STRESS AND ROMANTIC PARTNER SUPPORT IN CONTEXTS OF ACUTE AND CHRONIC STRESS

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Summary of thesis

Stress is an inevitable aspect of life that, and if not well managed, can be detrimental to an individual's wellbeing (Yaribeygi et al., 2017) as well as their romantic relationship's wellbeing (Shrout, 2021). Despite the possible negative impact of stress on a romantic relationship, romantic partners consist of one of the most important sources of support from an individual's social circle in times of stress (Taylor, 2012). Various studies have shown that providing or receiving effective support from a partner can help to reduce the stress that one may experience in response to a stressful context and is also associated with relationship and individual benefits (Berli et al., 2021; Graham & Barnow, 2013; Selcuk & Ong, 2013; Overall et al., 2010). The means through which support is sought or provided, however, may tend to vary according to the context as well as according to individual tendencies, such as romantic attachment and caregiving tendencies (Simpson & Rholes, 2017). The present thesis comprises two novel and independent, yet complementary, studies that contribute to the literature on stress and support in couples by exploring some of the links between stress and support provision between romantic partners in different contexts, one of acute stress and one of chronic stress. The present thesis is composed of four sections: a general introduction, two empirical studies, and a general discussion. The general introduction presents the focus of the thesis, defines the study variables, provides relevant theoretical and empirical context pertaining to the focus of the thesis, and specifies the main objectives and hypotheses of the thesis. The general discussion will present a comprehensive summary and consolidation of the results of both studies. Study materials (i.e., ethics approval notices and consent forms) are included in the appendices. This thesis was written in accordance with the APA 7th manual, and/or in accordance with the journal to which the manuscripts were submitted.

The purpose of the first study was to examine the impact of experimentally induced stress (i.e., acute stress) on support seeking and support providing desires between romantic partners in a in-laboratory fictitious stressful scenario. Additionally, we aimed to explore the moderating role of each partner's combined romantic attachment and caregiving (into two variables called *hyperactivation* and *deactivation*) on the association between stress and desire to seek or provide support from the romantic partner. The first sample consisted of 109 English-speaking Canadian mixed-sex couples who had been involved in a romantic relationship with their partner for at least 12 months at the time of participation. We conducted series of two-way moderation analyses to examine our hypotheses. Results indicated that support seekers with higher stress or higher hyperactivation reported a greater desire to be with their partner during the stressful procedure, while those with higher deactivation reported a lower desire to be with their partner. Support providers with higher hyperactivation also reported a greater desire to accompany their partner. Support providers who perceived their partner as more stressed reported a lower desire to be with them when their partner reported greater deactivation and a greater desire to be with them when their partner reported lower deactivation. Such results highlight that there may be variability in support providers or seekers desires according to their attachment and caregiving.

The second study investigated longitudinal associations between parenting stress measured at two time points separated by 5 years (i.e., chronic stress), and the moderating effect of coparenting support in this association in biparental families. The sample consisted of 82 mixed-sex couples who are parents. We used a moderated Actor-Partner path analysis model to test our hypotheses. Our results revealed that greater parenting stress in each parent was related to their partner's greater parenting stress at each time point, but only to their own greater parenting stress about 5 years later. The association between fathers' parenting stress at both

time points was weaker in fathers who reported greater perceived coparenting support. This study highlights that coparenting support may act as a buffer to parenting stress.

Taken together, these studies provide a complementary overview of couples' experiences of stress and support in contexts of acute and chronic stress. While the first study focuses on how stress levels may be associated with romantic partner's desires for support seeking or providing, the second focuses on how romantic partner's perception of support quality is associated with their stress levels. Using cutting-edge actor-partner analyses and couple data in each study, as well as a laboratory paradigm in the first study and longitudinal data in the second study consist of important analytical and methodological strengths to these studies. The results highlight some of the variability in support seeking or providing tendencies in response to stress as well as in longitudinal experiences of stress. These results also add support to some of the theories that inform clinical conceptualizations of couple difficulties and intervention avenues for couples experiencing general relationship difficulties or those experiencing difficulties relating to coparenting specifically.

