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**Dyadic Empathy and Romantic Attachment:
Explaining Psychological and Physical Intimate Partner Violence in Heterosexual Couples**

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**Dyadic empathy and romantic attachment:
Explaining psychological and physical intimate partner violence
in heterosexual couples**

Katherine Péloquin

Thesis submitted to the Faculty of Graduate and Postdoctoral Studies
In partial fulfillment of the requirements for the Ph.D. degree in Clinical psychology

School of Psychology
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To Patrick for his endless patience and support

Summary

Empathy is a prominent component of social competence and is believed to foster effective communication, promote successful conflict management, and improve social relationships quality (Davis, 1994). The role of empathic responses in the romantic context, however, was overlooked in past literature, hence limiting our understanding of its contribution to global marital functioning. Dyadic empathy is the focus of this thesis and is examined through two articles.

The first article is concerned with the measurement of dyadic empathy. The Interpersonal Reactivity Index (Davis, 1980), a measure of general cognitive and emotional empathy, was adapted to assess empathy expressed toward the partner specifically and was validated in three independent samples of romantically involved individuals and couples. Confirmatory factor analyses yielded a two-factor structure (dyadic perspective taking and dyadic empathic concern), statistically invariant across gender and relationship type (heterosexual versus same-sex). Evidence of convergent, discriminant, concurrent, predictive, and incremental validity, as well as reliability and stability of the *Interpersonal Reactivity Index for Couples* is also provided. In sum, this measure appears valid for the assessment of cognitive and emotional dyadic empathy in diverse types of couples.

The second article presents a theoretical model in which dyadic empathy mediates the relationship between romantic attachment and psychological and physical intimate violence. Attachment was assessed through self-report and behavioural observation in 193 couples recruited in the general community. Results from multilevel analyses generally support the theory. Attachment anxiety and avoidance negatively predicted

dyadic empathy and positively predicted intimate partner violence in both men and women. Dyadic empathy in partners also predicted psychological and physical partner violence. Dyadic empathy mediated the relationship between avoidance and the use of psychological violence in women. Contrary to predictions, however, behaviourally observed attachment was unrelated to dyadic empathy or partner violence. This study has clinical implications and suggests that both romantic attachment and empathy expressed toward the partner may be valuable points of intervention for understanding and preventing the occurrence of violence within intimate relationships.

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Content of the thesis and contribution of authors

Along with a general introduction and conclusion, this thesis comprises two articles, which have been submitted for publication. In particular, the introduction presents the topic of the thesis, defines key concepts, and thoroughly describes the theoretical context that serves as the basis of the thesis. In light of previous literature limitations, the precise objectives of the articles are also discussed. As a prelude to the second article of the thesis, the second chapter introduces conceptual issues and theoretical approaches related to the study of IPV. The presentation of the first article, titled *Measuring empathy in couples: Validity and reliability of the Interpersonal Reactivity Index for Couples*, then follows. This article was recently accepted for publication in the *Journal of Personality Assessment*. The second article, titled *Romantic attachment, dyadic empathy, and intimate partner violence: Examination of the direct relationships and underlying mechanism*, is in turn presented. This article was submitted for publication in the *Journal of Social and Personal Relationships*. Lastly, the general conclusion summarises and integrates findings from the two previous articles and highlights global limitations and implications of the current thesis, and proposes avenues for future research.

The two articles have been prepared and formatted according to the submission guidelines of the journals to which they were submitted. Accordingly, the author of the current thesis and the thesis supervisor appear as co-authors on both articles. The author of the thesis participated to every step involved in the preparation of both manuscripts, including the literature review and conceptualisation of the studies, the ethics approval procedures, the recruitment and testing of participants, the statistical analyses, and the

writing of the manuscripts. The thesis supervisor acted as a consultant at each step and ensured the overall global functioning of the project.

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General Introduction

Empathy is a prominent component of social and emotional competence (Saarni, 1990; Salovey & Mayer, 1990). Individuals' ability to empathise with others is believed to foster effective communication between social partners, promote successful conflict management, lead to more tolerance, cooperation, social support and benevolence, and ultimately, improve the overall quality of social relationships (Davis, 1994; Davis & Kraus, 1991). To this date, empathy has mostly been investigated within a broad social context, with a particular emphasis on its association with prosocial and altruistic behaviour (Eisenberg & Fabes, 1990; Eisenberg, Losoya, & Spinrad, 2003; Hoffman, 1984; 2008) as well as aggression (Jolliffe & Farrington, 2004; Miller & Eisenberg, 1988). It has also been widely examined within the psychotherapeutic context (e.g., Bohart & Greenberg, 1997; Elliott, Watson, Goldman, Greenberg, 2004; Rogers, 1951; 1957). Surprisingly, however, despite empathy being an important interpersonal process, the role of empathic responses in intimate relationships has largely been overlooked in past empirical investigations, thus limiting our current understanding of its relationship to global marital functioning and more specific relationship outcomes.

Dyadic empathy is at the heart of the present thesis and is examined through two articles. The first article is concerned with the measurement of dyadic empathy, whereas the second article evaluates a theoretical model in which dyadic empathy is part of a mechanism linking romantic attachment and intimate partner violence. The specific goals and strengths of these two articles will be delineated at the end of this introduction, after a thorough review of the relevant literature. In particular, this chapter first introduces and clarifies the definition of empathy and related concepts, and presents a description of the

main empathy instruments for adults. Second, the distinction between general and dyadic empathy is examined and the literature on empathy within couple relationships is reviewed. Third, the theoretical and empirical relations between empathy and the attachment framework are presented. This introduction ends with a discussion on previous research limitations and a presentation of the objectives and strengths of the two articles that form the main body of the thesis.

Empathy

Definitions of empathy

Over the years, numerous authors have underlined the lack of consensus regarding the definition of empathy (Brems, 2001; Davis, 1994; Duan & Hill, 1996; Eisenberg & Fabes, 1990; Eisenberg & Strayer, 1987; Gladstein, 1984; Wispé, 1987). One of the main debates pertains to the precise nature of empathy, mainly whether empathy is an emotional or a cognitive phenomenon. Furthermore, a variety of terms have been used interchangeably within the literature to refer to empathy and related emotional responses (e.g., empathy, sympathy, empathic distress, perspective taking), thus contributing to the general confusion regarding the construct of empathy. As an illustration, a brief historical overview will be presented in the next section, followed by more contemporary views on empathy. It should be noted that empathy has been studied in various disciplines (e.g., aesthetics, philosophy, and sociology) and multiple psychological domains (e.g., clinical psychology, developmental psychology, and personality psychology) over the years. Because this thesis follows a psychosocial approach, only the literature and definitions pertaining to this approach will be presented. This section aims to demonstrate the

nonlinear trajectory taken by theorists and researchers to understand and study empathy, and to highlight similarities and differences between the different theoretical perspectives in this area of research. The ultimate goal is to present the definition of empathy that will serve as the basis for this thesis.

Historical roots of empathy. Although the concepts of sympathy and empathy are now understood by contemporary researchers as being closely related (as will be seen later in this section), they were introduced at different points in time and by different theorists (Davis, 1994). Adam Smith (1759/1976) first defined the concept of sympathy as being “a near irresistible tendency to experience a ‘fellow-feeling’ when we observe someone experiencing a powerful emotional state” (Davis, 1994, p. 3). This “fellow-feeling” was believed to be similar to those experienced by the person being observed. Hence, sympathy was conceived as having a primarily emotional connotation.

The concept of empathy, however, came from the German term *Eignfühlung* that Lipps (1903) borrowed from German aesthetics and applied to the psychological context: “the tendency of observers to project themselves ‘into’ that which they observe” (Davis, 1994, p. 5). The term *empathy* was coined by Titchener, which he translated from German (1909), and referred to a “process of humanizing objects, of reading or feeling ourselves into them” (Titchener, 1924, p. 417). This definition also suggested the emotional nature of empathy; both authors implied an emotional sharing between the observer and the object or person being observed (Davis, 1994; Duan & Hill, 1996; Gladstein, 1984).

A different perspective on empathy was introduced by Kohler (1929) who believed that empathy better referred to a cognitive understanding of others’ feelings, and

not necessarily an emotional sharing of their inner experiences (Davis, 1994; Duan & Hill, 1996). Two influential theorists adopted this stance and argued for an important cognitive component in humans' ability to understand others. Mead (1934) emphasised that role taking was necessary to understand others' reality and called this ability sympathy (Gladstein, 1984). Similarly, Piaget (1932), in his theory of cognitive development, introduced the notion of *decentering*, which referred to the ability to take someone else's perspective. Hence, these authors believed that for the understanding of others' feelings and experiences, one did not need to actually experience their feelings. In their view, cognitive understanding (role taking or perspective taking) was sufficient.

In sum, this brief historical review demonstrates how various definitions (emotional vs. cognitive) and terms (sympathy vs. empathy) came to be used by subsequent theorists to explain similar and related phenomena, and how diverging opinions regarding the conceptualisation of empathy evolved. We now turn to more contemporary views on empathy.

Contemporary views on empathy. More recently, Stotland (1969) reemphasised the notion that empathy involves a key emotional component and defined the construct as an observer's emotional reaction resulting from a current or impending emotional experience in another person. This definition of empathy closely resembled the definition of sympathy originally put forward by Smith (1759/1976), but did not necessarily involve parallel emotions in the observer and the person being observed; a person's joyful reaction in the face of someone else's pain qualified as an empathic reaction (Davis, 1994).

Most contemporary authors now recognise the emotional content of empathy but unlike Stotland (1969), they argue that the empathic reaction should at least broadly parallel the emotion felt by the person being observed (Barnett, 1987; Batson, Fultz, & Schoenrade, 1987; Eisenberg & Miller, 1987; Eisenberg & Strayer, 1987; Hoffman, 1984). As such, empathy has been defined in a number of ways and despite wording differences, remarkable similarity can be observed in these definitions. For instance, Hoffman (1984) defined empathy as “an affective response more appropriate to someone else’s situation than to one’s own” (p. 114). Barnett (1987) defined it as “the vicarious experiencing of an emotion that is congruent with, but not necessarily identical to the emotion of another individual” (p. 146). Bryant (1987) described empathy as entailing “emotional responsiveness to the feelings experienced by others and, as such, is an expressive experience” (p. 246). In sum, for these authors, empathy was undeniably a congruent emotional experience resulting from the witnessing of feelings in others.

Some researchers also attempted to provide conceptual distinctions between related constructs in an effort to refine our understanding of these distinct notions (e.g., sympathy, empathy, and personal distress). For instance, Eisenberg and Strayer (1987) conceptualised sympathy and empathy as being closely related, yet distinct concepts. They defined empathy as “an emotional response that stems from another’s emotional state or condition and that is congruent with the other’s emotional state or situation” (p. 5). Based on this view, empathy was inclusive of a wide range of affective states. Conversely, sympathy was described as being more restrictive and was limited to feelings of sorrow and concern for another, often resulting from empathy. Wispé (1986) also distinguished sympathy, “the heightened awareness of

the suffering of another person as something to be alleviated” (p. 318), from empathy, “the attempt by one self-aware self to comprehend unjudgmentally the positive and negative experiences of another self” (p. 318). This view of empathy, however, was rather distinct from previously presented definitions of empathy because it implied a cognitive process; an aspect that will be addressed later in this section. Hence, according to these researchers (Eisenberg & Strayer, 1987; Wispé, 1987), empathy and sympathy were distinct, although similar constructs; empathy was generally inclusive of a wider range of feelings than sympathy, which was generally understood as compassion in the face of suffering others.

Contrarily to previous authors, however, empathy and sympathy were synonymous in nature for Batson and colleagues (1987) who defined these terms as being a congruent and other-focused emotion, such as compassion and tenderness, resulting from the sight of a distressed other. This definition of empathy was more limited in its scope and closely resembled Wispé’s (1986) view of sympathy introduced earlier. This conceptualisation excluded instances where observer and observee’s emotional experiences were congruent, and only pertained to feelings of compassion.

Adding to the conceptual confusion, Batson, Fultz, and Schoenrade (1987) introduced another related concept which they called *personal distress* and which has also been mistaken for empathy and sympathy in the literature (Eisenberg & Strayer, 1987). In their view, personal distress involves self-oriented feelings of distress and discomfort when witnessing a distressed other. Hence, although both empathy and personal distress can be triggered at the sight of distress and need in another person, empathy (and/or sympathy) is understood as an other-oriented feeling whereas personal

distress is understood as a self-oriented feeling. As such, different outcomes are likely to occur as a result of these distinctive emotional reactions. That is, empathy (and/or sympathy) has been shown to be associated with an altruistic motivation to help (i.e., alleviating the distress of others) whereas personal distress has been associated with a more egoistic motivation to help (i.e., diminishing one's own discomfort; Batson, Fultz, & Schoenrade, 1987; Eisenberg & Fabes, 1990).

Although researchers recognise that empathy and personal distress are linked, they do not completely agree on the nature of this relationship. In particular, Batson and his colleagues described these constructs as completely distinct but positively related. Hoffman (1982; 1984), however, described personal distress (empathic distress in his terms) as being an earlier developmental stage of empathy. That is, as children are not yet able to distinguish between their own emotional experiences and that of others, they experience personal distress upon witnessing the suffering of another person. As they grow, however, they come to understand that their experience and that of others are distinct and now become better able to experience a purer form of empathy. Thus, for Hoffman, personal distress and empathy were part of the same construct. Eisenberg and colleagues supported Hoffman's proposition that personal distress is a developmental precursor of empathy, but, as Batson and colleagues, also believed that personal distress could exist independently of empathy or may even result from empathic reactions. Empathy and personal distress were then seen as being different, yet related, concepts by these authors (Eisenberg & Fabes, 1990; Eisenberg & Strayer, 1987).

At this point, three related concepts have been introduced: empathy, sympathy, and personal distress. Although researchers do not all agree on the precise nature of

these constructs, distinct features characterise each of them. The difficulty of past research to distinguish them may stem from them all being emotional reactions to someone else's emotional experience.

Other authors have conceptualised empathy as being more cognitive in nature or have at least emphasised the interplay between emotional and cognitive factors in empathic responses. As mentioned previously, Wispé (1986) conceived empathy in cognitive terms and implied that for an empathic reaction to occur, a cognitive understanding of the reality of the other person was necessary, but a congruent emotional experience was not. Hogan (1969) also viewed empathy as primarily cognitive and defined it as “the intellectual or imaginative apprehension of another's condition or state of mind without actually experiencing that person's feelings” (p. 307). Although this view has been supported by other theorists (Borke, 1971; Deutsch & Madle, 1975), most researchers acknowledge the interaction between cognitive and emotional factors in empathy (Duan & Hill, 1996; Feshbach, 1975; Hoffman, 1982, 1984; Strayer, 1987), which has also been empirically observed (Isen, 1984). Most notably, Hoffman (1982; 1984), one of the most influential empathy theorists, endorsed the view that empathy is an affective construct, but also advanced that cognitive components strongly influence its process. For him, the processes leading to empathy are strongly dependent on the developmental stage of the observer. Mainly, he proposed six modes of empathic arousal that increase in complexity with age, as cognitive capacities develop. At the earliest stage, newborn experience “emotional contagion” and cry upon hearing another child crying. No cognitive process is involved at this point. The child then develops until he acquires the ability to use role taking, the most advanced cognitive

mediator of empathy according to Hoffman. Yet, although role taking (which other authors have also called perspective taking) is an important precursor of empathy in Hoffman's model, he also recognises that empathic responses can be triggered without role taking in adulthood¹.

The difficulty in deciding on the precise nature of empathy may also be attributable to researchers' failure to distinguish between the processes leading to and outcomes of empathic responses. To address this problem, Davis (1994) proposed an organisational model of empathy in an attempt to integrate its many facets. In this model, empathy is seen as a rather inclusive notion. The comprehensive conceptualisation includes empathy's antecedents (e.g., biological capacities, individual differences), its processes (e.g., Hoffman's six cognitive modes of empathic arousal), its intrapersonal outcomes (e.g., empathic concern and personal distress), and its interpersonal outcomes (e.g., helping, aggression, social behaviour). It also reconciles the contribution of cognitive and emotional components of empathy. In particular, the cognitive component is understood as being the process by which one comes to experience an emotional reaction when faced with the distress of another person. It is through perspective taking, for instance, that one can experience empathic concern (and/or sympathy) and/or personal distress, although cognitive processing is not necessary to produce such emotional reaction, nor is perspective taking always producing empathic concern according to this model². In sum, Davis's model leads to the conclusion that many authors have drawn based on their review of the literature.

¹ A thorough description of Hoffman's six cognitive modes of empathic arousal is beyond the scope of the current thesis. The reader may refer to Hoffman (1984) for a detailed description.

² To our knowledge, no study has examined how the cognitive and emotional components of empathy relate to one another in producing intrapersonal and interpersonal outcomes. Authors have typically used each component in isolation to make predictions about social outcomes.

Mainly, empathy appears to be multidimensional in nature and comprehensive theoretical models, inclusive of its many facets should guide its study (Davis, 1994, Hoffman, 1984; Strayer, 1987). Along those lines, Cohen and Strayer (1996) more recently enriched the literature with another, more encompassing, definition of empathy that integrates both cognitive and emotional aspects: “the ability to *understand* and *share* in another’s emotional state or context” (p. 988). Although simple and brief, this definition integrates the specific features on which authors have long disagreed upon. The present thesis will thus take a multidimensional approach in its study of empathy and will adopt Cohen and Strayer’s definition as a guiding principle in its investigation of empathy.

Measurement of empathy in adults

A number of measures (i.e., self-reports, facial indexes, and physiological indexes³) have been developed in order to assess empathy in children and adults. Empathy has also been conceptualised as being either a trait or a state, depending on the instrument utilised to assess it. Within the present thesis, empathy is conceived as being a relatively stable disposition and accordingly, is assessed by means of questionnaires. The following section briefly describes several questionnaires that have been developed to assess empathy. Because this thesis is concerned with empathy in the romantic context, only the questionnaires relevant to the measurement of empathy in adults are reviewed.

Because an unambiguous conceptualisation of empathy remains elusive to this date, various questionnaires yielding different indexes of empathy have been developed.

³ Contrary to self-reports of empathy, which generally measure dispositional empathic responding, both facial indexes and physiological recording of empathic responding measure empathy in a specific context and in relation to specific stimuli. The current thesis is concerned with empathy as a general disposition of the individuals rather than empathic responding in a very specific situation. Accordingly, facial and physiological indexes of empathy are not further described here. The reader may refer to Eisenberg & Fabes (1990) and Davis (1994) for descriptions of these measures and findings obtained from these measures.

For instance, a tradition of researchers has conceptualised empathy as being a cognitive phenomenon and accordingly, has developed scales solely concerned with cognitive empathy (i.e., role taking or perspective taking). The *Chapin Social Insight Test* (Chapin, 1942) and Dymond's (1949) rating scale method were the first attempts to assess cognitive empathy and were designed to measure social role taking and accurate transposition of the self into the thinking, feeling, and acting of others. Both methods, however, were later largely criticised because a number of extraneous factors, unrelated to empathy per se, were likely responsible for respondents' answers on these measures (Davis, 1994). The *Hogan empathy scale* (Hogan, 1969) is currently the most widely used scale of cognitive empathy. Its 64 items were designed to discriminate between high and low empathy groups. Other factors, such as social self-confidence and non-conformity were later identified in the scale, however, and thus cast doubt on the exact nature of the information provided by this instrument (Johnson, Cheek, & Smither, 1983).

Other researchers designed measures of emotional empathy exclusively. The *Emotional Empathic Tendency Scale* (EETS; 33 items; Mehrabian & Epstein, 1972) was developed to assess a person's chronic tendency to react emotionally to the context and affective experiences of others. It was later suggested that the EETS may tap into more general emotional arousability to the environment rather than empathy resulting from observing affect in others (Mehrabian, Young, & Sato, 1988). The *Balanced Emotional Empathy Scale* (BEES; 30 items; Mehrabian, 1996) was subsequently developed in order to update, improve, and replace the EETS (i.e., the new scale corrects for acquiescence bias and includes both positively and negatively worded items).

In an attempt to reconcile cognitive and emotional components of empathy, Davis (1980, 1983) developed a multidimensional instrument designed to integrate empathy-related concepts. The *Interpersonal Reactivity Index* (IRI; 28 items) comprises four scales: perspective taking (tendency to take on the point of view of others), empathic concern (tendency to experience sympathy and compassion toward distressed others), personal distress (tendency to experience distress and discomfort as a result of being exposed to the suffering of others), and fantasy (tendency to imagine oneself into fictional characters and situations)⁴. This questionnaire allows for the assessment of all previously identified empathy components, in particular emotional versus cognitive aspects, as well as other- versus self-oriented empathic reactions. Due to this multifaceted approach, the IRI is probably the most widely used measure of empathy, and accordingly, is central in the current thesis.

The *Toronto Empathy Questionnaire* (TEQ; 16 items; Spreng, McKinnon, Mar, & Levine, 2009) was very recently developed, with the aim of measuring empathy at the broadest level and complement (not replace) the multifaceted approach accepted and used by many. Hence, items from several existing and widely used empathy scales were combined, and, using a factor-analytic strategy, a single and broad factor was extracted. This factor was characterised by the affective process of empathy, although some items tapping into the cognitive component were also retained, suggesting the overlapping and non-mutually exclusive nature of both components.

⁴ Davis (1980) initially included the fantasy scale in the *Interpersonal Reactivity Index* because the tendency to imagine oneself in fictitious situations had been shown to be associated with emotional reactions toward others (Stotland, Mathews, Sherman, Hansson, & Richardson, 1978). Davis (1994) later recognised, however, that this dimension was more difficult to integrate within his organisational model of empathy and he did not focus on this dimension in his multidimensional conceptualisation of empathy. Moreover, very few studies used the fantasy scale when examining empathy; most studies focused their investigation on perspective taking, empathic concern, and personal distress.

Finally, several other measures of empathy were developed to assess empathic responses in very specific populations and contexts, such as the Jefferson Scale of Physician Empathy (Hojat et al., 2001), the Scale of Ethnocultural Empathy (Wang et al., 2003), the Empathy Quotient (used with autistic populations; Lawrence, Shaw, Baker, Baron-Cohen, & David, 2004), and the Nursing Empathy Scale (Raynolds, 2000). However, given their very specific application and scarce usage, these measures will not be further described.

Empathy and couple relationships

Distinction between general empathy and dyadic empathy

The definitions presented in the previous section all pertained to what could be called *general* empathy, in that they related to empathy expressed within a broad, non-specific social context. Accordingly, instruments that were described previously were designed to assess individuals' general empathic disposition. Because the present thesis is especially concerned with empathic responses expressed in the romantic context, empathy expressed toward the partner specifically is of particular interest here. This tendency for empathic reactions toward the partner has been termed *dyadic* empathy in past literature (Long, 1990). Hence, throughout the remainder of this thesis, the terms *general* and *dyadic* will be used to qualify empathy and to refer to the specific contexts in which empathy is expressed.

The role of empathy in intimate relationships

From a relational standpoint, empathy would facilitate the maintenance of personal relationships (Hansson, Jones, & Carpenter, 1984; Vansteenwegen, 1998;

Waldinger, Schulz, Hauser, Allen, & Crowell, 2004). That is, as partners actively try to understand and share each others' feelings, they may feel understood and validated in their relationship. In that sense, empathy may serve to maintain close bonds and enhance intimate connections over time. On the other hand, a lack of empathy may lead one to feel misunderstood and perhaps unimportant or dismissed. Over time, such perception may damage the relationship and eventually lead to its dissolution (Long, 1993a; Waldinger et al., 2004). This may be especially true in the context of romantic relationships in which partners heavily rely on each other for compassion, support, and validation. In this light, an individual's lack of empathy is possibly detrimental to their partner's well-being in the relationship and overall evaluation of the relationship.

