took place in this past relationship. This participant in particular commented on her current level of "awareness" about issues in her past and present relationships. She noted that at the time of the interview, she had been out of the relationship, had engaged in much reflection, and might not have had the

same understanding of her past experiences of aggression if interviewed at a different point in time. Additionally, 42% of participants noted that they had some kind of professional help (e.g., therapy, counselling) to help process these past relational experiences, which likely adds to their self-awareness. Considering the sample, it is not surprising that these women tended to have an integrated understanding of their past experiences. As mentioned above, further research should examine these theoretical issues (i.e., about decisions regarding behaviours and memorial beliefs related to past aggression) in a wider sample of women, some of whom may still be in relationships marked with aggression.

Furthermore, it should be noted that the categorization I imposed on the data is shaped by the research literature that I have read. The names I have given to categories, and placement of certain statements into particular categories is somewhat artificial, such as the categorization of indirect and direct social feedback. The word "indirect" may have connotations of being less powerful than "direct" social feedback. However, some "indirect" social feedback, such as parents saying that they really like their daughter's (aggressive) partner may be powerful for many reasons, such as being a reflection of the parents' true feelings. Future research could study these intrapersonal and interpersonal processes in further depth, as well as different types of social feedback.

This study supports the idea that topics from the literature on autobiographical memory map well onto issues related to violence and aggression against women in intimate partnerships. Although there is not one particular "pattern" that has emerged from the data, this study is an important first step in making connections between two distinct but seemingly connected literatures. The analyses conducted in this study are

triangulated with further data on this topic in Study 3, where I used different methodology and different samples. Study 3 also serves to enhance this project's "crystallization" (Tracy, 2010) by providing an increasingly complex and detailed look at the area of interest examined in Study 2 with the participation of different members of our lab's research team, as well as a different sample and methodology.

Study 3

Method

Participants

Data were collected from 151 participants. After removing participants who were off-topic (e.g., described a lack of memory being challenged, or off-topic; n = 16), or only described a situation in which someone other than their intimate partner challenged a memory for past aggression (n = 19), as well as one male participant who accidentally completed the study, the final sample analyzed in this study consisted of 115 respondents (M_{age} = 28.61, SD = 9.44, range = 18 to 60; self-described race/ethnicity 68.7% Caucasian, 3.5% Black/Caribbean, 3.5% Hispanic/Latin American, 0.9% Asian, 3.5% Middle Eastern, 7% biracial, 5.1% other; 7.8% missing; nationality: 49.6% American, 38.3% Canadian, 2.6% other, 9.5% missing; highest education: 39.1% high school; 22.6% community college; 30.4% bachelor's level; 5.2% Master's level, 2.7% missing).

Participants were recruited using an academic participant pool (48.7%) and Mechanical Turk (51.3%) in order to augment the pool sample with a more diverse sample from MTurk. Participants in the pool received academic credit, and Turk workers received $3.00USD as a token of appreciation. Only Canadian and American participants were sampled on Turk in Study 3, in order to be able to provide relevant North American support/crisis resources in case a participant felt a need for support during or after

participation. All participants had to meet specific screening criteria: female, heterosexual, had an autobiographical memory for past experience of intimate partner aggression challenged by another person, and were willing to write about this experience.

Materials

Open-ended questions about social challenge. Participants were prompted to provide open-ended descriptions of the challenge to the memory, how the memory was challenged, by whom, and what was the outcome of this process. Based on the findings from Studies 1 and 2, participants were also asked to elaborate on the effects that the challenge had on their belief in the occurrence of the event, their confidence in the details of the memory, and their interpretation regarding the event (See Appendix J for prompts). They were also asked for the duration of this relationship, whether the relationship had ended, time since ending (if it had), and how isolated they felt in the relationship (rated on a *1-7* Likert-style scale).

Autobiographical belief (belief in occurrence). As per Study 1, the three item scale developed by Scoboria et al. (2014) measured belief in occurrence of autobiographical events (Appendix J). Cronbach's alphas in the current data were $\alpha = .91$ (challenged event) and $\alpha = .92$ (control event).

Recollection. As per Study 1, the three item scale developed by Scoboria et al. (2014) was used to measure recollection (Appendix J). Cronbach's alphas in the current data were $\alpha = .97$ (challenged event) and $\alpha = .83$ (control event).

Belief in accuracy. As per Study 1, the three highest loading items from the belief in accuracy factor described by Scoboria, Talarico, and Pascal (2015) were used

(Appendix J). Cronbach's alphas in the current data were α = .85 (challenged event) and α = .85 (control event).

Recollective phenomenology. Eight items measured different facets of recollective phenomenology (as used in Study 1, see Johnson, Foley, Suengas, & Raye, 1988; vividness, visual features, auditory features, reliving, mental time travel, and three items measuring spatial features). Per prior research and Study 1, a scale was created for spatial items (i.e., spatial arrangement, location of people, location of objects; α = .73 [challenged event] and α = .79 [control event]) and for re-experiencing items (i.e., re-living, mental time travel; α = .81 [challenged event] and α = .92 [control event]).

Self-relevance and event plausibility. Three items from Study 1 were retained to measure personal plausibility, the importance of the event, and connectedness of the event to other aspects of one's life (see Appendix J).

Centrality of Events Scale. The seven items short-form of the Centrality of Events Scale (Bernsten & Rubin, 2006) was used for the challenged event, as per Study 1, with α = .92 in the current data.

Items related to facets of the social challenge. The sixteen items written for Study 1 based on Scoboria's (2016) model, were administered, as they are potential predictors of outcomes of social challenges to memories. Items were measured on *1-7* Likert-style scales. See Appendix J for more detail.

Embedded validity checks. Participants answered two embedded validity checks (i.e., What is 2+2? Please write the word "dog") to ensure participants were paying attention to the task at hand.

Procedure

MTurk workers read a brief description of the study on the Turk website which contained screening criteria. Individuals who were interested in participating clicked a link which directed them to the Turkitron website (Foster, Michael, & Garry, 2014). This site screened MTurk workers to ensure eligibility; workers who had participated in similar studies in the lab, including Study 1, were not eligible to participate. Pool participants were screened through questions at the beginning of the academic term.

Participants filled in the questionnaire online, which took approximately 30-45 minutes. Participants were referred to the study website and read a letter of information (Appendix K). They then were asked to describe a case in which their aggressive partner challenged a memory for a past experience of IPA. Participants then completed the open-ended questions regarding social challenge. Participants were asked to categorize themselves in terms of the outcomes from Scoboria's (2016) model.

Participants then rated their memory on belief in occurrence, belief in accuracy recollection, phenomenology, plausibility, importance, and connectedness, followed by the questions related to facets of the social challenge. Participants were then asked if they remembered a time when a person other than their aggressive partner challenged a memory for IPA. Those who responded affirmatively completed the procedure again for that event. Then participants were asked to describe and rate a positive control event of their choice on the same variables, with the exception of the social challenge variables. This was done partly to mitigate risk associated with the research, by attempting to induce a positive mood before the study was completed. Neither of these events were analyzed in the present study.

Coding

Development of the coding scheme and coder training. The coding scheme for Study 3 was adapted from Study 1. Categories that were deemed to be more inferential or extraneous to the topic were removed from this coding scheme, and new categories inspired by the IPA literature and findings from Study 2 were created. See Appendix L for the coding manual. The PI completed the coding for this project. See Table 12 for definitions and examples from the current data.

Categories retained from Study 1. Codes from Study 1 that were retained for the present data are as follows: sought input, sought evidence, social feedback (with the removal of "pressured by another person" code as it was deemed present in every example), internal features (weak), internal features (normal/vivid), internal alternate attributions (self and other), and external alternate attributions (self and other).

Categories developed for Study 3. Codes were created based on the IPA literature and findings from Study 2: presence of corroboration, presence of normalizing, told her fault/blamed, told not intended, told exaggerating/over-reacting/minimized, feedback from others regarding alternate attributions, vacillation in a belief other than belief in occurrence, vacillation in belief in occurrence, and validation. Note that some of these codes fall into the category of social feedback.

Inter-rater reliability. The inter-rater coding was completed by the PI and the same research assistant who was the primary coder for Study 1. Training was done through phone meetings and discussion with examples (approximately 2 hours). The assistant initially coded 28 participants (Table 13). From this first batch of coding, kappas and agreement rates were satisfactory for the following variables: belief in occurrence

Table 12

Coding Features of the Memory and Memory Challenge: Brief Descriptions and Examples from Study 3

Category	Description	Brief example
Codes retained from Study 1		
Social feedback		
Told did not occur	Feedback that the event did not occur, and/or others deny event*	"The topic briefly came up via my father, and he completely denied doing this."
Told could not occur	Feedback that event could not have occured*	"He proceeded to say …he would never hurt me, or anyone."
Told not likely to have occurred	Feedback that the event could have occurred, but it is unlikely*	"My significant other told me I was crazy… so why would he have done that?"
Lack of corroboration	Feedback provided that the memory cannot be confirmed*	"He claims he has no recollection…"
Told not there to witness	Feedback that was not present to witness event*	n/a in this data
Told happened to someone else	Feedback that the event (or event features) happened to someone else*	"[The police] told me that my partner called them from a gas station because I (myself) cut the phone cord so he could not get help" (*note:* for context, this was after partner was the one to do this activity).
Told happened differently	Feedback that details within the event happened differently*	"Later on he said that he was 'not that rough' with me, and that he had thrown me on the carpet, not on the (very painful) pile of equipment."
Disconfirming non-verbal feedback	Intentional non-verbal feedback (e.g., look of disbelief, laughing, etc.)*	"It should also be noted that he was a foot taller, so he stood up very close to me, so he could loom and accuse from above."
Others unavailable	Does not receive feedback because key other(s) unavailable*	n/a in this data
Refused to speak of event	Seeks feedback but other(s) refuse to provide (other may be motivated to avoid)*	"When I challenged him on what happened he says that all I want to do is cause an argument and to drop the subject."
Another person did not provide feedback	Does not seek feedback and others do not provide it*	n/a in this data
Internal features		
Weak memory	Something unusual about memory (features disorganised, feels unreal, etc.)*	"Since I could not remember the exact events, I began wondering if this had actually happened."
Typical/vivid memory	Memory described as normal/vivid	"…everything he did was in vivid detail in my memory."
Internal attribution		
Re. self	Participant's memory may have resulted from fantasy, imagination, dream, nightmare, hallucination, substance use, etc.*	"I was on medication for pain and on sedatives as well. When he denied what he had said, I truly believed I had made this up, or just imagined/dreamed it."
Re. other	Challenger's memory may have resulted from fantasy, imagination,	"I think that, because he was drinking all day, that his judgment or perception of

	dream, nightmare, hallucination, substance use, etc.*	the event was clouded and his aggression and violence were not provoked by me."
External attribution		
Re. self	Participant's memory may have resulted from an external source (movie, T.V., book, etc.).*	n/a in this data
Re. other	Challenger's memory may have resulted from an external source (movie, T.V., book, etc.).*	n/a in this data
Sought input from anyone else	Participant attempted to speak with someone regarding the challenged event.	"His brother also told me he had done this to his mother before (a couple years previous)."
Sought evidence	Participant sought/created evidence related to the aggression.	"I also had the bruises to prove that it hit me."
New codes developed for Study 3		
Social feedback		
Presence of corroboration	Participant states that she has another person substantiate/verify her version of the events. Corroboration differs from validation in that the corroborator was there to witness the event.	"I had spoke to others that were there and confirmed that what I had said happened, actually did."
Normalized	Participant was told that the partner's behaviour is socially appropriate (i.e., normal for men to behave this way).	"[He] claimed that this was appropriate behavior."
Told her fault/blamed	Participant states that she felt blamed or somehow responsible for what happened.	"He then blamed me and said that it was my fault and that I shouldn't have been there in the first place to fuel the situation."
Told exaggerating/over-reacting/too sensitive	Participant has been told that she is exaggerating, or over-reacting to her experience of aggression, or has the aggression has been minimized in some way.	"…he told me I was overreacting and that what happened wasn't what was shown. He proceeded to tell me it wasn't a big deal and he made a mistake."
Told no intent	Participant was told that her partner did not intend to hurt/upset/offend her.	"My partner later said that he was joking and I should have seen that it was a joke."
Feedback re. alternate attributions	Participant was told that her memory or beliefs come from another source (i.e., partner accused her of dreaming, being drunk, being "crazy" or "delusional," etc.). Can be internal or external sources.	"Since that time and still today he claims that the chemo drugs have fogged my memory."
Other new code		
Vacillation in some belief (other than belief in occurrence)	If at any point, the participant noted questioning her beliefs or internalizing something that the challenger said (related to blame, exaggeration, etc.) with the exception of belief in occurrence.	"He made me believe that I was in the wrong, that I was too sensitive. That my feelings were irrational and an over-reaction."

Note. Asterisk denotes that definition was taken either verbatim or somewhat altered from Scoboria, Boucher, & Mazzoni (2015, pp. 550-551). Brief examples come from the current data-set. When not otherwise specified, "he" refers to participants' intimate partners. Categories not found in the data are retained in the table for purposes of comparison with Study 1.

Table 13

Agreement Rate and Kappa for Coding

Category	Agreement rate	Kappa
Reduce vs. maintain belief in occurrence	100%	
Public agreement vs. disagreement	92.85%	.81
Input	96.43%	
Evidence	89.29%	.73
External attributions re. self	100%	
External attributions re. others	100%	
Normalizing	96.43%	
Told her fault/blamed	89.29%	.76
[a]Told no intent	92.43%	
Exaggerating/overreacting/minimizing	92.43%	.85
Feedback re. alternate attributions (from others)	85.71%	.70
Presence of social feedback	100%	
[a b] Type of social feedback	89.29% - 100%	
[b] Internal features (weak)	96.43%	
[b] Internal features (average/vivid)	96.43%	
[b] Internal alternate attributions (self)	96.43%	
[b] Internal alternate attributions (others)	92.86%	.71
[b] Presence of corroboration	96.43%	
[b] Vacillation in a belief except belief in occurrence	89.29%	.77
[b] Vacillation in belief in occurrence	82.14%	.34
[b] Validation	89.29%	.61

Note: categories that were dropped due to low agreement/low kappas were as follows: validation, and vacillation in belief in occurrence. Kappa only calculated in cases where agreement was less than 95%.
[a] Kappa could not be calculated in some cases due to low frequency of the code.
[b] Kappa calculated for second set of inter-rater reliability coding.

(maintain vs. reduce), behaviour (agree vs. disagree), sought input, sought evidence, external attributions, normalizing, told her fault, told no intent, told exaggerating, feedback regarding her own alternate attributions. Note that kappa was not calculated in some cases when agreement was high (i.e., above 95% agreement).

The coding manual was revised for categories that did not show good agreement, more training and discussion took place and the PI and research assistant coded 10 additional cases for discussion (two separate meetings, approximately 1.5 hours each). The assistant then coded an additional 28 cases, and achieved satisfactory agreement for: social feedback categories (e.g., did not happen vs. happened differently), internal alternate attributions, internal features, corroboration, and vacillation in belief other than belief in occurrence. Two categories were dropped from analyses due to low agreement: vacillation in belief in occurrence and validation.

Data Cleaning for Quantitative Data

Handling of missing data. Analyses were conducted using both SPSS v.22 and JASP 0.7.0 Beta3. For scales for challenged events (i.e., belief in occurrence, belief in accuracy, recollection, spatial, and re-experiencing phenomenology, Centrality of Events), mean replacement was used for missing scale items (i.e., replaced the missing score with the mean of that participant's score on the other items from that scale only). This method was deemed appropriate because of the low amount of missing data (i.e., 1.74% or lower per variable) as well as non-significant Little's tests for missing data.

Outliers. Outliers were assessed for the quantitative analyses. Participants' responses to embedded validity checks were examined to ensure participants were paying attention to the task at hand. To assess for response sets, I calculated each participant's

standard deviation as a within-subjects variable. Two cases were noted to have an average within-subjects standard deviation below one across all variables. Mahalanobis distance scores were calculated for the central dependent variables (i.e., three belief in occurrence items, three belief in accuracy items, and three recollection items for challenged events) and were examined with a cut-off of χ^2 p =.001. Seven multivariate outliers were identified using this manner. Thus, I considered removing these nine outliers (i.e., two with low standard deviations and seven based on Mahalanobis distance). The decision was made to retain these outliers, in particular because their removal would reduce one of the outcome groups (i.e., those who agreed and reduced belief in occurrence) from n = 12 to n = 7. This suggests that the cases are not outliers, but are representative of a particular type of responding, and were thus retained.

Results

The results begin with a description of the characteristics of the challenges and the support participants noted in making decisions about the challenged events. Then, participants' ratings of their personal outcomes of the social challenge are examined, as well as the independent coding by the PI of these outcomes. Comparisons between the four outcome groups are discussed. Finally, exploratory attempts to predict key variables are described.

Features of the Memory and Memory Challenge

Types of social feedback. Participants' narratives made mention of different kinds of social feedback that they experienced in their social challenges (see Table 14). The most commonly mentioned were participants being told that the event happened differently (n = 71) or that the event did not occur at all (n = 41). Of the codes that were

Table 14

Frequency of Endorsement of the Narrative Coding Variables

Code	Frequency of endorsement (%)
Social feedback	
Told did not occur	41 (35.65%)
Told impossible	7 (6.09%)
Told implausible	1 (0.86%)
Lack of corroboration	8 (6.96%)
Not witnessed	0 (0%)
Told happened to someone else	1 (0.86%)
Told happened differently	71 (61.74%)
Disconfirming non-verbal	7 (6.09%)
Lack of feedback to confirm/deny	1 (0.86%)
*Presence of corroboration	7 (6.09%)
*Normalized	2 (1.74%)
*Told her fault/blamed	25 (21.74%)
*Told exaggerating/over-reacting/too sensitive	47 (40.87%)
*Told no intent	7 (6.09%)
*Feedback re. alternate attributions from others (about herself)	39 (33.91%)
Sought input	21 (18.26%)
Sought evidence	36 (31.30%)
Internal features (weak)	10 (8.70%)
Internal features (vivid/normal)	50 (43.48%)
Alternate attributions (self)	10 (8.70%)
Alternate attributions (other)	15 (13.04%)
Alternate attributions (external – self)	0 (0%)
Alternate attributions (external – other)	0 (0%)
*Vacillation in belief other than belief in occurrence	63 (54.78%)

Note. $N = 115$. Asterisk indicates new code added for Study 3. Percentages may not total 100%, as participants could receive multiple codes per each category.

created for this study to capture unique aspects of memory for IPA, the most commonly observed were participants' noting that they were blamed for what happened (n = 25), told that they were exaggerating, overreacting, or being "too sensitive" (n = 47), and were given some kind of feedback about alternate attributions (n = 39), such as being told that she imagined it, hallucinated it, etc.

Other factors that influenced participants' memories/memory reports. Some participants explicitly noted seeking input from others (n = 21) and seeking evidence (n = 36). Consistent with Study 2, some participants noted purposefully keeping evidence, such as a journal or photographs to support their memorial beliefs. Some participants commented on having a fuzzy memory for the aggressive episode (n = 10), although more noted having a typical or particularly vivid memory (n = 50) for the incident. Some participants made reference to alternate attributions about their experience (n = 10; e.g., participant recognized she was intoxicated at the time of encoding, participant considered that she imagined the event, etc.). Some participants made alternate attributions about their challengers (n = 15), such as noting that the challenger was intoxicated, had delusions due to a mental health condition, etc.

Items related to characteristics of the relationship and the challenge: General patterns. Sixteen items measured facets of the social challenge (see Table 15 for means and *SD*s). When looking at ratings overall, there were high average ratings (i.e., above 5 on the 7-point scale) on the following: being bothered by the memory disagreement, being influenced by past experiences with the challenger, forcefulness of the challenge, trust of one's own memory, and importance of the memory. Participants gave low average ratings (i.e., below 3) on the following: credibility of the challenger, credibility

Table 15

Means and Standard Deviations of Social Challenge Items

Item	M (SD)	Skew.	Kurt.
1. At the time, how much did it bother you that your memory disagreed with what the other person(s) said or did?	5.86 (1.72)	-1.59	1.59
2. Currently, how much does it still bother you that your memory disagreed with what the other person(s) said or did?	4.07 (2.16)	0.02	-1.34
3. At the time, how easy was it for you, in general, to disagree with the person(s) who challenged your memory?	4.69 (2.20)	-0.45	-1.31
4. How much did your past experiences with the person(s) who challenged your memory influence your behaviour, such as what you said or did in reaction to the challenge?	5.29 (1.79)	-1.02	0.28
5. How forceful was the challenge the person(s) made?	5.41 (1.45)	-0.85	0.22
6. How important was it for you to avoid disagreeing with the other person(s)?	4.02 (2.16)	-0.07	-1.33
7. How important was your relationship with the person(s) who challenged your memory at that time?	5.61 (1.56)	-0.89	-0.20
8. How credible was the information that the person(s) provided when challenging the memory?	2.54 (1.61)	0.71	-0.59
9. How credible was the person(s) who provided the social challenge?	2.64 (1.68)	0.71	-0.47
10. At the time that the person(s) challenged your memory, in general how much did you trust him/her/them?	3.36 (2.04)	0.29	-1.20
11. How much did you trust your own memory, in general, at the time the other person challenged your memory?	5.88 (1.51)	-1.53	1.77
12. To what extent did you wonder if your memory might have come from some source other than personal experience? Some examples of other sources include having been told about it by someone else, from your imagination, a dream, or from a TV show?	2.08 (1.70)	1.48	1.07
13. How much did you seek out information from anyone else after your memory was challenged?	2.41 (1.92)	1.19	0.12
14. How much did you discuss the event with others after your memory was challenged?	3.61 (2.13)	0.18	-1.39
15. To what extent did you feel like the person(s) who challenged your memory was/were attempting to threaten you?	4.24 (2.02)	-0.19	-1.06
16. How important was this memory to you before it was challenged?	5.32 (1.70)	-0.80	-0.28

Note. n = 111 – 114 depending on missing data. All ratings had a minimum of 1 and maximum of 7.

of the information provided by the challenger, speculations regarding the memory coming from an external source, and seeking out information from others after the challenge.