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Contribution of Authors

Both studies of the present thesis have been written in manuscript format. The first study is entitled *I'll be there for You: Couples' Support Providing and Seeking Behaviors in a Stressful Situation*. This study is published in *Marriage & Family Review* (Azzi et al., 2022), a peer reviewed journal. Thesis author, Stéphanie Azzi, appears as the primary author in this manuscript. Ms. Azzi participated in key aspects of this manuscript, including conducting the literature review, defining hypotheses, planning and conducting the statistical analysis of the data, interpreting the results and writing the manuscript. Thesis supervisor and principal study investigator, Dr. Marie-France Lafontaine, appears as the second author. She participated in the development and implementation of the study, including formulating the ethics request and data collection, supervised all aspects of the current manuscript and helped to write it. This study was also prepared in collaboration with Dr. Katherine Péloquin, appearing as the third author, who participated in the development and implementation of the study, and she reviewed the manuscript in its final form.

The second study is entitled *Are we There for Each Other? Longitudinal Associations Between Parenting Stress and Coparenting in Parents of Preschool and School-Aged Children*. Stéphanie Azzi appears at the primary author of this manuscript. Ms. Azzi participated in key aspects of this project, including data collection, conducting the literature review, defining hypotheses, planning and conducting the statistical analysis of the data, interpreting the data and writing the manuscript. The development of study methods and procedures, selection of validated measures, formulation of the research ethics request and data collection were completed through the joint efforts of the University of Ottawa's Child and Adult Relationships and Environments Lab and the Couple Research Laboratory. Thesis supervisor, Dr. Marie-France Lafontaine, appears as the second author. She is a co-investigator and participated in the development and

implementation of the larger project, supervised all aspects of the current manuscript, and helped to write it. Dr. Jean-François Bureau, principal investigator of the larger project, appears as the third author. He participated in all aspects of the development and implementation of the larger project and reviewed the final manuscript. This study was also prepared in collaboration with Dr. Audrey Brassard, who appears as the fourth author and provided support in the data analysis and reviewed the final manuscript.

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General Introduction

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As a social, relational, and bonding species, requiring support from loved ones is an innate and universal need (Johnson, 2019). As such, seeking support and providing it to others in times of need is essential to our own and our loved ones' wellbeing. The romantic relationship is particularly important to this effect as it can consist of adults' primary source of support. To this effect, a large body of research shows that providing or perceiving that one is receiving optimal support from a romantic partner is associated with various positive outcomes, such as psychological well-being, (Berli et al., 2021; Ratelle et al., 2013), physical health (Brown et al., 2003; Selcuk & Ong, 2013), and relationship quality (Lawrence et al., 2008; Overall et al., 2010). In fact, providing responsive support to the partner as well as seeking it effectively in times of stress is such a crucial component of healthy romantic relationships that learning to do so is at the heart of some therapeutic approaches, such as Emotionally Focused Therapy (EFT; Johnson, 2019). The main goal of the current thesis is to explore whether stress may be linked with support related desires and behaviours in couples in different contexts, one representing a context of acute stress and the other consisting of chronic stress. The first study will examine whether romantic partners' stress is associated with their support providing or seeking desire to or from their partner in a specific stressful scenario (i.e., acute stress). Additionally, this study will explore whether hyperactivation (i.e., strategies characterised by drawing attention to one's own distress, excessive rumination, seeking persistent reassurance) and deactivation (i.e., strategies characterised by denying one's own needs for comfort and support, withdrawing, or using distractions) of their attachment and caregiving systems moderate these associations. The second study will explore whether romantic partners' parenting stress (i.e., chronic stress) is associated with their own as well as their partner's parenting stress 5 years later, as well as to explore

whether their perception of support in their coparenting relationship moderated this association, in couples who are parents. The constructs of social support and stress will first be defined, followed by an overview of some of the most influential and relevant theories of stress and support in couples and ending with an overview of the empirical links between stress and support related desires or behaviours similar to those explored in the current studies.