Research on the role of empathy in couple relationships has typically followed two distinct traditions. The first tradition has investigated how partners accurately perceive each other's cognitive and affective state, a construct termed empathic accuracy (Ickes, 1997; 2001). The assessment of empathic accuracy necessitates the use of an elaborated experimental procedure that focuses on the accurate cognitive understanding of the partner's thoughts and feelings during a specific interaction. Mainly, partners are typically videotaped while discussing an issue of conflict in their relationship. Partners then individually review the taped interaction and record specific thoughts and feelings they recall having had throughout the interaction. They are then asked to watch the recorded interaction a second time and to infer their partner's thoughts and feelings throughout the interaction. Accuracy indexes are then obtained based on independent raters' comparison of the content of participants' own reported thoughts and feelings and their partner's inferred content of these thoughts and feelings. Empathic accuracy, as

assessed in laboratory settings, is thus based on a very specific instance and does not necessarily generalise to all interactions between partners. Empathic accuracy has also been shown to depend on the content of partner's thoughts and feelings (Simpson, Orina, & Ickes, 2003). Most of the research on empathy within romantic relationships has been done within this tradition (e.g., Simpson, Ickes, & Blackstone, 1995; Simpson, Orina, & Ickes, 2003; Thomas, Fletcher, & Lange, 1997). The second tradition has investigated empathy as a more global and stable quality using self-reported measures and has received much less attention. The current thesis falls within this later tradition of research and is interested in dispositional empathy generally expressed within the romantic relationship as opposed to the exact perception of the partner's thoughts and feelings in a particular instance. Research pertaining to empathic accuracy is thus beyond the scope of the current thesis and will not be further described here. The next section presents measures of dispositional dyadic empathy.

Measurement of dyadic empathy. As will be seen below, many studies investigating dispositional empathy in couples have used measures of general empathic responding (instead of measures of dyadic empathy). This may be because, to this date, there exists only one questionnaire specifically designed to measure dyadic empathy. That is, the *Self Dyadic Perspective-Taking* and *Other Dyadic Perspective taking* scales (SDPT & ODPT; Long, 1990) are the only well-validated scales of dyadic empathy available in the literature. They assess self and partner's cognitive empathy expressed within the relationship. These scales, however, do not address emotional components of empathy and accordingly, fail to provide a multidimensional assessment of dyadic empathy.

A few measures of general marital functioning also include empathy subscales, and hence also provide indexes of dyadic empathy. The *Barrett-Lennard Relationship Inventory* (Barrett-Lennard, 1962) was originally developed to measure the therapeutic conditions that Carl Rogers (1957) identified as necessary for therapeutic change. Since its development, however, this scale has been used in a variety of relationships other than the client-therapist relationship. In particular, Wampler and Powell (1982) demonstrated that it could be used as an adequate and valid measure of marital adjustment. Its Empathic Understanding scale assesses the extent to which one person is conscious of the immediate awareness of another. Aspects from both cognitive and emotional empathy are represented in this scale, but they are not clearly differentiated, thus precluding the formulation of different/separate hypotheses and models for the cognitive and emotional components of empathy.

The *Relationship Evaluation Questionnaire (RELATE)* (Holman, Busby, Doxey, Klein, & Loyer-Carlson, 1997) constitutes a comprehensive assessment of the individual, familial, cultural, and couple contexts bearing relevance to relationship adjustment. Similar to the *Relationship Inventory*, the *RELATE questionnaire* includes an empathy scale which assesses cognitive and emotional components of empathy in an undifferentiated manner. This questionnaire is also very lengthy (administration may take up to 1 hour), which may be very impractical if only one subscale is to be used.

Finally, the *Preparation for Marriage Questionnaire* (Larson, Anderson, Holman, & Niemann, 1998) was designed to assess individual and couple readiness, as well as values, attitude, and beliefs about marriage. Its Empathic Communication scale contains three items measuring the extent to which partners respond empathically to one another.

Again, the cognitive-versus-emotional-empathy differentiation is not made explicit in this scale. Further, this measure may only be used with a restricted range of couples (i.e., engaged couples) and has received little empirical consideration.

In sum, questionnaires of dyadic empathy fail to address the multifaceted nature of empathy and, although research on general empathy has attempted to study and understand both cognitive and emotional components of empathy and their impact on general social behaviour, the literature on empathy in intimate relationships appears to lag behind in this respect, as illustrated by available measures of dyadic empathy. We now present studies that have looked at the relationship between dispositional empathy and various aspects of marital adjustment.

Empirical findings. A very small body of research has specifically examined the role of dispositional general and dyadic empathy in romantic relationships. Four studies looked at *general* empathy in samples of couples (Davis & Oathout, 1987; Franzoi, Davis, & Young, 1985; Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991; Zimmer, Bélanger, Sabourin, & Wright, 1993). Overall, these studies show that general empathy significantly predicts partners' behaviours within the relationship as well as their overall relationship satisfaction. For example, using the Perspective Taking scale of the *Interpersonal Reactivity Index* (IRI; Davis, 1980), it was demonstrated that a general tendency for perspective taking predicted relationship satisfaction in men, whereas this tendency in women predicted both self and partner satisfaction in the relationship ($n = 131$ heterosexual student couples; Franzoi et al., 1985).

In a later study also using the IRI, a more complex theoretical model was proposed to explain the link between general empathic disposition, relationship

behaviours, and satisfaction ($n = 264$ heterosexual student couples; Davis & Oathout, 1987). Path analyses revealed that partners' general empathic responding (cognitive and emotional) was positively related to their use of positive behaviours (e.g., good communication, warmth, positive outlook) and negatively related to their use of negative behaviours (e.g., insensitivity and possessiveness) in the relationship. In turn, each partner's behaviours predicted the other partner's relationship satisfaction.

Finally, two studies examined the relationship between general empathy and conflict management with the partner. The first study used a sample of older couples ($n = 40$ heterosexual couples, mean relationship length = 13 years; Zimmer et al., 1993) and examined whether conflict resolution behaviours (assessed during a filmed conflict interaction between partners) mediated the relationship between general emotional empathy (as measured by the *Emotional Empathic Tendency Scale*; Mehrabian & Epstein, 1972) and relationship satisfaction. A significant relationship was found between emotional empathy and conflict resolution behaviours in men and women. In particular, highly empathic men were less likely to invalidate their partner and more likely to be encouraging and receptive toward them. Highly empathic men were also more likely to recognise and attempt to solve problems, whereas highly empathic women were less likely to withdraw and avoid the discussion during the filmed interaction. No relationship was observed between general emotional empathy and relationship satisfaction in these couples, however.

The second study investigated accommodation strategies used by university students involved in romantic relationships ($n = 498$; Rusbult et al., 1991). These strategies refer to individuals' reaction to their partner's potentially destructing

behaviours in the relationship. Results yielded a positive relationship between general and dyadic perspective taking (authors modified the IRI perspective taking scale for this endeavour) and the use of constructive strategies (e.g., trying to discuss the problem with the partner). A negative relationship was observed between dyadic perspective taking and the use of destructive strategies (e.g., avoiding the partner, ending the relationship).

Other studies also examined the role of *dyadic* empathy in relation to well-being and maintenance in intimate relationships. Results pertaining to dyadic empathy tend to support findings obtained with general empathy. For instance, individuals' dyadic perspective taking (assessed using the *Self and Other Dyadic Perspective Taking Scales*; Long, 1990) was found to predict self and partner relationship satisfaction in a sample of 159 older and married heterosexual couples (average length of marriage = 23 years). Furthermore, participants' perception that their partner is capable of perspective taking in the relationship also predicted both self and partner relationship satisfaction (Long & Andrews, 1990).

In another set of studies, dyadic perspective taking was found to distinguish men and women involved in high-adjustment ($n = 259$ individuals) from those involved in low-adjustment ($n = 43$ individuals) marriages (Long, 1993b). Men married to women reporting poor perspective taking abilities were also more likely to contemplate divorce than men married to women reporting good perspective taking abilities. Similarly, women perceiving poor perspective taking abilities in their husbands were more likely to consider leaving the relationship than women who evaluated their husbands as being good perspective takers ($n = 159$ couples; Long, 1993a).

Longitudinal studies were also conducted to examine the lasting effects of dyadic empathy on relationship satisfaction and maintenance. For example, a study revealed that men and women's reports of self and partner dyadic empathy (measured using the *RELATE questionnaire*) assessed at time 1 predicted self and partner relationship satisfaction 12 months later ($n = 299$ couples; Busby & Gardner, 2008). Moreover, a 5-week perspective taking enhancement program for couples ($n = 48$ heterosexual couples) was found to not only enhance general and dyadic perspective taking abilities (as assessed using the SDPT) in both men and women over a six-month period, but overall relationship satisfaction was also improved in both partners over that same time period (Long, Angera, Carter, Nakamoto, & Kalso, 1999). Finally, one study examined the relationship between several premarital factors, including dyadic empathy (as measured using the *Preparation for Marriage Questionnaire*), and sexual satisfaction in the first year of marriage ($n = 109$ couples; Larson et al., 1998). Findings revealed a significant and positive relationship between wives' empathic responding in the relationship prior marriage and their sexual satisfaction in the first year of marriage.

Overall, general and dyadic dispositional empathy appear to be related to a number of relationship adjustment factors and also seem to predict relationship stability over time. Hence, although few in numbers, reviewed studies provide support for the study of empathy in the context of romantic relationships. Yet, while research has found that both general and dyadic empathy are relevant to the romantic setting, findings suggest that they are not entirely overlapping and relate differently to relationship satisfaction, with dyadic empathy explaining greater variance in relationship satisfaction than general empathy (Long & Andrews, 1990; Long, 1993b; Rusbult et al., 1991).

Partners of both distressed and nondistressed couples were also found to engage in more positive and less negative interactions with strangers than with their romantic partner (Birchler, Weiss, & Vincent, 1975), suggesting that although one may possess interpersonal skills, such competence may not be used effectively or consistently with the partner. It might be more difficult to consider the partner's perspective and show compassion when one is personally involved in the problem or situation (such as in the context of romantic relationships), as opposed to when one is removed from the situation, as is the case in more general social contexts (Pistrang, Picciotto, & Barker, 2001). In summary, these results highlight the importance of assessing and studying relationship dispositions (e.g., dyadic empathy) and general dispositions (e.g., general empathy) separately as they are not entirely overlapping and may act as distinct mechanisms in the prediction of overall relationship adjustment.

Attachment and empathy

As thoroughly described in the previous section, a general empathic tendency and empathy specifically expressed toward the partner appear to benefit the quality and stability of intimate relationships. Specifically, when partners have a general tendency to be attuned to others' emotions or when they devote special efforts to understand each others' perspectives and experiences, relationship satisfaction is likely impacted and intimate bonds likely strengthened. Conversely, when partners demonstrate a lack of empathy toward each other, they are more likely to be dissatisfied with their relationship and to contemplate dissolving their relationship.

From the previous literature review, it thus appears that differences in dispositional empathy predict relationship adjustment. One may then wonder what could explain these individual differences in empathy. The attachment literature has been a major framework from which to understand adult romantic functioning and it also bears relevance to the study of empathy. Yet, despite the existence of theoretical grounds supporting an association between adult attachment and empathy, very few researchers have empirically investigated this avenue to this point. The following section aims to examine the theoretical relationship between attachment and empathy and to expose research findings supporting this theoretical relationship.

Theoretical perspective

Attachment theory (Bowlby, 1969/1982) stipulates that infants develop secure attachment representations in response to their caregiver's sensitive and responsive caretaking in times of stress or adversity. In such circumstances, attachment figures' availability and care consistency promote the development of a sense of attachment security. As a result, children subsequently develop positive expectations of the social world, a sense of control and a willingness to explore the environment. Conversely, children whose needs are ignored or neglected, or who receive unpredictable attention from attachment figures are more likely to develop a negative or an insecure view of others and a sense of unworthiness, hence leading to uncertainty and mistrust.

Gradually, children's attachment experiences with the primary caregiver and other attachment figures generalise and are consolidated into internal working models of self and others. Through these internal models, conceived as schemas representing different aspects of specific attachment relationships, relationship patterns are reinforced and

maintained over time, and they increase in complexity until adulthood. Consequently, these models become resistant to dramatic change in adulthood (Bowlby, 1979). These models then serve to regulate, interpret, and predict attachment-related behaviour, thoughts, and feelings about both attachment figures and others in general as well as the self (Bretherton & Munholland, 1999), especially in times of stress and perceived threat. In this view, attachment representations operate as cognitive filters that, through automatic processes, direct attention, encoding, and inferences in relation to attachment-related events (Collins & Allard, 2001; Collins & Read, 1994). In adulthood, the attachment system becomes especially important in the context of romantic relationships and the partner often takes on the role of the primary attachment figure (Hazan & Shaver, 1987).

Attachment theory has proven useful to explain how early attachment figures' response to individuals' needs shapes their expectations of others' responsiveness and availability for support in the future. Attachment theory, however, can also provide a framework to understand and explain one's reaction to others' needs and distress. Mainly, Bowlby (1969/1982) talks about another system that is complementary to the attachment system, namely, the caregiving system. From an evolutionary perspective, this system serves to provide protection and support to individuals who are either chronically dependant (e.g., a child) or temporarily in need (e.g., a romantic partner). Although this later system may not be as relevant for children or as often activated in children, it becomes more important in the context of adult romantic relationships. That is, unlike the parent-infant relationship that is unidirectional in nature, the adult romantic relationship is more equal in that its members both turn to each other for comfort and security in times

of stress and both provide support and protection to each other when needed. As it was pointed out by previous authors, each partner is “sometimes threatened, frightened, or injured and in need of protection or comfort” (Schachner, Shaver, & Mikulincer, 2003, p.18). The caregiving system thus serves to alleviate distress and promote a sense of security in others and more especially, in love partners.

According to Bowlby (1969/1982), the caregiving system would be strongly influenced by the attachment system, as people, especially romantic partners, alternate between needing and providing support. Mainly, the attachment system would inhibit the caregiving system in times of stress and when one needs protection from others. In such circumstances, more egoistic motives would cause people to turn to others, first hoping to restore their own sense of security, before they can effectively attend to others’ distress and need for comfort. In this view, it is only when a sense of security is restored, or when one already possesses sufficient attachment security, that the caregiving system may be activated when witnessing distress and need in others (Collins, Guichard, Ford, & Feeney, 2006; Mikulincer & Shaver, 2005; Mikulincer & Shaver, 2007).

From this perspective, empathy and compassion would be comprised within the caregiving system and would serve as a mechanism through which distress and needs in others can be recognised and attended to (Mikulincer et al., 2001; Mikulincer & Shaver, 2005; Mikulincer & Shaver, 2007; Mikulincer, Shaver, Gillath, & Nitzberg, 2005). As one person feels empathy for someone else, the likelihood of providing help and comfort to that person increases (Batson, 1991; Eisenberg & Fabes, 1990). However, just as for the overall caregiving system, empathic responses can be altered or suppressed by attachment insecurity (Feeney & Collins, 2001; Gillath, Shaver, & Mikulincer, 2005).

Insecure attachment is characterised by anxiety over abandonment and/or avoidance of intimacy (Ainsworth, Blehar, Waters, & Wall, 1978; Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998; Hazan & Shaver, 1987). From a theoretical standpoint, both dimensions may be associated with empathy, but the mechanisms underlying this association differ for each dimension. On the one hand, the anxiety dimension represents the working model of self and refers to one's sense of self-worth, lovability, and acceptance by others (Collins & Allard, 2001). Highly anxious individuals, who report a preoccupied or fearful attachment style (Bartholomew and Horowitz, 1991), tend to be overly preoccupied with their own attachment needs and distress due to their intense fear of rejection by others (Collins & Read, 1994). Consequently, this may leave them with little cognitive resources to attend to their partners' needs or to emotionally share their distress, eventually preventing anxious individuals from providing effective caregiving to their partner (Collins et al., 2006; Mikulincer et al., 2001; Mikulincer & Shaver, 2007). That is, when the partner comes for support, anxiously attached individuals may initially experience empathy but are more likely to also experience discomfort and personal distress and as a result, may fail to effectively alleviate their partner's distress.

The avoidance dimension, on the other hand, represents the working model of others and refers to one's approach of intimacy and interdependence with others (Collins & Allard, 2001). Individuals who are uncomfortable with closeness (fearful and dismissing attachment styles; Bartholomew & Horowitz, 1991) avoid intimacy with others and prefer remaining emotionally distant from them. These individuals constantly doubt that others will be there to support them in times of need. As a result they may be

less likely to perceive their partner as deserving their help, to express empathy, and to reciprocate supportive behaviours (Collins et al., 2006; Mikulincer et al., 2001; Mikulincer & Shaver, 2007). Moreover, in these individuals, a lack of empathy may also serve to keep a distance in their relationships, hence preventing them from becoming too close and intimate with their partner and preventing future dependency.

Conversely, attachment security, defined by low anxiety over abandonment and low avoidance of intimacy, is characterised by control, self-efficacy, and self-confidence in one's ability to manage adversity. Securely attached individuals are not preoccupied with issues of self-worth, which may free resources to attend to others' needs for security and comfort and lead to more empathic responses toward them and less personal distress as a result of witnessing others' distress (Collins et al., 2006). Moreover, they perceive others as being available to them when needed and as such, are more likely to believe that others also deserve their compassion and help in times of need (Mikulincer et al., 2001; Mikulincer & Shaver, 2007).

Findings supporting this view have been reported in children and young mothers. Mainly, children having a secure attachment style were found to demonstrate greater empathy toward peers than children having insecure attachment styles (Denham, 1994; Kestenbaum, Farber, & Sroufe, 1989). Similarly, young mothers of 6-month-old babies whose emotional needs had not been met in their childhood demonstrated less empathic responses toward their infant's distress compared to mothers whose emotional needs had been consistently and effectively met in childhood (Leerkes & Crockenberg, 2006).

Empirical findings

Several studies provided support for the relationship between attachment and caregiving behaviours and generally demonstrated that attachment insecurity is related to poor caregiving (e.g., Feeney, 1996; Feeney & Collins, 2001; Gillath et al., 2005; Kunce & Shaver, 1994; Mikulincer et al., 2005; Simpson, Rholes, & Nelligan, 1992; Simpson, Rholes, & Phillips, 1996). Yet, only a few studies have specifically investigated the relationship between attachment and empathy in adults. Before describing these studies in details, however, a brief presentation of the two traditions of research in adult attachment appears necessary.

Two distinct, and somewhat parallel, approaches have characterised the study of adult attachment over the years. In the first approach, developmental psychologists have examined adults' recollection of childhood attachment experiences and intergenerational transmission of attachment patterns (Mikulincer & Shaver, 2007). The most widely used measure by researchers in this tradition is the *Adult Attachment Interview* (AAI; George, Kaplan, & Main, 1985), which inquires about a person's memories of their childhood attachment experiences and is believed to assess a person's current state of mind with respect to attachment. AAI coding of attachment is based on the content as well as the coherence, consistency, and emotional organisation of the narrative (Hess, 1999). Based on AAI classification, individuals may fall within five categories – secure, dismissing, preoccupied, unresolved, and cannot classify⁵. Adults' recollection of childhood attachment experiences may also be assessed using self-report measures such as the

⁵ A thorough description of the AAI coding system and classification is beyond the scope of the current thesis and accordingly, is not further discussed here. The reader may refer to Hess (1999) for a comprehensive presentation of the AAI.

Parental Bonding Instrument (Parker, Tupling, & Brown, 1979) and the *Attachment History Questionnaire* (Pottharst & Kessler, 1990).

In the second approach, personality and social psychologists have examined social and cognitive processes linked to feelings and behaviour in adult close relationships (Mikulincer & Shaver, 2007). Assessment of attachment is done primarily using self-report measures in which individuals are either classified in four attachment categories (secure, preoccupied, dismissing, and fearful) or evaluated along the two dimensions of anxiety over abandonment and avoidance of intimacy⁶. Categorical measures of adult attachment include the *Adult Attachment Style Questionnaire* (Hazan & Shaver, 1987) and the *Relationship Questionnaire* (Bartholomew & Horowitz, 1991). Dimensional measures of adult attachment include the *Adult Attachment Scale* (Collins & Read, 1990), the *Attachment Style Questionnaire* (Feeney, Noller, & Hanrahan, 1994), the *Adult Attachment Questionnaire* (Simpson et al., 1996), and the *Experiences in Close Relationships* (Brennan et al., 1998). Most studies investigating adult attachment and empathy (including the current thesis) fall within this second research tradition. Studies examining adult attachment and empathic disposition are described next.

Three studies have examined the relationship between adult attachment and general empathy. Joireman and colleagues (2001) used both dimensional (*Adult Attachment Scale; Experiences in Close Relationships – Revised*) and categorical (*Adult Attachment Styles questionnaire, Relationship Questionnaire*) measures of attachment to investigate the link between adult attachment and general empathic tendencies (as

⁶ As per Bartholomew & Horowitz's (1991) two-dimensional space of attachment, the two dimensions of attachment are believed to underlie the four attachment styles – secure (low anxiety and low avoidance), preoccupied (high anxiety and low avoidance), dismissing (low anxiety and high avoidance), and fearful (high anxiety and high avoidance).

measured by the *Interpersonal Reactivity Index* in a sample of college students ($n = 261$). Secure attachment dimensions were found to predict higher empathic concern (emotional empathy) and perspective taking, whereas anxious attachment dimensions were found to predict higher personal distress. Moreover, individuals reporting a secure attachment style demonstrated higher empathic concern than individuals reporting a fearful attachment style. Individuals reporting a secure attachment style also scored lower on personal distress than did individuals reporting a preoccupied attachment style or a fearful attachment style. Perspective taking did not relate to any attachment categories.

Similar results were obtained in a study looking at the relationship between general empathy (*Interpersonal Reactivity Index*) and both recollection of childhood attachment (*Parental Bonding Instrument*) and romantic attachment (*Experiences in Close Relationships*) in a sample of undergraduate students ($n = 178$; Britton & Fuendeling, 2005). Mainly, empathic concern was negatively associated with anxiety over abandonment whereas personal distress was positively associated with anxiety over abandonment and parental overprotection.

Finally, a study looking at adult attachment (*Attachment Style Questionnaire*) and general perspective taking (*Interpersonal Reactivity Index*) in relation to conflict resolution in a sample of parents ($n = 124$) found a negative relationship between avoidance of intimacy and the ability for perspective taking (Corcoran & Mallinckrodt, 2000).

Other studies on adult attachment and empathic tendencies were conducted in very specific contexts. For instance, using the *Emotional Empathic Tendency Scale* (Mehrabian & Epstein, 1972) and the *Attachment Style Questionnaire*, high anxiety over

abandonment and low avoidance of intimacy predicted highest levels of general emotional empathy in a sample of master's level counsellor trainees ($n = 143$; Trusty, Ng, & Watts, 2005). Adult attachment was also related to empathy for the bereaved following the September 11th attacks ($n = 319$ undergraduate students; Wayment, 2006). That is, using the *Adult Attachment Questionnaire*, avoidant attachment was negatively associated with empathy for the bereaved, but a curvilinear relationship was uncovered between anxious attachment and empathy, with people scoring in the middle of the attachment anxiety scale reporting greater empathy levels than those scoring at the lower or higher ends of the scale.

Finally, experimentally enhanced attachment security was found to promote empathic responding toward others in a series of studies conducted by Mikulincer and his colleagues. Mainly, using the *Experiences in Close Relationships* (ECR) and priming procedures to activate a sense of attachment security in participants, both experimentally enhanced attachment security and dispositional attachment security reported on the ECR (low anxiety and low avoidance) predicted compassionate feelings following the reading of a story about a student whose parents had been killed in a car accident in over 400 American and Israeli undergraduate students. Conversely, dispositional anxiety was negatively related to compassion and positively associated with personal distress. Dispositional avoidance was also negatively related to compassion (Mikulincer et al., 2001). Both types of attachment (experimentally induced and dispositional) also predicted compassion and helping in an experimental situation involving a confederate in distress (Mikulincer et al., 2005).

Overall, these findings are consistent with the attachment theory and support the theoretical relationship between the attachment system and the caregiving system, and more precisely empathic responding toward others.

Previous research limitations and objectives of the thesis

Overall, the previous literature review makes empathy an appealing concept to study within the context of romantic relationships. Specifically, evidence suggests that partners' general and dyadic dispositional empathy contribute to relationship adjustment and are related to relationship maintenance over time. The attachment theory also provides an interesting perspective from which to understand individual differences in empathic responding and to explain how this may translate to the romantic context. However, because the literature on empathy in couples is not substantial and because the theoretical relationship between attachment theory and empathy has only been proposed and investigated recently (Mikulincer & Shaver, 2007), limited conclusions regarding the interplay between attachment and empathy in the romantic setting can be drawn at this point. Several other general shortcomings can be identified in previous research, hence leaving many questions unanswered.