Comparing responses between Study 1 and Study 3. Study 1 can be seen as a normative sample to which the specialized sample collected for Study 3 can be compared. See Figure 3 for comparisons of the ratings to these items measuring facets of the social challenge between Studies 1 and 3. Some of the largest and most notable differences for ratings in the Study 3 data were as follows: substantially lower ratings of credibility of the challenge and challenger, substantially lower trust of the challenger, less discussion with others, higher ratings of feeling threatened, and believing the challenged memory to be of higher importance. These differences suggest that social challenges to memories of IPA are experienced differently than social challenge to general memories. The comparison revealed that although the relationships were viewed as highly important in both studies, the IPA sample's perceptions were characterized by higher personal threat, greater isolation from discussion with others, and lower credibility of the individual and the information provided by the individual.

Outcomes of Memory Challenges

Self-ratings. Participants selected from four outcome ratings, or selected *other* and elaborated on this selection. Two of these groups had behaviour and memorial beliefs that were concordant: 63 (55%) of the participants indicated that they maintained belief in occurrence and disagreed with their partner's invalidation of the memory (i.e., defended), and 12 (10%) of the participants indicated that they reduced belief in occurrence and agreed with their partner (i.e., relinquished). In contrast, two groups had

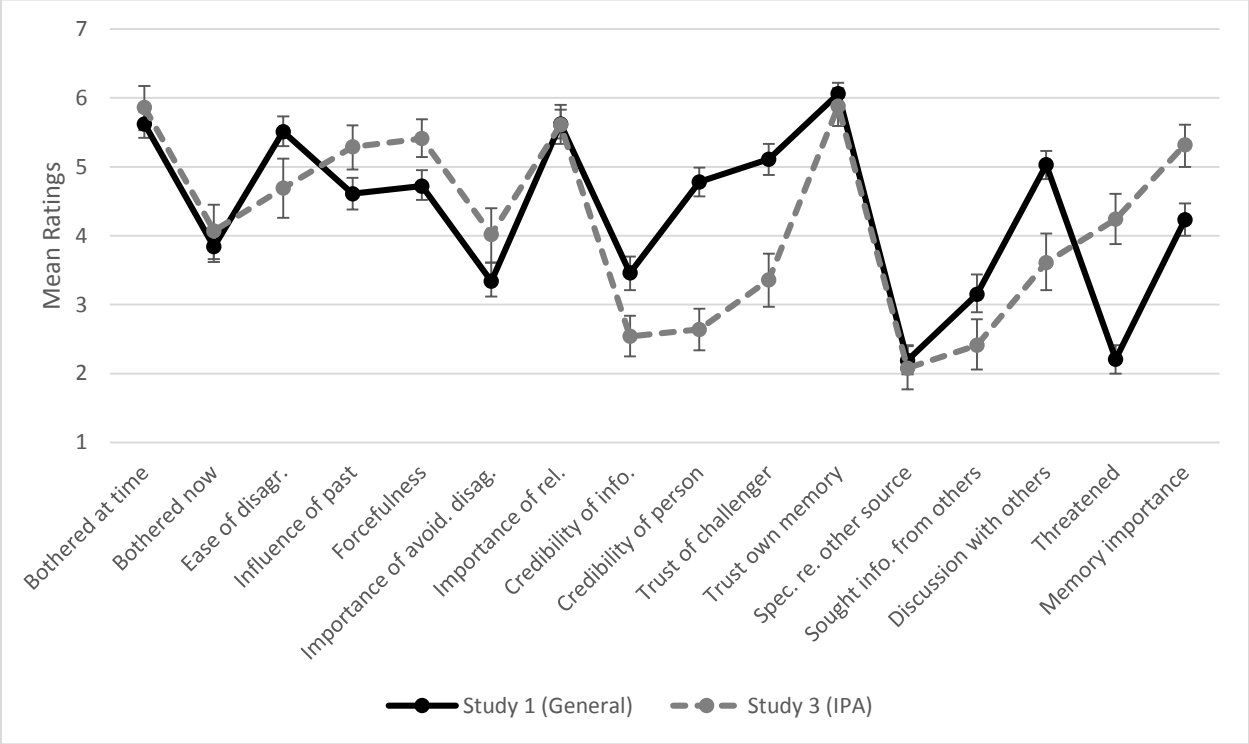

Figure 3. Comparisons of social challenge items between Study 1 and Study 3. The error bars are 95% CIs.

outcomes with discordant behaviour and memorial beliefs; 19 participants (17%) described themselves as reducing belief in occurrence but disagreeing (i.e., denied), and 21 participants (18%) indicated that they maintained belief in occurrence but agreed (i.e., complied). Patterns of ratings of these group outcomes did not meaningfully differ between the MTurk and Pool samples.

The pattern of endorsement was similar to Study 1 (i.e., Study 1/Study 3: defended: 56%/55%; relinquished: 10%/10%; denied: 17%/19%; complied: 9%/18%). A larger ratio of participants noted that they complied (i.e., maintained belief in occurrence but agreed; 9% in Study 1, 18% in Study 3, difference in proportions = .09, 95% CI_{diff} [.02, .16]) which makes sense considering the aggressive nature of the relationships with many of the challengers in these narratives.

Self-ratings compared to coder's ratings. Ratings made by the PI were compared to the ratings made by participants regarding whether they reduced or maintained belief in occurrence, and whether they publicly agreed or disagreed (see Table 16). Like Study 1, maintaining belief in occurrence ratings matched well to participants' self-ratings, (81 matches, 3 mismatches), but less so for reducing belief in occurrence (10 matches, 21 mismatches). The PI's coding for agreeing was at an acceptable level (30 matches, 5 mismatches), as was the coding for disagreeing (66 matches, 14 mismatches).

As in Study 1, to assess whether these coding mismatches were more common in certain groups, participants' ratings of themselves into one of the four outcomes were compared with the independent coder's ratings. Similar to the pattern in Study 1, ten participants who identified *disagreeing and reducing belief in occurrence* were perceived

Table 16

Four Outcome Group Ratings: Participants' Codes Compared to PI's Codes

	Self-rating				
Coder's code	Disagree & Maintain B.occ	Disagree & Reduce B.occ	Agree & Maintain B.occ	Agree & Reduce B.occ	Total
Disagree & Maintain B.occ	55	10	3	0	68
Disagree & Reduce B.occ	2	1	0	0	3
Agree & Maintain B.occ	6	6	17	5	34
Agree & Reduce B.occ	0	2	1	7	10
Total	63	19	21	12	115

by the independent rater as *disagreeing but maintaining belief in occurrence*. Further, five participants who identified themselves as *agreeing and reducing belief in occurrence* were coded as *agreeing but maintaining belief in occurrence.* Again, it appears that coding for reduction of belief in occurrence was difficult based on the content of these narratives.

Features of the Memory and Memory Challenge

Within-subjects comparisons of memorial beliefs vs. recollection. Within-subjects comparisons were made between memorial belief ratings (i.e., belief in occurrence and belief in accuracy) and recollection ratings. Past research has shown that recollection ratings typically exceed belief in occurrence ratings for nonbelieved memories, and in Study 1, recollection ratings exceeded belief in accuracy for challenged-reduced events. In the present study, no statistically meaningful differences were found between belief in occurrence and recollection ratings or for belief in accuracy compared to recollection ratings within-subjects for those who reported maintenance and those who reported reductions in belief.

Challenged-reduced events vs. challenged-maintained events. Participants who endorsed that they reduced belief in occurrence had similar ratings of belief in occurrence to those who noted maintaining (M = 7.01, SD = 0.86 vs. M = 7.21, SD = 0.38). However, those who endorsed reducing belief in occurrence had lower ratings of belief in accuracy (M = 5.98, SD = 1.09 vs. M = 6.61, SD = 0.61; 95% CI_{diff} [-0.95, - 0.31] d = -0.82).

Four outcome group comparisons: Memorial beliefs, recollective phenomenology, and related items. Like Study 1, comparisons were made between the four self-selected outcome groups (i.e., defend, deny, relinquish, comply) in different

combinations. There were group differences in ratings of variables related to beliefs and recollective phenomenology. See Table 17 for means, *SD*s, and 95% CIs. The following variables did not have meaningful statistical differences: sound, re-experiencing, subjective plausibility, connectedness, importance, isolation, and centrality of the event.

Participants who agreed/reduced (i.e., relinquished) rated belief in occurrence lower than the other three groups (M = 6.67 vs. M = 7.21, 95% CI [-0.87, -0.22], d = -1.02). It is particularly noteworthy that the means of belief in occurrence scores, regardless of group, were close to the scale ceiling, indicating that regardless of group membership, participants tended to have high ratings of belief in occurrence.

Participants who disagreed/maintained (i.e., defended) had the highest ratings of belief in accuracy (M = 6.76 vs. M = 6.06, 95% CI_{diff} [0.43, 0.98], d = 0.95), recollection (M = 6.75 vs. M = 6.21, 95% CI_{diff} [0.28, 0.80], d = 0.77), vividness (M = 6.41 vs. M = 5.69, 95% CI_{diff} [0.34, 1.10], d = 0.70), visual details (M = 6.50 vs. M = 5.92, 95% CI_{diff} [0.21, 0.92], d = 0.60), and spatial/location details (M = 6.44 vs. M = 5.69, 95% CI_{diff} [0.42, 1.09], d = 0.84).

Further, the relationship between these outcomes and relationship status was examined. The ratios of those who disagreed vs. agreed and reduced vs. maintained were roughly the same across whether or not participants were still in relationships with their aggressive partners (17.95% of those who disagreed and 18.18% of those who agreed were still in the relationship; 16% of reducers and 19.51% of maintainers were still in the relationship). Additionally, although not statistically meaningful, of interest is that for those participants where the relationship with the aggressive partner had ended, those who reported maintaining belief in occurrence had been out of this relationship

Table 17

Between-Subjects Comparisons for Standard Dependent Variables from the Literature

Dependent Variable	Disagreed/ Maintain B.occ (Defend) *n* = 63 *M (SD)* [95% CI]	Disagreed/ Reduce B.occ (Deny) *n* =19 *M (SD)* [95% CI]	Agreed/ Maintain B.occ (Comply) *n* = 21 *M (SD)* [95% CI]	Agreed/ Reduce B.occ (Relinquish) *n* = 12 *M (SD)* [95% CI]
*Belief in occurrence	7.28 (0.21) [7.22, 7.32]	7.23 (0.32) [7.05, 7.33]	6.98 (0.63) [6.71, 7.24]	6.67 (1.29) [5.83,7.28]
*Belief in accuracy	6.76 (0.46) [6.64, 6.86]	6.12 (0.71) [5.80, 6.44]	6.17 (0.79) [5.80, 6.49]	5.75 (1.52) [4.86, 6.54]
*Recollection	6.75 (0.55) [6.61, 6.89]	6.12 (0.79) [5.78, 6.48]	6.40 (0.77) [6.05, 6.72]	6.03 (1.07) [5.33, 6.58]
*Vividness	6.41 (0.85) [6.17, 6.62]	5.63 (1.12) [5.10, 6.11]	5.86 (1.01) [5.42, 6.24]	5.50 (1.68) [4.42, 6.29]
*Visual details	6.49 (0.78) [6.27, 6.67]	6.05 (1.03) [5.58, 6.53]	5.90 (1.09) [5.41, 6.33]	5.75 (1.42) [4.91, 6.45]
Sound	5.70 (1.65) [5.26, 6.09]	4.84 (1.61) [4.09, 5.60]	5.29 (1.49) [4.61, 5.87]	5.58 (1.78) [4.46, 6.47]
*Location/Spatial	6.44 (0.70) [6.29, 6.62]	5.70 (1.10) [5.17, 6.20]	5.67 (1.02) [5.24, 6.08]	5.72 (1.27) [4.85, 6.38]
Re-experiencing	5.53 (1.28) [5.22, 5.85]	5.11 (1.26) [4.50, 5.71]	5.33 (1.42) [4.76, 5.90]	5.54 (1.92) [4.45, 6.50]
Subjective plausibility	7.89 (0.44) [7.76, 7.98]	7.89 (0.32) [7.73, 8.00]	7.52 (0.81) [7.16, 7.82]	7.55 (1.04) [6.86, 8.00]
Connectedness	5.76 (1.46) [5.42, 6.12]	6.00 (1.28) [5.40, 6.58]	5.81 (1.44) [5.19, 6.43]	5.11 (2.18) [3.62, 6.33]
Importance	6.00 (1.33) [5.66, 6.29]	5.50 (1.69) [4.63, 6.21]	6.14 (1.35) [5.53, 6.69]	5.81 (1.89) [4.57, 6.75]
Isolated	4.87 (2.04) [4.37, 5.38]	5.37 (1.92) [4.44, 6.29]	4.81 (2.21) [3.93, 5.69]	5.02 (2.03) [4.42, 6.85]
Centrality of Event	3.17 (1.12) [2.88, 3.44]	3.35 (1.08) [2.86, 3.78]	2.94 (0.98) [2.53, 3.38]	3.04 (0.92) [2.94, 3.33]

Note. The following dependent variables are scales: belief in occurrence, belief in accuracy, recollection, location/spatial, re-experiencing. Asterisk indicates this variable is discussed in text due to substantial effect/non-overlapping bootstrapped 95% CI.

longer than those who reduced (*M* = 6.62, *SD* = 6.89 vs. *M* = 4.05, *SD* = 5.18). Further, of those participants who gave information on length of relationship (*n* = 103), interestingly those who maintained belief in occurrence had been in their relationships for a longer period of time than those who reduced (*M* = 4.15, *SD* = 5.00 vs. *M* = 2.26, *SD* = 2.42, CI_{diff} [0.38, 3.33], *d* = 0.43).

Four outcome group comparisons: Social challenge items. Here, the four self-selected groups were compared on the items that measured different facets of the social challenge as perceived by participants. See Table 18 for means, *SD*s, and 95% CIs.

Compared to the three other groups, participants who agreed/reduced (i.e., relinquished) reported higher trust of the challenger (*M* = 5.73 vs. *M* = 3.11, 95% CI_{diff} [1.43, 3.81], *d* = 1.39) and lower trust of their own memory (*M* = 3.46 vs. *M* = 6.15, 95% CI_{diff} [-3.50, -1.89], *d* = -2.11). Those who agreed/reduced also had lower ratings of discussions with others when compared with those who disagreed/maintained (*M* = 2.27 vs. *M* = 3.83, 95% CI_{diff} [-2.92, -0.19], *d* = -0.74).

Participants who disagreed/maintained (i.e., defended) had the following pattern of results (all comparisons with remaining three groups): higher ease of disagreement (*M* = 5.70 vs. *M* = 3.42, 95% CI_{diff} [1.57, 2.99], *d* = 1.21); lower importance of avoiding disagreement (*M* = 3.10 vs. M = 5.16, 95% CI_{diff} [-2.78, -1.35], d = -1.08); lower credibility of information from challenger (M = 1.95 vs. *M* = 3.28, 95% CI_{diff} [-1.87, -0.77], *d* = -0.89); and, lower credibility of challenger (*M* = 2.18 vs. *M* = 3.24, 95% CI_{diff} [-1.67, -0.46], *d* = -0.66).

Participants who reduced belief, regardless of agreement or disagreement, had higher ratings of speculations about their memories coming from an internal/external

Table 18: *Between-Subjects Comparisons for Social Challenge Items*

Dependent Variable	Disagreed/ Maintain B.occ (Defend) *n* = 63 *M (SD)* [95% CI]	Disagreed/ Reduce B.occ (Deny) *n* = 19 *M (SD)* [95% CI]	Agreed/ Maintain B.occ (Comply) *n* = 21 *M (SD)* [95% CI]	Agreed/ Reduce B.occ (Relinquish) *n* = 12 *M (SD)* [95% CI]
Bothered by disagreement (past)	5.76 (1.87) [5.26, 6.19]	6.21 (1.44) [5.54, 6.78]	5.67 (1.74) [4.85, 6.38]	6.18 (1.25) [5.33, 6.80]
Bothered by disagreement (present)	3.95 (2.20) [3.41, 4.47]	5.00 (2.06) [4.08, 5.94]	3.24 (1.70) [2.50, 4.00]	4.82 (2.36) [3.34, 6.20]
*Ease of disagreement	5.70 (1.77) [5.26, 6.14]	3.78 (1.93) [2.91, 4.63]	3.43 (1.96) [2.57, 4.27]	2.82 (2.36) [1.43, 4.36]
Influence of past experiences	5.18 (1.93) [4.73, 5.63]	5.05 (1.78) [4.24, 5.86]	5.38 (1.63) [4.61, 6.15]	6.20 (0.92) [5.08, 7.32]
Forcefulness of challenge	5.29 (1.56) [4.93, 5.65]	5.90 (1.24) [5.24, 6.55]	5.10 (1.41) [4.46, 5.74]	5.41 (1.45) [5.00, 6.80]
*Importance of avoiding disagreement	3.10 (2.05) [2.63, 3.57]	4.37 (1.92) [3.51, 5.22]	5.62 (1.32) [4.81, 6.43]	5.64 (1.63) [4.51, 6.76]
Importance of relationship with challenger	5.46 (1.68) [5.07, 5.85]	5.53 (1.39) [4.82, 6.23]	5.76 (1.26) [5.09, 6.44]	6.36 (1.57) [5.43, 7.30]
*Credibility of information from challenger	1.95 (1.46) [1.58, 2.32]	3.21 (1.55) [2.53, 3.89]	3.29 (1.52) [2.64, 3.93]	3.36 (1.50) [2.47, 4.26]
*Credibility of challenger	2.17 (1.52) [1.77, 2.58]	3.05 (1.65) [2.32, 3.78]	3.05 (1.70) [2.34, 3.76]	3.91 (1.81) [2.95, 4.87]
*Trust of challenger	2.68 (1.92) [2.23, 3.14]	3.63 (1.77) [2.80, 4.47]	3.91 (1.92) [3.11, 4.70]	5.73 (1.10) [4.63, 6.82]
*Trust of one's own memory	6.48 (1.01) [6.17, 6.78]	5.50 (0.92) [4.93, 6.07]	5.70 (1.53) [5.16, 6.24]	3.46 (1.97) [2.73, 4.19]
*Speculation re. internal/external source	1.60 (1.35) [1.20, 2.00]	3.05 (2.12) [2.32, 3.78]	2.10 (1.58) [1.40, 2.79]	3.09 (1.97) [2.13, 4.05]
Sought information from others	2.35 (1.92) [1.85, 2.85]	2.63 (2.22) [1.75, 3.52]	2.57 (1.96) [1.73, 3.41]	2.09 (1.45) [0.93, 3.25]
*Discussion with others	3.83 (2.16) [3.30, 4.35]	3.58 (2.06) [2.62, 4.54]	3.71 (2.21) [2.80, 4.63]	2.27 (1.62) [1.01, 3.53]
Threatened	4.24 (2.18) [3.73, 4.75]	4.37 (2.00) [3.44, 5.30]	4.10 (1.90) [3.21, 4.98]	4.27 (1.56) [3.05, 5.50]
Importance of this memory	5.60 (1.66) [5.18, 6.02]	5.21 (1.65) [4.45, 5.98]	4.90 (1.81) [4.18, 5.63]	4.72 (1.62) [3.72, 5.73]

Note. Asterisk indicates this variable is discussed in text due to substantial effect/non-overlapping 95% CI.

source compared to those who maintained (M = 3.07 vs. M = 1.73, 95% CI_{diff} [2.02, 0.67], d = 0.84). Thus, those who relinquished belief in their memory tended to trust themselves less, trust the challengers more, and discuss their memories less with others. Participants who defended their memories to their challengers tended to have an easier time disagreeing, cared less about avoiding disagreement, and found both the challengers and the information provided by the challenger to be less credible. Last, participants who identified that they reduced belief tended to have higher ratings of wondering about other sources from which their memory might have come.

Predicting dichotomous ratings of vacillation in belief in occurrence, belief in accuracy, and event interpretation. Thirty-three percent of participants endorsed that they did at some point question belief in occurrence, on the dichotomous item that queried whether there was *ever* any vacillation in belief in occurrence. Exploratory analyses examined whether this dichotomous belief in occurrence item was related to memorial beliefs (i.e., final belief in occurrence and belief in accuracy ratings), recollection, or particular features of the social challenge.