Defining Stress

Stress is an inevitable element of life that has been experienced by humans for as long as we know. In fact, physical anthropologists have discovered considerable skeletal evidence of stress in prehistoric populations (Goodman et al., 1988). Many researchers have aimed to operationalize the term "stress". However, in the stress literature, whether medical or psychological, the term has been given multiple meanings and is commonly used interchangeably with other words, such as "anxiety" or "threat" (Burton & Hinton, 2004).

The different uses of the term "stress" can be categorised into two meanings: stress exposure or stress response (Harkness & Hayden, 2020). The term "stress" in the context of stress exposure refers to events or difficult environmental conditions to which an individual is exposed. Sometimes referred to as "stressors", these can range from acute (e.g., being in an accident; losing a job) to chronic (e.g., having a long-term physical illness; parenting). Acute stressors are temporally limited, such that they have an onset and an offset, and can have limited effects on a person's life, while chronic stressors are long lasting and relatively stable (Karney et al., 2005). Acute stressors may vary in length and can sometimes become chronic stressors. As such, it can sometimes be difficult to find a clear distinction between acute and chronic stressors (Randall & Bodenmann, 2009). In the present thesis, the stressor in the first study (i.e., a laboratory stressful situation) is considered acute given that it is temporally limited and has a

clear offset. In the second study, the stressor (i.e., parenting) is considered chronic given that the experience of parenting is long lasting, it does not have a clear offset and stress experienced from parenting is relatively stable from what we know (Putnick et al., 2010; Williams & Parra, 2019). In the context of stress response, "stress" refers to an individual's reaction to stress exposure, whether it be psychological/emotional (e.g., anxiety, fear, depression) or physiological (e.g., sweating, cortisol levels). For the purpose of the current thesis, we will differentiate the two by henceforth using terms such as "stressors" or "stressful situations" to refer to stress exposure and using "stress" to refer to individual's emotional stress response to a perceived stressor. Although exposure to a stressor can lead to experiencing stress, stressors do not automatically lead to stress (Harkness & Monroe, 2016). Individuals will vary in their reaction to the same stressor, such that some may experience more stress than others in the same situation (Compas et al., 2020). Differentiating between "stress" and "stressors" is, therefore, particularly important as it allows to explore how individuals' different levels of stress in response to certain stressors may be associated with their other tendencies, such as support seeking or providing tendencies. The present thesis will focus on psychological/emotional stress responses, specifically, using self report measures reflecting individuals perceived levels of stress, in link with an acute stressor in the first study (i.e., stressful laboratory procedure) and a chronic stressor in the second study (i.e., parenting).

Defining Social Support

Social support is a broad concept that englobes individuals' surrounding social structures, as well as their various interpersonal relationships. It can come in different forms that have generally been classified into three main categories: informational support, emotional support, and instrumental support (Taylor, 2012). Informational support involves providing information or

advice to the partner to help them understand a difficult situation or to help them decide how to manage it. Emotional support consists of providing the partner with warmth, comfort, acceptance, and reassurance that they are cared for and valuable. Instrumental support requires providing tangible help to a partner through a service or through providing goods and tools. Support attempts can either be positive or negative. That is, positive support attempts are those that can benefit the individual in need of support (e.g., through providing a solution, a hug) while negative support attempts do not benefit the individual (e.g., overprotection, control, minimising the other's experience; Falconier & Kuhn, 2019). Nonetheless, not all forms of positive support are appropriate in response to every situation. In order for support to be *effective*, it is important that it corresponds with the need of the individual seeking support at that moment (Cutrona, 1990). Both studies of the current thesis will focus on positive forms of support. Participants in the first study are not aware of the nature of the acute 'stressful' situation, as such, are not able to provide or seek instrumental nor informational support to or from their partners. As such, given that emotional support tends to be more appropriate for situations in which the individual has little to no control over the situation (Cutrona, 1990), only emotional support is measured in the first study. In the second study, however, the support measure encompasses informational, emotional and instrumental support as experiencing chronic stress consists of experiencing various stressors, for which appropriate support (i.e., informational, emotional, instrumental, or a combination) will vary with time and depending on the situation.