The first limit pertains to the lack of a measure of multidimensional dyadic empathy. As pointed out earlier, the only existing and well-validated measures of dyadic empathy are the *Self Dyadic Perspective Taking* and *Other Dyadic Perspective Taking* scales. These instruments were designed to assess dyadic cognitive empathy solely. There thus exists no well-validated measure of dyadic empathy assessing the emotional component of the construct (i.e., compassion and sympathy). This is especially

troublesome given some evidence suggesting that cognitive and emotional empathy may play different roles in relationship adjustment (Davis & Oathout, 1987) and that empathy is not a unitary concept and is now better conceptualised as a multifaceted construct.

Second, very little is known about the contribution of emotional empathy (general or dyadic) to intimate relationship functioning, with most research focusing on perspective taking (see Davis & Oathout, 1987 and Zimmer et al., 1993 for exception). One may speculate that the ability to be attuned to the partner's emotions or to feel compassion for the partner is just as important as the ability to cognitively understand the experiences of the partner for the development of satisfying bonds and secure connections between partners.

Third, the majority of studies examining the relationship between empathy (dyadic or general) in the context of couple relationships limited their investigation to relationship satisfaction and related concepts (i.e., relationship dissolution and divorce contemplation). Although informative, this literature does not address *how* empathy relates to satisfaction. The mechanisms by which empathy contributes to relationship adjustment and maintenance are largely unknown at this point. Furthermore, empathy may relate to other indexes of relationship adjustment. A few of these indexes have been examined previously, for instance conflict resolution behaviours, accommodation strategies, and sexuality (Larson et al., 1998; Rusbult et al., 1991; Zimmer et al., 1993), but it appears that more studies would be needed to fully capture the contribution of empathy in intimate relationships.

The fourth limit pertains to the lack of studies examining the relationship between attachment and empathy in samples of couples. Current research has examined 1) how

individual differences in attachment influence empathic responding toward strangers or in general social situations, and 2) how attachment influences caregiving behaviours within couples. However, no study has examined how romantic attachment influences empathy expressed toward the partner specifically, despite convincing theoretical grounds for the existence of this relationship. Additionally, empathy and validation are recognised as necessary ingredients for effective caregiving in intimate relationship (Collins et al., 2006). Yet, few investigations have provided empirical evidence of how such relationship operates in couples to this point.

The present thesis aims to address these limitations through two distinct studies, presented in two separate articles. In particular, with the goal of expanding the study of multidimensional dyadic empathy and especially promote the study of the emotional component of empathy within intimate relationships, the first article presents the adaptation of the *Interpersonal Reactivity Index* (Davis, 1980) for the measurement of cognitive and emotional empathy specifically expressed toward the partner. This new measure, the *Interpersonal Reactivity Index for Couples* (IRIC), is then validated in three independent samples of individuals and couples: (1) individuals involved in heterosexual relationships; (2) individuals involved in same-sex relationships; and (3) heterosexual couples. This multi-sample approach is chosen to ensure the valid and appropriate use of the IRIC in a wide range of romantically involved individuals and couples. Validity is also evaluated in a comprehensive series of analyses in order to provide evidence for convergent, discriminant, concurrent, predictive, and incremental validity, as well as internal consistency of the scale.

Subsequently, in order to further our understanding of the role played by empathy in the romantic context, the second article evaluates a theoretical model linking romantic attachment, dyadic empathy (assessed using the *Interpersonal Reactivity Index for Couples*), and intimate partner violence. Specifically, it proposes that dyadic empathy (cognitive and emotional) mediates the relationship between romantic attachment and psychological and physical intimate violence perpetuated by both men and women. The theoretical relationships examined in this study are novel and several empirical and methodological strengths can be identified in this study. First, as mentioned earlier, the relationship between romantic attachment and dyadic dispositional empathy has not been empirically established despite theoretical grounds for the existence of this relationship. Second, this study adds to the previous literature by examining how dyadic empathy relates to intimate partner violence, another index of relationship quality and adjustment. Furthermore, as will be described in greater length in the article, low empathy is associated with interpersonal aggression and offending (Jolliffe & Farrington, 2004; Miller & Eisenberg, 1988), but the relationship expected between low empathy and intimate partner violence has not been examined in samples of couples. Fourth, a multimethod approach is taken to study attachment in that both self-report and observed attachment behaviours between partners are used to assess romantic attachment and make predictions regarding dyadic empathy and intimate violence. Finally, a multilevel statistical approach is chosen to test the proposed theoretical model while accounting for the non-independence of partners' responses. To conclude, together, these two studies contribute to furthering our understanding of dyadic empathy and its relationship to

intimate functioning. The larger implications of these studies will be discussed more fully in the general conclusion of the thesis.

As a prelude to the second article, the next chapter introduces the notion of intimate partner violence and presents the theoretical context that serves as the basis of the study of intimate violence in the current thesis.

Intimate Partner Violence: Definitions and Theoretical Context

As mentioned previously, intimate partner violence (IPV) is central to the second article of this thesis and as such, also warrants a short introduction. First, the following section offers the definitions of psychological and physical intimate violence, as they apply to the current thesis. Then, to demonstrate the extent of the phenomenon, prevalence rates of IPV are presented. Lastly, theoretical approaches to the study of IPV are briefly reviewed, with a particular emphasis on the approaches that serve as the basis of the current thesis. The following discussion on IPV is not meant to be an exhaustive review, but is intended to put the second study of this thesis in its larger theoretical context. Accordingly, to avoid redundancy, the relationships between IPV, attachment, and empathy are not discussed in the following section, but are rather explored at great length in the second article.

Definitions

There exist several forms of IPV, including physical, sexual, psychological, and financial violence (Beauchamp, 2007; Lipsky & Caetano, 2009), but the study of physical violence over any other forms of partner violence is far more common in the literature, and accordingly, scientific knowledge about the aetiology and correlates of other forms of IPV is relatively limited. Yet (as will be illustrated below), psychological violence is more prevalent than physical violence (Dutton & Starzomski, 1993; Straus, Gelles, & Steinmetz, 1980). Furthermore, psychological violence very often accompanies physical violence (Tolman, 1992; Walker, 1984) and may lead to more damaging consequences for the victim than physical violence (Follingstad, Rutledge, Berg, Hause, & Polek, 1990;

Walker, 1984). The current thesis consequently focuses its investigation on both physical and psychological partner violence.

Physical violence is defined as intentional acts used to cause physical harm or pain to the partner (Straus, 2001), and comprises behaviours such as hitting, pushing, kicking, choking, burning, or using a knife against the partner. The concept of psychological violence, however, is not as clearly defined as that of physical violence and several terms have been used interchangeably to refer to this concept, for instance verbal aggression (Straus & Sweet, 1992) and emotional abuse (Beauchamp, 2007). Typically, psychological violence refers to verbal or nonverbal behaviours aimed at inflicting emotional pain to the partner (Straus & Sweet, 1992), and involves behaviours intended to belittle (Loring, 1994), socially isolate (Baldry, 2003), control, or coerce the partner (Lipsky & Caetano, 2009). Examples of such behaviours include, but are not limited to, name calling, destroying the partner's property, monitoring the partner's activities and social network, threats of physical violence, slamming doors, and stonewalling.

Prevalence

IPV is a universal and widely spread phenomenon as indicated by prevalence rates available in the literature (Chan, Straus, Brownridge, Tiwari, & Leung, 2008). These rates, however, tend to vary considerably due to conceptualisation, measurement, and sampling differences across studies (Lipsky & Caetano, 2009; Shorey, Cornelius, & Bell, 2008).

Several national surveys were conducted in recent years in both Canada and the United States. Such nation wide empirical efforts provide general population estimates of

IPV. For instance, in Canada, results from the 2004 General Social Survey revealed that 7% of men and women reported being a victim of physical or sexual intimate violence and 17% reported being a victim of emotional or financial abuse from a partner in the five years preceding the survey (Beauchamp, 2007). In the United States, results from the 1985 National Family Violence Survey, which used a representative sample of couples, indicated that 75% of men and women reported using emotional abuse toward their partner at least once in the past year (Straus & Sweet, 1992). Moreover, results from the 1995 National Longitudinal Couples Survey revealed that 18.2% of American men and 13.6% of American women experienced physical and sexual violence from their partner in the past year (Caetano, Cunradi, Clark, & Schafer, 2000). Finally, results from the International Dating Violence study revealed median annual rates of physical violence and sexual coercion by a romantic partner of 26% and 24% respectively in a sample of 16,000 university students recruited in 21 countries across continents (Chan et al., 2008).

Other studies, conducted using smaller community samples, also reported varying rates of physical and psychological partner violence. For instance, in a sample of French Canadian couples, 63% of men and women reported sustaining at least one act of psychological violence and 11% reported sustaining at least one act of physical violence in the past year (Lafontaine & Lussier, 2005). In samples of American undergraduate students, rates of sustained physical violence in the previous year varied from 28 to 34% in women and from 16 to 55% in men (Bookwala, 2002; Follingstad, Wright, Lloyd, & Sebastian, 1991).

Overall, these studies demonstrate the high prevalence of IPV across various samples and cultures, with psychological violence being at least twice as frequent as

physical violence. Studies indicate that psychological violence is often a precursor to and tends to co-occur with physical violence (Tolman, 1992; Walker, 1984), hence highlighting the utmost importance of examining psychological violence in addition to physical partner violence. Furthermore, the vast majority of investigations report no gender differences in violence perpetuation in community samples⁷, with women reporting as many violent acts toward their male partners as men towards their female partners (Archer, 2000; Straus, 2009; Straus & Ramirez, 2007). This phenomenon, termed gender symmetry in the IPV literature, strongly supports the study of female violence, which has largely been neglected in past literature and has only recently begun to be investigated more systematically. The second article of this thesis addressed these limitations in past research by examining both psychological and physical partner violence as well as male and female violence.

Theoretical approaches to the study of IPV

In the past thirty years, various theories have been developed and used to explain the occurrence of IPV and identify its correlates. The following section presents a brief overview of major theoretical frameworks used in the study of IPV.

Sociocultural theories

Sociocultural theories of IPV look at the global social context to explain the occurrence of partner violence, typically male violence toward female partners. For instance, the social role theory postulates that men who identify more strongly with a

⁷ It is important to differentiate between common violence (occasional and less severe, typically observed in community samples, and equally perpetrated by men and women) and patriarchal terrorism (severe and frequent violence systematically perpetrated by men toward their female partners; Johnson, 1995). Gender symmetry is observed for common violence but not for patriarchal terrorism. The current thesis is concerned with common violence observed in a community-based sample.

traditionally masculine gender identity are more likely to express aggression and use violence because such behaviours are perceived by society as typical masculine behaviours (Woodin & O’Leary, 2009). The feminist perspective also falls under this theoretical umbrella and suggests that patriarchal values and norms ascribe men with the right to control and dominate women (Dobash & Dobash, 1979). Accordingly, aggression is used by men to exert control over women and ensure their subordination. From this perspective, IPV is a global and societal problem, rather than an individual and psychological problem (Bartholomew & Allison, 2006).

Although well-developed from a theoretical standpoint, sociocultural theories have been largely criticised in recent years. Among the shortcomings identified in the literature are the failure to account for the well-documented gender symmetry in IPV in community samples, the lack of studies addressing patriarchal elements in female violence, accumulating empirical evidence for the relationship between *low* power and use of violence in men, the frequent mutuality of violence in relationships, and women’s use of violence for reasons other than self-defence (Bartholomew & Allison, 2006; Shorey et al., 2008; Woodin & O’Leary, 2009).

Intrapersonal theories

Contrary to sociocultural perspectives that conceptualise IPV as a global societal problem, intrapersonal theories focus on individual differences and risk factors for the development of partner violence. Various factors inherent to individuals have been evaluated as potential candidates for explaining IPV, for instance substance and alcohol abuse, self-esteem, communication strategies and anger management, negative attributions, psychopathology, as well as genetic predispositions (Bartholomew &

Allison, 2006; Woodin & O'Leary, 2009). Some of these factors received more empirical support than others, for example, the link between anger/hostility and male physical violence (Norlander & Eckhardt, 2005), the finding that partner violence frequently occurs following high consumptions of alcohol (Caetano, Schafer, & Cunradi, 2001; Brookoff, O'Brien, Cook, Thompson, & Williams, 1997), and the higher risk of IPV in individuals with personality disorders (Dutton, 1995).

Intrapersonal theories possess advantages over the sociocultural perspective because they contribute to explain why some individuals are more likely than others to engage in violent behaviours in their intimate relationships. They also address both male and female violence (Bartholomew & Allison, 2006). Yet, such theories fall short in some respects as they do not consider the dyadic context in which violence occurs and fail to appreciate the contribution of the partner in the development of IPV (Bartholomew & Allison, 2006). This later limit may be particularly problematic as empirical evidence demonstrates that IPV is very often mutual and not unidirectional (Straus, 2009; Straus & Ramirez, 2007; Stets & Straus, 1990). Consequently, considering the relationship dynamic in which violence takes place is especially important to understand factors that lead to and maintain IPV.

Interpersonal theories

The interpersonal theories examine how individuals' interpersonal relationships influence the development of IPV. For instance, the social learning theory (Bandura, 1973) postulates that family violence is transmitted across generations through classical and operant learning mechanisms resulting from the witnessing and experiencing of violence in the family of origin (Shorey et al., 2008; Woodin & O'Leary, 2009). This

approach has received empirical support from both retrospective and prospective studies (Ehrensaft et al., 2003; O'Leary, 1988; Reitzel-Jaffe & Wolfe, 2001), but evidence also suggests that violence in the family of origin is not the sole predictor of partner violence and that other factors also contribute to the development of IPV in adulthood (Shorey et al., 2008; Stith et al., 2000).

Another large body of research focused on examining factors inherent to the relationship in which IPV occurs and, although not as strongly theoretically based (Wooding & O'Leary, 2009), this approach found substantial evidence for a significant relationship between low relationship satisfaction as well as high relationship discord and IPV, as indicated by a recent meta-analysis (Stith, Green, Smith, & Ward, 2008). Distressed couples are also considerably more likely to experience partner violence than nondistressed couples, as suggested by a study revealing that 60% of couples entering couple therapy reported physical violence in the previous year (Ehrensaft & Vivian, 1996; cited in Wooding & O'Leary, 2009).

Finally, the attachment theory (Bowlby, 1969/1982, 1973, 1980) is now a well-established framework for the study of IPV, and examines both early childhood experiences with caregivers (Babcock, Jacobson, Gottman, & Yerington, 2000; Holzworth-Munroe, Stuart, & Hutchinson, 1997) and current attachment relationships with romantic partners to explain adult partner violence (Bookwala, 2002; Lafontaine & Lussier, 2005). In this perspective, IPV is understood as a dysfunctional response *resulting from unmet attachment needs in the romantic relationship*. Of particular interest to this approach is that it is not gender specific and accounts for both male and female violence. Moreover, both perpetuation and victimisation of IPV can be understood within

an attachment theoretical framework. Finally, the dyadic context in which violence takes place is also addressed by this approach (Bartholomew & Allison, 2006).

In sum, each theory contributes to explain some aspects of IPV, but no single theoretical approach provides a comprehensive framework from which to understand IPV and which addresses societal, interpersonal/dyadic, and individual components of IPV. As a result, authors have recently urged researchers to integrate multiple theories and approaches in their study of IPV in order to formulate encompassing and multidimensional models of partner violence (Woodin & O'Leary, 2009).

The current thesis draws from intrapersonal and interpersonal frameworks to propose a theoretical model of IPV. Mainly, because of its advantages over other theoretical approaches, the current thesis adopts an attachment framework in its examination of IPV. Furthermore, it examines individual differences in empathy as a precursor of IPV. The hypothesised relationships between romantic attachment, dyadic empathy, and IPV are elaborated in details in the second article of this thesis. The presentation of the first article follows next.

Running head: MEASURING EMPATHY IN COUPLES

Measuring empathy in couples:

Validity and reliability of the Interpersonal Reactivity Index for Couples

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Abstract

The present paper included three studies aimed at adapting the Interpersonal Reactivity Index (Davis, 1980), a measure of general cognitive and emotional empathy, in order to assess empathy expressed within a romantic relationship. The factorial structure of the Interpersonal Reactivity Index for Couples was examined. Results supported the use of the two-factor measure (dyadic perspective taking and dyadic empathic concern) in three independent samples (individuals in heterosexual relationships, individuals in same-sex relationships, and partners of heterosexual couples). The IRIC also demonstrated good convergent, discriminant, concurrent, predictive, and incremental validity, as well as adequate internal consistency and stability over 18 months.

Keywords: dyadic empathy, factor analysis, reliability, validity, relationship satisfaction, heterosexual relationship, same-sex relationships.

In the past decades, empirical research in the field of marriage and couple relationships has typically focused on negative behavioral processes and emotions to explain and understand conflict and distress in intimate relationships. More recently, however, researchers have stressed the importance of studying more positive processes promoting the development of more stable relationships over time (Gable & Reis, 2001; Gonzaga, Keltner, Londahl, & Smith, 2001; Roberts & Greenberg, 2002; Snyder & Lopez, 2002). In other words, the processes that form the basis of satisfying and healthy relationships possibly differ from those that allow couples to manage conflict and distress. Nevertheless, more instruments have been developed that measure negative emotional and behavioral processes than positive processes of intimate relationships. As a result, relatively less is known about the processes that serve to maintain a climate of trust, respect, and acceptance, and to preserve intimate connections and positive regards between partners (Roberts & Greenberg, 2002).

In an effort to address this lack of literature, the purpose of the present study was to adapt and validate the Interpersonal Reactivity Index (Davis, 1980), a measure of general cognitive and emotional empathy, in order to measure empathy toward the romantic partner specifically. The precise goal was to examine the factor structure of the Interpersonal Reactivity Index for Couples (IRIC) and provide preliminary evidence of its reliability and validity in three samples of romantically involved individuals.

Historically, there has been a debate over the definition of empathy. Whereas some authors have defined empathy in emotional terms (Batson, Fultz, & Schoenrade, 1987; Bryant, 1987; Eisenberg & Strayer, 1987), other authors have defined it in cognitive terms (Hogan, 1969; Wispé, 1986). There now seems to be a general consensus

that empathy is not a unitary concept; rather, it can be expressed both cognitively and emotionally (Davis, 1994, Duan & Hill, 1996; Hoffman, 1984; Strayer, 1987). The cognitive component, also known as perspective taking, refers to the ability to understand the other's point of view or to cognitively put oneself in the other's place, without necessarily experiencing the other's emotions (Hogan, 1969). The emotional component refers to one's emotional reactions as a result of the other's emotional experience (Davis, 1983). Hence, a comprehensive definition of empathy could be one's ability to *understand and share in* the emotions of others (Cohen & Strayer, 1996). This definition integrates both cognitive and emotional components of empathy and implies perspective taking and emotional reaction to another's emotions. Another important distinction needs to be made between *general* and *dyadic* empathy. General empathy can be defined as empathic tendencies in a general social context, not specific to a particular relationship. Conversely, empathy expressed toward the romantic partner in particular is referred to as dyadic empathy (Long, 1990). The literature pertaining to the role of empathy in the romantic context is reviewed next.

From a relational standpoint, empathy would facilitate the maintenance of personal relationships (Hansson, Jones, & Carpenter, 1984; Vansteenwegen, 1998; Waldinger, Schulz, Hauser, Allen, & Crowell, 2004). That is, as partners actively try to understand and share each others' feelings, they may feel understood and validated in their relationship. In that sense, empathy may serve to maintain close bonds and enhance intimate connections between partners over time. On the other hand, a lack of empathy may lead partners to feel misunderstood and perhaps unimportant or dismissed. Over time, such perception may damage the relationship and eventually lead to its dissolution

(Long, 1993a; Waldinger et al., 2004). This may be especially true in the context of romantic relationships in which partners heavily rely on each other for compassion, support, and validation.

Research on the role of empathy in couple relationships has typically followed two distinct traditions. The first tradition has investigated empathic accuracy using an experimental paradigm that focuses on the accurate cognitive understanding of the partner's thoughts and feelings during a specific interaction (Ickes, 2001). Most of the research on empathy within romantic relationships has been done within this tradition (e.g., Simpson, Ickes, & Blackstone, 1995; Simpson, Orina, & Ickes, 2003; Thomas, Fletcher, & Lange, 1997). The second tradition has investigated empathy as a global quality using self-reported measures and has received much less attention. The current study falls within this latter tradition of research and is interested in dispositional empathy expressed within the romantic relationship as opposed to the accurate perception of the partner's thoughts and feelings in a particular instance. The small body of research contained within this second tradition of research has generally found a significant association between empathy (general and dyadic) and relationship satisfaction (Busby & Gardner, 2008; Davis & Oathout, 1987; Franzoi, Davis, & Young, 1985; Long, 1993b; Long & Andrews, 1990; Long, Angera, Carter, Nakamoto, & Kalso, 1999), as well as with other relationship adjustment variables, such as sexual satisfaction (Larson, Anderson, Holman, & Niemann, 1998), forgiveness following a partner's transgression (Fincham, Paleari, & Regalia, 2002), and divorce contemplation (Long, 1993a). Altogether, these findings provide support for the role that general and dyadic empathy might play in the maintenance and enhancement of romantic relationships.

Although both general and dyadic empathy have been linked to relationship satisfaction and maintenance, research suggests that they are not entirely overlapping concepts and that both contribute differently to relationship outcomes (Long, 1993b; Long & Andrews, 1990; Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991). Partners of both distressed and nondistressed couples have also been found to engage in more positive and less negative interactions with strangers than with their romantic partner (Birchler, Weiss, & Vincent, 1975), suggesting that although one may possess interpersonal skills, such competence may not be used effectively or consistently with the partner. To this effect, it was suggested that it may be more difficult to be empathic toward one's partner when one is personally involved in the problem or situation (such as in the context of romantic relationships), as opposed to when one is removed from the situation, as it is the case in more general social contexts (Pistrang, Picciotto, & Barker, 2001). This highlights the importance of assessing and studying relationship dispositions (e.g., dyadic empathy) and general dispositions (e.g., general empathy) separately as they are not entirely overlapping and may act as distinct mechanisms in the prediction of overall relationship adjustment.

Although several self-report measures of general empathy in adults have been developed, only one measure specifically concerned with dyadic empathy exists. That is, the Self Dyadic Perspective Taking and Other Dyadic Perspective Taking scales (Long, 1990) assess self and partner's cognitive empathy expressed within the relationship. A few measures of general marital functioning also include empathy subscales (e.g., Barrett-Lennard Relationship Inventory; Barrett-Lennard, 1962; Wampler & Powell, 1982; RELATE questionnaire; Busby, Holman, & Taniguchi, 2001), but they have

received little empirical attention and fail to differentiate between emotional and cognitive components of empathy. Thus, to this date, there exists no multidimensional measure of dyadic empathy assessing both cognitive and emotional components separately, despite some evidence suggesting that cognitive and emotional empathy may play different roles in relationship adjustment (Davis & Oathout, 1987). To address this lack of literature, this paper presents the adaptation of a scale aimed at measuring both cognitive and affective dyadic empathy. That is, the Interpersonal Reactivity Index (IRI; Davis, 1980), a widely utilised measure of general empathy, was adapted and validated for the assessment of empathy in couples (i.e., items were reworded to assess empathy toward the partner specifically). Most existing general empathy scales are unidimensional and assess either emotional (e.g., Questionnaire Measure of Emotional Empathy; Mehrabian & Epstein, 1972; Balanced Emotional Empathy Scale; Mehrabian, 2000), or cognitive empathy alone (e.g., Hogan Empathy Scale; Hogan, 1969). Others assess both components in a more global fashion (Toronto Empathy Questionnaire; Spreng, McKinnon, Mar, & Levine, 2009) or were designed for very specific populations (e.g., Empathy Quotient, Lawrence, Shaw, Baker, Baron-Cohen, & David, 2004; Jefferson Scale of Physician Empathy, Hojat et al., 2001). In contrast, a multifaceted approach was taken when developing the IRI and both components of empathy are measured separately through four different subscales, thus making it an appealing measure for the assessment of dyadic empathy. The Perspective Taking scale (PT; cognitive empathy) assesses the tendency to spontaneously adopt the psychological point of view of others. The Fantasy scale (F; cognitive empathy) measures respondents' tendencies to transpose themselves imaginatively into the feelings and actions of fictitious characters in books, movies, and

plays. The Empathic Concern scale (EC; emotional empathy) evaluates “other-oriented” feelings of sympathy and concerns for unfortunate others, and the Personal Distress scale (PD; emotional empathy) assesses self-oriented feelings of personal anxiety and unease in tense interpersonal situations. The adapted IRI, the *Interpersonal Reactivity Index for Couples* (IRIC), comprises two of these scales. The Fantasy scale was dropped due to its personal nature and its conceptual mismatch with close relationships. The Personal Distress scale was also discarded because, contrary to both perspective taking and empathic concern which are other-oriented processes and responses, personal distress is a parallel and self-oriented response (Davis, 1994). Some have also suggested that this scale may be better described as a measure of emotional self-control and may not assess a central aspect of empathy (Baron-Cohen & Wheelwright, 2004; Cliffordson, 2001). Given the interpersonal nature of couple relationships, we were primarily interested by the other-oriented nature of empathy and its impact on relationship functioning. In addition, items included in the Personal Distress scale mostly applied to “emergency situations” and it was felt that such items did not generalise as well to the relationship context. Consequently, the focus of this article is on the Perspective Taking and Empathic Concern scales, which were adapted to specifically measure cognitive and emotional empathy toward the partner (i.e., general words, such as “people”, in the original items were replaced with relationship-specific words such as “my partner”).