First, point-biserial correlations were examined (with 1000 bootstrapped samples; see Table 19), and vacillation in belief in occurrence was found to be meaningfully related to speculations about whether memory came from other internal/external source to a moderate extent. It was found to be related to belief in occurrence, belief in accuracy, credibility of information from the challenger, credibility of the challenger, trust of the challenger, trust of one's own memory, having sought out information from others, memory importance, and recollection to a weaker extent. The aforementioned variables

Table 19

Correlations with Dichotomous Ratings of Vacillation in Belief in Occurrence, Belief in Accuracy, and Event Interpretation

Variables	Vacillation in belief in occurrence: Correlation and 95% CI	Vacillation in belief in accuracy: Correlation and 95% CI	Interpretation of meaning: Correlation and 95% CI
Belief in occurrence	**-.33 [-.46, -.18]****	**-.26 [-.39, -.12]****	**-.19 [-.31, -.03]***
Belief in accuracy	**-.34 [-.49, -.16]****	**-.39 [-.53, -.22]****	**-.29 [-.42, -.15]****
Recollection	**-.23 [-.40, -.04]***	**-.33 [-.49, -.18]****	**-.25 [-.41, -.08]****
Bothered (past)	.17 [-.00, .31]	.07 [-.12, .23]	**.27 [.10, .42]****
Bothered (present)	.19 [-.00, .36]*	.08 [-.11, .28]	.13 [-.05, .31]
Ease of disagreement	-.14 [-.31, .05]	**-.38 [-.55, -.19]****	**-.31 [-47, -.13]****
Influence of past	.06 [-.13, .22]	-.05 [-.22, .13]	.07 [-.11, .25]
Forcefulness of challenge	.16 [-.02, .33]	.04 [-.17, .22]	.07 [-.12, .25]
Imp. of avoid. disag.	.17 [-.02, .35]	**.23 [.04, .39]***	**.28 [.10, .44]****
Imp. of rel. w. chall.	.09 [-.09, .25]	.05 [-.12, .22]	.14 [-.05, .31]
Credibility of information	**.27 [.09, .46]****	**.42 [.26, .59]****	**.19 [.01, .37]***
Credibility of challenger	**.26 [.08, .43]****	**.30 [.13, .48]****	**.22 [.05, .38]***
Trust of challenger	**.27 [.10, .43]****	**.30 [.13, .47]****	**.28 [.10, .45]****
Trust own memory	**-.37 [-.55, -.18]****	**-.49 [-.62, -.34]****	**-.28 [-.43, -.09]****
Spec. re. other source	**.49 [.32, .64]****	**.47 [.31, .62]****	.07 [-.12, .24]
Sought information	**.26 [.06, .44]****	.18 [-.00, .37]	.05 [-.15, .23]
Discussion with others	-.03 [-.23, .15]	-.09 [-.26, .10]	.04 [-.14, .23]
Felt threatened	.15 [-.03, .32]	.10 [-.09, .27]	.15 [-.04, .33]
Memory importance	**-.27 [-.45, -.07]****	**-.28 [-.45, -.11**]**	-.10 [-.29, .08]

Note. ** denotes significant at $p < .01$ level. * denotes significant at $p < .05$ level. Bolded variables were entered in the logistic regressions due to having 95% CIs that did not overlap with zero.

with significant correlations (i.e., with 95% CIs that did not overlap with zero) were entered into an exploratory logistic regression to assess which are significant predictors of vacillation in belief in occurrence. Although traditional null hypothesis significance testing has not been used throughout this project, *p* values were examined for these analyses as they are a suitable for preliminary step towards developing a predictive model.

The regression model was significant $\chi^2(10, n = 108) = 48.40$, $p < .001$, and was a good fit (i.e., non-significant Hosmer and Lemeshow test). One variable was a significant predictor at the $p < .01$ level (wondering whether memory came from internal/external source, OR = 1.68) and two were significant at the $p < .05$ level (sought out information from others, OR = 1.45; and, importance of the memory before the challenge, OR = 0.67); and 83.3% of cases were classified correctly. Thus, the higher the ratings of wondering whether the memory came from an internal/external source, the higher the ratings of having sought information from others, and the lower the ratings of the importance of the memory, the higher participants' odds are of having vacillated in belief in occurrence.

The same exploratory analyses were conducted with the dichotomous (yes/no) question regarding whether participants ever wavered in belief in the accuracy of their memory for the challenged event. This item was endorsed as "yes" by 43% of participants. Correlations were examined and this variable (wavered in confidence related to accuracy of details of memory) was found to be meaningfully related to credibility of information, trust of one's own memory, and speculations about the memory coming from other sources to a moderate extent, and to belief in occurrence, belief in accuracy,

recollection, ease of disagreement, credibility of challenger, importance of avoiding disagreement, trust of challenger, and memory importance to a weaker extent. Variables with meaningful correlations were entered into a logistic regression model, $\chi^2(11, n = 110) = 63.30$, $p < .001$ with goodness of fit according to Hosmer and Lemeshow's test. Two variables were significant predictors at the $p \leq .01$ level (i.e., ease of disagreement, OR = 0.64, and speculations about memory coming from another source, OR = 1.77), and one predictor was significant at the $p < .05$ level (importance of the memory before the challenge, OR = 0.69); and 80.0% of cases were classified correctly. Thus, the harder it was to disagree, the lower the importance of the memory, and the more they wondered if the memory came from an internal/external source, the higher the odds are that participants vacillated in confidence in the details of their memories.

The same exploratory analyses were conducted with a dichotomous (yes/no) item regarding whether the challenge affected participants' interpretation of the meaning of the event, which was endorsed as "yes" by 52% of participants. Correlations were examined and this variable (shifting in the interpretation of meaning) was found to be meaningfully related to the following variables to a weak extent: belief in accuracy, recollection, bothered at the time by the memory disagreement, ease of disagreement, trust of challenger, trust of own memory, importance of avoiding disagreement, belief in occurrence, credibility of the information from the challenger, and credibility of the challenger. Variables with meaningful correlations were entered into a logistic regression model, $\chi^2(10, n = 111) = 33.38$, $p < .001$ with goodness of fit according to Hosmer and Lemeshow's test. Being bothered by the disagreement at that time was the only variable significant at the $p < .05$ level (OR = 1.56) and 72.1% of cases were classified correctly.

Thus, the more one was bothered by the disagreement, the higher the odds of changing the interpretation of the meaning of the event.

Discussion

This study provided an examination of social feedback and memorial beliefs within the context of IPA. Scoboria's (2016) model was studied, as applied to a broad sample of women who were challenged regarding the veracity of their memories for IPA by their abusive partner. The study examined narratives similar in theme but less rich in content to those in Study 2, using quantitative methods. Like Study 1, a variety of interpersonal and intrapersonal factors were mentioned by the women in this study. With respect to social feedback, participants described some types of feedback that were similar to the feedback described in the general memory challenges of Study 1. Namely, for example, many described being told that the event happened differently or that the event did not happen at all.

Some participants mentioned seeking input from others, some mentioned gaining corroboration from others, and still others noted failing to gain corroboration. Research has highlighted the critical nature of confirmatory social feedback and social support in general for women experiencing IPA (e.g., Barnett, 2001). Thus, it is not surprising that some participants did attempt to gain corroboration/validation from others, but it is also not surprising that many were unable to seek out information from others, whether because of perceived risk of doing so, or shame related to their experiences of abuse. Many of the aggressive incidents also took place in private, without witnesses, leading to further difficulties in being able to attain social corroboration.

Some participants described keeping evidence (e.g., photographs) to bolster confidence in their memory. This is an interesting example of the use of external memory supports (e.g., Schyer & Ross, 2013). People tend to see physical evidence as a reliable source of information when seeking to verify memories (e.g., Nash & Takarangi, 2011; Wade & Garry, 2005). Researchers (e.g., Lempert, 1997) have noted that women sometimes question memories for past aggression in the absence of salient physical evidence. Thus, the active collection or creation of evidence (e.g., journals, photographs) appears to be a helpful strategy to support the content of women's memories for past experiences of aggression. However, one of the difficulties with some of the evidence cited by participants is the fact that physical markings (e.g., cuts, bruises) dissipate over time. Thus, evidence that might have been validating in the days after a violent experience are no longer available to participants in the weeks or months after the aggressive incident if not otherwise recorded. Important here, the retention as well as loss of evidence subsequently influences memorial decisions. This may explain in part why journaling or retaining photographs is valued, as these strategies serve to bolster confidence in memory at later times. Further, oftentimes people who have experienced trauma avoid bringing this trauma to mind. Although not studied in this project, there may be a "push and pull" of on one hand wanting support and validation for one's memories, but also desiring at times to avoid reflecting on unwanted traumatic memories. This could lead to avoiding reflecting on tangible evidence, which could also have effects for one's memorial beliefs.

Although some participants commented on their memories being fuzzy (n = 10), many more commented on having a vivid or otherwise normal memory for the event (n =

50). Despite the fact that more statements were made about high-quality memories, it should be noted that beliefs may be diminished even in the face of high quality recollective features (i.e., as in the case of nonbelieved memories). Further, some participants made alternate attributions for their own experiences such as noting that they were, in fact, intoxicated at the time of the original event. This alternate attribution could serve to undermine confidence, or having low confidence initially may lead people to make these alternate attributions. That is, future research may attempt to ascertain whether a person may be more apt to absorb or create alternate attributions for a memory that is held with lower confidence, or whether a memory must be held with low confidence to begin with to be affected by an alternate attribution. A similar number of participants made alternate attributions about their challengers' memories (n = 15). There were no statements related to external attributions (e.g., to TV shows, radio, etc.) which is consistent with the low reports in Study 1.

New themes were added in this study to capture the unique features of the accounts of women who were challenged regarding memories for IPA. Of the new themes related to social feedback, the most commonly observed were participants being blamed for what happened and being told that they were exaggerating, overreacting, or were being "too sensitive." The presence of comments related to blame and minimization made by challengers is consistent with findings in the IPA literature (e.g., Lammers et al., 2005). Women's attributions regarding who is responsible for relationship violence (i.e., herself vs. her partner) has been shown to affect women's decisions about remaining in the relationship (Pape & Arias, 2000). Notably, past research has shown that women who blame themselves for experiences of violence in relationships tend to have lower levels of

social support (i.e., Andrews & Brewin, 1990). Further, another type of social feedback included the times when others ascribed alternate attributions to participants (n = 39; e.g., being told that she imagined the event, hallucinated it, was too intoxicated to remember, etc.). Research has shown that both disconfirmatory social feedback and alternative attributions can be salient reasons when people report relinquishing belief in a vivid memory (e.g., Scoboria, Boucher, et al., 2015). This type of social feedback has the potential to be quite powerful in undermining belief in instances of intimate partner aggression.

Further, there were interesting general patterns in this data-set for ratings of social challenge items, compared to the data collected in Study 1. In particular, participants in Study 3 gave lower ratings of credibility of the challenge and challenger, as well as lower trust of the challenger in general. This indicates that the challengers were not particularly credible sources in this study, at least in a retrospective report by participants. They also spent less time in discussion with others, which is consistent with research showing that women experiencing IPA often lack social support (e.g., Barnett, 2001). Unsurprisingly, participants in Study 3 had higher ratings of feeling threatened, which is consistent with the aggressive nature of these narratives vs. the mix of benign and aggressive narratives in Study 1. Events described in Study 3 were also seen as more important than those in Study 1, which can also be explained by the fact that many events described in Study 1 were more benign (e.g., disagreements over toys in childhood, etc.) and the fact that the purpose of Study 3 was to examine memories for events of greater personal importance.

As mentioned in the Results, similar to Study 1, the participants self-identified to all four of the theorized outcome groups. In this study, no participant selected “other” as

an option, further supporting that the proposed outcomes do appear to map on to the experiences of women who have faced challenges to their memories of IPA. Second, the ratio of these self-ratings was quite similar to Study 1, with the exception of more participants endorsing that they complied with their partner during the challenge (i.e., agreed with him, but privately maintained belief). This is not unexpected, as the model predicts that as the consequences of disagreement increase, individuals are more likely to comply. Such consequences are presumably higher in cases where there is risk of aggression, compared to general memory challenges for which consequences may be much less severe.

Third, like Study 1, an independent rater coded participants' outcomes (i.e., did the participant reduce belief vs. maintain belief in the memory, and did they agree or disagree publicly?). Again, similar to Study 1, in these data, the combination of disagreeing and reducing belief in occurrence was not readily discerned by the rater, further supporting the notion that participants endorsing this particular discordant outcome do not give clear information in their narratives for a coder to be able to identify them as such. As previously noted, given that reductions in belief are thought to occur internally, it is not surprising that people may not always reflect this decision when providing verbal output.

Although there were some similarities between this data-set and Study 1, certain within-subjects comparisons revealed how different the current data are not only from standard NBM data, but also Study 1. In Study 1, there were statistically meaningful differences for challenged-reduced events within-subjects; specifically, recollection ratings were higher than belief in accuracy ratings. In Study 3, this effect was absent.

Recollection ratings did not exceed belief in occurrence or accuracy, because these memorial belief ratings were all quite close to scale ceiling. The final "outcome" for many participants in this study involved having fairly high ratings of belief in occurrence. This further highlights the importance of examining not only the final "outcome" but process variables (e.g., did participants *ever* waver in belief in occurrence, accuracy, etc.?) for experiences such as relationship aggression. Similar to Study 1, belief in accuracy ratings were lower for challenged-reduced events vs. challenged-maintained events. Thus, there were meaningful differences between-subjects as a function of self-reported belief. The fact that group differences were primarily found for belief in accuracy ratings further highlights that belief in accuracy may be the variable that best differentiates the four outcome groups for women who have experienced abusive relationships and are reflecting back on their memorial experience at the time. Perhaps because of the distinctiveness of these experiences of IPA, participants retained a sense of occurrence even in the face of social challenge. The specific details of the event were perhaps less fixed and more amenable to revision over time, particularly as participants' memories shifted towards more schematic (i.e., "gist") representations.

When examining the four outcome groups, those who relinquished had lower belief in occurrence ratings than the other three groups. Those who defended had the highest ratings of belief in accuracy, recollection, vividness, visual details, and spatial/location details. Of note is that both of these groups (relinquished and defended) are the groups that are theorized to experience lower cognitive dissonance compared to the remaining two groups (those who comply and who deny). That is, people who relinquish and defend have public behaviours and private beliefs that appear to be

reasonably consonant and thus do not appear to have much dissonance to resolve (or have already resolved the dissonance at some point in time). This is because they have either reinforced or altered fundamental memorial beliefs for the event.

Additionally, interestingly, variables such as whether or how long ago the relationship ended did not appear to be related to these outcome groups. This also warrants future study, as I would have anticipated that participants who are currently in aggressive relationships might rate the variables of interest differently compared to those who are much further removed from their previous aggressive relationships. For example, in the follow-up feedback meeting with one of the participants in Study 2, she noted that she believed herself to have a different understanding of her experiences of aggression after having been out of her relationship with her aggressive partner for some time. In general, in Study 2, participants described that they had questioned belief (whether in occurrence, in accuracy, in severity, or intent, etc.) immediately after initial episodes of aggressive behaviour. Collecting data at this moment in time (i.e., when survivors were still actively struggling to make sense of the aggressive episode) might yield different data than did the methods of Study 3, which sampled women with a broad array of experiences and lengths of time since their relationships had ended (or, that had not ended). The data collected in this study may have been different if they were collected through different methods whereby participants did not have to identify as having experienced aggression, or if data were collected from women presently in relationships marked with dynamics of intimate terrorism, as there are likely many women who have internalized beliefs that aggression in relationships is socially acceptable or who would not be able to access an online study such as this, or feel safe doing so.

The four outcome groups were also compared on social challenge items created for Study 1, with interesting results. These findings are promising but preliminary, and require psychometric work to develop validated measures for future research. Participants who relinquished reported higher trust of the challenger, consistent with research documenting the development of false beliefs based on information coming from trusted, credible sources (e.g., Scoboria, Wysman, & Otgaar, 2012). These participants also had lower trust of their own memories, which, as noted in Study 1, could potentially be explained by correct perceptions of actual poor memory performance and thus susceptibility to suggestions from other people. Further research would have to be conducted to disentangle whether this lower trust of memory is actually related to poorer memory quality/performance. Further, research has documented that even when participants have low-quality memories, memory disagreement may highlight to them that they should refrain from updating their beliefs (Muller & Hirst, 2014). These participants also gave lower ratings of discussion with others, which, as noted above, is consistent with research noting that women experiencing IPA may not receive adequate social support.

In contrast, those who defended reported the higher ease of disagreement. Consistent with other research (e.g., Koriat & Goldsmith, 1996), if costs of reporting are low (i.e., there are not serious consequences to disagreement), it is more likely that information will be reported. Thus, people are more apt to publicly disagree if they do not think the consequences will be severe or can otherwise avoid negative consequences. This outcome group also had lower ratings of the importance of avoiding disagreement. Future research could help to disentangle whether this is related to personality variables

(i.e., do these participants, in general, care less about avoiding disagreement?). Those participants who disagreed/maintained belief also had lower ratings of credibility of information from the challenger, and lower credibility of the challenger. Perceiving the challenger as credible could influence whether a person accepts misleading information (e.g., French, Garry, & Mori, 2011).

Participants who self-endorsed that they reduced belief in occurrence had higher speculations about whether their memories came from another source compared to those who endorsed maintaining belief in occurrence. This finding is consistent with Study 1, further supporting the relationship between metamemorial appraisals about poor reality monitoring and endorsing a reduction in a memorial belief.

In addition to the ratings of "final" belief in occurrence and belief in accuracy, dichotomous yes/no items collected information on whether *at any point in time* participants thought that they vacillated in belief in occurrence, belief in the accuracy of the details of their memories, or interpretation of meaning of the event. In this study, 33% of participants reported vacillation in belief in occurrence, 43% vacillated in belief in the accuracy of the details of their memories, and 52% vacillated in their interpretations of the meaning of the event. Interestingly, the exact same proportion of participants in Study 2 (33%) commented on vacillation in belief in occurrence in their interviews. Per the regression models, vacillation in belief in occurrence and belief in accuracy were both related to higher ratings of wondering whether the memory came from an internal/external source, as well as lower ratings of the importance of the memory. Endorsing vacillating in confidence in memory accuracy was also related to higher ratings of difficulty disagreeing with the challenger. One can thus see that this difficulty

in disagreeing with others does not simply lead to compliance; rather, it is related to actual questioning of one's memorial beliefs. Additionally, higher odds of vacillating in belief in occurrence were related to higher ratings of having sought information from others. Thus, counterintuitively, the more information was sought from others, the more vacillating happened. These ratings could mean a number of things, with one potential explanation being that when discussion took place with others, these others were non-supportive or otherwise gave feedback that contributed to more uncertainty for participants. Or, perhaps participants sought information from others after having vacillated in belief in occurrence. Due to the nature of the data, causality cannot be inferred and more research will be necessary to better understand these findings.

As noted earlier, this project does not take an intensive look at changes in the interpretation/meaning of the event to participants. However, considering the importance of this topic in experiences of IPA, vacillation in interpretation was analyzed. In the logistic regression predicting whether participants fluctuated in perceptions of the meaning of the event, one variable was significant: being bothered by the disagreement. This finding highlights the importance of dissonance in decisions related to interpretation of the aggression; that is, that the more participants felt bothered by disagreeing with their partners, the more apt they were to re-interpret the meaning of the event. This re-interpretation was arguably an attempt to resolve this dissonance.

Limitations and Future Directions

There are some limitations of the current data. First, Studies 2 and 3 are not representative of all women currently experiencing IPA. There are women who cannot access computers, women who are controlled to the point that attempting to participate in

research would be dangerous, women who do not perceive their experiences of aggression to be problematic, etc. Although this lack of representativeness is a limitation of the data, it does not detract from the importance of the present study as a preliminary step in examining the outcomes of social challenges to memories of IPA.

Second, the language used in the outcomes participants selected may conflate belief in accuracy with belief in occurrence (i.e., "maintained/reduced my belief that the event occurred as I remembered it"). Participants who selected that they reduced belief still tended to have relatively high belief in occurrence ratings, thus demonstrating that the outcome groupings in this study did not differentiate belief in occurrence as much as they did differentiate belief in accuracy. Future researchers may alter this language (e.g., very clearly referring only to reduction in belief in occurrence without alluding to the details of participants' memories). Researchers may also take a different approach to studying these phenomena; for example, studying the process of vacillation in belief in occurrence rather than only the outcome, or using ratings on scaled items to determine if belief in occurrence was reduced, as participants may use language or endorse terms related to belief in occurrence or recollection that are understood differently in memory research, or may conflate belief with recollection (e.g., Otgaar, Scoboria, & Smeets, 2013).

Third, a difficulty of this project, as in Study 1, was the sheer quantity of information to code per participant. Streamlining the coding system helped with this cumbersome task, but future researchers on this topic using this methodology may consider using different strategies for coding. For example, a larger coding scheme could be created and certain research assistants may code the text for certain components, rather

than attempting to keep all categories and codes in mind while reading the narratives provided by each participant. Fourth, collecting more data to enhance sample size would be valuable so as to survey a broader spectrum of experiences. Last, it is possible that some participants may have feigned data or pretended to fit screening criteria in order to be eligible in the Turk data set. Although this in unlikely, it is not impossible, and future replications of these data will ensure that the patterns found exist in other samples.