Links between Stress and Support in Couple Relationships

As previously highlighted, couple relationships are a privileged relationship in which partners can act as an important source of support to each other in times of stress, regardless of the type of stressor in which the support is sought from the romantic partner or provided to them.

However, theory and research suggest that stress and support related tendencies in couples can be linked to each other in different ways. On the one hand, experiencing stress can influence each romantic partner's support seeking or providing related tendencies, as will be the focus of the first study of the present thesis. For example, experiencing stress tends to be linked with a greater desire to seek support or to provide it to the partner (Bodenmann et al., 2015; Brock & Lawrence, 2014; Collins et al., 2014; Collins & Feeney, 2000; Feeney & Collins, 2001), however, certain factors, such as romantic attachment insecurities, may interfere with one's tendency to desire to seek or to provide support (Simpson & Rholes, 2017). On the other hand, support experiences (e.g., perceiving that one is receiving adequate support from the romantic partner) can also reduce one's experience of stress. This will be explored in the second study of the present thesis. To this effect, a multitude of studies have found benefits to obtaining support from a romantic partner in various stressful contexts (e.g., Bradbury & Karney, 2004; Glazier et al., 2004; Lafaye et al., 2014; Lee & Goldstein, 2016; Maheux & Price, 2016). We first review some of the theories linking stress to support seeking or providing tendencies relevant for each of these associations, following which we will present empirical links between stress and support in the contexts explored in the current thesis.

Theories of Stress and Support in Couples

Several theories have guided the understanding of the links between stress and support in the context of romantic relationships. In the following sections, we present an overview of the most influential theories (i.e., those that have guided the majority of the research in the field) for understanding the associations between stress and related coping responses, primarily, support seeking or providing. Initial models of stress and related coping responses (such as support seeking) were focused on the individual level, such as how one individual's experience of stress

impacts their own way of coping with the stress and how this may help reduce their own stress (e.g., Lazarus & Folkman, 1984). Although seeking support from a romantic partner was considered one of the possible means of coping with stress even in early models, those considering the possibility of dyadic effects, such as the possibility that one partner's variables (e.g., their level of stress, their support providing or support seeking strategy) could be related to the other partner's variables were introduced in later models (e.g., Bodenmann, 1995; Cutrona, 1990; Simpson & Rholes, 1994), which have allowed for a more complex and in depth understanding of some of the existing dyadic support dynamics that can arise in couples in times of stress.

Theory of Stress and Coping (Lazarus & Folkman, 1984)

Although not developed to address stress and coping in the context of couples, the Theory of Stress and Coping has influenced much of the work on romantic partners' emotion regulation processes within romantic partner's support tendencies (Monin, 2016). Lazarus and Folkman had proposed that individuals experience stress as a result of the appraisal they make of a stressor as being relevant to their well-being and as exceeding their resources to cope with it. According to them, "coping" consists of cognitive and behavioural efforts to manage stress, which has two functions: 1) regulating distressing emotions (e.g., stress) and 2) doing something to modify the source of distress (e.g., seeking support). They noted that stress and coping interact such that stress may decrease if the individuals' coping resource is adequate. Bodenmann suggested the Systematic Transactional Model (STM; Bodenmann, 1995) as a dyadic extension to Lazarus and Folkman's model. Although the STM recognises that individuals may effectively cope with stress individually or by seeking support outside of the romantic relationship, their model focuses on the processes that can occur within a romantic dyad in times of stress