In specific terms, the current study examined the factor structure of the IRIC, its internal consistency, its stability, and its convergent, discriminant, concurrent, predictive, and incremental validity. Three independent samples (individuals involved in heterosexual relationships, individuals involved in same-sex relationships, and

heterosexual couples) were used in order to allow generalization of results to a wider range of couples. The contribution of this study is twofold. First, the IRIC constitutes the only available multidimensional questionnaire of empathy in couples and allows for the measurement of both cognitive and emotional dyadic empathy. Second, the IRIC adds to the relatively small collection of tools available to measure positive aspects of close relationships. Consequently, it helps to diminish the gap between our knowledge of the negative processes involved in intimate relationships and our knowledge of the positive processes that operate to maintain and enhance romantic relationships.

Hypotheses

Factorial structure and group invariance

It was hypothesized that the structure of the IRIC would replicate that of the original IRI's Perspective Taking and Empathic Concern scales: a two-factor model, each factor comprising seven items. Moreover, because cognitive and emotional aspects of empathy are presumed to be distinct yet related constructs, Davis (1980, 1983) originally observed a moderate positive correlation between general Perspective Taking and general Empathic Concern. A similar correlation was expected between Dyadic Perspective Taking and Dyadic Empathic Concern. The structure of the IRIC was also expected to be invariant across gender and relationship type (heterosexual versus same-sex).

Convergent and discriminant validity

Davis (1983) initially observed different patterns of relationships between the IRI scales and other measures of general empathy. That is, general Perspective Taking correlated higher with other measures of cognitive empathy than with other measures of emotional empathy. The reverse pattern of relationships was observed for general

Empathic Concern. Different patterns of relations were thus also expected between the two IRIC scales and other measures of empathy that served to establish convergent validity, for Dyadic Perspective Taking was expected to correlate most strongly with other measures of general and dyadic cognitive empathy and least strongly with other measures of general emotional empathy. The reverse pattern of relationships was expected for Dyadic Empathic Concern.

Furthermore, conceptually unrelated demographic variables served to establish discriminant validity. No strong association was expected between Dyadic Perspective Taking and Dyadic Empathic Concern, and participants' age, relationship duration, and annual revenue.

Concurrent and predictive validity

Because previous research consistently demonstrated a relationship between relationship satisfaction and both general and dyadic empathy (Busby & Gardner, 2008; Franzoi, Davis, & Young, 1985; Long, 1990, 1993a, 1993b; Long & Andrews, 1990; Long et al., 1999), relationship satisfaction served to establish concurrent and predictive validity of the IRIC. A positive and moderate relationship was expected between both Dyadic Perspective Taking and Dyadic Empathic Concern, and relationship satisfaction, as measured concurrently and prospectively over a 12-month period.

Incremental validity

Previous research demonstrated that general and dyadic perspective taking are not entirely overlapping constructs (Long, 1993b; Long & Andrews, 1990). Consequently, it was expected that dyadic empathy would account for additional variance in relationship satisfaction. That is, Dyadic Perspective Taking and Dyadic Empathic Concern were

expected to predict relationship satisfaction while controlling for general Perspective Taking and general Empathic Concern.

Method

Participants and procedures

To verify the replicability of our results and the validity of the IRIC, the proposed hypotheses were tested in three independent samples.

Sample 1: Individuals involved in heterosexual relationships. A sample of 922 English-speaking individuals, primarily university students (80%), involved in heterosexual intimate relationships at the time of the study completed the questionnaires. To take part in the study, participants were required to have been involved with their current partner for at least 12 months. Participants were excluded if they reported being in a same-sex relationship ($n = 6$) or if they reported having been involved in their current relationship for less than 12 months ($n = 16$). Moreover, five additional participants were excluded from further analyses because they were identified as multivariate outliers. The final sample thus consisted of 895 individuals. Demographic characteristics for this sample are summarised in Table 1.

Participants were recruited through visits to undergraduate classes at the University of Ottawa, the School of Psychology Integrated System of Participation in Research (ISPR), student associations, and local newspapers. They completed an online questionnaire package (through *Survey Monkey*, a secure website designed to collect online questionnaire data; $n = 886$) or a mailed questionnaire ($n = 14$), at their convenience. Participants recruited from newspapers and class visits were given a chance to win movie theatre gift certificates. Participants enrolled in the ISPR received course

credits. All participants completed the following questionnaires: demographic questionnaire, Interpersonal Reactivity Index, Interpersonal Reactivity Index for Couples, Balanced Emotional Empathy Scale, Self Dyadic Perspective-Taking Scale, and Dyadic Adjustment Scale – Four items. Participation required 45 minutes.

Sample 2: Individuals involved in same-sex relationships. The second sample comprised 133 English-speaking individuals involved in same-sex intimate relationships at the time of the study. Participants were recruited based on the following criteria: (a) being 18 years old or over, and (b) having been involved with the current partner for at least 12 months. Participants were excluded if they reported having been involved in their current relationship for less than 12 months ($n = 6$). One additional participant was also excluded from further analyses due to being a multivariate outlier. The final sample thus consisted of 126 individuals. Of these individuals, 85% self-identified as homosexual and 15% self-identified as bisexual. Demographic characteristics are summarised in Table 1.

Participants were recruited through events and social gatherings in the gay and lesbian community, local newspapers, and websites targeting gay and lesbian individuals, and they completed an online questionnaire package (through *Survey Monkey*). The compensation was a chance to win gift certificates for a music store. Participants completed the following questionnaires: demographic questionnaire, Interpersonal Reactivity Index for Couples, and Dyadic Adjustment Scale – Four items. Participation required 15 minutes.

Sample 3: Heterosexual couples. The third sample included 194 English-speaking heterosexual couples (388 individuals) recruited from the general community. Couples were required to meet the following criteria: (a) being 18 years old or over; (b) having

been involved with the current partner for at least 12 months, and (c) having been cohabitating with the partner for at least six months. An additional cohabitation criterion was added in this sample as an additional precaution to ensure that couples would be representative of close and stable couples in the general community. Four participants were excluded from further analyses because they were identified as multivariate outliers. The final sample thus consisted of 384 individuals.

A hundred and twenty couples were also recontacted 12 months following the first session for a follow-up session (M duration between Time 1 and Time 2 = 18 months; ranging from 11 to 42 months). Of these, 42% ($n = 100$; 46 men and 54 women) participated for a second time, 17% ($n = 40$) had separated, 11% ($n = 28$) could not be tracked down, 18% ($n = 43$) refused to participate, and 12% ($n = 29$) never returned their completed questionnaire package. Couples who participated in the follow-up session did not differ from couples who did not on demographic characteristics (age, relationship length, annual revenue) and relationship satisfaction at Time 1. Demographic characteristics for participants at both Time 1 and Time 2 are summarised in Table 1.

Couples were recruited through local newspapers, posters around town, and community events. At Time 1, these couples took part in a larger study requiring them to participate in a two-hour testing session. Partners completed a questionnaire package independently from one another. The questionnaires relevant to the present study were included in the package and took approximately 15 minutes to complete. Procedures at Time 2 were the same as those for Time 1. In order to retain as many participants as possible, however, interested participants were also given the opportunity to complete the questionnaire online (through *Survey Monkey*) or by mail if they did not wish to come to

the lab (both partners were not required to participate) ($n = 20$). Couples received \$40 for their participation in the first session and \$30 and an invitation to attend a workshop on intimate relationships for their participation in the second session. They completed the following questionnaires during each testing session: demographic questionnaire, Interpersonal Reactivity Index for Couples, and Dyadic Adjustment Scale - Four items.

Measures

Demographic Information. Participants were asked to provide personal (e.g., age, gender, ethnicity/racial background, educational level, and gross annual revenue) and relationship information (e.g., length of relationship, cohabitation, and marital status).

Interpersonal Reactivity Index (IRI; Davis, 1980). The IRI is a 28-item measure of general empathic tendencies that assesses both cognitive and emotional components of empathy. Items are evaluated on a five-point Likert scale (where 0 = does not describe me well and 4 = describes me very well). This scale yields four subscales, each including seven items: Perspective Taking (tendency to spontaneously adopt the psychological point of view of others; “I try to look at everybody’s side of a disagreement before I make a decision”), Fantasy (tendency to transpose oneself imaginatively into the feelings and actions of fictitious characters in book, movies, and plays; “I really get involved with the feelings of the characters in a novel”), Empathic Concern (other-oriented feelings of sympathy and concern for unfortunate others; “I am often quite touched by things I see happen”), and Personal Distress (self-oriented feelings of personal anxiety and unease in tense interpersonal settings; “I sometimes feel helpless when I am in the middle of a very emotional situation”). Items in each subscale are summed in order to obtain the subscale score (score range for each scale: 0 to 28) and a high score means higher fantasy,

perspective taking, empathic concern, and personal distress, respectively. For the purpose of the present study, the full scale was administered but the Fantasy and Personal Distress scales were not used in statistical analyses. The empathic concern and perspective taking scales were used to establish convergent validity. Alpha coefficients for perspective taking and empathic concern in individuals involved in heterosexual relationships were .79 and .77, respectively.

Interpersonal Reactivity Index for Couples (IRIC). The IRI was modified to assess cognitive and emotional empathic tendencies within the context of intimate relationships. The 14 items comprising the Perspective Taking and Empathic Concern scales were adapted to specifically measure empathy toward the partner. The words “people” and “somebody” were replaced with the words “my partner” and “in my relationship with my partner” (see Appendix). IRIC subscale scores are calculated as in the original IRI: items are evaluated on a five-point Likert scale (where 0 = does not describe me well and 4 = describes me very well), and each subscale score is obtained by summing its respective items. Higher scores are indicative of greater perspective taking and empathic concern. Alpha coefficients for dyadic perspective taking and dyadic empathic concern in the current samples were as follows: .84 and .74 respectively in individuals involved in heterosexual relationships; .81 and .63 respectively in individuals involved in same-sex relationships; .76 and .60 respectively in male partners of heterosexual couples; and .80 and .73 respectively in female partners of heterosexual couples.

Balanced Emotional Empathy Scale (BEES); Mehrabian, 2000). This 30-item instrument was designed to assess a person’s predisposition to vicariously experience the

emotions of others. Each item is rated on a Likert scale (where -4 = very strong disagreement, 0 = neither agreement nor disagreement and +4 = very strong agreement). The sum of all items is used as an index of general emotional empathy. A high score is indicative of high general emotional empathy (score range: -120 to 120). High scores have been found to be associated with less aggressiveness, more active listening, and greater arousal of autonomic nervous system in response to emotional stimuli (LeSure-Lester, 2000; Singer et al., 2004; Van Hasselt et al., 2005). This measure was used to establish convergent validity in Sample 1. The alpha coefficient in individuals involved in heterosexual relationship (Sample 1) was .88.

Dyadic Adjustment Scale – Four items (DAS-4; Sabourin, Valois, & Lussier, 2005). The DAS-4 is a shorter version of the original 32-item DAS (Spanier, 1976) and measures relationship satisfaction. Items are rated on varying Likert-type scales and include questions such as “How often do you discuss or have you considered divorce, separation, or terminating you relationship?” and “In general, how often do you think that things between you and your partner are going well?” The total scale score is computed by summing all items. A high score is indicative of greater relationship satisfaction (score range: 0 to 21). The scale demonstrated adequate reliability, adequate classification rate of distressed and nondistressed couples as measured by the DAS-32, and better predictive validity (couple dissolution over a two-year period) than the DAS-32 (Sabourin et al., 2005). This measure was used to establish concurrent validity. Alpha coefficients in the current samples were as follows: .70 in individuals involved in heterosexual relationships; .65 in individuals involved in same-sex relationships; .71 in male partners of heterosexual couples; and .76 in female partners of heterosexual couples.

Self Dyadic Perspective-Taking Scale (SDPT; Long, 1990). This 13-item scale was designed to assess the use of perspective taking within the context of a specific relationship. Each item is rated on a five-point Likert scale ranging from “does not describe me very well” (0) to “describes me very well” (4). The total score is obtained by summing all items (score range: 0 to 52). A high score is indicative of high dyadic perspective taking. This measure demonstrated excellent reliability (Long, 1990). It was used to establish convergent validity in Sample 1. The alpha coefficient in individuals involved in heterosexual relationships (Sample 1) was .91.

Results

Preliminary analyses

Prior to conducting the main analyses, data from all three samples were screened for missing data, multivariate outliers, and multivariate normality. Because of its ability to maximize power and its advantage over more traditional methods (e.g., case deletion, mean substitution, and regression) and single imputation (Widaman, 2006), multiple imputation was used to replace missing data. Accordingly, five complete data sets were generated for each of the samples' incomplete data set. All results presented in analyses below represent pooled parameters from these five data sets. Multivariate outliers were identified using the Mahalanobis distance and were removed from further analyses ($n = 5$ in individuals involved in heterosexual relationships; $n = 1$ in individuals involved in same-sex relationships; $n = 4$ in heterosexual couples). Multivariate non-normality was identified with Mardia's (1970) multivariate skewness and kurtosis coefficients and analyses below were adjusted accordingly.

Factor structure and group invariance

In order to determine the appropriate number of factors to retain, an exploratory factor analysis (EFA) was conducted on a randomly selected subset ($n = 200$) of the individuals involved in heterosexual relationships sample. An independent sample t-test revealed that this subset did not differ from the rest of the sample ($n = 695$) on gender, age, length of relationship, length of cohabitation (when applicable), length of marriage (when applicable), and gross annual revenue. Principal axis factoring was chosen as the extraction method for the EFA because it does not require multivariate normality. An oblimin rotation was used because factors were expected to be correlated. A two-factor solution was retained to parallel the structure of the original IRI, although one- and three-factor models were also considered but not supported. Results are presented in Table 2. Each item correctly loaded on its respective factor. Item 2's factor loading was lower than the suggested value of .30 (Bryant & Yarnold, 1995) and accordingly, was dropped from further analyses. This model explained 37.62% of the variance prior to rotation.

We then proceeded to confirm this factor structure in the second subset of individuals involved in heterosexual relationships ($n = 695$) with a confirmatory factor analysis (CFA). Because the multivariate normality assumption required for using maximum likelihood estimation procedures in CFA was violated (Floyd & Widaman, 1995), nonparametric bootstrapping (500 samples) was used. This approach only assumes that the population and sample distributions have the same basic shape (Kline, 2005). We tested the two-factor solution (13 items; see Appendix) revealed by the EFA. As indicated by Hu and Bentler (1999), several indexes were used to assess to goodness of fit of the model: the goodness of fit index (SRMR; values or .08 or less indicate a good fit

of the model), the comparative fit index (CFI; values greater than .90 indicate a reasonable fit of the data; values close to .95 or greater indicate a model that fits the data well), and the root mean square error of approximation (RMSEA; values of .06 or less indicate a model that fits well). Based on these guidelines, the fit of the model was judged adequate ($\chi^2(64, N = 695) = 263.0, p < .001$, SRMR = .055, CFI = .93, RMSEA = .067 (CI_{.90} = .058-.075). Inspection of the modification indices revealed that two pairs of items had significant correlated errors (items 7 and 9; items 3 and 8). Items 7 and 9 both fell under the dyadic empathic scale and as such, were allowed to correlate in the final model. The fit of the final model was adequate ($\chi^2(63, N = 695) = 233.0, p < .001$, SRMR = .051, CFI = .94, RMSEA = .062 (CI_{.90} = .054-.071)⁹). All remaining 13 items had significant path estimates, which ranged from .33 to .77. Standardised factor loadings are presented in Table 3. This model solution also yielded a significant moderate and positive correlation ($r = .52, p < .001$) between the two factors.

Cross validation indicates that the model is a good model if the same results can be replicated in independent samples. Accordingly, the two-factor solution found in the sample of individuals involved in heterosexual relationships was tested in our two other samples. Due to the data between male and female partners being non independent in our sample of heterosexual couples, separate CFA analyses (with maximum likelihood estimation and nonparametric bootstrapping) were conducted for male and female

⁹ The deletion of items 3 and 9, which had the lowest factor loadings, yielded slightly better model estimates in all samples (individuals involved in heterosexual relationships: $\chi^2(43, N = 695) = 125.42, p < .001$, SRMR = .039, CFI = .97, RMSEA = .053 (CI_{.90} = .042-.063); individuals involved in same-sex relationships: $\chi^2(43, N = 126) = 44.56, p = n.s.$, SRMR = .054, CFI = .97, RMSEA = .041 (CI_{.90} = .000-.080); male partners of heterosexual couples: $\chi^2(43, N = 192) = 88.64, p < .001$, SRMR = .070, CFI = .89, RMSEA = .074 (CI_{.90} = .052-.096); female partners of heterosexual couples: $\chi^2(43, N = 192) = 92.6, p < .001$, SRMR = .040, CFI = .91, RMSEA = .077 (CI_{.90} = .055-.099)). Deleting items 3 and 9, however, did not improve validity or reliability indexes. Accordingly, these two items were kept in the final IRIC questionnaire in order to keep the IRIC items closer to the original IRI items.

participants in this sample. Although slightly lower, the fit of the model for both men (χ^2 (63, $N = 192$) = 124.4, $p < .001$, SRMR = .074, CFI = .87, RMSEA = .071 (CI_{.90} = .053-.090)) and women (χ^2 (63, $N = 192$) = 145.1, $p < .001$, SRMR = .077, CFI = .83, RMSEA = .083 (CI_{.90} = .065-.100)) was judged acceptable (Brown, 2006). All items had significant path estimates; standardized factor loadings ranged from .15 to .77 in men and from .40 to .74 in women (see Table 4). The two factors were also significantly associated (Men: $r = .46$, $p < .001$; Women: $r = .53$, $p < .001$). Cross-validation using the third sample, individuals involved in same-sex relationships, yielded very similar results as well (χ^2 (43, $N = 126$) = 70.2, $p = \text{n.s.}$, SRMR = .067, CFI = .97, RMSEA = .025 (CI_{.90} = .000-.062)). All items had significant path estimates, which ranged from .21 to .73 (see Table 3); the two factors were also significantly associated ($r = .48$, $p < .001$).

In order to test for gender and type of relationship invariance, two sets of analyses were conducted. The model was first constrained to be equal between men ($n = 154$) and women ($n = 541$) in the sample of individuals involved in heterosexual relationships. That is, the unconstrained model (i.e., all parameters were free to be estimated in each group) was compared to a sequence of progressively restrictive models: the measurement weights model (i.e., equal corresponding factor loadings in both groups), the structural covariances model (i.e., equal latent factor variance and latent error variance across groups), and the measurement errors model (i.e., equal error variances across groups). Comparison of the models was done by calculating chi-square difference. If an added model restriction does not produce a significant difference in chi-square, it indicates that the fit of the model is not decreased and the compared models can be considered to be equivalent. Although the use of the chi-square statistic alone for evaluating model fit is

not recommended because it is largely dependent on sample size, chi-square statistics can be used to compare the fits of nested models in which the sample size is held constant across models (Thompson, 2004). Results indicated factorial invariance across gender (equal measurement weights; $\Delta\chi^2(11) = 13.94; p > .05$). Assuming the measurement weights model to be correct, however, the structural covariances ($\Delta\chi^2(14) = 27.64; p < .05$) and measurement errors ($\Delta\chi^2(28) = 48.22; p < .05$) models were not found to be equivalent. Equivalence at these levels is not mandatory, however, to be indicative of reasonable invariance across groups (Byrne, 2001). Note that due to non independence of the data between men and women in the sample of heterosexual couples and the small sample size of the individuals involved in same-sex relationships, gender invariance was not tested in those two samples.

Using the same procedure, the model was then constrained to be equal between individuals involved in heterosexual relationships ($n = 695$) and individuals involved in same-sex relationships ($n = 126$). Again, measurement weights were found equivalent across relationship type ($\Delta\chi^2(11) = 18.02; p > .05$), but the structural covariances ($\Delta\chi^2(14) = 36.02; p < .001$) and measurement errors ($\Delta\chi^2(28) = 118.13; p < .001$) were not equivalent.

The correlations between the two IRIC scales in each sample were calculated using scale total scores and are displayed in Table 5. Similar to the original IRI (Davis, 1980), a moderate relationship was found between Dyadic Perspective Taking and Dyadic Empathic Concern in both males and females in all three samples. As theoretically hypothesised, these results confirm that the two aspects measured by the IRIC are distinct yet related dimensions of dyadic empathy.

Reliability

Reliability coefficients for the IRIC scales in each sample are presented in Table 6. Note that due to non independence of the data from male and female partners of heterosexual couples, coefficients for the entire sample were not calculated. Alpha coefficients found for Dyadic Perspective Taking ranged from .76 to .86 and were greater than values originally found for the general Perspective Taking scale (.75-.78; Davis, 1980). Coefficients found for Dyadic Empathic Concern were notably lower in men involved in same-sex relationships and male partners of heterosexual couples at Time 1 (.55 and .60 respectively). Values found for Dyadic Empathic Concern in all other participants (ranging from .66 to .79), however, were comparable to original IRI reliability coefficients (.70-.72; Davis, 1980).

H coefficients were also calculated as another index of reliability (Hancock & Mueller, 2001). Note that *H* coefficients were not calculated for males and females involved in same-sex relationships separately, as well as for partners of heterosexual couples at Time 2 because such statistic is calculated based on parameters obtained through CFA and sample size for these groups were deemed too small to conduct such analysis. Results (presented in Table 6) indicated that *H* coefficients were higher than alpha coefficients (up to 10% increase in some cases). This point will be returned to later in the general discussion.

Convergent and discriminant validity

The IRIC scales were correlated with other indexes of general and dyadic empathy in individuals involved in heterosexual relationships (see Table 7), with consistent evidence of statistically significant correlations for Dyadic Perspective Taking

and Dyadic Empathic Concern with other measures of empathy. As expected, Dyadic Perspective Taking correlated higher with general and dyadic perspective taking (IRI general perspective taking, SDPT) than with measures of emotional empathy (BEES, IRI general empathic concern). Conversely, Dyadic Empathic Concern correlated more strongly with other measures of general emotional empathy than with general perspective taking. Both scales were also generally most strongly associated with dyadic empathy (SDPT) compared to general empathy (IRI, BEES), highlighting the distinct nature of dyadic and general empathy.

To assess discriminant validity, correlations were calculated with demographic variables that were hypothesised to be theoretically distinct from dyadic empathy in all three samples, namely, age, duration of the relationship, and gross annual revenue (Table 8). Results indicated that both Dyadic Perspective Taking and Dyadic Empathic Concern were generally weakly associated with these variables ($r < .16$).

Concurrent and predictive validity

Relationship satisfaction was used to establish concurrent validity in all three samples (Table 8). Both Dyadic Perspective Taking and Dyadic Empathic Concern showed a consistent moderate association with relationship satisfaction in men and women in each sample (r ranged from .18 to .57), except for men involved in same-sex relationships for whom there was no association between dyadic empathy and relationship satisfaction. This point is discussed in the general discussion. In general, the association between dyadic empathy and relationship satisfaction also appeared to be stronger for women than for men.

Predictive validity was examined in a subset of participants included in the sample comprised of heterosexual couples and those who participated twice in the study ($n = 100$; see Table 9). Both IRIC scales administered at Time 1 were moderately and positively associated with relationship satisfaction measured at Time 2 (r ranged from .20 to .37), except for men's Dyadic Perspective Taking scores at Time 1 which were not significantly linked to relationship satisfaction at Time 2. Given the small sample size, however, the non significant correlation of .20 could potentially have been significant in a larger sample. These results suggest the validity of the IRIC to predict relationship satisfaction over time.