Future research directions may also include looking at potential covariates in more detail (e.g., the number of times aggression was experienced in a relationship, dynamics of the relationship, personality factors, cultural factors, etc.). Further, an examination of the applicability of the model to different samples is important (i.e., people who experience IPA in LGBTQ relationships, men who experience IPA in heterosexual relationships). For example, research has highlighted that women may distance themselves more from dissonant events by rating these dissonant events as further in the past, which suggests that women may be more threatened by these dissonant events than men (Grysman, 2014). Gender differences in conformity in groups have also been observed when participants believe they are being surveilled (e.g., Eagly, Wood, & Fishbaugh, 1981). Clearly, future research can take a variety of approaches and directions to examine these potential effects in the realm of challenges to autobiographical memory.

Overall, Studies 2 and 3 provided a preliminary step in examining the effects of disconfirmatory social feedback on memories and memory reports for IPA from an autobiographical memory standpoint. These studies demonstrated that memory uncertainty and vacillation in memorial attributions is normative. Thus, these studies

have provided a different way of looking at why anyone whose memory is challenged may appear somewhat inconsistent and confused over time, especially in those cases in which a police investigation/legal process is unfolding. Thus, there must be shifts in the legal system to not expect witnesses or victims of crime to be confident at all times, and in fact, to expect some inconsistencies in terms of memorial beliefs and memory reports. Indeed, a witness can demonstrate active engagement with memory by being confident in some *but not all* details of her memory, because that is quite normative.

CHAPTER 4

General Discussion

The overarching goal of this dissertation was to develop a broader understanding of the outcomes that result when memories are challenged by disconfirmatory social feedback. Past studies have examined specific outcomes of memory challenges (e.g., nonbelieved memories; NBMs), what people would do hypothetically to verify memories (e.g., Nash & Takarangi, 2011; Wade & Garry, 2005), and what happens when memory ownership is contested in certain circumstances (e.g., Sheen, Kemp, & Rubin, 2001). This is one of the first studies to explore the outcomes of disconfirmatory feedback to memories on a considerably more expansive and inclusive scale. I sought to examine the outcomes of social challenges both to general memories and to memories for instances of IPA from a descriptive standpoint, as well as assess whether any other factors were related to particular outcomes. These projects have contributed a richer understanding of the types of social feedback experienced, other related factors, and the connection between different outcomes and different social and memorial variables.

As part of achieving this goal, the research in this dissertation is a preliminary step towards examining Scoboria's (2016) model for social challenge to vivid memories, both in a general sample and a sample of women who were challenged regarding their memories for IPA. Study 1 involved collecting narratives for challenges to memories from a large sample. The types of events that were challenged varied greatly in terms of content. This study found that various types of social feedback were experienced by participants. Notably, participants were able to identify with outcomes to these challenges articulated in the model, and these outcome groups had meaningful differences in ratings

of memorial beliefs, recollective phenomenology, and facets of the social challenge. Further, as will be discussed below, the studies in this dissertation have updated conceptualizations regarding the influence of social feedback on memories and memorial beliefs.

The next two studies examined the application of some of the concepts and constructs from Study 1 to the narratives provided by female survivors of IPA in relation to their experiences of social challenges to memories of past aggression. Study 2 was an exploratory qualitative study, in which women were interviewed to ascertain whether some of the concepts from Scoboria's (2016) model and the memory literature would be applicable to their experiences of social challenges to memories for IPA. This and the following study were innovative in that they were examinations of how IPA memories and reports can be shaped by social feedback, studied from an autobiographical memory standpoint. Study 2 demonstrated that many concepts from the memory literature and Scoboria's model were present in participants' narratives about past challenges (e.g., impact of direct and indirect social feedback, questioning different types of beliefs, social factors, internal strategies/factors, different behaviours such as agreeing or defending one's memory in reaction to challenge, etc.). Social factors and feedback were frequently mentioned as influences on beliefs and memory reports; sometimes, these social influences helped participants confirm their memories, whereas in other cases they contributed to participants questioning their memories, or complying with others. Other internal strategies were used to bolster confidence, such as reflecting on the vividness of one's memory. Further, the study confirmed that at times, women question and do not question memorial beliefs related to their experiences of IPA. Participants also described

sometimes agreeing and sometimes disagreeing with challengers. This study also highlighted that, when reflecting on experiences of social disconfirmation to memories of IPA, participants were not easily "categorized" (i.e., memory reducers, defenders, etc.). Rather, the findings underlined how many women vacillated between questioning and not questioning beliefs, and agreeing and disagreeing with those who challenged their memories.

Study 3 was a synthesis of the methodology from Study 1 with a sample of the same population as Study 2. In Study 3, many social factors were coded as present in the data-set, as well as other pieces of evidence used to support or negate participants' beliefs and memories. Study 3 demonstrated that a variety of types of social feedback were experienced by participants, including some social feedback that was specifically connected to the aggressive nature of their memories, such as feeling blamed, having the aggression minimized, being told they were exaggerating or over-reacting, etc. As in Study 1, participants identified with outcomes from Scoboria's (2016) model and there were group differences in ratings of beliefs, recollective features, and facets of the social challenge. Further, exploratory logistic regressions highlighted the importance of certain variables related to the social challenge in predicting whether participants vacillated in belief in occurrence, confidence in the details of their memory, and the interpretation of the meaning of the event.

There were both similarities and differences between Studies 1 and 3. Participants in both studies made mention of social feedback as being a factor in their decisions regarding events. In many cases, this feedback was quite direct, such as being told that the event did not happen or happened differently than they remembered. Other pieces of

confirmatory evidence were mentioned in both studies, as was the quality of participants' memories. Another similarity between Studies 1 and 3 is that it was difficult for independent raters to ascertain which participants reduced belief in occurrence and disagreed with their challenger(s). As noted in the aforementioned discussion, perhaps participants do not give much overt information regarding some of their beliefs and behaviours in this discordant subset in particular. This is to be expected, as the act of revising belief can be seen as an internal process which may not be communicated overtly in the narratives of this dissertation. Another notable similarity between Studies 1 and 3 is the ratio of outcome ratings. Although patterns were similar, Study 3 did have more participants endorsing memory compliance, consistent with the types of events they experienced (i.e., high threat, high risk of noncompliance). Further, no one in Study 3 selected "other" as their outcome, in contrast to Study 1.

Thematic differences between reports provided in Studies 1 and 3 served to contextualize the general findings from Study 1 within the context of IPA. Specifically, some women in Study 3 reported themes such as being blamed, being told they were exaggerating or over-reacting, or receiving alternate feedback about why their memory was mistaken (e.g., intoxication). Experiencing this unhelpful feedback is consistent with the literature on IPA (e.g., Bosch & Bergen, 2006). Further, experiencing alternate attributions from others about memory has been shown to be a relevant reason why people relinquish belief in a memory (Scoboria, Boucher, et al., 2015). Although it is not a novel finding to highlight that women are given this feedback regarding memories for IPA, this appears to be the first time where this disconfirmatory feedback was studied

regarding its relationship with subsequent beliefs, memories, and memory reports in the context of IPA.

Between Studies 1 and 3, there were also differences in ratings of social challenge items created for Study 1. Some of the interesting differences in the Study 3 data were as follows: lower ratings of credibility of the challenge and challengers, trust of the challenger, and discussion with others; and, higher ratings of feeling threatened and importance of the challenged memory. These differences make sense in light of the content of the data. Particularly, experiences of aggression are likely seen as important events (vs. some of the benign content from Study 1). Partners who are aggressive are likely seen as less trustworthy than others who are supportive or appear to have better intentions. Lower ratings of discussion with others make sense considering the social isolation of some women who experience IPA (e.g., Edwards, 2015; Riddell, Ford-Gilboe, & Leipert, 2009), as well the experience of threat, which is much less prominent in the Study 1 data.

Study 1 and Study 3 data also had differences compared to standard nonbelieved memory (NBM) data. Nonbelieved memories are vivid memories for which people have relinquished/reduced belief. Typical patterns for NBMs include having recollection ratings that exceed belief in occurrence ratings (e.g., Scoboria et al., 2014). In Study 1, this particular pattern was absent, but recollection ratings exceeded *belief in accuracy* ratings for events for which participants noted that they reduced belief. This suggests that belief in accuracy is more readily undermined by the social challenges of Study 1. In Study 3, recollection did not significantly exceed either belief in occurrence or belief in accuracy for challenged-reduced events; in fact, all of these variables were rated quite

highly, thus demonstrating that these events are quite different than traditional NBMs. These findings are in part to be expected, as the prompts used to elicit NBMs are different than those used in Study 1, which was intended to sample a broader spectrum of different outcomes of social challenges to memories. Further, in Study 3, these high ratings could have been brought about by various potential factors; for example, these narratives could have been highly rehearsed by the time participants took part in the study (e.g., through personal reflection, and/or recounting the story to friends, family, counsellors, etc.). However, as noted as a limitation of this data-set, when participants selected their outcome, the language I used could have been more clearly related to solely belief in occurrence. If future research focuses more specifically on belief in occurrence, this language should be revised, as it may have led to different selections by participants.

The studies in this dissertation fit well into the current literature and theory related to memorial beliefs and autobiographical memory. For example, these studies support the notion that belief in occurrence, belief in accuracy, and recollection are distinct constructs that may be affected in different ways by disconfirmatory social feedback. The studies also note the effects of social feedback on memorial beliefs, and highlighted how questioning the source of memories is related to different outcomes in Scoboria's model. These studies also highlighted that people sometimes withhold information or behave in ways that are dissonant with their beliefs, especially under circumstances in which they feel threatened or otherwise at risk, such as in situations of IPA.

Overall, the three studies conducted in this dissertation shed light on both the utility and the limitations of Scoboria's (2016) model of social disconfirmation of vivid memories. Study 1 took an initial step in noting that the model appears to apply in a

sample of people who experienced social challenges to general memories. That is, participants were able to rate themselves into the outcome groups as per Scoboria's model. Further, certain variables from Scoboria's model had meaningful between-group differences; for example, being bothered by the disagreement (present), ease of disagreement, forcefulness of the challenge, importance of avoiding disagreement, credibility of information and challenger, trust of one's own memory, and speculation about the memory coming from another source. Some variables from Scoboria's model, however, did not seem to have meaningful differences across groups in Study 1; for example, the centrality of the event, being bothered by the disagreement (past), the influence of past experiences, importance of the relationship with the challenger, trust of the challenger, having sought information from others, having engaged in discussion with others, having felt threatened, and the importance of the memory.

In Study 2, many of the general themes from participants' narratives illustrated ideas from Scoboria's model. For example, many participants described their questioning (or lack thereof) of belief in occurrence. They also described in many instances at some point agreeing with their challengers and defending their perspectives with their challengers. Other factors, such as social feedback, social support, vivid memory features, and physical evidence were used to help make decisions about events. Of note was the importance of beliefs *other* than belief in occurrence in this study. For example, many participants did not question that the aggressive event occurred, but did question the accuracy of their memory, the severity of the aggression, or the intent they ascribed to their partners. Further, Study 2 highlighted the importance of considering these events also in terms of being a process rather than focusing solely on outcome.

In Study 3, again, Scoboria's model appeared to be relevant in the data. Some of the variables from this model had meaningful group differences in both Study 1 and Study 3; for example, ease of disagreement, importance of avoiding disagreement, credibility of information and challenger, trust of one's own memory, and speculation of the memory coming from another source. Additionally, some other social challenge variables had meaningful group differences: for example, trust of the challenger and discussion with others. In addition to these group differences, exploratory logistic regressions were conducted, including one that predicted whether or not participants, at any point in time, vacillated in belief in occurrence. This logistic regression found that vacillation in belief in occurrence was related to higher ratings of wondering whether the memory came from another source, of seeking information from others, and lower ratings of the importance of the memory. This is another step towards examining Scoboria's model from more of process (i.e., did vacillation in belief in occurrence ever occur?) rather than outcome (i.e., did they reduce belief in occurrence?) perspective.

Although the studies in this dissertation lent some support to Scoboria's model of social disconfirmation of vivid memories, the projects also highlighted some of the limitations of this model. For example, in reaction to social challenge to memories, some participants highlighted "agreeing to disagree" (or "letting it go" or "keeping the peace") or had expressions of persistent doubt or a lack of clear behavioural outcome (i.e., did not overtly/publicly react to the challenge). These concepts should be accounted for in this model, perhaps through the addition of "opt-out" options at certain decision points (e.g., allowing for a person to say that he/she does not know, is unsure, etc.). Additionally, further study of some of the variables that did not have meaningful differences (e.g.,

centrality of the event) is warranted to better understand their place in this model. Further to this, a vital implication that this dissertation has for Scoboria's model is the importance of the studying the effects of disconfirmatory social feedback on belief in accuracy and other memorial beliefs, in addition to belief in occurrence. All three studies have demonstrated that disconfirmatory social feedback can affect beliefs about the accuracy of one's memory. In Study 2, for example, beliefs about accuracy, severity, and intent were more commonly undermined than belief in occurrence. Thus, it appears that at times it is easier to shake people's confidence in a detail of a memory, or a perception of a memory, rather than having them come to believe that the entire memory itself is false. In Study 3, for example, it makes sense that belief in accuracy may be more vulnerable than belief in occurrence in situations in which trust and credibility of the challenger is lower. Depending on the perspective taken, considerations related to belief in accuracy can fit at various places in Scoboria's model. For example, people's beliefs regarding the accuracy of their memory might be an additional factor to be considered as a part of the intrapersonal dissonance that individuals resolve by choosing to reduce or maintain belief in occurrence. That is, it could be a factor involved in the evaluation of the quality of the memory.

Overall, the three studies in this dissertation provided an interesting first step towards understanding how people respond to social disconfirmation of vivid memories, both in a general sense and in a context in which responding to memory challenges has greater implications for individuals (i.e., women who experienced aggression in their intimate relationships). Knowledge gained in this project should help in the development of future similar coding projects, as well as in our understanding of the social and

recollective processes that underlie how and what women report when they are discussing a memory for past aggression in an intimate relationship. Although memory defense was a frequently endorsed outcome in Studies 1 and 3, it is important not to generalize to say that memory defense is normative, considering that this finding is in the context of the sample and specific language used in the study. Additionally, the findings from these projects, especially Studies 2 and 3, reinforce the importance of the provision of validation and support when providing feedback to someone speaking about past experiences of intimate partner aggression. That is, even subtle behaviours or comments may lead women who experienced IPA to question the accuracy of the memories or other memorial beliefs. Both informal supports (e.g., survivors' friends, family members) and formal supports (e.g., police officers, medical doctors, counsellors and psychologists, etc.) must be mindful of their language and behaviour when speaking with survivors of intimate partner aggression to avoid contributing to the invalidating processes that may lead them to question their beliefs in their memories.

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APPENDICES

Appendix A

Study 1 Items

Please describe an event where another person or people challenged your memory. For example, this could include a time where someone told you that something did not actually happen to you, that you are misremembering something, or when the person behaved in such a way that made you feel as if they did not believe you. If you can think of multiple instances in which this occurred, choose one to focus on for the purpose of this study.

- First, we would like for you to describe your memory for the actual original event (i.e., for the event itself).

- What was your (approximate) age when the original event in your memory took place?

- Please describe how the other person/people challenged the memory. What did the other person/people say and/or do to challenge your memory?

- What was your (approximate) age when this challenge took place?

- What happened after your memory was challenged?

- What did you decide about the memory?

- Do you think the challenge affected your confidence in the memory? Elaborate if possible.

- Why do you think the other person/people challenged your memory for the event?

- Please describe the nature of your relationship with this person/these people (e.g., friend(s), parent(s), significant other, acquaintance(s), etc.).

- Here is a list of potential outcomes of this challenge. Please check which one applies, or check "other" if none apply:
  a) I defended my memory and maintained my belief that the event occurred as I remembered it.
  b) I defended my memory but felt as if my belief that the event occurred as I remembered it was lower than it was before the challenge.
  c) I eventually complied with the other person/people by saying that they were correct, but personally still maintained my belief that the event occurred as I remembered it.

d) I eventually complied with the other person/people by saying that they were correct, and felt as if my belief that the event occurred as I remembered it was lower than it was before the challenge.
e) Other: None of these really capture what took place.

- Please elaborate on the outcome that you just endorsed in the question above. We would like more information about what took place to lead to this outcome.

Please answer the following questions as you reflect, in the present, on the event that was challenged by another person. Please reflect specifically on your memory for the original event.

Recollection, belief in accuracy, and belief in occurrence

- How likely is it that you personally did in fact experience this event? (1 = *definitely did not happen*; 8 = *definitely happened*)
- Do you have any doubts about the accuracy of your memory for this event? (1 = *a great deal of doubts;* 7 = *no doubts whatsoever*)
- How strong is your memory for this event? (1 = *no memory*; 3 = *weak memory;* 5 = *moderate memory;* 7 = *strong memory*)
- How confident are you that your memory for this event is accurate? (1 = *not at all confident*; 7 = *completely confident*)
- Do you actually remember experiencing this event? (1 = *no memory of event at all*; 8 = *clear and complete memory for the event*)
- How strong is your belief that this event actually occurred (whether or not you remember the event)? (1 = *no belief;* 3 = *weak belief;* 5 = *moderate belief;* 7 = *strong belief*)
- What proportion of your memory for this event is accurate? (1 = *not at all accurate*; 7 = 100% *accurate*)
- As you think about this event, can you actually remember it rather than just knowing that it occurred? (1 = *not at all*; 3 = *vaguely*; 5 = *distinctly*; 7 = *more than any event*)
- It is true that this event occurred. (1 = *not at all true;* 7 = *completely true*)

Recollective phenomenology

- When I think about this event it the overall vividness is (1 = *vague*; 7 = *very vivid*)
- When I think about this event it involves visual details. (1 = *not at all*, 7 = *very much*)
- When I think about this event it involves sound. (1 = *not at all*, 7 = *very much*)
- When I think about this event, the location where the event takes place is: (1 = *vague*, 7 = *clear/distinct*)
- When I think about this event, the relative spatial arrangement of objects is: (1 = *vague*, 7 = *clear/distinct*)
- When I think about this event, the relative spatial arrangement of people in my memory is: (1 = *vague*, 7 = *clear/distinct*)
- As I think about the event, I feel as though I am re-living it. (1 = *not at all*, 7 = *very much*)
- While thinking about this event, I feel that I travel back to the time when it happened. (1 = *not at all*, 7 = *very much*)

Plausibility, importance, and connectedness

- How plausible is it that you personally could have experienced this event? (1 = *not at all plausible;* 8 = *extremely plausible*)
- This event is significant for my life because it imparts an important message for me or represents an anchor, critical juncture, or a turning point. (1 = *not at all*, 7 = *very much*)
- As I think about the event, it is connected with other events. (1 = *not at all*, 7 = *very much*)

Centrality of the event

- I feel that this event has become part of my identity. (1 = *totally disagree*; 5 = *totally agree*)
- This event has become a reference point for the way I understand myself and the world. (1 = *totally disagree*; 5 = *totally agree*)
- I feel that this event has become a central part of my life story. (1 = *totally disagree*; 5 = *totally agree*)
- This event has colored the way I think and feel about other experiences. (1 = *totally disagree*; 5 = *totally agree*)
- This event permanently changed my life. (1 = *totally disagree*; 5 = *totally agree*)
- I often think about the effects this event will have on my future. (1 = *totally disagree*; 5 = *totally agree*)
- This event was a turning point in my life. (1 = *totally disagree*; 5 = *totally agree*)

Please think back to the time when you experienced the social challenge you discussed above, and consider these items.

Items created based on Scoboria's (2016) model

- At the time, how much did it bother you that your memory disagreed with what the other person(s) said or did? (1 = *not at all*; 7 = *very much*)
- Currently, how much does it still bother you that your memory disagreed with what the other person(s) said or did? (1 = *not at all*; 7 = *very much*)
- At the time, how easy was it for you, in general, to disagree with the person(s) who challenged your memory? (1 = *very hard*; 7 = *very easy*)
- How much did your past experiences with the person(s) who challenged your memory influence your behaviour, such as what you said or did in reaction to the challenge? (1 = *past experiences did not influence me at all*; 7 = *past experiences influenced me*)
- How forceful was the challenge the person(s) made? (1 = *not at all forceful*, 7 = *very forceful*).
- How important was it for you to avoid disagreeing with the other person(s)? (1 = *not at all important*; 7 = *very important*)
- How important was your relationship with the person(s) who challenged your memory at that time? (1 = *not at all important*; 7 = *very important*)
- How credible was the information that the person(s) provided when challenging the memory? (1 = *not at all credible*; 7 = *highly credible*)

- How credible was the person(s) who provided the social challenge? (1 = *not at all credible*; 7 = *highly credible*)
- At the time that the person(s) challenged your memory, in general how much did you trust him/her/them? (1 = *I did not trust them at all*; 7 = *I trusted them completely*)
- How much did you trust your own memory, in general, at the time the other person challenged your memory? (1 = *I mistrusted my memory completely*; 7 = *I trusted my memory completely*)
- To what extent did you wonder if your memory might have come from some source other than personal experience? Some examples of other sources include having been told about it by someone else, from your imagination, a dream, or from a TV show? (1 = *not at all*; 7 = *very much*)
- How much did you seek out information from anyone else after your memory was challenged? (1 = *not at all*, 7 = *very much*)
- How much did you discuss the event with others after your memory was challenged? (1 = *lack of discussion with others*, 7 = *long and/or emotionally intense discussion with others*)
- To what extent did you feel like the person(s) who challenged your memory was/were attempting to threaten you? (1 = *I was not threatened*; 4 = *I felt that threat was implied*; 7 = *there was an explicit threat*)
- How important was this memory to you before it was challenged? (1 = *not at all important*; 7 = *very important*)

Please answer the following questions as you reflect, in the present, on a memory you have for an event that you definitely believe to be true. Please select a memory from approximately the same time period in your life as the socially challenged event you described above.