IRIC stability was also assessed in couples who participated twice in the study (see Table 9). Results suggested a moderate stability of the Dyadic Perspective Taking and Dyadic Empathic Concern scales over an 18-month interval (ranged from 11 to 42 months): correlations were .61 and .59 for men and .51 and .47 for women respectively. However, Watson (2004) convincingly urged researchers to examine stability more closely, and accordingly, retest interval and relationship satisfaction at Time 2 were evaluated as potential moderators of stability. We hypothesised that longer time intervals or lower relationship satisfaction at Time 2 would predict lower stability of the IRIC. Two sets of multiple regression analyses were conducted, with Time 1 IRIC scales, time interval, and the interaction terms between Time 1 IRIC scales and time interval entered simultaneously in one analysis, and with Time 1 IRIC scales, relationship satisfaction at Time 2, and the interaction terms between Time 1 IRIC scales and Time 2 satisfaction in the other analysis. Time 2 IRIC scales were the dependent variables and analyses were conducted separately in men and women. Results yielded no significant interactions,

indicating that time interval and relationship satisfaction did not moderate the relationship between Time 1 and Time 2 IRIC scales.

Incremental validity

To evaluate incremental validity of IRIC scores, a series of hierarchical multiple regression analyses was conducted using the sample comprising individuals involved in heterosexual relationships. In each analysis, relationship satisfaction served as the criterion variable, whereas conceptually related dyadic and general empathy dimensions served as predictors. To determine whether dyadic empathy scores account for additional variance above and beyond scores from general empathy, general empathy (e.g., general perspective taking as measured by the IRI) was entered in Block 1 and dyadic empathy (e.g., *Dyadic Perspective Taking*) was entered in Block 2. Because the strength of the association between dyadic empathy and relationship satisfaction appeared to vary based on gender (see results for concurrent validity above), separate analyses were conducted for men and women. Prior to conducting analyses, multicollinearity was inspected and found not significant. Finally, the alpha level was set at .002 for each statistical analysis (i.e., .05 divided by eight regression models with three statistical tests per regression model). The primary focus of the study was on R^2 change values as indexes of effect size. Results of these analyses are presented in Table 10. All F change values reached statistical significance and R^2 change values ranged from .05 to .17. Specifically, both *Dyadic Perspective Taking* and *Dyadic Empathic Concern* accounted for additional variance in the prediction of relationship satisfaction scores in both men and women.

Discussion

The current study described the adaptation and validation of the *Interpersonal Reactivity Index for Couples* (IRIC), a measure of dyadic cognitive and emotional empathy. Results supported the use of the IRIC in various samples of individuals involved in romantic relationships, as reflected by the stability of its two-factor structure revealed through exploratory and confirmatory factor analyses. The two IRIC subscales also demonstrated preliminary evidence of convergent, concurrent, discriminant, incremental, and predictive validity, as well as reliability and stability. Moreover, psychometrics of the IRIC compared favourably with psychometrics reported for the original IRI scale (Davis, 1980).

Specifically, results from the exploratory and confirmatory factor analyses confirmed the presence of two oblique factors, namely Dyadic Empathic Concern and Dyadic Perspective Taking. The resulting model, comprised of 13 items (see Appendix), was found to have a good fit in three independent samples of individuals involved in a romantic relationship, suggesting the appropriateness of using the IRIC to measure levels of dyadic empathy in (1) young adults (primarily university students) involved in heterosexual relationships (mean age: 23 years old), (2) older adults (mostly cohabitating with the partner) involved in same-sex romantic relationships (mean age: 30 years old), and (3) older and cohabiting partners of heterosexual couples (mean age: 30 years). The factorial structure was also found to be invariant across gender and relationship type (heterosexual versus same-sex), further supporting the use of this scale in diverse samples of couples.

The internal consistency of the IRIC was found to be adequate, paralleling levels of reliability presented for the original IRI (Davis, 1980), although alpha coefficients for the Dyadic Empathic Concern scale were found to be lower than that of the Dyadic Perspective Taking scale and demonstrated greater variability across samples. Measurement of reliability, however, warrants further discussion at this point. That is, although persistently reported as a measure of internal consistency in test construction, alpha coefficients are often an underestimate of actual reliability and can be largely misleading (Sijtsma, 2009). The use of alpha also necessitates that the assumption of tau equivalence be met, meaning that all items measure the same latent trait on the same scale with the only variance unique to an item being comprised of error (Graham, 2006). This condition may be unrealistic for most test data and, unsurprisingly, was violated in the current data. This is why we elected to calculate the *H* coefficient as another reliability index for it does not require tau equivalence and may be a more accurate estimate of reliability (Hancock & Mueller, 2001). Contrary to Cronbach's alpha, the *H* coefficient is not affected by the number of items in a scale and item valence and cannot be lower than the reliability of the best indicator of the scale. Accordingly, *H* coefficients found in our samples were better than alpha coefficients and are deemed to be more adequate estimates of IRIC reliability. As per *H* coefficients, both IRIC scales demonstrated good levels of reliability.

Construct validity of the IRIC was supported through various associations between the IRIC scales and several other measures that served to establish validity. First, convergent validity was demonstrated through theoretically congruent relationships between Dyadic Perspective Taking and Dyadic Empathic Concern, and other indexes of

general and dyadic empathy. Second, discriminant validity was supported in all three samples by a pattern of non significant correlations between IRIC scales and conceptually unrelated demographic characteristics. Third, evidence of concurrent validity was provided by the consistent positive association found between IRIC scales and relationship satisfaction, indicating that individuals who generally express emotional empathy toward their partner, or who are able to take their partner's perspective, report being more satisfied with their relationship. Unexpectedly, however, dyadic empathy (cognitive and emotional) was unrelated to relationship satisfaction in men involved in same-sex relationships. It may be that empathy and sharing emotional experiences is particularly important to women and their well-being in the relationship. Men in heterosexual relationships may show empathy because it is highly valued by their female partners. Empirical findings revealed that wives' perception of their husbands' perspective taking was strongly related to wives' marital adjustment (Long & Andrews, 1990). The resulting impact on women's satisfaction may in turn have a positive influence on men's satisfaction. Men may not value empathic responding as much as women do and, in male couples, this mechanism may not exist. Also supporting this hypothesis is the fact that the strongest relationship between dyadic empathy and relationship satisfaction was observed in female couples. This hypothesis would nevertheless need to be explored further in future studies on the role of empathy in same-sex couples.

Fourth, the IRIC's predictive validity was demonstrated by the moderate association found between IRIC scores and relationship satisfaction reported by partners of heterosexual couples 18 months later. This is congruent with prior research

investigating the influence of empathy on relationships satisfaction across time (Busby & Gardner, 2008). The IRIC was also found to be moderately stable over the same period, and this stability could not be explained by the interval between assessment periods, or relationship satisfaction at Time 2. Variability in dyadic empathy over time may thus be attributable to measurement error, but true change in dyadic empathy is also possible over this time period and other variables not assessed in the current study could account for this change.

Finally, the IRIC scores demonstrated good incremental validity in that Dyadic Perspective Taking and Dyadic Empathic Concern accounted for additional variance in the prediction of relationship satisfaction scores in both men and women. This supports previous research and highlights the importance of more closely examining the relationship between dyadic empathy and relationship satisfaction, as well as other adjustment variables in couple relationships.

Limitations

Methodological shortcomings were identified in the current study and require attention. Although an effort was made to survey a wide range of romantically involved individuals by including three independent samples in this study, most participants self-identified as Caucasian, were recruited in the same community, and generally reported being in well-adjusted relationships. It is unknown whether the psychometrics reported here would generalise to samples of distressed couples or couples coming from different socio-economic or cultural backgrounds. Additional studies will be necessary to replicate the current findings in different age groups (e.g., elderly), cultural groups, and clinical populations.

Moreover, the high attrition rate and resulting small sample size in the follow-up study involving heterosexual couples also limit conclusions that can be drawn concerning the predictive validity and stability of the IRIC. That is, although couples who participated in the follow-up session and those who did not participate did not differ on demographic variables and relationship satisfaction at Time 1, they may have been different on variables such as satisfaction at the time of the follow-up session, thus potentially attenuating the relationship between IRIC scores at Time 1 and satisfaction at Time 2. Furthermore, although we attempted to identify moderators of the IRIC scales stability over time, the lack of power may have prevented us from finding significant relationships between stability, retest interval, and satisfaction. Future studies should examine the stability of the IRIC using varying test-retest intervals to disentangle measurement error from true change in dyadic empathy (Watson, 2004). Factors predicting change in empathy over time should also be identified.

Conclusion

In sum, the preliminary results presented in the current article suggest that the IRIC is a valid instrument for assessing dyadic cognitive and emotional empathy in diverse types of couples, and support the use of a multidimensional approach in the study of empathy in couples. The current study also contributes to increasing the relatively small fund of tools aimed at assessing positive processes which promote the maintenance of close and intimate bonds between romantic partners.

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Table 1. Demographic characteristics of participants.

Samples	Women (%)	Age <i>M (SD)</i>	Relationship duration <i>M (SD)</i>	Cohabiting with the partner (%)	Cohabitation duration (When applicable) <i>M (SD)</i>	Married (%)	Marriage duration (When applicable) <i>M (SD)</i>	Annual gross revenue <i>M (SD)</i>
Individuals in heterosexual relationships (<i>n</i> =895)	77%	23.17 years (7.00)	3.77 years (4.38)	35%	4.61 years (6.30)	14%	7.87 years (8.42)	18 190\$ (25 272)
Individuals in same-sex relationships (<i>n</i> =126)	68%	30.89 years (11.01)	4.70 years (5.09)	66%	5.15 years (5.53)	N/A	N/A	37 778\$ (25 175)
Heterosexual couples at Time 1 (<i>n</i> =384)	50%	30.87 years (9.99)	5.76 years (7.38)	100%	4.34 years (7.40)	25%	9.42 years (12.14)	37 711\$ (23 825)
Heterosexual couples at Time 2 (<i>n</i> =100)	54%	31.10 years (10.88)	6.21 years (6.93)	100%	4.60 years (7.30)	36%	6.72 years (9.76)	36 177\$ (25 197)

Table 2. Exploratory factor analysis (principal axis factoring) with oblimin rotation performed on 200 individuals involved in heterosexual relationships.

IRIC items	Factors	
	1 Dyadic Perspective Taking	2 Dyadic Empathic Concern
2. ^a	-.26	.18
4.	.66	-.08
6.	.60	-.18
8.	-.35	.04
11.	.72	-.06
13.	.86	.17
14.	.79	.13
1.	.00	.42
3.	-.10	-.38
5.	.02	.56
7.	-.05	-.71
9.	-.07	-.62
10.	.21	.54
12.	.27	.36

Note. Primary loadings are bolded for ease of readability; ^a due to a factor loading below .30, this item was omitted in further analyses.

Table 3. Confirmatory factor analyses performed on individuals in heterosexual relationships and individuals in same-sex relationships.

IRIC items	Individuals in heterosexual relationships ($n = 695$)		Individuals in same-sex relationships ($n = 126$)	
	Factors			
	Dyadic Perspect. Taking	Dyadic Empathic Concern	Dyadic Perspect. Taking	Dyadic Empathic Concern
4.	.71		.63	
6.	.74		.71	
8.	-.47		-.56	
11.	.77		.55	
13.	.75		.70	
14.	.72		.73	
1.		.58		.67
3.		-.45		-.21
5.		.54		.54
7.		-.59		-.44
9.		-.33		-.29
10.		.70		.53
12.		.56		.50

Note. Items with a negative valence are indicative of negatively worded items and their coding need to be reversed when calculating scale total scores.

Table 4. Confirmatory factor analyses performed in male and female partners of heterosexual couples.

IRIC items	Men (<i>n</i> = 192)		Women (<i>n</i> = 192)	
	Factors			
	Dyadic Perspect. Taking	Dyadic Empathic Concern	Dyadic Perspect. Taking	Dyadic Empathic Concern
4.	.56		.70	
6.	.69		.73	
8.	-.42		-.41	
11.	.66		.69	
13.	.77		.74	
14.	.55		.64	
1.		.52		.56
3.		-.15		-.49
5.		.64		.47
7.		-.24		-.46
9.		-.37		-.58
10.		.53		.59
12.		.54		.57

Note. Items with a negative valence are indicative of negatively worded items and their coding need to be reversed when calculating scale total scores.

Table 5. Correlations between Dyadic Perspective Taking and Dyadic Empathic Concern in men and women.

Sample	Males	Females
Individuals involved in heterosexual relationships	.47*	.37*
Individuals involved in same-sex relationships	.37*	.35*
Heterosexual couples	.37*	.45*

Note. * $p < .05$.

Table 6. Reliability coefficients for IRIC subscales in all samples.

Samples	<i>n</i>	Dyadic Perspective Taking (6 items)		Dyadic Empathic Concern (7 items)	
		α	<i>H</i>	α	<i>H</i>
Individuals in					
heterosexual relationships	695	.84	.86	.74	.76
Men	154	.86	.89	.79	.82
Women	541	.81	.85	.71	.74
Individuals in same-sex					
relationships	126	.81	.82	.63	.70
Men	40	.79	n/a	.55	n/a
Women	86	.81	n/a	.66	n/a
Heterosexual couples T1					
Men	192	.76	.81	.60	.68
Women	192	.80	.84	.73	.74
Heterosexual couples T2					
Men	46	.78	n/a	.68	n/a
Women	54	.86	n/a	.70	n/a

Table 7. IRIC convergent validity correlations with other empathy measures in individuals involved in heterosexual relationships ($n = 695$).

	Dyadic Perspective		Dyadic Empathic	
	Taking		Concern	
	Males	Females	Males	Females
General emotional empathy (BEES)	.33*	.25*	.47*	.24*
General perspective taking (IRI)	.66*	.65*	.30*	.21*
General Empathic concern (IRI)	.41*	.28*	.49*	.34*
Self Dyadic perspective taking (SDPT)	.73*	.68*	.47*	.44*

Note. BEES = Balanced Emotional Empathy Scale; IRI = Interpersonal Reactivity Index; SDPT = Self Dyadic Perspective Taking scale. * $p < .05$.

Table 8. IRIC concurrent and discriminant validity correlations in all three samples.

	Dyadic Perspective		Dyadic Empathic	
	Taking		Concern	
	Males	Females	Males	Females
Individuals involved in heterosexual relationships ($n = 154$ males; 541 females)				
Concurrent validity				
Relationship satisfaction (DAS-4)	.31*	.25*	.39*	.42*
Discriminant validity				
Age	.00	.05	.00	-.05
Length of relationship	-.08	.02	-.03	.01
Gross annual revenue	.10	.03	-.09	.01
Individuals involved in same-sex relationships ($n = 40$ males; 86 females)				
Concurrent validity				
Relationship satisfaction (DAS-4)	.15	.48*	.00	.57*
Discriminant validity				
Age	.16	-.03	-.01	-.11
Length of relationship	.00	-.15	.09	.04
Gross annual revenue	.08	-.04	-.02	-.07
Heterosexual couples ($n = 192$ males; 192 females)				
Concurrent validity				
Relationship satisfaction (DAS-4)	.18*	.32*	.23*	.54*
Discriminant validity				
Age	-.07	-.06	-.16*	-.13
Length of relationship	-.13	-.07	-.10	-.05
Gross annual revenue	-.10	-.04	-.16*	-.05

Note. DAS-4 = Dyadic Adjustment Scale 4 items. * $p < .05$.

Table 9. IRIC predictive validity and test-retest stability correlations in heterosexual couples ($n = 46$ males, 56 females).

Variables at Time 1	Dyadic Perspective Taking		Dyadic Empathic Concern	
	Males	Females	Males	Females
Relationship Satisfaction (DAS-4)	.20	.37*	.36*	.30*
Dyadic Perspective Taking	.61*	.51*	.29*	.16
Dyadic Empathic Concern	.22	.33*	.59*	.47*

Note. DAS-4 = Dyadic Adjustment Scale 4 items. * $p < .05$.

Table 10. Incremental validity of IRIC scales as predictors of relationship satisfaction in individuals involved in heterosexual relationships.

	R	R ²	ΔR^2_{chg}	F Test			F Analysis		
				F	df	p	ΔF	p	p
Block/Predictor variables									
Men (n = 154)									
Perspective Taking									
1	.14	.02		3.19	1, 152	.076			
2	.36	.13	.11	11.03	2, 151	<.002	18.51		<.002
Empathic Concern									
1	.08	.01		1.04	1, 152	.339			
2	.41	.17	.16	15.21	2, 151	<.002	29.19		<.002
Women (n = 541)									
Perspective Taking									
1	.12	.02		8.44	1, 539	.004			
2	.25	.06	.05	18.44	2, 538	<.002	28.03		<.002
Empathic Concern									
1	.10	.01		5.15	1, 539	.032			
2	.42	.18	.17	58.82	2, 538	<.002	111.43		<.002

APPENDIX

Interpersonal Reactivity Index for Couples

The following statements inquire about your thoughts and feelings in a variety of situations occurring in your relationship with your partner. For each item, indicate how well it describes you by circling the appropriate number.

Empathic concern scale:

1. I often have tender, concerned feelings for my partner when he/she is less fortunate than me.
2. Sometimes I don't feel very sorry for my partner when he/she is having problems.
4. When I see my partner being taken advantage of, I feel kind of protective towards him/her.
6. My partner's misfortunes do not usually disturb me a great deal.
8. When I see my partner being treated unfairly, I sometimes don't feel very much pity for him/her.
9. I am often quite touched by things I see happen in my relationship.
11. In my relationship with my partner, I would describe myself as a pretty soft-hearted person.

Perspective taking scale:

3. I try to look at my partner's side of a disagreement before I make a decision.
5. I sometimes try to understand my partner better by imagining how things look from his/her perspective.
7. If I'm sure I'm right about something, I don't waste much time listening to my partner's arguments.
10. In my relationship, I believe that there are two sides to every question and try to look at them both.
12. When I'm upset at my partner, I usually try to "put myself in his/her shoes" for a while.
13. Before criticizing my partner, I try to imagine how I would feel if I were in his/her place.

Scoring. Items are rated on the following scale: 0 = Does not describe me well; 4 = Describes me very well. Items 2, 6, 7, and 8 are reverse coded. Items in each scale are summed in order to obtain scale total scores.

Running Head: ROMANTIC ATTACHMENT AND DYADIC EMPATHY

Romantic attachment and dyadic empathy: A dyadic approach to the study of intimate partner violence using multilevel modeling

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Abstract

The mediating role of dyadic empathy in the relationship linking romantic attachment and psychological and physical intimate partner violence was examined in 193 couples. Partners completed the Interpersonal Reactivity Index for Couples and the Revised Conflict Tactics Scales. Attachment was assessed through self-report (Experiences in Close Relationships) and observed secure base use during a conflict interaction (Secure Base Scoring System). Multilevel analyses revealed that attachment avoidance and anxiety were significantly and negatively related to dyadic empathy. Attachment dimensions and dyadic empathy were also significantly related to both types of violence. Dyadic empathy significantly mediated the relationship between avoidance of intimacy and psychological violence in women. Observed secure base use was unrelated to dyadic empathy or violence. Findings support hypothesized relationships and are discussed within an attachment framework.

Keywords: romantic attachment, dyadic empathy, psychological violence, physical violence, behavioral observation, multilevel analyses.

For many, the use of emotional abuse and physical aggression against a loved one is incomprehensible and unconceivable. Yet, intimate partner violence is most regrettably part of many couples' life. In 2006, 38,000 incidents of physical or sexual intimate violence were reported to police, accounting for 15% of all violent incidents reported to police across Canada (Bressan, 2008). Results from the 2004 General Social Survey revealed that 7% of Canadian men and women reported being a victim of physical or sexual intimate violence and 17% reported being a victim of emotional or financial abuse from a partner in the five years preceding the survey (Beauchamp, 2007). Results from the International Dating Violence study, which included 16,000 university students recruited in 21 countries across all continents, revealed median annual rates of physical violence and sexual coercion by a romantic partner of 26% and 24% respectively (Chan, Straus, Brownridge, Tiwari, & Leung, 2008). Other studies reported at least one incident of psychological violence in the past year in 51% to 75% of Canadian and American men and women (Lafontaine, Brassard, & Lussier, 2006; Lafontaine & Lussier, 2005; Straus & Sweet, 1992).

The alarming rates of intimate partner violence reported across studies have led researchers to seek to better understand the phenomenon through the study of various psychosocial factors. Among the theoretical perspectives examined, the attachment theory (Bowlby 1969/1982, 1973, 1980) has proven to be a fruitful avenue to understand relationships in which intimacy and love coexist with abuse and aggression. The mechanisms by which attachment relates to intimate partner violence, however, need to be explored and understood further (Bartholomew & Allison, 2006; Gosselin, Lafontaine, & Bélanger, 2005). The current study sought to investigate one such mechanism: mainly,

the mediating role that dyadic empathy might play in the relationship linking romantic attachment and psychological and physical intimate violence.

Attachment and intimate partner violence

From a theoretical standpoint, the attachment system serves to protect individuals in times of stress and adversity through proximity seeking behaviors toward caring and supportive others. In childhood, attachment figures' availability and care consistency promote the development of a sense of attachment security, leading to positive expectations of the world and a sense of self-efficacy in children. Conversely, attachment figures' prolonged care inconsistency and negligence promote attachment uncertainty and mistrust, leading to a negative view of others and a sense of unworthiness in children. With time, early attachment experiences generalize and are consolidated into internal working models of self and others. Through these models, relationship patterns are reinforced and maintained over time, and thus tend to become resistant to dramatic change in adulthood (Bowlby, 1979). These models then operate as cognitive filters and serve to regulate, interpret, and predict attachment-related behaviors, thoughts, and feelings about both attachment figures and others in general, as well as the self (Bretherton & Munholland, 1999; Collins & Read, 1994). In adulthood, the attachment system is especially important in the context of romantic relationships, in which partners become each other's primary attachment figure (Hazan & Shaver, 1987).

From an attachment perspective, anger and aggression occurring within romantic relationships have been conceptualized as an adult parallel to infants' angry protests resulting from unmet attachment needs (Dutton, Saunders, Starzomski, & Bartholomew, 1994; Lafontaine & Lussier, 2005). In this later context, anger is functional and serves to

promote proximity with the caregiver and restore a sense of security in the child. Functional anger, however, may translate into aggressive behaviors in children whose attachment needs are chronically frustrated (Greenberg, DeKlyen, Speltz, & Endriga, 1997). In a very similar manner, adults who are insecurely attached to their partner may use dysfunctional anger, translating into psychological and physical violence toward their partner, when they perceive the relationship to be threatened and ultimately, to restore their sense of security in the relationship (Maysless, 1991). In particular, insecure adult attachment is manifested through anxiety over abandonment and avoidance of intimacy (Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998). These two dimensions are believed to be distinctively related to intimate violence however. Specifically, highly anxious individuals (preoccupied and fearful attachment styles) desire complete intimacy with their romantic partner. Because they are concerned with issues of self-worth and lovability (negative model of self), however, they have a chronic fear of abandonment. Consequently, they may be more likely to blame and criticize (psychological violence) and use physical aggression toward their partner to signal unmet needs of closeness in the relationship (Bowlby, 1988). Conversely, avoidant individuals (dismissing and fearful attachment styles) are less likely to overtly express anger (Maysless, 1991), but they may become violent to keep the partner at distance and avoid intimacy, because they have learned that closeness means being hurt and rejected (negative model of others).

Consistent with the theory, past research has demonstrated an association between insecure adult and romantic attachment and the perpetuation of both psychological and physical intimate violence (Gosselin et al., 2005). Specifically, several studies revealed

that an insecure attachment, particularly the preoccupied and fearful attachment styles, predicts men's use of psychological (Dutton et al., 1994; Hendersen, Bartholomew, Trinke, & Kwong, 2005) and physical violence toward their partner (Babcock, Jacobson, Gottman, & Yerington, 2000; Bookwala & Zdaniuk, 1998; Dutton, Starzomski, & Ryan, 1996; Kesner & Mckenry, 1998; Hendersen et al., 2005; Holtzworth-Munroe, Stuart, & Hutchinson, 1997; Rogers, Bidwell, & Wilson, 2005). Avoidance of intimacy and anxiety over abandonment were also found to relate to their use of psychological (Lafontaine & Lussier, 2005; Lawson, 2008) and physical violence (Doumas, Pearson, Elgin, & McKinley, 2008; Lawson, 2008). Although far fewer studies have investigated female intimate violence, similar results were observed for women. That is, anxiety over abandonment and a preoccupied style were both found to predict their use of psychological violence (Hendersen et al., 2005; Lafontaine & Lussier, 2005), whereas fearful, preoccupied, and dismissing styles, as well as anxiety over abandonment were found to predict their use of physical violence (Doumas et al., 2008; Lafontaine & Lussier, 2005; Rogers, et al., 2005). Overall, these results are strong evidence for the relationship between insecure adult and romantic attachment, especially anxiety over abandonment, and the use of psychological and physical partner violence in both men and women.

Attachment and empathy

As described previously, the attachment theory has proven useful to explain how early attachment figures' response to individuals' needs shapes their expectations of others' responsiveness and availability for support in the future. Attachment theory, however, can also provide a framework to understand and explain individuals' reaction to

others' needs and distress. Mainly, the caregiving system, believed to be complementary to the attachment system (Bowlby, 1969), serves to alleviate distress, provide protection, and promote a sense of security in individuals who are either chronically dependant (e.g., a child) or temporarily in need (e.g., a romantic partner). This system is especially important in the context of adult romantic relationships, as partners both turn to each other for comfort and security in times of stress and both provide each other support and protection when needed. According to Bowlby (1969), the attachment system would exert a strong influence on the caregiving system and would inhibit this later system in times of stress and when one needs protection from others. In such circumstances, more egoistic motives would cause people to turn to others, first hoping to restore their own sense of security, before they can effectively attend to others' distress and need for comfort. In this view, it is only when a sense of security is restored, or when one already possesses sufficient attachment security, that the caregiving system may be activated when witnessing distressed others (Mikulincer & Shaver, 2005a).

Empathy, defined as one's ability to understand (cognitive component) and share in another's emotional experience (emotional component; Cohen & Strayer, 1996), would be part of the caregiving system and would serve as a mechanism through which distress and needs in others can be recognized and attended to (Mikulincer et al., 2001; Mikulincer & Shaver, 2005a; Mikulincer, Shaver, Gillath, & Nitzberg, 2005). As a person feels empathy for someone else, the likelihood of providing help and comfort to that other person increases (Batson & Shaw, 1991; Eisenberg & Fabes, 1990). Just as the overall caregiving system, however, empathic responses can be altered or suppressed by attachment insecurity (Feeney & Collins, 2001; Gillath et al., 2005). On the one hand,

highly anxious individuals tend to be overly preoccupied with their own attachment needs and distress due to their chronic fear of rejection (Collins & Read, 1994). This may leave them with little cognitive resources to emotionally share their partner's distress or attend to their needs, and eventually preventing them from providing effective caregiving (Mikulincer et al., 2001; Mikulincer & Shaver, 2007). On the other hand, highly avoidant individuals constantly doubt that others will be there to support them in times of need. As a result, they may be less likely to perceive their partner as deserving their help, to express empathy, and to reciprocate supportive behaviors (Mikulincer et al., 2001; Mikulincer & Shaver, 2007). For these individuals, a lack of empathy may also serve to keep their partner at distance, preventing them from becoming too intimate and precluding future dependency. Conversely, securely attached individuals are not preoccupied with issues of self-worth, which may free resources to attend to their partner's need for security, and lead to more empathic responses toward them. They also perceive their partner to be available when needed and as such, may be more likely to believe that their partner also deserves their compassion and help (Mikulincer et al., 2001; Mikulincer & Shaver, 2007).

Although several studies provided support for the relationship between attachment and caregiving behaviors (e.g., Feeney, 1996; Feeney & Collins, 2001; Kuncze & Shaver, 1994; Mikulincer, Shaver, Gillath, & Nitzberg, 2005; Simpson, Rholes, & Nelligan, 1992), only a few studies have specifically investigated the relationship between attachment and empathy in adults. That is, as theory suggests, attachment security was found to be positively related to dispositional empathy whereas avoidance of intimacy and anxiety over abandonment were found to be negatively associated with dispositional

empathy (Britton & Fuendeling, 2005; Corocoran & Mallinckrodt, 2000; Joireman, Needham, & Cummings, 2001; Trusty, Ng, & Watts, 2005). High avoidance was also found to be negatively related to empathy for the bereaved following the September 11th attacks, whereas a curvilinear relationship was uncovered between anxious attachment and empathy, with people scoring in the middle of the attachment anxiety scale reporting greater empathy for the bereaved than those scoring at the lower or higher ends of the scale (Wayment, 2006). Finally, dispositional (low anxiety and low avoidance) and experimentally enhanced (through priming procedures) attachment security both predicted compassionate feelings following the reading of a story about a student's misfortune (Mikulincer et al., 2001), as well as empathy and helping in an experimental situation involving a confederate in distress (Mikulincer et al., 2005). In sum, these studies support the relevance of studying empathy from an attachment perspective. To our knowledge, however, no study has examined whether attachment influences empathic disposition in the context of romantic relationships.

Empathy and violence

Although several studies established the relationship between empathy and prosocial and altruistic behaviors (e.g., Batson, Elklund, Chermok, Hoyt, & Ortiz, 2007; Batson, Fultz, & Schoenrade, 1987; Batson & Shaw, 1991; Eisenberg & Fabes, 1990; Eisenberg & Miller, 1987; Graziano, Habashi, Sheese, & Tobin, 2007; Rushton & Sorrentino, 1981), another body of research investigated the association between empathy (lack of) and interpersonal aggression and antisocial behavior. Most notably, this research tradition led to the publication of two meta-analyses supporting the view that low dispositional empathy is related to externalizing, aggressive, and antisocial behavior in

older children, adolescents, and adults (Miller & Eisenberg, 1988), as well as offending (Jolliffe & Farrington, 2004). Other researchers also demonstrated that cognitive empathy (i.e., perspective taking) inhibited interpersonal aggression in an experimental setting (Richardson, Hammock, Smith, Gardner, & Signo, 1994) and found evidence that low empathy is related to dating violence and sexual aggression in samples of adolescents and male college students (Christopher, Owens, & Stecker, 2006; McCloskey & Lichter, 2003). Overall, based on previous literature, evidence for the relationship between low empathy and aggression is strong. Whether an equally strong relationship exists between empathy and intimate partner violence requires further exploration, however, as only two studies related empathy to intimate violence (physical or sexual; Christopher et al., 2006; McCloskey & Lichter, 2003), and no study investigated this relationship in samples of couples or in women.

The current study

The previous literature suggests a theoretical link between adult attachment, empathy, and intimate violence, but no study attempted to verify a more complex model, which includes the examination of both the direct and indirect relationships among these variables. Several other limitations can be identified from the previous review. First, the majority of studies focused their investigation on male violence despite evidence indicating that men and women in the general community use comparable rates of violence against each other (Archer, 2000; Chan et al., 2008; Straus, 2009; Straus & Ramirez, 2007) and that violent behavior is often reciprocal in couples from the community (Straus, 2009; Straus & Ramirez, 2007). Moreover, distinct models of intimate violence have been identified in men and women (Lafontaine & Lussier, 2005;

Roberts & Noller, 1998), supporting the view that both male and female violence should be examined. Second, only a minority of studies explored the relationship between attachment and psychological violence (Dutton et al., 1994; Hendersen et al., 2005; Lafontaine & Lussier, 2005; Lawson, 2008), with most studies focusing on physical violence. Yet, psychological violence is more prevalent than physical violence (Dutton & Starzomski, 1993; Straus, Gelles, & Steinmetz, 1980), is often a precursor of physical violence (Walker, 1984), may be more harmful than physical violence (Follingstad, Rutledge, Berg, Hause, & Polek, 1990; Walker, 1984), and has different consequences on the victims' well-being (Arias & Pape, 1999; Baldry, 2003). Third, studies examining adult attachment and empathy all used measures of general empathic disposition, but none looked at empathy expressed toward the partner specifically (*i.e.*, dyadic empathy) in samples of couples. Previous studies demonstrated that general empathic disposition and dyadic empathy are not entirely overlapping and relate differently to relationship outcomes (Long & Andrews, 1990; Long, 1993; Péloquin & Lafontaine, *in press*; Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991). Finally, studies mostly used self-report measures to assess attachment (with the exception of Babcock et al., (2000) and Hendersen et al., (2005) who used interviews). Despite their susceptibility to social desirability and recall biases, these measures have been deemed adequate for the study of attachment as numerous studies have found theoretically predictable relationships between self-reports of adult attachment and measures of implicit and unconscious attachment processes (Mikulincer & Shaver, 2007). Yet, such measures do not provide direct access to actual attachment behaviors (Lafontaine & Bélanger, 2003). The use of an observational protocol and a behavioral coding scheme to assess attachment behaviors

as a complement to self-report measures of attachment would address this limitation. To this date, no study used such methodology to investigate the link between attachment and intimate violence.

In an effort to address the literature's shortcomings, the current study examined the mediating role that dyadic empathy (cognitive and emotional) might play in the relationship linking romantic attachment and men and women's use of psychological and physical intimate violence in a sample of couples recruited in the general community. Romantic attachment was assessed through means of self-report and observed secure base use during a filmed conflict discussion between partners. We hypothesized that (1) attachment insecurity (high anxiety over abandonment, high avoidance of intimacy, poor secure base use) would be related to low levels of dyadic empathy (cognitive and emotional components); (2) attachment insecurity would also be related to the use of psychological and physical intimate violence; (3) low dyadic empathy would be related to more self-reported violent behavior (psychological and physical) perpetuated toward the partner in the past year; and (4) the relationship between attachment insecurity and intimate violence would be nonsignificant (or significantly weakened) when adding dyadic empathy as a mediator in the analyses. In other words, insecurely attached individuals (i.e., high avoidance or high anxiety) would generally report less empathy toward their partner. This lack of perspective taking and empathic concern for the partner would in turn be related to a greater likelihood of using psychological or physical intimate violence during conflict situations in the relationship. The moderating effect of gender on this model was also examined, although no specific hypotheses were put

forward a priori. These hypotheses are illustrated in Figures 1. Multilevel analyses were used to test proposed hypotheses.

“Figure 1 about here”

Method

Participants

The sample included 193 English-speaking heterosexual couples (386 individuals) recruited from the general community based on the following criteria: (a) be 18 years old or older; (b) having been involved in the current relationship for at least 12 months; and (c) having been cohabitating for at least 6 months. The cohabitation criterion served to ensure that couples were representative of close and stable couples in the general community. On average, partners had been involved in the current relationship for 6 years (ranging from 1 to 59 years) and cohabiting for 4 years (ranging from 6 months to 54 years). Twenty-five percent were married and 27% had children (mean number of children = 1.6). Partners' mean age was 31 years (ranging from 18 to 78 years). They were primarily Caucasian (84%), had a university degree (60%), and their individual average annual income was \$38,000 (Canadian dollars). Analyses involving self-reported attachment were based on this entire sample.

Behavioral coding of attachment behaviors was available for a subset of couples ($n = 85$ couples; see section on Secure Base Scoring System). These couples did not differ from the overall sample on age, duration of relationship and cohabitation, but fewer individuals reported being Caucasian (80%) and having a university degree (56%), and more reported being married (29%). The average gross annual revenue was also slightly

lower (\$36,000) in this subsample. Analyses involving behavioral attachment were based on this subset of couples.

Procedures

Couples were recruited through local newspapers, posters around town, and community events to participate in a large study on relationship functioning. They were invited to take part in a 2½-hour testing session during which they completed questionnaires and participated in a 15-minuted filmed discussion on a topic of conflict in their relationship. The questionnaires relevant to the present study were included in the questionnaire package and required approximately 30 minutes to complete. The order of questionnaires was counterbalanced to control for the potential effect of previously administered measures (that were not part of this study).

Before their visit to the lab, partners were informed about the purpose of the study, the procedures, and confidentiality issues. Partners' individual consent to engage in the conflict discussion was also obtained; this procedure was put in place in order to ensure that both partners felt comfortable engaging in such discussion with their partner. During the session, partners completed the questionnaire package individually. They were then reunited and instructed to find a topic of disagreement in their relationship; one that was important in their relationship and kept coming up. Once partners agreed on the topic, they were left alone to discuss the topic during 15 minutes. This standard conflict resolution paradigm (Gottman, 1979) is believed to induce stress in partners and as a result, activate partners' attachment system (Crowell et al., 2002). Interactions were videotaped and scored using the Secure Base Scoring System (described below). Each couple was compensated 40\$ for their participation.

Measures

Demographic Information. Participants were asked to provide personal (e.g., age, gender, ethnicity/racial background, and years of education) and relationship demographic information (e.g., duration of the relationship, number children).

Interpersonal Reactivity Index for Couples (IRIC; Péroquin & Lafontaine, in press). The IRIC is a 13-item measure that assesses both cognitive and emotional components of dyadic empathy. Items are evaluated on a 5-point Likert scale (where 0 = does not describe me well and 4 = describes me very well) and yield two scales: dyadic perspective taking (tendency to spontaneously adopt the psychological point of view of the partner; “I try to look at my partner’s side of a disagreement before I make a decision”) and dyadic empathic concern (other-oriented feelings of sympathy and concern for the partner; “I often have tender, concerned feelings for my partner when he/she is less fortunate than me”). Items in each scale are summed in order to obtain the scale score (ranging from 0 to 24 for dyadic perspective taking and from 0 to 28 for dyadic empathic concern). Higher scores are indicative of greater dyadic perspective taking and dyadic empathic concern. The IRIC demonstrated satisfactory internal consistency and adequate convergent, concurrent, and predictive validity in various samples of couples (Péroquin & Lafontaine, in press). Alpha coefficients for the current sample were .78 for dyadic perspective taking and .67 for dyadic empathic concern.

Experiences in Close Relationships (ECR; Brennan et al., 1998). The ECR is a 36-item questionnaire measuring romantic attachment. It comprises two scales: anxiety over abandonment (e.g., “I need a lot of reassurance that I am loved by my partner”) and avoidance of intimacy (e.g., “I try to avoid getting too close to my partner”). Each scale

includes 18 items that are rated on a 7-point Likert-type scale (1 = “Strongly disagree” and 7 = “Strongly agree”). Items on each scale are summed and used as indexes of anxiety over abandonment and avoidance of intimacy (score range: 18 to 126) and higher scores are indicative of higher levels of attachment anxiety and avoidance respectively. Excellent reliability coefficients were previously reported for both scales and a comparison study concluded that, compared to three other well-known attachment questionnaires, the ECR demonstrated superior psychometric data (Fraley, Waller, & Brennan, 2000). Alpha coefficients for the current sample were .91 for anxiety and .88 for avoidance.

Revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The CTS2 is a 72-item questionnaire assessing the presence and frequency of psychological and physical violence as well as sexual coercion used by both the self and the partner in the past 12 months and in the lifetime. It also includes scales measuring negotiation strategies and physical injury sustained. On an 8-point scale, participants report how often each behavior has occurred in the past 12 months (“This has never happened”, “Once”, “Twice”, “3-5 times”, “6-10 times”, “11 to 20 times”, “21 or more times”, and “Not in the past year, but this has happened before”). Each response category is then recoded at the midpoint (0, 1, 2, 4, 8, 15, and 25 respectively). The category “Not in the past year, but this has happened before” is given a value of 0 to obtain the annual prevalence of psychological and physical violence. The total psychological violence score ranges from 0 to 200 and the total physical violence score ranges from 0 to 300, with higher scores indicating more severe psychological and physical violence used against the partner. The self-reported psychological and physical

violence scales initially demonstrated good internal consistency (Straus et al., 1996) and yielded alpha coefficients of .71 and .65 respectively in the current sample, which are consistent with coefficients generally reported in the literature (Straus, 2007).

Secure Base Scoring System (SBSS; Crowell et al., 1998). The SBSS allows for the assessment of attachment behaviors and was used to code the 15-minute conflict interaction between partners. The SBSS first includes an attachment topic scale, which assesses, on a 7-point scale, the degree to which the conflict discussed by partners is attachment-related (i.e., feelings of security are raised). The SBSS then comprises four scales measuring secure base use: (1) initial signal (i.e., initial clarity of the concern expressed); (2) maintenance of the signal (i.e., how actively and persistently the individual maintains a clear distress signal or becomes increasingly clear and direct in expressing what he or she wants or needs); (3) approach (i.e., direct expression of the desire and need for the response of the partner); and (4) ability to be comforted (i.e., whether the individual responds to the partner's support with diminished distress and relief or attempt to self-soothe). These scales are used to form an overall impression of attachment behaviors and to create a global index of secure base use (score ranges from 0 to 7). Only the global index is used in analyses, although the four subscales are usually highly correlated with the global index. High scores are indicative of a clear and effective distress signal that is expressed initially and throughout the interaction with the partner. It also indicates that throughout the discussion with the partner, the person approaches the partner with clear expectations that the partner will provide support and actively responds to the partner's efforts to provide such support (Crowell et al., 2002). The SBSS also includes four scales measuring secure base support (interest in the partner, recognition of

distress, interpretation of distress, and responsiveness to distress), but these were not used in the current study, and therefore, are not further described here.

A hundred and thirty filmed interactions were randomly selected among the entire sample to be coded using the SBSS by a team of seven thoroughly trained coders. Coders watched the entire interaction twice, taking notes about the key elements of the interaction, and assigned scores on the attachment topic scale, the four support-seeking and four secure base support subscales for the man and the woman separately. Global scores for men and women were then assigned based on scores obtained on these subscales.

In order to ensure that the attachment system was activated during the interaction and that the interactions included in our analyses were attachment-related, only interactions that had been given a score of 4 or higher on the attachment topic scale were kept ($n = 85$ couples). Interactions receiving scores of 3 or lower tend to be instrumental or materialistic, with no reference regarding how reported problems threaten individual partners or the relationship, or are characterized by very little distress expressed by partners ($n = 45$ couples).

Interrater agreement between two coders was calculated for 30% of the interactions. Disagreements between the coders were settled by conference with a third coder. Using a two-way mixed model and an absolute agreement definition, the intraclass correlation coefficients were .79 ($p < .01$) for the secure-seeking behaviors global score and .90 ($p < .01$) for the secure base support global score. Coefficients of such magnitude indicate substantial agreement between coders (Bech & Clemmensen, 1983).

Results

Preliminary analyses

Prior to conducting the main analyses, data were screened for missing data, multivariate outliers, and normality. Because of its ability to maximize power and its advantage over more traditional methods (e.g., case deletion, mean substitution, and regression; Widaman, 2006), single imputation (using the expectation-maximization algorithm in SPSS 17.0) was used to replace missing data (less than 1% of the dataset, missing at random). Seven multivariate outliers were identified using the mahalanobis distance and an index of influence (DFFIT). Upon examination, these participants were extreme due to reporting higher levels of violence. Because the primary focus of this study was to investigate the occurrence and predictors of intimate violence in a range of couples recruited in the general community, and also because the multilevel statistical approach taken to conduct analyses would require eliminating both the outlier participant and their partner (hence doubling the number of participants to be eliminated), it was decided that these outliers would be kept in our main analyses¹¹. All variables were found to have an acceptable normality index, except for physical violence, which distribution was significantly skewed. Mainly, most participants reported no, or very few, incident of physical violence within the last year. Accordingly, the logarithmic transformation was used in our main analyses¹². All other variables were left untransformed.

¹¹ No difference in results was found when conducting our analyses while excluding the seven outlier participants and their partner.

¹² Multilevel analyses were also performed using the untransformed distribution, but they yielded no significant results due to a lack of variance in reported physical violence.

Descriptive statistics

Findings revealed similar rates of partner violence used by both men and women in our sample. Mainly, 83.5% of men reported using psychological violence and 20.6% reported using physical violence toward their female partner at least once in the past year. Similarly, 89.2% of women reported using psychological violence and 29.4% reported using physical violence toward their male partner at least once in the past year. On average, men perpetuated 13.8 acts of psychological violence and 1.2 acts of physical violence in the past 12 months. Women perpetuated an average of 19.4 acts of psychological violence and 2.8 acts of physical violence in the same period. Means and standard deviations for the study variables are displayed in Table 1.

“Table 1 about here”

Main analyses

Multilevel modeling analyses using the restricted maximum likelihood estimation method (REML) in HLM 6.06 (Raudenbush, Bryk, & Congdon, 2008) were conducted to test our hypotheses, with individual partners hierarchically nested within the couple. This procedure addresses the non-independence of dyadic data (see Table 1 for intra-class correlations derived from the null model) in that it allows for the inclusion of both male and female partners in the same analyses, while precluding the inclusion of biased standard errors and the inflation of type I error (Kenny, Mannetti, Pierro, Livi, & Kashy, 2002; Krull & MacKinnon, 2001). A multiple mediation model, in which all proposed mediator variables are entered simultaneously in the model, as opposed to several simple mediation models, in which each mediation relationship is tested independently, was adopted because this approach holds several advantages. Mainly, it reduces the number of

analyses to be conducted, it decreases the likelihood of biased parameter estimates due to omitted variables, and finally, it allows comparing the relative contribution of each mediator (Preacher & Hayes, 2008a). Prior conducting our main analyses, all independent variables were grand-mean centered (Kenny, Kashy, & Cook, 2006). Gender was effect-coded as male = -1 and female = 1 (Aguinis, 2004). Multicollinearity among independent variables was also inspected, but found not significant. Self-reported attachment (assessed with the ECR) and observed attachment behaviors (assessed with the SBSS) were examined in separate analyses due to different sample sizes available for each measure ($n = 386$ and 170 respectively).

The causal step strategy dictates four assumptions to be met for statistical mediation to be observed (Baron & Kenny, 1986). That is, there must be a significant relationship between (1) the independent variables (attachment anxiety, attachment avoidance, secure base use) and the mediator variables (perspective taking and empathic concern); (2) the independent variables and the dependent variables (intimate partner violence); and (3) the mediator variables and the dependent variables. Finally, no association between the independent variables and the dependent variable must be found after controlling for the mediating variables (although partial mediation is observed when the strength of the relationship decreases significantly).

To assess whether romantic attachment was associated with dyadic empathy, a set of multilevel regression analyses were conducted, with perspective taking and empathic concern as separate outcome variables. To verify whether the relationships varied according to gender, gender was treated as a moderating factor. For each analysis, gender, attachment variables, and the two-way interaction terms between gender and attachment

were entered as simultaneous predictors in the main effects model. The following level 1 equation was used for self-reported attachment:

$$Y_{ij} = \beta_{0i} + \beta_{1i} (\text{Gender}) + \beta_{2i} (\text{Anxiety}) + \beta_{3i} (\text{Avoidance}) + \beta_{4i} (\text{Gender} * \text{Anxiety}) + \beta_{5i} (\text{Gender} * \text{Avoidance}) + r_{ij}$$

in which perspective taking or empathic concern reported by partner j in couple i (Y_{ij}) was predicted by each couple's intercept (β_{0i}), gender weighted by the slope β_{1i} , anxiety weighted by the slope β_{2i} , avoidance weighted by the slope β_{3i} , the moderating effect of gender on anxiety weighted by the slope β_{4i} , the moderating effect of gender on avoidance weighted by the slope β_{5i} , and residual (r_{ij}).

The following level 1 equation was used for observed attachment behaviours:

$$Y_{ij} = \beta_{0i} + \beta_{1i} (\text{Gender}) + \beta_{2i} (\text{SecureBase}) + \beta_{3i} (\text{Gender} * \text{SecureBase}) + r_{ij}$$

in which perspective taking or empathic concern reported by partner j in couple i (Y_{ij}) was predicted by each couple's intercept (β_{0i}), gender, secure base use, and the moderating effect of gender on secure base use each weighted by slopes β_{1i} , β_{2i} , and β_{3i} respectively, and residual (r_{ij}). Results of these analyses are presented in Table 2.

“Table 2 about here”

As expected, both attachment anxiety and avoidance negatively predicted perspective taking in partners. Avoidance also negatively predicted empathic concern. There was no gender difference in dyadic empathy, but gender moderated the relationship between anxiety and empathic concern (i.e., significant interaction). Using Jaccard and Turrisi's (2003) method to probe significant interactions in regression analyses, two additional regression analyses were conducted with gender dummy coded as male = 0 and female = 1 in one analysis, and as female = 0 and male = 1 in the other analysis. Results

revealed an unexpected positive relationship between anxiety and empathic concern in men, $\beta_i = .05$, $t(383) = 4.39$, $p < .001$, but, as hypothesized, a negative relationship between these two variables in women, $\beta = -.02$, $t(383) = -1.71$, $p = .05$. Finally, contrary to expectations, secure base use did not predict either forms of dyadic empathy.