Please briefly describe the event:

Recollection, belief in accuracy, and belief in occurrence

- How likely is it that you personally did in fact experience this event? (1 = *definitely did not happen*; 8 = *definitely happened*)
- Do you have any doubts about the accuracy of your memory for this event? (1 = *a great deal of doubts;* 7 = *no doubts whatsoever*)
- How strong is your memory for this event? (1 = *no memory*; 3 = *weak memory;* 5 = *moderate memory;* 7 = *strong memory*)
- How confident are you that your memory for this event is accurate? (1 = *not at all confident*; 7 = *completely confident*)
- Do you actually remember experiencing this event? (1 = *no memory of event at all*; 8 = *clear and complete memory for the event*)
- How strong is your belief that this event actually occurred (whether or not you remember the event)? (1 = *no belief;* 3 = *weak belief;* 5 = *moderate belief;* 7 = *strong belief*)
- What proportion of your memory for this event is accurate? (1 = *not at all accurate*; 7 = 100% *accurate*)
- As you think about this event, can you actually remember it rather than just knowing that it occurred? (1 = *not at all*; 3 = *vaguely*; 5 = *distinctly*; 7 = *more than any event*)

- It is true that this event occurred. (1 = *not at all true;* 7 = *completely true*)

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- When I think about this event it involves sound. (1 = *not at all*, 7 = *very much*)
- When I think about this event, the location where the event takes place is: (1 = *vague*, 7 = *clear/distinct*)
- When I think about this event, the relative spatial arrangement of objects is: (1 = *vague*, 7 = *clear/distinct*)
- When I think about this event, the relative spatial arrangement of people in my memory is: (1 = *vague*, 7 = *clear/distinct*)
- As I think about the event, I feel as though I am re-living it. (1 = *not at all*, 7 = *very much*)
- While thinking about this event, I feel that I travel back to the time when it happened. (1 = *not at all*, 7 = *very much*)

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- I feel that this event has become a central part of my life story. (1 = *totally disagree*; 5 = *totally agree*)
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- This event permanently changed my life. (1 = *totally disagree*; 5 = *totally agree*)
- I often think about the effects this event will have on my future. (1 = *totally disagree*; 5 = *totally agree*)
- This event was a turning point in my life. (1 = *totally disagree*; 5 = *totally agree*)

Please answer the following questions as you reflect, in the present, on an event you do not remember, but believe to be true (e.g., something you heard of in a family story). Please select a memory from approximately the same time period in your life as the socially challenged event you described above, if possible.

Please briefly describe the event:

Recollection, belief in accuracy, and belief in occurrence

- How likely is it that you personally did in fact experience this event? (1 = *definitely did not happen*; 8 = *definitely happened*)
- Do you have any doubts about the accuracy of your memory for this event? (1 = *a great deal of doubts;* 7 = *no doubts whatsoever*)
- How strong is your memory for this event? (1 = *no memory*; 3 = *weak memory;* 5 = *moderate memory;* 7 = *strong memory*)
- How confident are you that your memory for this event is accurate? (1 = *not at all confident*; 7 = *completely confident*)
- Do you actually remember experiencing this event? (1 = *no memory of event at all*; 8 = *clear and complete memory for the event*)
- How strong is your belief that this event actually occurred (whether or not you remember the event)? (1 = *no belief;* 3 = *weak belief;* 5 = *moderate belief;* 7 = *strong belief*)
- What proportion of your memory for this event is accurate? (1 = *not at all accurate*; 7 = 100% *accurate*)
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- This event has colored the way I think and feel about other experiences. (1 = *totally disagree*; 5 = *totally agree*)
- This event permanently changed my life. (1 = *totally disagree*; 5 = *totally agree*)
- I often think about the effects this event will have on my future. (1 = *totally disagree*; 5 = *totally agree*)
- This event was a turning point in my life. (1 = *totally disagree*; 5 = *totally agree*)

Demographics

Age:

Sex:

Ethnicity (please select):
__ Black/African/Caribbean
__ Chinese
__ Filipino
__ First Nations
__ Japanese
__ Latin American
__ Mixed
__ South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)
__ Southeast Asian (e.g., Vietnamese, Cambodian, Malaysian, etc.)
__ White
__ Other: _____

Highest level of education completed. If currently enrolled, please select the highest degree you have received:
__ No formal education
__ Elementary school
__ High school or equivalent (GED)
__ Community college
__ Bachelor's degree
__ Master's degree
__ Professional degree
__ Doctorate degree

Please enter your Mechanical Turk ID in order to be compensated.

Appendix B

Study 1 Letter of Information

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: The experience of social challenge about past events

You are asked to participate in a research study conducted by Lauren Wysman, MA, and Dr. Alan Scoboria from the Psychology Department at the University of Windsor. This project is being conducted as part of Ms. Wysman's doctoral dissertation.

If you have any questions or concerns about the research, please feel to contact Lauren Wysman at ****@uwindsor.ca or Dr. Alan Scoboria at ****.

PURPOSE OF THE STUDY

This study aims to explore people's experiences with social challenge to memories for events.

PROCEDURES

If you volunteer to participate in this study, you will be asked to identify a time where you experienced social challenge to a memory for a past event and answer questions about the social challenge. You will describe your memory and your experience of the memory being challenged, and answer questions about the memory. You will then answer questions about two other events from your past. The questionnaires will take no longer than 45 minutes to complete and will be completed online.

Please complete the study on your own, and in a private location where you cannot be observed, and at a time that you can devote your full attention without interruption.

POTENTIAL RISKS AND DISCOMFORTS

There are no known risks associated with this research. You may feel some discomfort if you choose to reflect on negative events from the past. We expect that under most circumstances any discomfort will be mild and temporary. However, you may decide what past events you choose to describe. You may end your participation in the study at any point.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

There are no foreseeable benefits of participation in this research. Results of this research will contribute to bettering the understanding of the relationship between social challenges to memory and remembering.

COMPENSATION FOR PARTICIPATION

You will be compensated $3.50 (USD) for your participation in this research. You must complete at least 80% of the survey to receive this compensation.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. You will participate using your Mechanical Turk ID so that we can provide you with the compensation after the study is completed. No further identifying information will be collected about you. As researchers, we are not in control of how information is transmitted over the internet, so to ensure confidentiality of your identity, please do not include any personally identifying information about yourself or anybody else when you describe your memories during the study. Data will be retained indefinitely and will be stored on an external hard drive in a locked filing cabinet as well as on the computers of the investigators. Your files will only be accessible to individuals associated with the study. In any resulting publications or presentations, participants will be referred to in groups so as to protect individual identity. If the event you provide is described in a presentation or publication, it will be altered or paraphrased, and any identifying information that you provide will be removed.

PARTICIPATION AND WITHDRAWAL

You can withdraw your participation from this study at any time. The investigator may withdraw you from this research if circumstances arise which warrant doing so. Once your data is submitted you will not be able to withdraw your data. If you choose to withdraw before completing 80% of the survey, you must return to Turk to withdraw yourself from the HIT. If you select to withdraw before the end of the study session, you will be asked if we can retain the data that you have provided.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

A summary of the research findings will be available to you upon completion of the project.
Web address: uwindsor.ca/reb
Date when results are available: on or before September 30, 2015

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

I understand the information provided for the study **"**The experience of social challenge about past events" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

/s/ Lauren Wysman June 15, 2014

Please print or save a copy of this information letter for your records.

By completing the study, it indicates your consent to participate.

Appendix C

Study 1 Coding Manual

General instructions for social challenge of memory coding

(Coding manual in part adapted/taken verbatim from NBM coding manual [with permission] used for coding in Scoboria, Boucher, & Mazzoni, 2015)

- Read this manual in full before commencing coding.
- Read each participant's social challenge narratives (i.e., written answers to all questions) in full before coding that participant.
- Do not discuss your ratings of specific events with other coders unless given permission to do so – it could bias your coding and our inter-rater reliability ratings.
- Unless stated in the manual instructions, try to refrain from inferring beyond what a participant explicitly states. If it is permissible for inference to be made for certain categories, it will be noted in the instructions below.
- Always treat the data as if the participant was the one being challenged by another person.
- In the NBM coding section, please consult with Boucher's expanded manual for clarification.
- If you have questions, comments, or concerns, please contact Lauren.

Coding for memory/lack of memory

- **Is it a memory or lack of memory that was challenged?**
  - 1 = A participant's memory was challenged
  - 2 = A participant's lack of memory was challenged
    - E.g., "This was a fight my sister says happened between my best friend and I when we were teenagers. I do not remember the event ever happening so I have no memory to describe, I only know what my sisters says which I do not believe ever happened."
  - ***Note:*** *if the participant's lack of memory was challenged (i.e., you coded this column as a 2), you may stop your coding for this participant here.*

Coding descriptive aspects of the data

- **Coding for the relationship with challenger**

Note: You may have multiple codes depending on how many people were involved in the challenge (e.g., coding that both a sister [sibling category] and a cousin [extended family category] challenged the participant). Each code will have a separate column.

- Intimate partner
  - Enter "1" if participant mentions the challenger was a significant other (e.g., boyfriend, girlfriend, partner, husband, wife, etc.).
  - Note: this can include ex-partners who were current partners at the time of the challenge. If a partner was an ex-partner at the time of the challenge, please add the word "ex" in the column.
- Extended family member
  - Enter "1" if participant mentions the challenger was an extended family member (e.g., aunt, uncle, cousin, grandparent, etc.).
- Sibling
  - Enter "1" f participant mentions the challenger was a sibling (e.g., brother, sister, half-brother, half-sister, step-brother, step-sister).
- Parent
  - Enter "1" if participant mentions the challenger was a parent (e.g., mother, father, step-mother, step-father).
- Child
  - Enter "1" if participant mentions the challenger was his/her child.
- Friend
  - Enter "1" if participant mentions the challenger was a friend.
- Co-worker or classmate
  - Enter "1" if the participant mentions the challenger was a co-worker or classmate.
- Teacher/Boss/Authority figure
  - Enter "1" if the participant mentions the challenger was some kind of authority figure other than a parent/family member (e.g., teacher, boss, supervisor, manager, etc.).
- Acquaintance
  - Enter "1" if participant mentions the challenger was an acquaintance.
- Stranger
  - Enter "1" if the participant mentions the challenger was a stranger (e.g., "I did not know the person", etc.).
- Other
  - Enter "1" for anything that does not fit into the above categories.

- **Number of people who did the challenging**
  - The number entered in the spreadsheet corresponds with the number of challengers involved in the challenge (i.e., 2 people challenged the participant = "2")
  - Note: if participant mentions multiple people where you cannot figure out the exact number (e.g., "my friends") put the code "mult".

- **Modality of the challenge**
  - *Each code will have a separate column, since a challenge could occur over multiple modalities.*
  - Face to face (1) – can have some inference here
    - Note: can infer if there is something written that conveys that the participant and challenger are in the same space, for example

(e.g., at a family reunion, restaurant) since it is most plausible that then they are discussing the event in person, face to face.
        - To test whether you can infer, ask yourself if the challenge could have happened through another modality (e.g., phone, texting, etc.). If the scenario reads fairly well as you imagine that this happened over the phone, and there are no details that make this impossible, then code as <u>non-specified</u>.
    - Texting (1)
    - Telephone (call) (1)
    - Internet communication (1)
        - E.g., email, Facebook message, Twitter, etc.
    - Non-verbal (1)
        - E.g., body language, dismissive look, etc.
    - Other (1)
    - Non-specified (1)

- **Sought input from anyone else (interpersonal)**
    - Yes = 1
    - E.g., asking another person about the challenged event, spoke with someone about the challenged event (which could include having a discussion with the challenger beyond the challenge – i.e., seeking information from the challenger).
    - Note: If this takes place with a challenger, it must be clear that this happened separate from the challenge (e.g., on another day, in a later conversation). Prolonged discussion does not get coded here.
    - Note: Code **1o** if seeks input from a person other than the challenger. Code **1c** if seeks input from the challenger at a later point. Code **1co** if seeks input from both.

- **Sought evidence (not interpersonal)**
    - Yes = 1
    - E.g., looking at photos, phone records, etc.
    - Note: Emails are coded above (sought input from anyone else) if the participant contacted someone through email to find out information. It would be coded in this category (sought evidence) if the participant was using it as a record of something (i.e., going through old emails to find proof, a record of an old conversation, etc.).

- **Type of challenge**
    - Active (enter "1" in this column for its presence)
        - This is the more "conventional" type of challenge that one may expect. For example, it could involve the participant recounting a story and having the challenger tell him/her "you're remembering that incorrectly."
        - E.g., "My sister says that I couldn't have the memory because I was so little."
    - Passive (enter "1" in this column for its presence)

        - The challenger did not necessarily intend to challenge. For example, this may take place when the challenger is telling a story in front of the participant, and the participant realizes that the challenger is incorrect, misremembering, etc. So the challenger passively challenged the participant.
        - E.g., "My husband later told the story as if it all happened to him and said that my memory of it was wrong." ➔ The husband telling this story was the passive challenge, in that he was not prompted to tell the story by the participant. The husband stating that her memory was wrong is an active challenge.

- **Emotion described by participant (referring to self)**
    - **Note:** This is for the challenge. Not the original event.
    - Also note: Not much space for inference. Do not infer one words like "argued" or "fought". Stick to looking for direct emotion words as per below.
    - 1= Negative (e.g., sad, embarrassed, angry, frustrated, etc.)
    - 1= Positive or Neutral (e.g., happy, unphased, etc.)

Coding using the NBM system

How did the other person challenge the participant?

- **Social Feedback (overt and/or covert; active and/or passive; may be permitted to infer):**
    - *Numbers here pertain to categories in coding sheet*

1- Told by another person/persons the event did not occur
2- Told by another person/persons the event could not occur (i.e., is impossible)
3- Told by another person/persons the event is not likely to have occurred (i.e., is implausible)
4- Lack of corroboration from another person/persons
5- Told by another person/persons he/she was not there to witness the event
6- Told by another person/persons the event happened to someone else
7- Told by another person/persons the event happened differently
8- Pressured by another person/persons (safe to infer)
9- Disconfirming non-verbal feedback from another person/persons
10- Lack of feedback from another person/persons confirming or denying event. Please specify 10a, 10b, and/or 10c.
    a. Another person/persons are unavailable to provide feedback
    b. Another person/persons refused to speak of event (active)
    c. Another person/persons did not provide feedback (passive)

What other support was used to make a decision about the event?

- **External Evidence (always pertains to the participant's perspective)**
  - *Note: as a cue to better understand this category, for both types of evidence, a code of 1 would typically be against the participant's perspective (potentially in support of the challenger). A code of 2 would typically be in support of the participant's perspective.*
  - **Disconfirming evidence**
    - 1 = Disconfirming evidence was obtained (in opposition)
      - I.e., participant found evidence to disprove his/her beliefs.
    - 2 = Disconfirming evidence could not be obtained (in support)
      - I.e., participant could not find evidence to disprove his/her beliefs.
  - **Confirming evidence**
    - 1 = Confirming evidence cannot be located/ was not obtained (in opposition)
      - I.e., participant could not find evidence that proves his/her beliefs.
    - 2 = Confirming evidence was obtained (in support)
      - I.e., participant found evidence that proves his/her beliefs.

- **Internal Feature of Event Representation (self)**
  - "Weak"/ Undermining = 1
    - E.g., participant endorses that he/she has a weak memory/fuzzy memory/lack of memory
  - "Typical"/Supporting = 2
    - E.g., participant endorses that he/she has typical features of the memory/ typical memory characteristics; OR particularly vivid/strong features/memory characteristics

- **Motivation (over and/or covert; safe to infer)**
  - 1= Motivated to relinquish belief in memory
  - 2= Motivated to maintain belief in memory

- **Event Plausibility (safe to infer objective plausibility)**
  - **Subjective plausibility**
    - 1= Impossible/Implausible/Illogical for this particular participant
    - 2 = Possible/Plausible/Logical for this particular participant
  - **Objective plausibility**
    - 1= Impossible/Implausible/Illogical in general
    - 2= Possible/Plausible/Logical in general

- **Alternate Attributions (internal and/or external)**
  - **Alternate attribution (internal)**
    - Self
      - E.g., Participant identifies that he/she dreamt event.

        - Please specify for each a, b, and/or c, whenever possible:
            - a) Imagination/ Confabulation/ Exaggeration/ Simplification/ Fantasy/ Daydream
            - b) Dream/ Nightmare
            - c) Altered consciousness (e.g., drunk, drowsy, high, etc.)
            - Other = write in "other"

    - Other
        - E.g., Participant speculates that <u>the challenger/another person</u> dreamt the event.

        - Please specify for each a, b, and/or c, whenever possible:
            - a) Imagination/ Confabulation/ Exaggeration/ Simplification/ Fantasy/ Daydream
            - b) Dream/ Nightmare
            - c) Altered consciousness (e.g., drunk, drowsy, high, etc.)
            - Other = write in "other"

- **Alternative attribution (external) – TV shows, books, etc.**
    - Self
        - If present, =1
        - For example, the participant stating that <u>he/she</u> saw it on TV.
    - Other
        - If present, =1
        - For example, the participant stating that he/she believes that <u>the challenger/another person</u> saw it on TV.

- **General Beliefs re. Memory and Ability (overt and/or covert; safe to infer – see Boucher's manual for extended discussion)**
    - In support of participant's beliefs
        - General beliefs regarding memory and age
        - General beliefs regarding memory and behavior
        - General beliefs regarding memory ability
        - General beliefs regarding memory integrity

    - In opposition to the participant's beliefs
        - General beliefs regarding memory and age
        - General beliefs regarding memory and behavior
        - General beliefs regarding memory ability
        - General beliefs regarding memory integrity

- **Notions of Self and Others**
    - Self-Image
        - 1= Inconsistent with self-image
        - 2= Consistent with self-image

    - Image of other person
        - 1= Inconsistent with image of another person
        - 2= Consistent with image of another person

    - Note: column to put info about whether it was in support of (S) or in opposition to (O) the participant's beliefs.

Coding how the data fit with Scoboria's model

This coding involves attempting to categorize each participant's response into one of four categories, based on Scoboria's model.

Please read whole event through and note which of these apply (inference is appropriate when necessary).

1st column:
Maintain vs. reduce belief in occurrence

- 1 = maintain/heighten
- 2 = reduce

2nd column:
Did you feel like you were guessing/inferring?

- 1 = yes
- 2 = no

3rd column:
Publicly agree vs. disagree

- 1 = agree
- 2 = disagree

4th column:
Did you feel like you were guessing?

- 1 = yes
- 2 = no

Additional coding

Did he/she receive corroboration from another person/persons?
See column labelled "corrob"

- The participant receives feedback from others that confirms the memory. (e.g., the participant is challenged by his sister, but his mother corroborates his version of the story, not the sister's).
- The "other person" can be the challenger at a later time (e.g., my sister later told me that she did, in fact, remember the event and was lying about her version of it). Or, it can be a separate person (e.g., sister challenges, mother corroborates, etc.).
- This category is not about actual hard evidence (e.g., finding an old email, old text messages, photographs, videos, etc.) – that fits into another category.
- 1 = received corroboration that confirms the memory
- 2 = received social feedback that confirms the challenger's story (i.e., other people confirm the challenger's story, not the participant's)
- 0 = neither present

Doubted memory but came to maintain belief in occurrence
See column labelled "dbt but blv"

- Look for words like "doubt", "confidence", etc.
- 1 = present
- 0 = absent

Doubted memory and remained in state of doubt/unsure
See column labelled "still dbt"

- Look for words like "doubt", "confidence", etc.
- 1 = present
- 0 = absent
- 2 = doubted and then completely gave up belief (occurrence/accuracy) in his/her original memory

Should the data be retained?
See column labelled "remove?"

- Did the participant seem to understand that we wanted them to focus on a single event that was challenged? Or did they focus on multiple events? An indicator that he/she is speaking about multiple events is the use of many generalities (e.g., she never did this, he always fought with me, we always had this argument, I usually reacted this way, etc.). Do you get the sense that they are focusing on one particular event when they are describing their original memory, or thinking more about patterns in this particular relationship?
- Could be removed for other reasons (e.g., hopping between events, being challenged for something other than a memory ["I wrote a challenging test"].)
    - Keep = 0
    - Remove = 1

Appendix D
Participant Pool Advertisement for Study 2

In this study, you will be interviewed about your experiences as a woman who experienced some type of controlling, abusive, or aggressive behaviour in a past intimate partner relationship. This could include verbal, sexual, physical, or emotional abuse, as well as other behaviours such as over-control, stalking, or manipulation. We are hoping to learn more about your experiences of remembering and communicating with others about things that happened in that relationship, such as times you may have been told that your memory was incorrect, that the events did not happen, or where other people had doubts about your experiences. Your participation in this research is important for gaining new knowledge about how women who have experienced intimate partner aggression remember these past events, but will involve talking about potentially painful instances from your past. The study has 2-3 parts. First, if you are interested in participating, you can sign up for a screening meeting to review consent and discuss if you would be eligible to participate. This screening session is up to 30 minutes (0.5 bonus credits). If you are interested and eligible to participate, the second meeting will be up to 1.5 hours (1.5 bonus credits) in which we will discuss your experiences in your past relationship. There will also be an optional follow-up meeting to discuss the results of the research.