To assess whether romantic attachment was associated with intimate violence, a second set of analyses were conducted, with psychological and physical violence as separate outcome variables. Again, gender was treated as a moderating factor. For each analysis, gender, attachment variables, and the two-way interaction terms between gender and attachment were entered as simultaneous predictors in the main effects model. The following level 1 equation was used for self-reported attachment:

$$Y_{ij} = \beta_{0i} + \beta_{1i} (\text{Gender}) + \beta_{2i} (\text{Anxiety}) + \beta_{3i} (\text{Avoidance}) + \beta_{4i} (\text{Gender} * \text{Anxiety}) + \beta_{5i} (\text{Gender} * \text{Avoidance}) + r_{ij}$$

in which psychological violence or physical violence reported by partner j in couple i (Y_{ij}) was predicted by each couple's intercept (β_{0i}), gender, anxiety, avoidance, the moderating effect of gender on anxiety, and the moderating effect of gender on avoidance each weighted by slopes β_{1i} , β_{2i} , β_{3i} , β_{4i} , and β_{5i} respectively, and residual (r_{ij}).

The following level 1 equation was used for observed attachment behaviours:

$$Y_{ij} = \beta_{0i} + \beta_{1i} (\text{Gender}) + \beta_{2i} (\text{SecureBase}) + \beta_{3i} (\text{Gender} * \text{SecureBase}) + r_{ij}$$

in which psychological violence or physical violence reported by partner j in couple i (Y_{ij}) was predicted by each couple's intercept (β_{0i}), gender, secure base use, and the moderating effect of gender on secure base use each weighted by slopes β_{1i} , β_{2i} , and β_{3i} respectively, and residual (r_{ij}). Results are presented in Table 3.

“Table 3 about here”

As hypothesized, anxiety over abandonment was positively related to the use of both psychological and physical violence towards the partner in both men and women. Gender predicted the use of psychological violence and marginally predicted the use of physical violence; women reported perpetuating more violence than man. Gender also moderated the relationship between avoidance of intimacy and psychological violence in that avoidance was a significant predictor of psychological violence in women, $\beta_{3i} = .31$, $t(383) = 2.89$, $p < .01$, but not in men, $\beta_{3i} = -.10$, $t(383) = -1.29$, $p = .20$. Avoidance of intimacy did not predict physical violence, nor was secure base use related to either types of intimate partner violence.

Finally, to determine whether dyadic empathy predicted partner violence and mediated the relationship between romantic attachment and intimate violence, a third set of analyses were conducted. Psychological and physical violence were separately regressed on attachment, controlling for dyadic empathy. Gender was again entered as a moderating factor. Only significant predictors from the two previous sets of analyses were entered in the current models. For each analysis, gender, attachment variables, empathy variables, the two-way interaction terms between gender and attachment, and the two-way interaction terms between gender and dyadic empathy were entered as simultaneous predictors in the main effects model. The following level 1 equation was used for self-reported attachment:

$$Y_{ij} (\text{psychological violence}) = \beta_{0i} + \beta_{1i} (\text{Gender}) + \beta_{2i} (\text{Anxiety}) + \beta_{3i} (\text{Avoidance}) + \beta_{4i} (\text{Perspective taking}) + \beta_{5i} (\text{Empathic concern}) + \beta_{6i} (\text{Gender*Avoidance}) + \beta_{7i} (\text{Gender*Persp. taking}) + \beta_{8i} (\text{Gender*Emp. concern}) + r_{ij}$$

The following level 1 equation was used for observed attachment behaviours:

$$Y_{ij} (\text{physical violence}) = \beta_{0i} + \beta_{1i} (\text{Gender}) + \beta_{2i} (\text{Anxiety}) + \beta_{3i} (\text{Perspective taking}) + \beta_{4i} (\text{Empathic concern}) + \beta_{5i} (\text{Gender*Persp. taking}) + \beta_{6i} (\text{Gender*Emp. concern}) + r_{ij}$$

Note that no analysis including secure base use was conducted due to behaviors of attachment being unrelated to dyadic empathy or intimate partner violence in previous analyses. Results are displayed in Table 4. Results from all regression analyses for men and women are also summarized in Figures 2 and 3.

“Table 4, Figure 2 and Figure 3 about here”

As anticipated, both perspective taking and empathic concern negatively predicted psychological violence in both men and women. Low empathic concern was also related to the use of physical violence in men and women, but not perspective taking.

According to Baron and Kenny (1986), mediation is obtained when the coefficient associated with the independent variable (i.e., attachment) is significantly reduced when entering the mediators (i.e., dyadic empathy) as simultaneous predictors of the dependent variables (i.e., psychological and physical violence)¹³. Accordingly, dyadic empathy was found to fully mediate the relationship between avoidance of intimacy and psychological violence use in women as avoidance did not predict psychological violence in women

¹³ More recent publications encourage researchers to move away from Baron and Kenny's causal step strategy to assess mediation and to perform tests of indirect effects instead (Preacher & Hayes, 2008b). The use of such statistical method, however, is far more complicated, especially as models increase in complexity, such as is the case in the current study (multilevel analyses, moderation and mediation, multiple independent variables and mediators). Furthermore, most statistical packages do not provide built-in modules to conduct such analyses and the use of elaborated statistical scripts are necessary to perform these analyses. In recent years, some authors developed and published scripts enabling researchers to test indirect effects in models of varying complexity (see Preacher & Hayes, 2008a for testing indirect effects in multiple mediator models; see Bauer, Preacher, & Gil, 2006 for testing indirect effects in single mediator multilevel models). So far, however, there are no published methodologies to examine indirect effects in multiple mediation multilevel models and existing scripts (Preacher, Zhang, & Zyphur, 2009) would require significant modifications for this purpose (K. J. Preacher, personal communication; August 11, 2009). In sum, despite awareness of the limitations inherent in the causal step strategy, this technique was used in the current article because it is still the most widely used method to assess mediation in the literature, and most importantly, for lack of a better statistical methodology available to test indirect effects in the current study's model.

after controlling for dyadic empathy ($\beta_i = .17, t(381) = 1.95, p > .05$). Dyadic empathy, however, did not mediate the relationship between anxiety over abandonment and psychological ($\beta_i = .22, t(381) = 4.59, p < .01$) or physical violence ($\beta_i = .005, t(383) = 4.79, p < .01$), since unstandardised coefficients associated with anxiety remained approximately the same following the inclusion of dyadic empathy in the analyses.

Discussion

This study examined a theoretical model proposing romantic attachment (assessed through self-report and observed behaviors) and dyadic empathy as predictors of intimate partner violence in a sample of couples recruited in the general community. Mainly, dyadic empathy was expected to mediate the relationship between romantic attachment and psychological and physical partner violence in both men and women.

Prevalence of intimate partner violence

First, gender differences obtained in the perpetration of partner violence are noteworthy. In particular, women in our sample reported using more psychological and physical violence than their male partners, both in terms of the percentage of women using violence and the average number of violent acts reported in the past year. This finding is consistent with prior research (see Archer, 2000 for a meta-analysis), and re-emphasizes the importance of considering both male and female violence when examining correlates and theoretical models of partner violence.

Attachment and dyadic empathy

Current findings also replicate prior research that demonstrated a link between adult and romantic attachment representations and general empathic responding (e.g., Britton & Fuendeling, 2005; Corocoran & Mallinckrodt, 2000; Joireman, Needham, &

Cummings, 2001; Trusty, Ng, & Watts, 2005). This study extends past research, however, by demonstrating an association between partners' romantic attachment and dispositional empathy toward each other, a relationship which had not been previously examined in couples. Mainly, consistent with hypotheses, results revealed that highly avoidant men and women are less likely to consider their partner's perspective when a disagreement occurs in their relationship and to feel compassion for their partner's misfortune. This highlights avoidant individuals' lack of emotional closeness with their partner, their cognitive distancing from distress-related cues, and overall emotion regulation deactivation style (Mikulincer & Florian, 2001). Also supporting our prediction, highly anxious individuals reported being less understanding of their partner's point of view, which is consistent with their chronic self-centered preoccupation and is further evidence for the contention that self-centered worries interfere with anxious individuals' ability to pay genuine attention and appropriately respond to their partners' distress (Mikulincer & Shaver, 2007). In particular, anxious individuals are more likely to become emotionally overwhelmed and flooded with negative emotions when witnessing distress in others (Mikulincer, et al., 2001). Such emotional hyperactivation is likely to consume mental capacity, hence leaving little cognitive resources to fully process and consider their partner's perspective (Mikulincer & Shaver, 2005b). Attachment anxiety, however, related to empathic concern differently in men and women. That is, whereas highly anxious women reported less empathic concern toward their partner (as had been hypothesized), highly anxious men unexpectedly reported more empathic concern toward their partner. This finding may be explained by the motives underlying concern for the partner as well as the impact of men's empathy on women's relationship satisfaction and

adjustment. Mainly, although anxious individuals may possess some skills allowing them to care for others, self-focused worries and egoistic goals are often at the basis of their caring behaviors (Collins, Guichard, Ford, & Feeney, 2006; Feeney & Collins, 2003; Mikulincer & Shaver, 2007). In other words, self-worth preoccupations lead anxious individuals to constantly seek approval from their partner and behave in ways to increase closeness and intimacy with their partner. As such, anxious men's compassion in our study may have been motivated by egoistic motives related to their desire for acceptance and love by their partner, rather than a genuine interest for their partner's well-being. Furthermore, some evidence suggests that the expression of empathy in men may be related to relationship maintenance and stability and may be especially valued by their female partners. In particular, in a prospective study, observed empathic responses in men during a conflict interaction task predicted whether partners were still together as a couple five years later. This relationship, however, was not observed in women (Waldinger, Schulz, Hauser, Allen, & Crowell, 2004). In another study, wives' perception of their husband's perspective taking was strongly related to wives' marital adjustment (Long & Andrews, 1990). Together, these studies suggest that men's empathic responding may be especially important to women's well-being in their relationship and may contribute to overall relationship stability. Although women's perception of their partner's empathic concern was not assessed in the current study, we may speculate that anxious men's compassion and emotional concern for their partners was linked to their desire to be appreciated by their female partner and to maintain closeness with them over time. Hence, future examination of the motives for and functions of compassion in insecurely attachment individuals may help identify the

context in which empathic responding toward the partner is more likely to occur in these individuals.

Attachment and intimate partner violence

Another important result of this study concerns the expected association found between romantic insecure attachment and the perpetuation of intimate violence. Highly anxious men and women in our sample reported being more psychologically and physically violent toward their partner. This finding is unsurprising and corroborates results from numerous studies revealing an association between violence expressed toward the partner and both the dimension of anxiety over abandonment (Lafontaine & Lussier, 2005; Rogers et al., 2005) and the categorical attachment styles characterized by high anxiety over abandonment (*i.e.*, preoccupied and fearful styles; Babcock et al., 2000; Bookwala, 2002; Henderson et al., 2005; Kesner & McKenry, 1998). Avoidance of intimacy, however, predicted women's use of psychological violence only. This lack of a consistent relationship between avoidance and partner violence could also be foreseen as avoidant individuals are more likely to use passive-aggressive behavior (Mayseless, 1991), to control their anger (Mikulincer, 1998), and withdraw from conflict situations to deactivate the attachment system (Bartholomew & Allison, 2006) rather than use overt expression of aggression (although violent behavior is not impossible in these individuals). Accordingly, far fewer studies demonstrated a strong and consistent association between avoidance of intimacy and intimate partner violence (*e.g.*, Lafontaine & Lussier, 2005; Rogers et al., 2005). Our findings are thus in line with previous research.

Yet, to explain the gender difference found in the association between avoidance and psychological violence, the categorical conceptualization of attachment may be useful. In particular, avoidance of intimacy is a component of both fearful (high avoidance and high anxiety) and dismissing (high avoidance and low anxiety) attachment styles. In the current sample, categorical attachment was not assessed, but women reported being significantly more anxious than men ($M = 61.47$ and 53.03 respectively, $p < .05$). Accordingly, it is possible that avoidant women tended to be more fearfully attached whereas avoidant men tended to be more dismissingly attached. Prior research demonstrated that fearfulness is strongly associated with anger and emotional abuse whereas dismissing attachment is not (Dutton et al., 1994). Men and women involved in physically violent relationships are also more likely to report a fearful attachment than those involved in non-violent relationships (Bookwala & Zdaniuk, 1998), suggesting that fearfulness may be a risk factor for the use of intimate partner violence. In particular, fearful attachment is characterized by a strong desire for closeness and intimacy with the partner, but intense fears of rejection and abandonment lead to behavioral and emotional avoidance. This push/pull interpersonal style may result in high levels of frustration regarding the relationship and may lead fearful individuals to experience chronic anger toward their partner or what Dutton and colleagues (1994) termed “intimacy anger”. Over time, such anger may translate into passive-aggressive behaviors and overt psychological aggression toward the partner. In another study, fearfully attached individuals were found to be most violent toward their partner when they perceive they have low power in their relationship (Rogers et al., 2005). Interestingly, women reported using violence toward a partner to gain control three times more often than men did in a study examining motives

for using partner violence (Follingstad, Wright, Lloy, & Sebastian, 1991). Together, these studies imply that fearful individuals may react most strongly when they perceive they have low control in their relationship (e.g., their partner is wanting to become too close, or threatening to leave the relationship) and may use violence to regain control and feel safer in their relationship; women may be especially likely to use such strategies to gain greater relationship power and remain in control. Unfortunately, present results do not allow determining whether fearfulness or the need for control per se is at the root of women's use of psychological violence toward their partners. Future studies are thus warranted to more closely examine avoidant men and women's motives for using violence, to clarify the relationship between avoidance of intimacy and partner violence, and most importantly, to address inconsistencies related to this relationship found in previous literature.

Dyadic empathy as a mediator

Although the current study did not directly address *why* avoidant women use more psychological violence toward their partners, it shed light on *how* they do so. In particular, findings revealed that avoidance of intimacy relates to psychological violence through a mediational process involving low dyadic empathy in women. In other words, highly avoidant women in our sample reported significantly less perspective taking and empathic concern toward their male partners. In turn, this lack of empathy predicted higher levels of psychological violence by these women. Empirical findings indicate that avoidant individuals may be more likely to experience pity, rather than empathic compassion, as a result of witnessing distress in their partners (Florian, Mikulincer, & Hirschberger, 2000). Pity stems from perceiving the distressed partner as inferior, which

is congruent with avoidant individuals' negative perception of others. This reaction also promotes detachment from and contempt toward the partner, and facilitates the safe maintenance of personal boundaries and the avoidance of closeness with the partner (Mikulincer & Shaver, 2005b). Mikulincer and colleagues (2005b) also hypothesized that pitiful reactions could even be transformed into contemptuous gloating and enjoyment of the partner's distress, which would be a reflection of avoidant individuals' overall hostile attitude toward their partner (Mikulincer, 1998; Mikulincer, Horesh, Eilati, & Kotler, 1999). The literature on empathy and interpersonal aggression suggests that low empathy facilitates offending and aggression. That is, individuals with poor empathic abilities fail to recognize, appreciate, and relate to others' emotional experiences, and as such, they are not as sensitive to the distress their actions may cause to others (Blackburn, 1993; Farrington, 1998). Hence, in the current study, avoidant women's lack of perspective taking and compassionate feelings would result in poor sensitivity toward their partner's experiences, and could potentially lead to the development of inappropriate and disrespectful emotional reactions such as pity or gloating when witnessing distress in their partner. In turn, this lack of sensitivity would facilitate the use of overt emotional abuse toward their partner, such as harsh criticism, humiliation, threats, or insults. Interestingly, when securely attached individuals' behavior has caused emotional hurt to their partner, these individuals are likely to feel guilt and shame, to take responsibility for the well-being of the partner and seek to repair the damage caused. Avoidant individuals, on the other hand, are unlikely to take responsibility for their actions in such situations and may angrily blame their partner for their own negative and hurtful actions (Mikulincer & Shaver, 2005b), again illustrating their lack of empathy and sensitivity.

The mediation model proposed in the current study only received partial support. Nevertheless, dyadic empathy was found to be associated with the use of psychological and physical partner violence perpetrated by men and women. This finding is particularly important because, despite an impressive body of research showing a relationship between low empathy and general interpersonal aggression and criminal offending (for reviews, see Jolliffe & Farrington, 2004; Miller & Eisenberg, 1988), prior research largely overlooked the relationship between empathy and intimate partner violence specifically. Supporting past research, present results indicated that partners' ability to understand each other's point of view and to feel compassion for each other's distress and misfortune was inversely associated with their use of psychological violence. However, although empathic concern predicted less physical violence in partners, perspective taking did not. This finding is consistent with results from a study showing that perspective taking inhibits aggression at intermediate levels of arousal, but not at high levels (Richardson et al., 1994). We may speculate that once a conflict situation between partners has degenerated into a physically violent fight, arousal in partners is quite high. In such circumstances, even individuals with good perspective taking abilities may have difficulty inhibiting their impulse to react with physical aggression if they feel they have been provoked by their partner. This hypothesis appears to be suitable to explain why perspective taking is related to the use of psychological violence, but not to the use of physical violence. Hence, in the romantic context, promoting the development of compassionate feelings toward the partner may be more effective for preventing the occurrence of both psychological and physical violence toward the partner.

Before concluding, the lack of a significant association between observed attachment behaviors and any other variables included in this study warrants exploration. One may argue that differences in assessment method (self-report versus behavioral observation) is at the basis of this finding. For instance, self-reports of adult attachment and adult attachment assessed through interview are generally only moderately related (Mikulincer & Shaver, 2007), suggesting that different methods of assessment of the same variable may measure different constructs or different aspects of a same construct. Yet, the few studies that have used the SBSS to code observed secure base use in couples have found significant associations with self-reports of relationship satisfaction (Lafontaine & Bélanger, 2003), observed behaviors of support and validation, as well as problem solving (Lafontaine, Bélanger, & Gagnon, 2009), self-reports of verbal and physical partner aggression (Crowell et al., 2002), and childhood attachment representations as assessed using the Adult Attachment Interview (Crowell et al., 2002), suggesting that it was reasonable to expect a significant relationship between secure base use, empathy and partner violence in the current study. Furthermore, inspection of preliminary correlations between SBSS scores and our study variables in men and women revealed some significant results, also suggesting the existence of an association between observed secure base use, empathy and intimate partner violence. Characteristics of the current sample may be at the basis of the current findings and the inclusion of different couples in the sample (i.e., distressed couples, older couples) may have yielded different results. At this point, it is thus very difficult to explain the unexpected nonsignificant findings and only future studies using the SBSS will help us understand the relationship between observed attachment behaviors and other measures of relationship adjustment.

Limitations

Several methodological strengths characterize the current investigation, for instance the examination of both male and female violence, the inclusion of both psychological and physical violence in the model, and the use of a multilevel statistical approach. Yet, some limitations need to be addressed. First, the correlational nature of the study prevents us from inferring causation between variables despite the hypothesized theoretical directionality between romantic attachment, dyadic empathy, and partner violence. Prospective designs would be needed to determine the temporal relationships between these variables.

Second, dyadic empathy was assessed globally and as a general disposition of the individuals in their relationship. Therefore, although a link between low empathy and partner violence was found, it is unknown whether poor empathic responding is a situational determinant of partner violence in specific instances of such violence. Some authors have urged researchers to examine the context in which acts of intimate violence occur, including the antecedents, triggers, functions, and outcomes specific to violent episodes to further our understanding of the precursor, correlates, and consequences of intimate violence (Cascardi & Vivian, 1995; Wilkinson & Hamerschlag, 2005). A contextual study of partner violence, in which partners are asked to recall a past incident of intimate violence, would be needed to assess the precise nature of the relationship between empathy and violence in the romantic context, and to see whether the lack of empathy during a specific conflict with the partner increases the likelihood of using violence against the partner at that precise moment.

Third, this study failed to examine partner violence from a dyadic perspective. That is, behaviors and attributes from both partners most likely contribute to the development of violence in a relationship and a comprehensive model of partner violence should consider the impact of both partners (Bartholomew & Allison, 2006). In the current study, it may be the perception that one's partner is not empathic that mediates the relationship between one's attachment representations and one's use of violence against that partner. It may also be that one's lack of empathy mediates the relationship between one's attachment representations and violence received from one's partner. Studies demonstrate an association between attachment and victimization (Bond & Bond, 2004; Bookwala, 2002; Dutton & Painter, 1993; Henderson, Bartholomew, & Dutton, 1997), but the mechanisms at the basis of this association have not been widely examined. Since violence is reciprocal in approximately half of the couples who report intimate violence (Stets & Straus, 1990), the utilization of the Actor/Partner Interdependence Model (APIM; Kenny, Kashy, & Cook, 2006) would allow determining the effects of individuals' and their partner's attributes and behavior on the perpetration and receipt of intimate violence and would inform the development of a more comprehensive model of intimate partner violence in community samples.

Finally, findings from the current study are only relevant in the context of the occasional violence reported by couples recruited in the general community. Most of the participants included in this study did not report clinical levels of violence and rarely admitted to using acts of severe violence toward their partners. Examining the current theoretical model in distressed couples or populations identified based on high violence levels would provide extra evidence for the validity of this model for explaining partner

violence in a wider range of couples. Different relationship may be observed between study variables in different populations. For instance, individuals reporting severe attachment insecurity may report lower levels of empathy and higher levels of partner violence than what was reported by current participants. Relationships between variables may thus be strengthened. A relationship between observed attachment behavior and study variables may also be identified in such a sample.

Clinical implications and conclusion

Overall, our findings are congruent with previous literature on attachment and caregiving behaviors in couples and highlight the importance of attachment security for interpersonal sensitivity and the adequate provision of care to loved ones. It is only when one possesses a sense of security, characterized by self-control, self-efficacy, and trust in others, that individuals can effectively attend to their partners, empathize with their experience, and competently respond to their needs and distress (Collins et al., 2006; Mikulincer & Shaver, 2007). Conversely, attachment insecurity appears to interfere with individuals' empathic responses toward their partners and this lack of sensitivity appears to translate into adverse behaviors such as intimate partner violence. Ultimately, a prolonged lack of empathy from one's partner is perhaps likely to bear negative consequences for the relationship as a whole, as indicated by previous research showing an association between poor dyadic empathy and relationship dissatisfaction, divorce contemplation, and relationship dissolution (Waldinger et al., 2004; Long, 1993a; Long, 1993b).

From a clinical standpoint, interventions targeting the attachment system and promoting the expression of empathy in partners would be a suitable avenue for couples

who occasionally resort to violence to resolve relationship problems. In particular, Emotion-Focused Couple Therapy (EFT; Greenberg & Johnson, 1988; Johnson, 2004) aims to restructure the attachment system through the promotion of partners' empathic understanding of each others' emotional experiences and attachment needs. As partners learn to empathically respond to each others' emotional experiences and attachment needs, a sense of safety develops in the relationship and more secure attachment bonds are created between partners. The use of EFT, however, is counter-indicated when violence is chronic and severe (Johnson & Sims, 2000). That is, EFT requires partners to explore unavowed attachment needs and emotions, which puts them in a state of great vulnerability and could endanger their safety in the context of severe violence. In such circumstances, it is recommended that partners work on attachment issues and anger-control management on an individual basis before undergoing couples therapy with their partner.

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Table 1. Intraclass correlations and descriptive statistics for romantic attachment, dyadic empathy, and intimate partner violence.

Variables	ICC	Men (<i>n</i> = 194)		Women (<i>n</i> = 194)	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Attachment					
Anxiety	.09*	53.03	18.80	61.47	19.74
Avoidance	.16*	39.87	14.14	39.98	16.80
Secure base use	.41*	3.50	1.20	3.93	1.21
Dyadic empathy					
Perspective taking	n.s.	16.46	3.79	16.52	3.82
Empathic concern	.14*	28.54	2.80	23.72	3.78
Intimate violence					
Psychological	.34*	13.78	17.85	19.35	22.64
Physical ^a	.21*	1.18	4.62	2.76	8.59

Note. ^a Means and standard deviations displayed for physical violence are based on the untransformed distribution. The logarithmic distribution yielded a mean and standard deviation of .13 and .31 respectively for men, and of .23 and .42 respectively for women. ICC = Intraclass correlation, n.s. = non significant, **p* < .05.