Appendix E
Study 2 Consent Form

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Interviews about experiences of violence or aggression in past relationships: A student sample.

You are asked to participate in a research study conducted by Lauren Wysman and Dr. Alan Scoboria from the Psychology Department at the University of Windsor. This project is being conducted as part of Ms. Wysman's doctoral dissertation.

If you have any questions or concerns about the research, please feel to contact Lauren Wysman at ****@uwindsor.ca or Dr. Alan Scoboria at *** or *****@uwindsor.ca.

PURPOSE OF THE STUDY

This study aims to gain in-depth knowledge about women's experiences in relationships where partners have engaged in controlling, abusive, and/or aggressive behaviours. Specifically, we aim to learn about their experiences of receiving challenges from other people about their memories for past events related to this abuse.

PROCEDURES

If you volunteer to participate in this study, you will first be invited to a screening meeting to go through this consent form and learn about the study and its risks and benefits. This screening session is worth 0.5 bonus credits, regardless of whether you participate in the main interview. If you are eligible and choose to participate in the interview, we will schedule an interview. Then, you will be asked to discuss and answer questions about your experiences in a relationship in which your partner was abusive, aggressive, or controlling. You will also be asked some specific demographic questions. Interviews will take place at the University of Windsor and should take no longer than 1.5 hours. This interview will be audio-taped. You will be asked whether you are willing to be contacted for a follow-up study (for a $10 gift card) to give your impressions about the results of the study. If so, you will provide contact information for this follow-up.

POTENTIAL RISKS AND DISCOMFORTS

Due to the nature of the topic, you will be asked to reflect on relationship experiences that may upset you. The researcher will work with you to ensure that you are comfortable with the material being discussed, and that any negative emotional reactions are discussed in order to ensure that you feel able to cope with them. The researcher will provide you with contact information for on-campus and community resources in case you would like to seek further support. If the researcher feels that your participation is leading to a high level of discomfort, she may make the decision to terminate your participation in this research. Further, if you feel that you are unable to discuss these past events without becoming uncomfortable doing so, you may choose to not participate in this study.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Participants may benefit by learning more about themselves and gaining insight in reflecting on past experiences in relationships. This research may contribute to a better understanding of women who have experienced abuse in the context of heterosexual relationships, which may benefit research knowledge as well as potentially provide information for advocacy work for women who have left violent or aggressive relationships.

COMPENSATION FOR PARTICIPATION

Participants will receive 0.5 bonus points for 30 minutes of participation (in the screening meeting) towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses. After this screening meeting, if eligible and interested, participants may sign up to be interviewed. Participants will

receive 1.5 bonus points for 90 minutes of participation (in the interview) towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses. If potential participants are no longer in the psychology participant pool or not eligible for more bonus points at the time of the interview, alternative compensation may be provided (i.e., $20 gift card to Tim Horton's). Participants who attend an optional follow-up interview will receive a $10 gift card for Tim Horton's.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, with exceptions with respect to duty to report (e.g., high risk of child abuse, sexual abuse at the hands of a health-care practitioner, high risk for suicide, homicidal intent, etc.). Your data will be associated with a participant code that will be retained on a separate sheet until data is analysed. Audio files will be deleted after transcription and verification. Data will be stored on an external hard drive without being connected to your identifying information indefinitely.

PARTICIPATION AND WITHDRAWAL

You may choose to withdraw from participating at any time in the course of the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so, such as if you appear to become very distressed in discussing past events. You may withdraw your data at any point before the end of the interview. You will be able to earn 0.5 bonus credits if you only participate in the screening session, or a total of 2 bonus credits (0.5 for screener and 1.5 for the interview) if you participate in the full study. Once you start one of the sessions, you will be credited with the full bonus points for that session.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

You will be able to schedule an (optional) follow-up session to hear the results of the study and give your impressions. You will be reimbursed with a 10$ gift card for this follow-up interview. Feedback will also be available at uwindsor.ca/reb after July 15, 2015.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the study **"**Interviews about experiences of violence or aggression in past relationships: A student sample" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____
Name of Participant

_____ _____
Signature of Participant Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

_____ _____
Signature of Investigator Date

Appendix F

Scripts and Questions for Study 2

Part 1: Screening Session

Session begins with an introduction and some brief small talk to facilitate making the participant comfortable.

Review consent form. Have participant sign it, but explain that signing it does not mean she will be eligible for the interview (Part 2). Signing it serves as consent for both the screener, and potentially the interview, depending on interest/suitability. We will review a separate consent form for audiotaping as well, to facilitate discussion around this (only to be signed if will participate in the main interview).

So let me tell you a bit more about this project. I'm completing these interviews as part of my dissertation for my PhD. As part of this project, my supervisor and I are examining the experiences of women who have had past aggressive intimate relationships where they have experienced some kind of challenge about past events regarding past aggression in relationships, whether that aggression was verbal, emotional, sexual, physical or so on. What I mean by challenge is having another person, whether it was your ex-partner, a friend, a family member, or someone in the legal system try to undermine your experience. This could include really direct things like being told you're making something up, that you are exaggerating, you're misrepresenting what happened. It could also include more subtle things, like ignoring things you have said, giving you a dismissive look, or so on. So we are interested in these experiences because we think that they have important implications for the way women remember and talk about past experiences of violence or control in relationships. Does this make sense to you? Do you have any questions so far?

Obviously, there could be some risks involved in participating in this project. You will be talking with me about probably what was a really challenging time in your life, which could be upsetting. So if you feel that you don't really want to go through this stuff with me, that's okay. You can make the choice to not participate at all, or you can only tell me things that you feel comfortable with.

With that being said, I don't want you to get the impression that I don't want you to share things that could be upsetting. I'm definitely comfortable if you choose to discuss challenging material, and if you get upset that's okay. If you do get upset, however, I'll want to monitor it closely to make sure that you and I both think that you aren't feeling out of control or anything like that. I'll also be able to direct you to some therapy resources too if you'd like, if you think you might want to pursue having a bit of counselling for some of these past issues.

Also worth considering are the potential benefits of participating. You might learn more about yourself and gain insights based on talking to me. On a larger scale, you

would be contributing to a project that might become a piece of research that can help provide support for women who have been in violence or aggressive relationships.

So, what are your thoughts? *Engage in discussion based on participant's feedback.* **If you think that this project is relevant to you, and you're interested in participating, let's set up a time that works for both of us.** *Set up time for Part 2, and explain and sign the audio consent form.* **If you need some time to think about it, that's okay too. I can email or call you in a couple days and check in to see whether you'd like to participate.**

<u>Part 2: Actual interview</u>

Hi, _____. Welcome back. How are things? Before we get going, I would just like to get some demographic information from you

Age:

Sex:

Ethnicity (please select):
__ Black/African/Caribbean
__ Chinese
__ Filipino
__ First Nations
__ Japanese
__ Latin American
__ Mixed
__ South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)
__ Southeast Asian (e.g., Vietnamese, Cambodian, Malaysian, etc.)
__ White
__ Other: _____

How long was the relationship with your abusive partner (corresponding to relationship you plan to talk about)?
How long ago did the relationship end?
Have you had therapy ever to help you process this past relationship?

Highest level of education completed. If currently enrolled, please select the highest degree you have received:
__ No formal education
__ Elementary school
__ High school or equivalent (GED)
__ Community college
__ Bachelor's degree
__ Master's degree

__ Professional degree
__ Doctorate degree

Great. As we discussed in that meeting last week, the issue that we're hoping to understand a bit better with the project is the experience of being challenged about your past experiences in a relationship with some aggressive dynamics. Have you given any thought to this after our screening session? Can you think of a time where you might have experienced something like that?

If yes, have her elaborate.

If has not thought about it, can ask:
What were the dynamics in the relationship like?

Can you think back to some times when you two might have disagreed about something? What were those times like?

Questions about explicit challenge (if does not directly address in it earlier discussion):
Did your ex-partner ever pressure you to change what you thought about an abusive episode? Like telling you that you're making it up, you're exaggerating, etc.? If so, please elaborate.
If yes, **What happened when you were told this?**
Did you come to doubt your memory?
Did you change your beliefs about what happened?
Were you doing so just to comply? Or did you actually start to believe the other person's views?
If answers suggest she began to doubt/change beliefs, ask:
Why do you think you started to doubt your memory?
If answers suggest she was complying and did not doubt, ask:
Why do you think you did not come to doubt your memory?

Did a person other than your ex-partner ever pressure you to change what you thought about an abusive episode? Like telling you that you're making it up, you're exaggerating, etc.? If so, please elaborate.
If yes, **What happened when you were told this?**
Did you come to doubt your memory?
Did you change your beliefs about what happened?
Were you doing so just to comply? Or did you actually start to believe the other person's views?
If answers suggest she began to doubt/change beliefs, ask:
Why do you think you started to doubt your memory?
If answers suggest she was complying and did not doubt, ask:
Why do you think you did not come to doubt your memory?

Questions about implied challenge (if does not directly address it in earlier discussion):

Sometimes people are very direct, like saying "you're wrong" or "you're remembering that incorrectly" or "*insert one of her examples.***" Other times people can be a bit less direct, like refusing to talk about something or giving you a look that suggests you had better stop talking about something. Did you ever experience anything like this?**
If yes, **What had happened? What were the thoughts you had when this happened?**

Questions about doubts (if does not directly address it in earlier discussion):
Some research on women who have experienced difficult relationships have said things along the lines of "I did not have a bruise, so I was not sure if he had really hit me." Did you ever have any thoughts like this in this relationship?
If yes, **What had happened? What were the thoughts you had?**

Questions about support from others (if does not directly address it in earlier discussion):
Maybe you can think about some of your experiences with other people in your life when you were with this previous partner? Did people support you? Did they try to ignore what was going on? Did they have any clue at all?

Questions about own motives (if does not directly address it in earlier discussion):
Were you ever motivated to remember an event differently? For example, did you ever feel like you were covering up what was happening to maintain a certain image to others?
If yes, **Please tell me more.**

Did you ever strongly wish that something did not happen? You knew that it happened, but in your mind you just wished that it had not?
If yes, **Did this desire for things to be different seem to motivate you to remember things differently?**

Questions about defending memories (if does not directly address it in earlier discussion):
So we've established that there were/were not times, in the context of this relationship, where you might have doubted yourself. Can you think of any times where you stuck firmly with what you believed? Where people were not able to shake your confidence in your memory or beliefs about what happened?
If yes, **Can you tell me about one of these times? What were the thoughts you had when it happened? What do you think led to being so firm in this instance?**

Questions about present perceptions of events from the past (if does not directly address it in earlier discussion):
When you reflect back now on that relationship, how do you view yourself in the relationship?

If they endorsed adjusting beliefs/memories/reports based on social challenge: **What do you think contributed to you coming to trust your own beliefs or memories about these past events now?**

Do these challenges from other people in the past still serve to undermine your confidence in your memory now?

To finish up:
Thanks for answering all those questions. Is there anything else that you want to share that might be relevant to the project? Anything we did not cover in our discussion that you think would be helpful for me to reflect on?

Okay. Thanks for talking with me today and answering those questions. As noted in the advertisement on the pool, with this type of research, we often like to contact participants in the future to ask for your reflections on the results of the study. We would be able to compensate you with a $10 gift card for Tim Horton's in future if you agree and come in for the follow-up meeting. If you are interested, I'll just take down some contact information so that I can be in touch when we have examined the results.

Contact information for follow up:

Part 3: Follow-up

This interview was less structured. It began by presented a brief summary of Scoboria's model for social challenges to memory and an explanation of major categories that were found in the data. Participants were given the chance to ask questions and to discuss things that they believed were important from the study, or things that were missing from my analysis.

Appendix G

Resources Given to Participants for Mental Health Support in Study 2

Student specific resources:

- Student Counseling Centre
  Room 293 CAW Centre
  University of Windsor
  519-253-3000 ext 4616
  Monday - Friday - 8:30 am - 4:30 pm.
  scc@uwindsor.ca

General community resources:

- Community Counseling Alliance
  (519) 254-3426
  ccawindsoressex.ca

- Sexual Assault Crisis Centre of Essex County
  1407 Ottawa St, Unit G
  Windsor, ON N8X 2G1
  Office phone: 519-253-3100
  Crisis phone: 519-253-9667 (24 hours)

- Hiatus House
  250 Louis Avenue
  Windsor, ON N9A 1W2
  Phone: 519-252-7781

- Hotel Dieu Hospital 24 Hour Crisis Line
  519-973-4435

- Canadian Mental Health Association
  1-800-875-6213
  www.ontario.cmha.ca

Appendix H
Safety Planning Document Given to Participants in Study 2
(Provided by Dr. P. Timmons Fritz; Revised by L. Wysman)

PERSONALIZED SAFETY PLAN WORKSHEET

The following steps are my plan for increasing my safety and preparing for possible further violence. Although I do not have control over my (ex) partner's violence, I do have a choice about how I respond and how to get myself to safety.

Safety during a Violence Incident

Consider using a variety of strategies to increase safety during violent incidents.

I can use some or all of the following strategies:

- If I decide to leave, I will _____ _____. (Practice how to get out safely. What doors, windows, elevators, stairwells or fire escapes would you use?)
- Safe places that I can go if I need to leave a violent situation:
    - A place to use the phone: _____
    - A place I could stay for a couple of hours: _____
    - A place I could stay for a couple of days: _____
- I can keep my purse/wallet and vehicle keys ready and always keep them in the same place (_____), so that I can locate them easily if I need to leave in a hurry. I can also have a second set of keys made in case my partner takes the first set.
- If it is safe for me, I can tell certain people about the violence and ask that they call the police if they hear suspicious noises coming from my home. The people I could tell are: _____.

- It may be helpful to have a code word to use with my friends and family if I should need them to call for help. My code word is _____.
- When I expect we are going to have an argument, I will try to avoid places in the house where I may be trapped or where weapons are readily available such as in the bathroom or kitchen. Bigger rooms with more than one exit may be safer. The places I would try to avoid would be _____. The places I would try to move to are _____.
- I will use my judgment, experience and intuition.
- There are resources available to me, some of which may be helpful for developing a more long-term plan if I decide to leave my partner.
- Website with additional safety planning information: http://www.keepingsafe.ca/keepingsafe/keepingsafe.html

Appendix I

Coding and Cues to Distinguish Categories/Codes for Study 2

- Accuracy *(Did the aggression occur the way the participant remembers? [i.e., this is more focused on the details, like did he slap or punch me?])*
    - Questioned accuracy of memory
    - Did not question accuracy of memory
    - Maintain belief in accuracy
- Severity *(How severe was the aggression? "Am I exaggerating how bad it was?")*
    - Questioned it
    - Did not question it
- Occurrence *(Did the aggression, in fact, occur?)*
    - Questioned it
    - Did not question it
    - Maintain belief in occurrence
    - Reduce belief in occurrence
    - Question evidence
    - "Forgetting"/Remembering differently (*Participant mentions forgetting or remembering differently some aspect of the aggression).*
    - "Remembering" (*Participant mentions "remembering" what happened).*
    - Felt like she wasn't believed
- Intent *(Participant wonders if her partner intended to harm her).*
    - Questioned it
    - Did not question it
- Agreement/Compliance *(i.e., Publicly agreeing with partner/other when privately disagrees with respect to the challenge to her beliefs about her memories for past aggression. This can be direct [e.g., with words] or indirect [e.g., stops arguing with other/ex-partner to avoid continued fighting, stays in relationship]).*
    - Compliance to avoid repercussions from challenger/ex-partner
    - Compliance that then contributes to coming to believe challenge
    - Presence of compliance with partner
    - Presence of compliance with other
- Defense *(Publicly disagreeing with partner/other. This is typically direct [e.g., with words]).*
    - Defended her own perspective
    - Defend then comply
- Doubt *(Does the participant question her beliefs or memory for the event? This can be doubting occurrence and/or accuracy and/or severity and/or intent).*
    - Presence
    - Absence
- Reasons for doubt *(The participant mentions this as part of why she doubted her memory [i.e., beliefs about occurrence, for severity, accuracy, intent]).*
    - Lack of validation
    - Maintain image of aggressor
    - Manipulated by challenger/aggressor

    - Not severe enough/obscure
    - No evidence
    - Doubt in spite of evidence
    - It's not abuse if it isn't physical
    - Questioned by other
    - Negative influence of important other
    - Intoxicated
    - Other reason
- Reasons for lack of doubt/ceasing to doubt *(The participant mentions this as part of why she did not doubt/eventually ceased doubting her memory [i.e., beliefs about occurrence, for severity, accuracy, intent]).*
    - Vivid memory
    - External evidence (photos, journal)
    - Sober
    - His personality
    - Validated by others (friends, family, therapist)
    - Admission of guilt by partner
    - Time spent in reflection
    - Assertive anger
    - Mood improving
    - "Bro code"
    - Gut instinct/trusting self
    - Physical violence = "abuse"
    - He's no longer manipulating me
    - Other
- Subtle/Indirect social feedback *(these codes are when the participant mentions something [subtle] that another person did in response to her experience of aggression. Note: subtlety is an assumption. Participant does not need to mention that the invalidation was subtle. This is just a way to try to categorize. Further, because it is subtle, the other person does not need to know that he/she is invalidating the participant's experience of aggression).*
    - Others like him
    - Others did not intervene
    - Others uncomfortable hearing about the aggression
    - Others ignored *(this includes "brushing it off")*
    - Other subtle social feedback
- Direct social feedback *(As above, these codes are when the participant mentions something [direct] that another person in response to her experience of aggression. Direct is an assumption, but these more direct types of invalidation are probably things that are verbalized to the participant).*
    - Normalizing/minimizing *(includes being told that she's making a big deal)*
    - Disbelief
    - Told her fault *(this includes being told she likes it [e.g., likes aggressive men] or deserves it)*
    - Questioning her decisions

    - From ex-partner
- Internal strategies
    - Maintain image to others/coherent understanding of self or situation *(The participant mentions something about making excuses/hiding/covering up the extent of the aggression in order to maintain an image of herself [e.g., not wanting to be "a victim"] for herself or for others. Downplaying severity fits here too).*
        - Hide/cover up/excuses
        - Refusing to hide/cover up/excuses
- Cultural influences *(Participant mentions something re. her culture's perspective on violence against women, dating, premarital intercourse, etc.)*
- Other beliefs
    - Believe it is normal
    - Believe it was bad
    - Believe it wasn't her fault
    - Believe it wasn't so bad
    - Believe she deserved it/ "my fault"
    - Believe she is too sensitive/overreacting
    - Believe she liked it
    - Didn't believe his views
- Misc.
    - Wish it didn't happen
    - Presumed negative/self-serving motive of other
    - Silenced
    - Assumed people would react negatively
    - Maintain coherent understanding of self or situation *(The participant mentions something about making excuses/hiding/covering up the extent of the aggression in order to maintain an image of herself [e.g., not wanting to be "a victim"]).*
    - Cultural influences *(Participant mentions something re. her culture's perspective on violence against women, dating, premarital intercourse, etc.)*

Appendix J

Questions Asked in Study 3

To begin, please try to focus on a time that <u>your intimate partner in a relationship</u> challenged your memory for a past aggressive event that he carried out. If you cannot think of a time where he did this, please check the box below.

- First, we would like for you to describe your memory for the actual original event that was challenged (i.e., the experience of aggression/control). Please note that you can give as much or as little detail as you choose, depending on how comfortable you feel with this task.

- What was your (approximate) age when the original event in your memory took place?

- Please describe how your intimate partner challenged the memory of this aggression/control. What did he say and/or do to challenge your memory?

- What was your (approximate) age when the challenge to your memory took place?

- What happened after your memory was challenged?

- What did you decide about the memory?

- At any time, did the challenge to your memory affect your belief that the event actually occurred? (Yes/No) (Please elaborate in space provided)

- Did the challenge affect your confidence that the details in your memory for the event were correct? (Yes/No) (Please elaborate in space provided)

- Did the challenge affect the way you interpreted the meaning of the event? (Yes/No) (Please elaborate in space provided)

- Why do you think your intimate partner challenged your memory for the event?

- Here is a list of potential outcomes of this challenge. Please check which one applies, or check "other" if none apply:
  a) I defended my memory and maintained my belief that the event occurred as I remembered it.
  b) I defended my memory but felt as if my belief that the event occurred as I remembered it was lower than it was before the challenge.
  c) I eventually complied with my partner by saying that he was correct, but personally still maintained my belief that the event occurred as I remembered it.

d) I eventually complied with my partner by saying that he was correct, and felt as if my belief that the event occurred as I remembered it was lower than it was before the challenge.
e) Other: None of these really capture what took place.

- Please elaborate on the outcome that you just endorsed in the question above. We would like more information about what took place to lead to this outcome.

Please answer the following questions as you reflect, in the present, on the event that was challenged by your intimate partner. Please reflect specifically on your memory for the original event.

Recollection, belief in accuracy, and belief in occurrence

- How likely is it that you personally did in fact experience this event? (1 = *definitely did not happen*; 8 = *definitely happened*)
- Do you have any doubts about the accuracy of your memory for this event? (1 = *a great deal of doubts;* 7 = *no doubts whatsoever*)
- How strong is your memory for this event? (1 = *no memory*; 3 = *weak memory;* 5 = *moderate memory;* 7 = *strong memory*)
- How confident are you that your memory for this event is accurate? (1 = *not at all confident*; 7 = *completely confident*)
- Do you actually remember experiencing this event? (1 = *no memory of event at all*; 8 = *clear and complete memory for the event*)
- How strong is your belief that this event actually occurred (whether or not you remember the event)? (1 = *no belief;* 3 = *weak belief;* 5 = *moderate belief;* 7 = *strong belief*)
- What proportion of your memory for this event is accurate? (1 = *not at all accurate*; 7 = 100% *accurate*)
- As you think about this event, can you actually remember it rather than just knowing that it occurred? (1 = *not at all*; 3 = *vaguely*; 5 = *distinctly*; 7 = *more than any event*)
- It is true that this event occurred. (1 = *not at all true;* 7 = *completely true*)

Recollective phenomenology

- When I think about this event it the overall vividness is (1 = *vague*; 7 = *very vivid*)
- When I think about this event it involves visual details. (1 = *not at all*, 7 = *very much*)
- When I think about this event it involves sound. (1 = *not at all*, 7 = *very much*)
- When I think about this event, the location where the event takes place is: (1 = *vague*, 7 = *clear/distinct*)
- When I think about this event, the relative spatial arrangement of objects is: (1 = *vague*, 7 = *clear/distinct*)
- When I think about this event, the relative spatial arrangement of people in my memory is: (1 = *vague*, 7 = *clear/distinct*)
- As I think about the event, I feel as though I am re-living it. (1 = *not at all*, 7 = *very much*)
- While thinking about this event, I feel that I travel back to the time when it happened. (1 = *not at all*, 7 = *very much*)

Plausibility, importance, and connectedness

- How plausible is it that you personally could have experienced this event? (1 = *not at all plausible;* 8 = *extremely plausible*)
- This event is significant for my life because it imparts an important message for me or represents an anchor, critical juncture, or a turning point. (1 = *not at all*, 7 = *very much*)
- As I think about the event, it is connected with other events. (1 = *not at all*, 7 = *very much*)

Centrality of the event

- I feel that this event has become part of my identity. (1 = *totally disagree*; 5 = *totally agree*)
- This event has become a reference point for the way I understand myself and the world. (1 = *totally disagree*; 5 = *totally agree*)
- I feel that this event has become a central part of my life story. (1 = *totally disagree*; 5 = *totally agree*)
- This event has colored the way I think and feel about other experiences. (1 = *totally disagree*; 5 = *totally agree*)
- This event permanently changed my life. (1 = *totally disagree*; 5 = *totally agree*)
- I often think about the effects this event will have on my future. (1 = *totally disagree*; 5 = *totally agree*)
- This event was a turning point in my life. (1 = *totally disagree*; 5 = *totally agree*)

Please think back to the time when you experienced the social challenge you discussed above, and consider these items.

Items created based on Scoboria's (2016) model

- At the time, how much did it bother you that your memory disagreed with what your partner said or did? (1 = *not at all*; 7 = *very much*)
- Currently, how much does it still bother you that your memory disagreed with what your partner said or did? (1 = *not at all*; 7 = *very much*)
- At the time, how easy was it for you, in general, to disagree with your partner? (1 = *very hard*; 7 = *very easy*)
- How much did your past experiences with your partner influence your behaviour, such as what you said or did in reaction to the challenge? (1 = *past experiences did not influence me at all*; 7 = *past experiences influenced me*)
- How forceful was the challenge your partner made? (1 = *not at all forceful*, 7 = *very forceful*).
- How important was it for you to avoid disagreeing with your partner? (1 = *not at all important*; 7 = *very important*)
- How important was your relationship with your partner at that time? (1 = *not at all important*; 7 = *very important*)
- How credible was the information that your partner provided when challenging the memory? (1 = *not at all credible*; 7 = *highly credible*)
- How credible was your partner? (1 = *not at all credible*; 7 = *highly credible*)

- At the time that your partner challenged your memory, in general how much did you trust him? (1 = *I did not trust him at all*; 7 = *I trusted him completely*)
- How much did you trust your own memory, in general, at the time your partner challenged your memory? (1 = *I mistrusted my memory completely*; 7 = *I trusted my memory completely*)
- To what extent did you wonder if your memory might have come from some source other than personal experience? Some examples of other sources include having been told about it by someone else, from your imagination, a dream, or from a TV show? (1 = *not at all*; 7 = *very much*)
- How much did you seek out information from anyone else after your memory was challenged? (1 = *not at all*, 7 = *very much*)
- How much did you discuss the event with others after your memory was challenged? (1 = *lack of discussion with others*, 7= *long and/or emotionally intense discussion with others*)
- To what extent did you feel like your partner was attempting to threaten you? (1 = *I was not threatened*; 4 = *I felt that threat was implied*; 7 = *there was an explicit threat*).
- How important was this memory to you before it was challenged? (1 = *not at all important*; 7 = *very important*)

    - What was/is the duration of this relationship?

    - Did the relationship end? __Yes __No

    - If "yes", approximately how long ago did the relationship end?

    - How isolated from others did/do you feel in this relationship? (1 = *not at all isolated;* 7 = *very isolated*).

    What is 2+2? ___ (*note: this is a validity check*)

    Please describe another experience of having your memory challenged in the context of your experience of aggression/control in an intimate relationship. For example, this could include a time where someone told you that something did not actually happen to you, that you are misremembering something, or when the person behaved in such a way that made you feel as if they did not believe you. If you can think of multiple instances in which this occurred, choose one event to focus on for the purpose of this study.

    This time, please try to focus on a time that <u>someone else in your life other than your intimate partner challenged your memory for a time that your intimate partner was aggressive with you</u>. For example, this could include a friend, a family member, a police officer, etc. challenging you about your experience of aggression at the hands of your intimate partner. If you cannot think of a time where someone else did this, please check the box below.
    (Note: if participants do not give any information for either of these events [i.e., they check that they cannot think of a time that this happened for both events], they will be

sent to a page asking them to withdraw since they were unable to provide any information related to past social challenges [and thus has skipped the bulk of the survey and were not actually eligible].)

- First, we would like for you to describe your memory for the actual original event that was challenged (i.e., your experience of aggression/control). Please note that you can give as much or as little detail as you choose, depending on how comfortable you feel with this task. If this is the same event as you described earlier, please write "same event as described earlier".

- What was your (approximate) age when the original event in your memory took place?

- Please describe how the other person/people challenged the memory of this aggression/control. What did the other person/people say and/or do to challenge your memory?

- What was your (approximate) age when the challenge to your memory took place?

- What happened after your memory was challenged?

- What did you decide about the memory?

- At any time, did the challenge to your memory affect your belief that the event actually occurred? (Yes/No) (Please elaborate in space provided)

- Did the challenge affect your confidence that the details in your memory for the event were correct? (Yes/No) (Please elaborate in space provided)

- Did the challenge affect the way you interpreted the meaning of the event? (Yes/No) (Please elaborate in space provided)

- Why do you think the other person/people challenged your memory for the event?

- Please describe the nature of your relationship with this person/these people (e.g., friend(s), parent(s), police officer(s), acquaintance(s), etc.).

- Here is a list of potential outcomes of this challenge. Please check which one applies, or check "other" if none apply:
  a) I defended my memory and maintained my belief that the event occurred as I remembered it.
  b) I defended my memory but felt as if my belief that the event occurred as I remembered it was lower than it was before the challenge.

c) I eventually complied with the other person/people by saying that they were correct, but personally still maintained my belief that the event occurred as I remembered it.
d) I eventually complied with the other person/people by saying that they were correct, and felt as if my belief that the event occurred as I remembered it was lower than it was before the challenge.
e) Other: None of these really capture what took place.

- Please elaborate on the outcome that you just endorsed in the question above. We would like more information about what took place to lead to this outcome.

Please answer the following questions as you reflect, in the present, on the event that was challenged by another person other than your intimate partner. Please reflect specifically on your memory for the original event.

Recollection, belief in accuracy, and belief in occurrence

- How likely is it that you personally did in fact experience this event? (1 = *definitely did not happen*; 8 = *definitely happened*)
- Do you have any doubts about the accuracy of your memory for this event? (1 = *a great deal of doubts;* 7 = *no doubts whatsoever*)
- How strong is your memory for this event? (1 = *no memory*; 3 = *weak memory;* 5 = *moderate memory;* 7 = *strong memory*)
- How confident are you that your memory for this event is accurate? (1 = *not at all confident*; 7 = *completely confident*)
- Do you actually remember experiencing this event? (1 = *no memory of event at all*; 8 = *clear and complete memory for the event*)
- How strong is your belief that this event actually occurred (whether or not you remember the event)? (1 = *no belief;* 3 = *weak belief;* 5 = *moderate belief;* 7 = *strong belief*)
- What proportion of your memory for this event is accurate? (1 = *not at all accurate*; 7 = 100% *accurate*)
- As you think about this event, can you actually remember it rather than just knowing that it occurred? (1 = *not at all*; 3 = *vaguely*; 5 = *distinctly*; 7 = *more than any event*)
- It is true that this event occurred. (1 = *not at all true;* 7 = *completely true*)

Recollective phenomenology

- When I think about this event it the overall vividness is (1 = *vague*; 7 = *very vivid*)
- When I think about this event it involves visual details. (1 = *not at all*, 7 = *very much*)
- When I think about this event it involves sound. (1 = *not at all*, 7 = *very much*)
- When I think about this event, the location where the event takes place is: (1 = *vague*, 7 = *clear/distinct*)
- When I think about this event, the relative spatial arrangement of objects is: (1 = *vague*, 7 = *clear/distinct*)
- When I think about this event, the relative spatial arrangement of people in my memory is: (1 = *vague*, 7 = *clear/distinct*)

- As I think about the event, I feel as though I am re-living it. (1 = *not at all*, 7 = *very much*)
- While thinking about this event, I feel that I travel back to the time when it happened. (1 = *not at all*, 7 = *very much*)

Plausibility, importance, and connectedness

- How plausible is it that you personally could have experienced this event? (1 = *not at all plausible;* 8 = *extremely plausible*)
- This event is significant for my life because it imparts an important message for me or represents an anchor, critical juncture, or a turning point. (1 = *not at all*, 7 = *very much*)
- As I think about the event, it is connected with other events. (1 = *not at all*, 7 = *very much*)

Centrality of the event

- I feel that this event has become part of my identity. (1 = *totally disagree*; 5 = *totally agree*)
- This event has become a reference point for the way I understand myself and the world. (1 = *totally disagree*; 5 = *totally agree*)
- I feel that this event has become a central part of my life story. (1 = *totally disagree*; 5 = *totally agree*)
- This event has colored the way I think and feel about other experiences. (1 = *totally disagree*; 5 = *totally agree*)
- This event permanently changed my life. (1 = *totally disagree*; 5 = *totally agree*)
- I often think about the effects this event will have on my future. (1 = *totally disagree*; 5 = *totally agree*)
- This event was a turning point in my life. (1 = *totally disagree*; 5 = *totally agree*)

Please think back to the time when you experienced the social challenge you discussed above (i.e., when another person(s) challenged your memory), and consider these items.

Items created based on Scoboria's (2016) model

- At the time, how much did it bother you that your memory disagreed with what the other person(s) said or did? (1 = *not at all*; 7 = *very much*)
- Currently, how much does it still bother you that your memory disagreed with what the other person(s) said or did? (1 = *not at all*; 7 = *very much*)
- At the time, how easy was it for you, in general, to disagree with the person(s) who challenged your memory? (1 = *very hard*; 7 = *very easy*)
- How much did your past experiences with the person(s) who challenged your memory influence your behaviour, such as what you said or did in reaction to the challenge? (1 = *past experiences did not influence me at all*; 7 = *past experiences influenced me*)
- How forceful was the challenge the person(s) made? (1 = *not at all forceful*, 7 = *very forceful*).
- How important was it for you to avoid disagreeing with the other person(s)? (1 = *not at all important*; 7 = *very important*)

- How important was your relationship with the person(s) who challenged your memory at that time? (1 = *not at all important*; 7 = *very important*)
- How credible was the information that the person(s) provided when challenging the memory? (1 = *not at all credible*; 7 = *highly credible*)
- How credible was the person(s) who provided the social challenge? (1 = *not at all credible*; 7 = *highly credible*)
- At the time that the person(s) challenged your memory, in general how much did you trust him/her/them? (1 = *I did not trust them at all*; 7 = *I trusted them completely*)
- How much did you trust your own memory, in general, at the time the other person challenged your memory? (1 = *I mistrusted my memory completely*; 7 = *I trusted my memory completely*)
- To what extent did you wonder if your memory might have come from some source other than personal experience? Some examples of other sources include having been told about it by someone else, from your imagination, a dream, or from a TV show? (1 = *not at all*; 7 = *very much*)
- How much did you seek out information from anyone else after your memory was challenged? (1 = *not at all*, 7 = *very much*)
- How much did you discuss the event with others after your memory was challenged? (1 = *lack of discussion with others*, 7= *long and/or emotionally intense discussion with others*)
- To what extent did you feel like the person(s) who challenged your memory was/were attempting to threaten you? (1 = *I was not threatened*; 4 = *I felt that threat was implied*; 7 = *there was an explicit threat*).
- How important was this memory to you before it was challenged? (1 = *not at all important*; 7 = *very important*)

Please write the word "dog" ___ (*note: this is a validity check*)

<u>Please select a positive memory that you still believe truly occurred. Please answer the following questions as you reflect on this believed memory.</u>

Please briefly describe the event:

What was your (approximate) age when this event took place?

<u>Recollection, belief in accuracy, and belief in occurrence</u>

- How likely is it that you personally did in fact experience this event? (1 = *definitely did not happen*; 8 = *definitely happened*)
- Do you have any doubts about the accuracy of your memory for this event? (1 = *a great deal of doubts;* 7 = *no doubts whatsoever*)
- How strong is your memory for this event? (1 = *no memory*; 3 = *weak memory;* 5 = *moderate memory;* 7 = *strong memory*)
- How confident are you that your memory for this event is accurate? (1 = *not at all confident*; 7 = *completely confident*)
- Do you actually remember experiencing this event? (1 = *no memory of event at all*; 8 = *clear and complete memory for the event*)

- How strong is your belief that this event actually occurred (whether or not you remember the event)? (1 = *no belief;* 3 = *weak belief;* 5 = *moderate belief;* 7 = *strong belief*)
- What proportion of your memory for this event is accurate? (1 = *not at all accurate*; 7 = 100% *accurate*)
- As you think about this event, can you actually remember it rather than just knowing that it occurred? (1 = *not at all*; 3 = *vaguely*; 5 = *distinctly*; 7 = *more than any event*)
- It is true that this event occurred. (1 = *not at all true;* 7 = *completely true*)

Recollective phenomenology

- When I think about this event it the overall vividness is (1 = *vague*; 7 = *very vivid*)
- When I think about this event it involves visual details. (1 = *not at all*, 7 = *very much*)
- When I think about this event it involves sound. (1 = *not at all*, 7 = *very much*)
- When I think about this event, the location where the event takes place is: (1 = *vague*, 7 = *clear/distinct*)
- When I think about this event, the relative spatial arrangement of objects is: (1 = *vague*, 7 = *clear/distinct*)
- When I think about this event, the relative spatial arrangement of people in my memory is: (1 = *vague*, 7 = *clear/distinct*)
- As I think about the event, I feel as though I am re-living it. (1 = *not at all*, 7 = *very much*)
- While thinking about this event, I feel that I travel back to the time when it happened. (1 = *not at all*, 7 = *very much*)

Plausibility, importance, and connectedness

- How plausible is it that you personally could have experienced this event? (1 = *not at all plausible;* 8 = *extremely plausible*)
- This event is significant for my life because it imparts an important message for me or represents an anchor, critical juncture, or a turning point. (1 = *not at all*, 7 = *very much*)
- As I think about the event, it is connected with other events. (1 = *not at all*, 7 = *very much*)

Demographics

Please tell us a little about yourself. This information is used to describe who completed the survey. It is very important for the research that this information is accurate. Thank you!

What is your current age?

What is your nationality?

What is your ethnicity?

What is your highest level of education completed. If currently enrolled, please select the highest degree you have received:
__ No formal education

__ Elementary school
__ High school or equivalent (GED)
__ Community college
__ Bachelor's degree
__ Master's degree
__ Professional degree
__ Doctorate degree

Thank you for taking part in our study about socially challenged memories.

Appendix K

Study 3 Letter of Information

For Participant Pool:

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: The experience of social challenge to memories of past intimate partner aggression.

You are asked to participate in a research study conducted by Lauren Wysman and Dr. Alan Scoboria from the Psychology Department at the University of Windsor. This project is being conducted as part of Ms. Wysman's doctoral dissertation.

If you have any questions or concerns about the research, please feel to contact Lauren Wysman at *****@uwindsor.ca or Dr. Alan Scoboria at **** or ****@uwindsor.ca.

PURPOSE OF THE STUDY

This study aims to gain knowledge about women's experiences in relationships where partners have engaged in aggressive and/or controlling behaviours. Specifically, we aim to learn about their experiences of being challenged by other people about their memories for past events related to experiences of aggression.

PROCEDURES

If you volunteer to participate in this study, you will complete an on-line survey. You will describe 1-2 experiences of having a memory for intimate partner aggression challenged by other people. This will include briefly describing the aggressive event, and in more detail, how your memory for that event was challenged. You will also answer questions about one other memory, and will provide demographic information.

POTENTIAL RISKS AND DISCOMFORTS

Due to the nature of the topic, you will be asked to reflect on relationship experiences that may upset you. Please do not participate in this study if you are uncomfortable thinking about or describing personal experiences with relationship aggression.

If you find that you are not comfortable continuing the study, you may terminate your participation in the study. Contact information for supportive resources are provided at the end of the survey and on the withdrawal page should you wish to seek support. You may also access them at this link: http://fluidsurveys.uwindsor.ca/s/S2bresourcesheet/. You may also contact the University of Windsor's Student Counselling Centre at 519-253-3000 ext.4616.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Participants may benefit by learning more about themselves and gaining insight by reflecting on experiences in relationships. This research may contribute to a better understanding of women's experiences in the context of heterosexual relationships. This research may provide information for advocacy work for women who are experience or who have experienced violent or aggressive relationships.

COMPENSATION FOR PARTICIPATION

Participants will receive 1 bonus point for 60 minutes of participation towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, with exceptions with respect to duty to report (e.g., a child being named who is at high risk of abuse, sexual abuse at the hands of a health-care practitioner, suicidal intent, homicidal intent targeted to specific person(s), etc.). You will participate using the numerical code provided by the researcher so that we can provide you with the compensation after the study is completed. No further identifying information will be collected about you. As researchers, we are not in control of how information is transmitted over the internet, so to ensure confidentiality of your identity, please do not include any other personally identifying information about yourself or anybody else when you describe your experiences during the study.

Data will be retained indefinitely and will be stored on an external hard drive in a locked filing cabinet as well as on the storage devices of the investigators. Your identity will only be accessible to the researchers. Only anonymized data will be shared with other researchers. In any resulting publications or presentations, participants will be referred to in groups so as to protect individual identity. If any of the written description that you provide is described in a presentation or publication, the details will be altered or the event paraphrased, and any identifying information that you provide will be removed.

PARTICIPATION AND WITHDRAWAL

You can withdraw your participation from this study at any time. The investigator may withdraw you from this research if circumstances arise which warrant doing so. Once you complete the survey, you will not be able to withdraw your data.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

A summary of the research findings will be available to you upon completion of the project.

Web address: uwindsor.ca/reb

Date when results are available: on or before February 1, 2016

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

I understand the information provided for the study **"**The experience of social challenge to memories of intimate partner aggression" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

/s/ Lauren Wysman February 1, 2015

Please print or save a copy of this information letter for your records.

By commencing the study, it indicates your consent to participate.

For Mechanical Turk:

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: The experience of social challenge to memories of past intimate partner aggression.

You are asked to participate in a research study conducted by Lauren Wysman and Dr. Alan Scoboria from the Psychology Department at the University of Windsor. This project is being conducted as part of Ms. Wysman's doctoral dissertation.

If you have any questions or concerns about the research, please feel to contact Lauren Wysman at *****@uwindsor.ca or Dr. Alan Scoboria at **** or *****@uwindsor.ca.

PURPOSE OF THE STUDY

This study aims to gain knowledge about women's experiences in relationships where partners have engaged in aggressive and/or controlling behaviours. Specifically, we aim to learn about their experiences of being challenged by other people about their memories for past events related to experiences of aggression.

PROCEDURES

If you volunteer to participate in this study, you will complete an on-line survey. You will describe 1-2 experiences of having a memory for intimate partner aggression challenged by other people. This will include briefly describing the aggressive event, and in more detail, how your memory for that event was challenged. You will also answer questions about one other memory, and will provide demographic information.

POTENTIAL RISKS AND DISCOMFORTS

Due to the nature of the topic, you will be asked to reflect on relationship experiences that may upset you. Please do not participate in this study if you are uncomfortable thinking about or describing personal experiences with relationship aggression.