Table 2. Multilevel regression analyses: Gender and romantic attachment as predictors of dyadic empathy.

Variables	Perspective taking			Empathic concern				
	Coefficient ^a	SE	p	% variance explained	Coefficient ^a	SE	p	% variance explained
Gender	.16	.18	.38	8%	.07	.14	.64	18%
Attachment anxiety	-.03	.01	< .01		.01	.01	.17	
Attachment avoidance	-.05	.01	< .001		-.08	.01	< .001	
Gender * anxiety	-.02	.01	.10		-.04	.01	< .001	
Gender * avoidance	.01	.01	.31		-.00	.01	.69	
Self-reports of romantic attachment (<i>n</i> = 388)								
Gender	-.05	.27	.86	0%	-.26	.26	.32	0%
Secure base use	.25	.25	.31		.29	.21	.22	
Gender * secure base	.27	.23	.24		.03	.21	.88	
Behavioral observation of romantic attachment (<i>n</i> = 170)								

Note. ^a Unstandardised regression coefficients.

Two-way interaction terms were tested in a first analysis. If they were non significant, they were removed and a second analysis was conducted. Coefficients shown were obtained from the second analysis.

Table 3. Multilevel regression analyses: Gender and romantic attachment as predictors of intimate partner violence.

Variables	Psychological violence			Physical violence				
	Coefficient ^a	SE	p	% variance explained	Coefficient ^a	SE	p	% variance explained
Gender	1.81	.78	< .05	12%	.03	.02	.08	14%
Attachment anxiety	.23	.05	< .001		.004	.001	< .001	
Attachment avoidance	.11	.06	.10		.002	.001	.24	
Gender * anxiety	.03	.05	.53		.000	.001	.78	
Gender * avoidance	.20	.07	< .01		.000	.001	.78	
Self-reports of romantic attachment (<i>n</i> = 388)								
Gender	3.96	1.30	< .01	4%	.07	.03	< .05	0%
Secure base use	-1.77	1.67	.29		.001	.02	.97	
Gender * secure base	-.90	1.12	.42		.02	.03	.51	
Behavioral observation of romantic attachment (<i>n</i> = 170)								

Note. ^a Unstandardised regression coefficients.

Two-way interaction terms were tested in a first analysis. If they were not significant, they were removed and a second analysis was conducted. Coefficients shown were obtained from the second analysis.

Table 4. Multilevel regression analyses: Gender, romantic attachment, and dyadic empathy (mediator) as predictors of intimate partner violence.

Variables	Psychological violence			Physical violence				
	Coefficient ^a	SE	p	% variance explained	Coefficient ^a	SE	p	% variance explained
Self-reports of romantic attachment (n = 388)								
Gender	2.00	.74	< .01	18%	.03	.02	.06	14%
Attachment anxiety	.22	.05	< .001		.005	.001	< .001	
Attachment avoidance	-.01	.06	.81		-	-	-	
Perspective taking	-.79	.28	< .01		-.001	.005	.78	
Empathic concern	-1.04	.37	< .01		-.02	.007	< .01	
Gender * avoidance	.19	.06	< .01		-	-	-	
Gender * Persp. taking	-.46	.30	.12		.004	.005	.49	
Gender * Emp. concern	-.05	.26	.83		-.01	.001	.07	

Note. ^a Unstandardised regression coefficients.

Two-way interaction terms were tested in a first analysis. If they were not significant, they were removed and a second analysis was conducted. Coefficients shown were obtained from the second analysis.

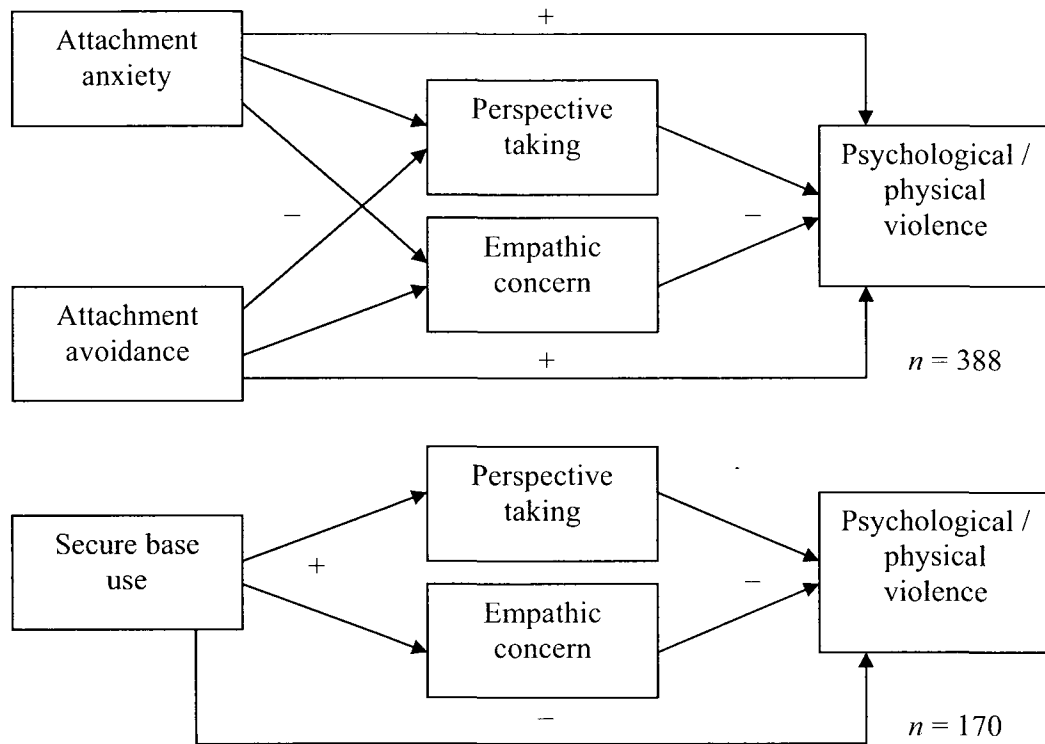
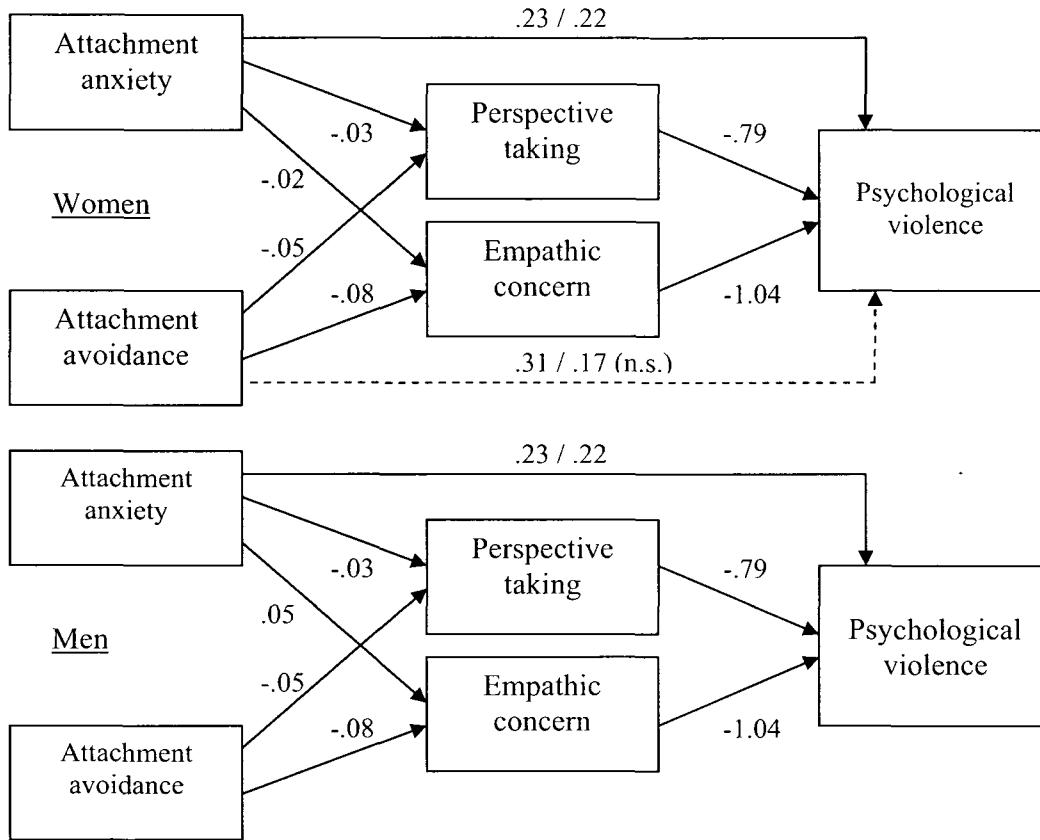
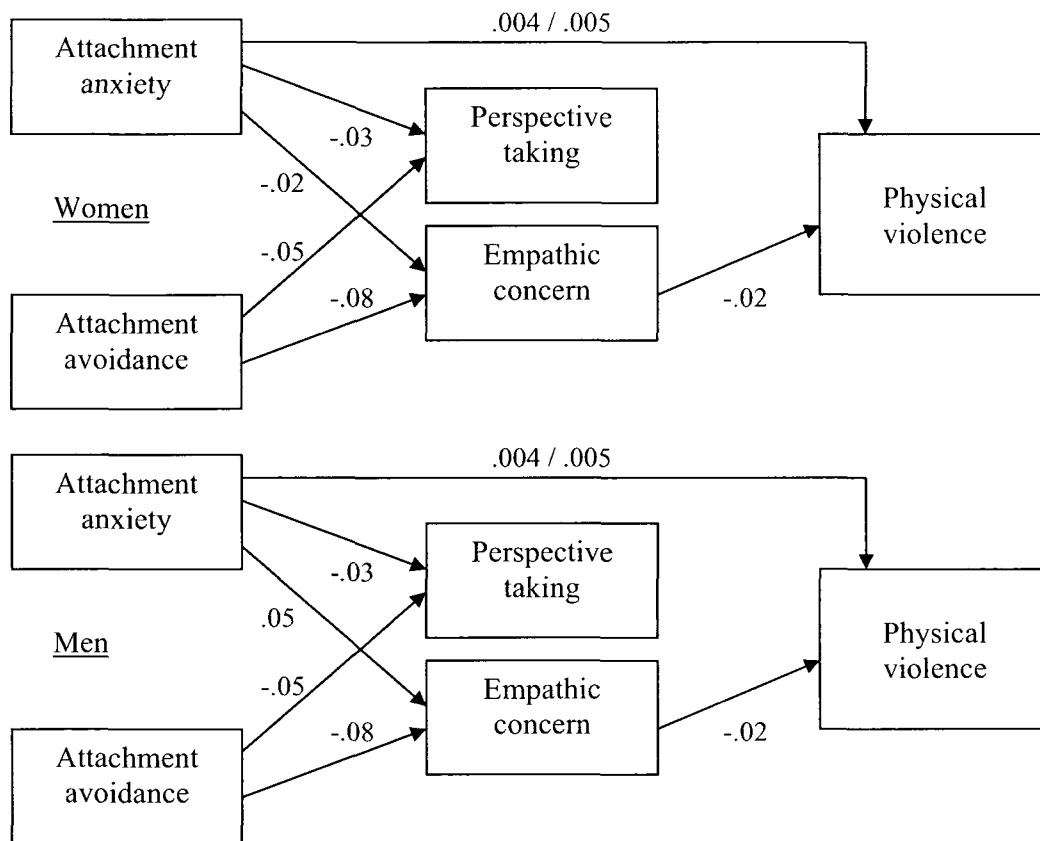


Figure 1.



Note. Unstandardised coefficients are shown. n.s. = non significant. Dashed line represents fully mediated path.

Figure 2.



Note. Unstandardised coefficients are shown.

Figure 3.

Figure Captions

Figure 1. Hypothesised mediation models: Romantic attachment and dyadic empathy as predictors of psychological and physical intimate violence.

Figure 2. Romantic attachment and dyadic empathy as predictors of psychological intimate violence.

Figure 3. Romantic attachment and dyadic empathy as predictors of physical intimate violence.

General discussion

Review of main results, strengths, and global implications

Dyadic empathy, or empathic responding specifically directed at the romantic partner, was the focal point of the current thesis, and was examined through two articles. The first article, concerned with the empirical measurement of dyadic empathy, was a necessary requirement for the completion of the second article, which evaluated a theoretical model involving romantic attachment and dyadic empathy in the prediction of intimate partner violence. In particular, the first article aimed at developing a valid instrument for the measurement of empathy in the romantic context. Accordingly, the *Interpersonal Reactivity Index* (IRI; Davis, 1980), a valid and well-established measure of cognitive and emotional general empathy was adapted to the romantic setting and was validated in three independent samples of romantically involved individuals and couples. The *Interpersonal Reactivity Index for Couples* (IRIC) contained two of the original IRI scales, Dyadic Perspective Taking (cognitive component) and Dyadic Empathic Concern (emotional component), and was found adequate for the measurement of dyadic empathy in young individuals (primarily students) involved in heterosexual relationships, individuals involved in same-sex relationships, and heterosexual couples from the general community. The study provided preliminary evidence of convergent, discriminant, concurrent, predictive, and incremental validity of the IRIC. The scale was also found reliable across samples. The implications of this study are not negligible as there existed no measure of multidimensional dyadic empathy previously. Provided the current general consensus about the cognitive and emotional processes involved in empathic responding (Cohen & Strayer, 1996; Davis, 1994), the development of a measure that allows for the

measurement of both cognitive and emotional facets of empathy in couples is important for furthering our understanding of the role of empathy in overall relationship functioning.

The second article examined the theoretical relationships existing between romantic attachment, dyadic empathy (as assessed using the *Interpersonal Reactivity Index for Couples*), and psychological and physical intimate partner violence in a sample of couples recruited in the general community. Overall, findings were congruent with hypotheses. First, insecure romantic attachment, as indicated by high anxiety over abandonment or high avoidance of intimacy, was related to poor dyadic empathy (low compassionate feelings toward the distress of the partner and poor cognitive understanding of the partner's experience) in men and women. Second, highly anxious men and women used more psychological and physical violence toward their partners. Third, highly avoidant women also used more psychological violence, and this was explained by avoidant women's low empathy toward their partners. Finally, low dyadic empathy was associated with the use of both psychological and physical violence in men and women. Several theoretical relationships observed in this study had been largely unexplored in previous studies and accordingly, findings from this study expand existing literature in many respects. From an empirical standpoint, the relationships between dispositional dyadic empathy and both romantic attachment and intimate partner violence had not been previously examined in samples of couples despite the existence of strong theoretical grounds for these associations. The mediation model by which dyadic empathy explains the relationship observed between avoidance of intimacy and psychological partner violence in women is also novel and contributes to our

understanding of the intricate relationship that exists between attachment and intimate partner violence. From a clinical standpoint, this study suggests that both romantic attachment and empathy expressed toward the partner may be valuable points of intervention for understanding and preventing the occurrence of violence within intimate relationships.

Overall, the contribution of the current thesis to previous literature is important, as indicated by the above-mentioned empirical findings, but the methodological rigor employed in this thesis also equally contributes to advancing our knowledge of the role of empathy in the romantic context. Among significant and noteworthy methodological strengths inherent to this thesis are the inclusion of several independent samples and the examination of multiple validity indexes for a thorough validation of the *Interpersonal Reactivity Index for Couples* in the first article, and the investigation of intimate partner violence perpetrated by both men and women, the study of both psychological and physical violence, the use of both self-reports and behavioural observations to assess romantic attachment, and the use of multilevel modeling to test hypothesised relationships in the second article. In sum, both its empirical findings and its thorough methodology contribute to making this thesis a valuable addition to current literature on dyadic empathy, romantic attachment, and intimate partner violence.

Limitations and future directions

Despite its numerous strengths, there are several limitations to the current thesis and future research would be needed to address these various shortcomings. The first limit pertains to the test-retest reliability of the *Interpersonal Reactivity Index for*

Couples. Mainly, the interval between the first and second administration of the IRIC was on average 18 months. Such large time interval does not allow determining whether fluctuations in IRIC scores are due to measurement error or actual change in personality (Watson, 2004). Cattell (1964) distinguished between the notions of dependability and stability. The former pertains to the reliability of a scale and assesses measurement error; that is, discrepancy between two test administrations when the time interval is too short for the trait measured to have changed (usually less than two months). The latter refers to stability of the trait measured and is usually assessed over longer periods of time; in such circumstances, changes in scores are not necessarily attributable to measurement error and more likely due to true change in personality. It is therefore crucial that studies concerned with scales psychometric properties include measures of both dependability and stability to disentangle measurement error from real personality change over time (Watson, 2004). Accordingly, it is advised that future studies examining validity and reliability of the IRIC look at test-retest coefficients over varying periods of time, especially intervals of two months or less, to provide a better estimate of measurement error versus actual change in dyadic empathy over time.

Second, although self-report measures hold several advantages (e.g., easy to complete and relatively short administration time) over other, more elaborate methods of assessment (e.g., behavioural coding schemes, physiological measures), they are more susceptible to self-presentation and social desirability biases. Unsurprisingly, self-reported measures of empathy in adults have been found to be associated with social desirability (Cialdini et al., 1987). This limitation has implications for both articles in the present thesis. Mainly, social desirability bias was not assessed in the first article. Hence,

it is unclear to what extent IRIC scores may be contaminated by such bias and future research investigating the psychometric properties of the IRIC needs to address this possibility. In the second article, positive self-presentation bias may have attenuated or obscured the relationships between study variables. Using behavioural coding schemes, such as the Specific Affect Coding System (SPAFF; Gottman, McCoy, Coan, & Collier, 1996), to code empathic behaviours during couple interactions, in conjunction with a self-report of dyadic empathy, may help us understand the relationship between self-perception of empathic behaviours and independently observed empathic responding in the context of romantic relationships, and more specifically as it pertains to attachment behaviours and intimate partner violence. The use of physiological indexes to assess empathy (Eisenberg & Fabes, 1990) would also provide interesting and novel information as such methodology has not been used to study empathy and couple dynamics.

The third limit concerns the conceptualisation of empathy and the processes involved in empathic responding. In particular, the vast majority of studies investigating the intrapersonal and interpersonal outcomes of empathy have treated the emotional and cognitive components of empathy as separate responses and, although most authors recognise the presence of a relationship between the two components, very few (if any) have actually examined the nature of this relationship. In other words, most studies examined perspective taking or empathic concern as they relate to various social outcomes in isolation, without seeking to understand how the two components may relate or interact to produce the studied social outcomes. The second article in this thesis falls within this tradition and did not examine the interplay between perspective taking and empathic concern in its prediction of intimate partner violence. Davis's (1994)

organizational model of empathy suggests that the process by which one may come to experience compassionate feelings for someone else may involve cognitive understanding of the other person's experience. That is, cognitive empathy would mediate the relationship between individual differences and empathic concern (although cognitive understanding is not always necessary for empathic concern to take place according to Davis's model). Applied to the current study, it may be that insecurely attached individuals are unable to achieve cognitive understanding of their partner's experience, which in turn, prevents them from experiencing compassion for their partner. Future research is needed to better understand the specific contribution of each empathy component to global relationship functioning as well as the processes involved and leading to empathic responding in the romantic context.

A final limit of the current thesis concerns the generalisability of the results to clinical samples, in particular couples in which one partner is in treatment for the perpetration of severe intimate violence. Although previous studies examining intimate partner violence from an attachment framework have typically found similar results in community samples and samples composed of men in treatment for intimate partner violence, it is unknown whether the current results regarding dyadic empathy would be applicable to such population. The examination of dyadic empathy in relation to intimate partner violence in clinically distressed couples would also be important to support the clinical implications suggested by findings obtained in the current community sample.

Apart from these limitations, other research questions were not addressed in the current thesis and remain unanswered. For instance, the mechanism underlying the association between dyadic empathy and intimate partner violence remains unclear at this

point. One may speculate that a mediational process involving forgiveness could explain the relationship between empathy and partner violence. That is, prior research indicates that dyadic empathy is associated with forgiveness of the spouse's offences (Fincham, Paleari, & Regalia, 2002; Paleari, Regalia, Fincham, 2005). In this sense, individuals who are able to take their partner's perspective and experience compassion and sympathy for their partner's distress would be more likely to also forgive their partner following a relationship transgression, and consequently, perhaps less likely to react aggressively to such transgression. Such model is also consistent with the attachment framework as one study demonstrated that general dispositional empathy mediated the relationship between romantic attachment (avoidance of intimacy) and dispositional forgiveness (Burnette, Davis, Green, Worthington, & Bradfield, 2009). Future studies should seek to examine how these variables relate to the use of partner violence in men and women.

Second, the current thesis examined individuals' perception of their own empathic responding, but the perception of one's partner's empathic responding may be equally important in predicting relationship outcomes. Prior studies have indeed found an association between the perception of the partner's empathy and self relationship satisfaction and divorce contemplation (Long, 1993a; Long & Andrews, 1990). In the context of the current thesis, to extent to which one feels understood and validated may also predict one's use of violence toward one's partner. Furthermore, whether individuals perceive their partners as being empathic may vary as a function of their romantic attachment. Mainly, it is possible that insecurely attached individuals perceive their partners as less empathic or understanding. To this respect, both highly anxious and highly avoidant individuals were found to evaluate their partner as showing less

compassion toward them (Péloquin, Lafontaine, Dandurand, & Matte, 2008). On the one hand, insecurely attached individuals may have a negatively biased perception of their partner's empathy due to their negative working models of self and other. On the other hand, a lack of empathy may actually characterise partners of individuals who are insecurely attached in their current relationship. In particular, these individuals may be in relationships with partners who demonstrate poor and inconsistent caregiving behaviours (including a lack of empathy and emotional responding toward them), which may have contributed to create insecure attachment representations in these individuals in the first place. That is, individuals who feel misunderstood, invalidated, and uncared for by their partners may be more likely to develop insecure attachment toward their partners than individuals whose partners demonstrate understanding and compassion toward them. Hence, although the current thesis suggests that attachment representations precede the development of empathic abilities toward the partner, partners' dispositional empathy at the beginning of the relationship may also define attachment bonds between partners over time. Longitudinal studies would be needed to examine the impact of empathy on the developmental course of partners' attachment to each other over time.

Unsurprisingly, emotion focused couple therapy (EFT) appears to intervene on this very mechanism. Distressed partners sometimes enter couple therapy oblivious to and estranged toward each others' emotional experiences and attachment needs in the relationship. In EFT, interventions are thus designed to increase not only each partner's awareness of their own emotions and attachment needs, but also to increased each partner's empathic understanding of the other's attachment needs (Johnson, 2004). As the course of therapy evolves, compassion between partners is fostered in the hope that each

partner begins to feel valued, cared for, and consequently, safer in the relationship. This leads to the insecure attachment dynamic to be restructured and transformed into a more secure attachment bond between partners. Hence, future studies concerned with therapeutic process and outcome of EFT could assess partners' dyadic empathy when they enter therapy and throughout the treatment with the aim of examining how changes in dyadic empathy impacts the attachment system and vice versa. Fortunately, the 13-item *Interpersonal Reactivity Index for Couples* is short and easily administered in the context of therapy. This measure would thus be appropriate for this endeavour.

Conclusion

The present doctoral thesis extended the study of empathy to the context of romantic relationships through the provision of a well-validated scale of multidimensional dyadic empathy. It also expanded our knowledge of the role of empathy in the romantic setting through the examination of a theoretical model nominating romantic attachment and dyadic empathy as important predictors of psychological and physical intimate partner violence in men and women recruited in the general community. The findings of the current thesis are novel and accordingly, present empirical implications for future research concerned with the study of dyadic empathy and global relationship adjustment. The discussion also raises several questions and points toward interesting future research directions. The findings of the current thesis also present significant clinical implications and are largely congruent with the EFT model of couple therapy.

It is hoped that future research examining dyadic empathy will address conceptual relationships between emotional and cognitive empathy components in a more systematic manner and will examine more thoroughly the processes and outcomes linked to these components as well as how they specifically relate to the romantic domain. Theory-driven models, including a larger scope of relationship adjustment variables, are at this point needed to foster an integrated and comprehensive understanding of the role of empathy in intimate relationships.

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(as cited in the general introduction and general discussion)

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