If you find that you are not comfortable continuing the study, you may terminate your participation in the study. Contact information for supportive resources are provided at the end of the survey and on the withdrawal page should you wish to seek support. You may also access them at this link: http://fluidsurveys.uwindsor.ca/s/S2bresourcesheet/.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Participants may benefit by learning more about themselves and gaining insight by reflecting on experiences in relationships. This research may contribute to a better understanding of women's experiences in the context of heterosexual relationships. This research may provide information for advocacy work for women who are experience or who have experienced violent or aggressive relationships.

COMPENSATION FOR PARTICIPATION

Participants recruited through Mechanical Turk will receive $3 (USD) for their participation.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. You will participate using your Mechanical Turk ID so that we can provide you with the compensation after the study is completed. No further identifying information will be collected about you, and your MTurk ID will be detached from the data at the earliest possible point. No further identifying information will be collected about you, and your name will be detached from the data at the earliest possible point. As researchers, we are not in control of how information is transmitted over the internet, so to ensure confidentiality of your identity, please do not include any other personally identifying information about yourself or anybody else when you describe your experiences during the study.

Data will be retained indefinitely and will be stored on an external hard drive in a locked filing cabinet as well as on the storage devices of the investigators. Your identity will only be accessible to the researchers. Only anonymized data will be shared with other researchers. In any resulting publications or presentations, participants will be referred to in groups so as to protect individual identity. If any of the written description that you provide is described in a presentation or publication, the details will be altered or the event paraphrased, and any identifying information that you provide will be removed.

PARTICIPATION AND WITHDRAWAL

You can withdraw your participation from this study at any time. The investigator may withdraw you from this research if circumstances arise which warrant doing so. Once you complete the survey, you will not be able to withdraw your data. If you choose to withdraw you must return to Turk to withdraw yourself from the HIT.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

A summary of the research findings will be available to you upon completion of the project.

Web address: uwindsor.ca/reb

Date when results are available: on or before February 1, 2016

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

I understand the information provided for the study **"**The experience of social challenge to memories of intimate partner aggression" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

/s/ Lauren Wysman February 1, 2015

Please print or save a copy of this information letter for your records.

By commencing the study, it indicates your consent to participate.

Appendix L

Study 3 Coding Manual

General instructions for social challenge of memory coding

(Coding manual in part adapted/taken verbatim from NBM coding manual [with permission] used for coding in Scoboria, Boucher, & Mazzoni, 2015)

- Read this manual in full before commencing coding.
- Read each participant's social challenge narratives (i.e., written answers to all questions) in full before coding that participant.
- Do not discuss your ratings of specific events with other coders unless given permission to do so – it could bias your coding and our inter-rater reliability ratings.
- Unless stated in the manual instructions, try to refrain from inferring beyond what a participant explicitly states. If it is permissible for inference to be made for certain categories, it will be noted in the instructions below.
- Always treat the data as if the participant was the one being challenged by another person.
- In the NBM coding section, please consult with Boucher's expanded manual for clarification.
- If you have questions, comments, or concerns, please contact Lauren.

New guidelines established after first set of coding

- If coding "sought evidence," must clearly state what proof is (just saying proof does not establish proof unless it is clear that it is tangible/physical proof).
- Do not code for S8 because it is present by definition in these events.
- S1/S7 coding: Unless a unique case, try to only code one of these for each case due to their mutual exclusivity. The focal event rule below should help with this
- Focal event: In each case, attempt to assess which is the focal event. For consistency in coding, pick the broadest grain size (e.g., if participant speaks about a fight in which she was hit, and she said that her partner denied the hitting [but not the fight], see the overall fight as the focal event, not the hitting).
- S5 has to be about participant (do not code S5 if the challenger said he didn't do something). Only code if the participant is told that she did not experience it (i.e., that someone else experienced the aggression instead).
- In most circumstances, if code exaggeration, code S7.
- Despite the guidelines in the NBM coding, avoid engaging in inference for alternate attributions categories.
- For clarity, try changing text colour in excel to help you remember which parts of the text you used for that code.
- Avoid using inference for corroboration codes.
- For internal features (weak): If participant states that a detail is missing, even if it is not a key detail, still give this code.

Coding for memory/lack of memory

- **Is it a memory or lack of memory that was challenged?**
  - 1 = A participant's memory was challenged
  - 2 = A participant's lack of memory was challenged
    - E.g., "This was a fight my sister says happened between my best friend and I when we were teenagers. I do not remember the event ever happening so I have no memory to describe, I only know what my sisters says which I do not believe ever happened."
  - ***Note:*** *if the participant's lack of memory was challenged (i.e., you coded this column as a 2), you may stop your coding for this participant here.*

- **No partner challenge = 1** (the participant opts out of giving a partner challenge)

- **To remove = 1** (remove for various reasons, such as being off topic or about a pattern rather than specific event. Note that if the participant talks about something that "always" happened but a specific challenge [e.g., he always did X, and later I told him that he always did X and he denied it] it can be kept).

Coding descriptive aspects of the data

- **Sought input from anyone else (interpersonal)**
  - Yes = 1
  - This involves, for example, asking another person about the challenged event; speaking with someone else about the challenged event.
  - In this case, it has to be someone other than the challenger him/herself.
  - This category also captures if someone looked for input from another person but could not obtain it.

- **Sought evidence (not interpersonal)**
  - Yes = 1
  - E.g., looking at photos, phone records, etc. Type of evidence has to be stated.
  - Note: Emails are coded above (sought input from anyone else) if the participant contacted someone through email to find out information. It would be coded in this category (sought evidence) if the participant was using it as a record of something (i.e., going through old emails to find proof, a record of an old conversation, etc.).
  - This category also captures if someone looked for evidence but could not find it (it is the act of seeking evidence that is important).
  - In S3, this can be physical evidence on the woman's body (e.g., checking for bruises or cuts the next day, ongoing pain the next day).

Coding using the NBM system

How did the other person challenge the participant?

- **Social Feedback (overt and/or covert; active and/or passive; may be permitted to infer):**
  - *Numbers here pertain to categories in coding sheet*
  - Note: for discerning the difference between 1 and 7, first consider what the focal event is. Once you have figured out the focal event that had been challenged, try to identify if there is an indication that the entire event was invalidated (that did not happen - #1) or if part but not all of the event was challenged (#7).

1 Told by another person/persons the event did not occur
Note: In S3, often couched as "you're making it up"
2 Told by another person/persons the event could not occur (i.e., is impossible)
3 Told by another person/persons the event is not likely to have occurred (i.e., is implausible)
4 Lack of corroboration from another person/persons
5 Told by another person/persons he/she was not there to witness the event
6 Told by another person/persons the event happened to someone else
7 Told by another person/persons the event happened differently
8 Pressured by another person/persons (removed in this study, as it is apparent in every case)
9 Disconfirming non-verbal feedback from another person/persons
10 Lack of feedback from another person/persons confirming or denying event. Please specify 10a, 10b, and/or 10c.
a. Another person/persons are unavailable to provide feedback
b. Another person/persons refused to speak of event (active)
c. Another person/persons did not provide feedback (passive)

SOCIAL DISCONFIRMATION (OVERT):

Note: when coding social feedback, focus on the focal event (i.e., the event with the biggest grain size) when attempting to code S1 vs. S7. Try to avoid coding these categories together, as per the focal event rule (i.e., if told that an event occurred, but a detail in the memory did not occur, code S7).

1 **Told by another person/persons the event did not occur (active and/or passive)**
  - The participant receives feedback that the event did not occur, and/or the participant states that others deny the occurrence of the event or that others provide an alternate explanation or state attribution (e.g., dream). In other words, the participant receives feedback that necessarily invalidates the occurrence of the event.
  - Note: This category may overlap with categories 2 and 3 below depending on the context provided by the participant (e.g., "He told me I definitely dreamt it" may be categorized as both 1 and 2).

- For example, the participant might state, "My uncle told me it didn't happen," or, "I spoke to my grandfather about it and he denied it ever happening," etc.

2 Told by another person/persons the event could not occur (i.e., is impossible; active and/or passive)

- The participant receives feedback that there is no way the event could have occurred (i.e., it is impossible), and this feedback necessarily invalidates the occurrence of the event.
- For example, the participant might state, "My mom told me that there is no way she would have forgotten my birthday," or, "My brother said that there was no such amusement park near our grandparent's house," etc.

3 Told by another person/persons the event is not likely to have occurred (i.e., is implausible; active and/or passive)

- The participant receives feedback that the event could have occurred but it is unlikely (i.e., it is implausible), however, this feedback *does not* invalidate the occurrence of the event. That is, others might express doubt or uncertainty concerning the event but they do not actually state that the event did not occur.
- For example, the participant might report, "My mother told me she didn't think that I would have been allowed in the water at that age without a life jacket," or, "My dad said my grade 4 teacher probably wouldn't have told me that I did a horrible job on my science fair project," etc.

4 Lack of corroboration from another person/persons (active and/or passive)

- The participant receives feedback that others cannot confirm the memory, however, this feedback *does not* invalidate the occurrence of the event. That is, others might express to the participant that they do not remember the event, without actually stating the event did not occur.
- For example, the participant might state, "Nobody else remembers it but me," or, "My friend who I thought was with me does not remember it at all," etc.

5 Told by another person/persons he/she was not there to witness the event (active and/or passive)

- The participant receives feedback that he/she was, in fact, not present (physically or mentally) to witness the event as they have recalled it. This feedback *does not* invalidate the occurrence of the event, only the individual's ability to perceive it. That is, others do not say the event did not occur, but they provide a reason for the individual's inability to witness it.
- For example, the participant might state, "I was told I wasn't even there," or, "I was told I was too drunk to see it," or "I was told I was sleeping at the time," etc.

- Note that this is about the participant, not that someone else did the event. Only code this if told it happened to someone other than the participant.

6 Told by another person/persons the event happened to someone else (active and/or passive)

- The participant receives feedback that the event (or features of the event) did happen, but it actually happened to someone else rather than to the participant personally.
- For example, the participant might state, "My father told me that it was my sister who fell off her bike and received candy at the hospital, not me," etc.

7 Told by another person/persons the event happened differently (active and/or passive)

- The participant receives feedback that features of the event happened differently. This feedback *does not* necessarily invalidate the occurrence of the event nor does it offer the suggestion that the event happened to someone else (as in category 6 above); it merely offers alternate suggestions regarding content components of the event.
- For instance, the participant might report, "My brother told me that the tree-house I remember falling from was not in our backyard, it was actually in his best friends' backyard," or, "My parents told me that I found out about my uncles passing differently than the way I remember," etc.
- Feedback from others might also include the following:

  - Occurred at a different age
  - Occurred at a different place
  - Occurred at a different time
  - Occurred over a different length of time
  - Occurred in a different context
  - Involved different objects
  - Involved different people/a different person
  - Involved different actions
  - Involved a different outcome
  - Did not include certain features that were reported
  - New for Study 3: if told exaggerating, code S7.

SOCIAL DISCONFIRMATION (COVERT):

9 Disconfirming non-verbal feedback from another person/persons (intentional; active and/or passive; overt and/or covert)

- The participant receives intentional non-verbal feedback that might include others' acting like everything was/is fine or like the event never occurred to begin with, providing a look of disbelief, or laughing at the individual when he/she recounted their memory.

- Note: This feedback may appear to be overt or covert depending on the context provided by the participant.
- For example, the participant might state, "When I saw my friend again, he acted like everything was fine, like we hadn't kissed at all," or, "I tried asking my dad about why he would forget to pick me up from school and he just shook his head like I was crazy for thinking he would do that," or, "When I told my friend that I hiked to the very top of Camelback Mountain, she just laughed at me," etc.

10 Lack of feedback from another person/persons confirming or denying event. Please specify 10a, 10b, and/or 10c.

10a. Another person/persons are unavailable to provide feedback (active and/or passive)

- The participant does not receive feedback from certain key others (i.e., witnesses in the memory) because they are unavailable to provide it.
- For example, the participant might state, "I tried contacting my friend about it but she changed her number, so I can not confirm that we really did see that happen," or, "My grandfather has since passed away so I can't even ask him if we really did see an alligator in his boathouse that summer," etc.

10b. Another person/persons refused to speak of event (active)

- The participant *actively seeks* feedback but others refuse to provide it. This refusal may appear to be motivated (in line with 'pressured by another person/persons' above). That is, the other person may be motivated to ignore or cast aside the participant's memory because it poses consequences for this other person. It may appear that the participant's belief in the memory is shaken or suspended but it is not entirely relinquished. That is, the participant's memory may be a true memory but the nature of the social interaction has persuaded the individual to stop believing.
- For instance, the participant might report, "I tried telling my mom that I saw her friends' son steel my bike but she refused to talk about it," or, "I asked my brother how he really did get fired from his job and he said he didn't want to talk about it," etc.

10c Another person/persons did not provide feedback (passive)

- The participant *does not* actively seek feedback and others do not provide it.
- For example, the participant might state, "It was never brought up by anyone again" without indicating whether he or she actively sought feedback regarding the event.

What other support was used to make a decision about the event?

- **Internal Feature of Event Representation (weak)**
  - "Weak"/ Undermining = 1
  - Absent = 0
  - The participant states that something was/is odd, unusual, or weak about their memory representation, which may align with the following:
    - Internal features present but disorganized (unusual, unfamiliar, not logically consistent)
    - Internal features present but not clear (faded, weak, vague)
    - Internal features absent (missing, unable to retrieve key episodic details)
    - The event no longer seems/feels real
    - E.g., participant endorses that he/she has a weak memory/fuzzy memory/lack of memory
  - If participant states that a detail is missing, even if it is not a key detail, still give this code.

- **Internal Feature of Event Representation (normal/vivid)**
  - "Typical"/Supporting/Vivid/Good = 1
  - Absent = 0
    - E.g., participant endorses that he/she has typical features of the memory/ typical memory characteristics; OR particularly vivid/strong features/memory characteristics
    - Note: Something like "I distinctly remember" or "clearly remember" would count. Don't code if they say they "know" they remember it right without any other information.

- **Alternate Attributions (internal and/or external)**

Notes: Alternate attributions connote those attributions that refer to other possible sources of the memory (i.e., sources other than 'real life').

The designations 'internal' and 'external' refer to the origins of these sources. An internally originating alternate attribution is one that comes from within the individual (e.g., "It came from me"), whereas as externally originating alternate attribution is one that is derived from outside of the individual (e.g., "I saw it in a movie").

Regardless of source, it is implied by the participant that this source was confused with or mistaken for reality.

ALTERNATE ATTRIBUTIONS MADE BY THE PARTICIPANT

- **Alternate attribution (internal) ➔ MADE BY PARTICIPANT ABOUT ONESELF**
  - 1 = present, 0 = absent
    - Even though you aren't coding for the categories from the NBM coding scheme, this can involve speculations the participant makes about where her own memory/belief

comes from (i.e., imagination, confabulation, simplification, fantasy, daydream, dream, nightmare, altered consciousness [drunk, drowsy, high, etc.], other)
- E.g., Participant identifies that he/she dreamt event. (Note: this could also include a participant identifying she "could have" dreamt it, "could have" been too drunk, etc. – it doesn't have to be 100% definitive; it could just be speculation about whether it might have some from some other source).
- Note: "exaggeration" was in this category for NBM coding scheme. It has been moved to its own separate category.

- **Alternate attribution (internal) ➔ MADE BY PARTICIPANT ABOUT OTHERS**
  - 1 = present, 0 = absent
    - Even though you aren't coding for the categories from the NBM coding scheme, this can involve speculations the participant makes about where the other person's memory/belief comes from (i.e., imagination, confabulation, simplification, fantasy, daydream, dream, nightmare, altered consciousness [drunk, drowsy, high, etc.], other)
    - E.g., Participant speculates that the challenger/another person dreamt the event.
    - Note: "exaggeration" was in this category for NBM coding scheme. It has been moved to its own separate category.

- **Alternative attribution (external) – TV shows, books, etc.**
  - **MADE BY PARTICIPANT ABOUT SELF**
    - If present, =1
    - The participant states that the memory likely resulted from an alternate external source such as in a movie, on television, in a book/magazine, etc. and it is implied this source was confused with reality.
    - For instance, the participant might report, "I actually saw that in a movie/on television," or, "I read about it in a book," etc.
    - For example, the participant stating that he/she saw it on TV.
  - **MADE BY PARTICIPANT ABOUT OTHERS**
    - If present, =1
    - The participant states that the other person's memory/beliefs likely resulted from an alternate external source such as a movie, on television, in a book/magazine, etc. and it is implied this source was confused with reality.

        - For example, the participant stating that he/she believes that the challenger/another person saw it on TV.

Other new codes based on S2:

- **(All of these are present = 1, absent = 0)**

- **Presence of corroboration (for participant's story):**
    - 1 = present, 0 = absent
    - Code this if the participant states that she has another person substantiate/verify her version of the events. Corroboration differs from validation in that the corroborator was there to witness the event.
    - E.g., the participant states that her friend witnessed the participant's boyfriend hit her and told her what she witnessed.
    - Try to avoid using inference.

- **Vacillation in belief in occurrence**
    - 1 = present, 0 = absent
    - Code this if the participant states that she questioned the occurrence of the event at any point in time
    - This code is given if a participant vacillated when it came to belief in occurrence and then decided to stick with her version. E.g., if a participant said that she briefly questioned whether the event occurred but then came to believe that it did happen the way she remembered, give this code.
    - Note: just because someone answers "yes" to the question about b.occ in the data (i.e., the yes/no question) doesn't necessarily mean the person gets this code – they have to use words that make you think that they vacillated in b.occ (this could facilitate a comparison of these narrative codes to their actual yes/no answer). Has to be b.occ, not other beliefs.

- **Presence of validation**
    - 1 = present, 0 = absent
        - Code this if a participant states that another person validated her perspective. This other person did not have to be present at the time of the original focal memory.
        - E.g., the participant states that her friend commented on how the participant's boyfriend has a temper, is a "jerk," etc.

- **Normalizing**
    - 1 = present, 0 = absent
        - This pertains to times when women are told that it is normal for men to behave this way (e.g., "put their woman in check"). Essentially, this code is for times that someone says that the partner's behaviour is socially appropriate (to differentiate it from exaggerating, minimizing, and over-reacting below).

- **Your fault/blamed**
    - 1 = present, 0 = absent

        - Code this when the participant states that she felt blamed or somehow responsible for what happened (i.e., she is told that the violence/aggression is her fault).
        - This is also coded when the participant is told "you slipped and fell" or something similar to that.
        - The sense of blame does <u>not</u> need to be internalized. For example, the participant may be told that she deserved it/it was her fault but she does not need to internalize that belief to get this code.

- **Told not intended**
    - 1 = present, 0 = absent
        - Code this when the participant is told that her partner did not intend to hurt/upset/offend her.
        - Being told "I was just joking" would count here as well.

- **Told exaggerating/over-reacting/too sensitive**
    - 1 = present, 0 = absent
        - Code this when the participant has been told that she is exaggerating, or over-reacting to her experience of aggression, or has the aggression has been minimized in some way.
        - Try to stick to using this when it is said more explicitly (e.g., "he said I was exaggerating" or "he said I was being too sensitive"). Can use this code for something like "he said he didn't grab me hard" as well.
        - Consider coding 7 in social feedback as well (happened differently) – they aren't mutually exclusive.

- **Feedback from others re. participant's alternate attribution**
    - 1 = present, 0 = absent
        - Code this when the participant is told by another person/her (ex)partner that her memory or beliefs come from another source (i.e., partner accused her of dreaming, being drunk, being "crazy" or "delusional," etc.).
        - This can be internal attributions (e.g., imagination, confabulation, simplification, fantasy, daydream, dream, nightmare, altered consciousness [drunk, drowsy, high, etc.], other) or external attributions (e.g., TV).

- **Vacillation in belief (not occurrence)**
    - 1 = present, 0 = absent
    - Internalizing/questioning regarding <u>some belief other than belief in occurrence</u>
        - Code this if at any point, the participant notes questioning her beliefs or internalizing something that the challenger said at some point (whether it's "I'm to blame," "I was exaggerating," etc.).
        - If the participant vacillates and then eventually sticks with her own version, still give this code.

- Do not give this code for vacillation in belief in occurrence; code **vacillation in belief in occurrence** for that.

Coding how the data fit with Scoboria's model

This coding involves attempting to categorize each participant's response into one of four categories, based on Scoboria's model.

Please read whole event through and note which of these apply (inference is appropriate when necessary).

1st column:
Maintain vs. reduce belief in occurrence

- 1 = maintain/heighten
- 2 = reduce

2nd column:
Did you feel like you were guessing/inferring?

- 1 = yes
- 2 = no

3rd column:
Publicly agree vs. disagree

- 1 = agree
- 2 = disagree

4th column:
Did you feel like you were guessing?

- 1 = yes
- 2 = no

VITA AUCTORIS

NAME:	Lauren Wysman
PLACE OF BIRTH:	Windsor, ON
YEAR OF BIRTH:	1988
EDUCATION:	University of Windsor, B.A. (Hons.), Windsor, ON, 2009 Psychology (Minor: Philosophy)
	University of Windsor, M.A., Windsor, ON, 2012 Clinical Psychology (Adult)
	University of Windsor, Ph.D., Windsor, ON, 2016 Clinical Psychology (Adult)