(including stress appraisal and support seeking or providing behaviours). For example, they argue that the stressed individual will communicate their stress to their partner verbally or nonverbally (i.e., support seeking), following which the partner will interpret the stress signals and respond using a range of possible coping behaviours which either represent positive or negative support providing strategies. Both these models have been particularly important in highlighting the idea that an individual's partner consists of an available resource for support that can help to alleviate an individual's stress experienced in response to a stressor. Despite this important contribution to the stress and support literature, these models do not focus specifically on the mechanisms determining whether a certain method of coping (e.g., type of support provided) is effective or not.

Theory of Optimal Matching (Cutrona, 1990)

The Theory of Optimal Matching complements the previously described theory in that Cutrona (1990) brought forward the idea that not all forms of support are appropriate and appreciated in all contexts, even if "positive". They explain that the effectiveness of support provision (i.e., perceived supportiveness according to the support seeker) depends on the match between the enacted support behaviour (e.g., instrumental support, emotional support) and the context in which it is enacted (e.g., controllable vs uncontrollable stressor, intimate relationship, casual relationship, achievement/performance context). For example, they noted that since nothing can be done to prevent the consequences of uncontrollable stressful events, emotional support may be more important as this can help to reduce individuals' negative emotional reactions to the event. The idea that positive forms of social support are not always automatically appropriate is a notion that has contributed greatly to the support literature and to our understanding of factors that can determine whether support is effective in specific scenarios

(Cutrona et al., 2018). Taken together, the theory of stress and coping, the STM and the theory of optimal matching each individually contribute to the support literature addressing how receiving effective support can contribute to reducing one's experience of stress. However, they do not address the fact that experiencing high levels of stress in itself may contribute to poor coping and to using ineffective support seeking or providing strategies through certain moderators. In fact, some individual differences, such as romantic attachment, may mitigate support behaviours in response to stress.

Attachment Theory (Bowlby, 1969/1982)

Attachment theory provides an important perspective from which to understand some of the variability in individuals' support seeking or providing responses to stress between romantic partners. According to this theory, children begin forming working models, as early as infancy, through relationship experiences with their caregivers (e.g., parents) that consist of expectations regarding whether others are likely to provide support when it is needed and whether one is worth receiving that support (Bowlby, 1969/1982). In adult romantic relationships (Hazan & Shaver, 1987), these two systems coexist within all individuals, and each play a role in their support dynamics as individuals can seek support from loved ones in times of stress (i.e., attachment system) and can also provide it to a loved one in response to their stress (i.e., caregiving system).

Within the attachment system, the working models can translate into romantic attachment anxiety (i.e., preoccupation with relationships and fear of rejection and/or abandonment) and romantic attachment avoidance (i.e., discomfort with closeness and distrust of others), where low attachment anxiety and avoidance indicate a secure attachment (Mikulincer & Shaver, 2016). In response to stress, securely attached individuals, who value intimacy given their positive sense of

self-worth and positive expectations of others, tend to prioritize using primary attachment strategies in the moment, which are optimal ways of seeking support or protection (e.g., searching for and requesting emotional support and protection) that corresponds to their need in order to be soothed and, thus, to inactivate their attachment system. Insecurely attached individuals, however, tend to use less optimal strategies when their attachment system is activated, such as drawing attention to their own distress, excessive rumination, seeking persistent reassurance (i.e., *hyperactivation* strategy, often used by individuals with greater attachment anxiety) or by denying their attachment needs for comfort and support, withdrawing or using distractions (i.e., *deactivation* strategies, often used by individuals with greater attachment avoidance; Mikulincer & Shaver, 2016). Such strategies are less effective at reducing the individual's distress and can even further increase their distress (Mikulincer & Shaver, 2016).

The caregiving system is parallel to the attachment system as it serves to motivate individuals to reduce the suffering of dependent others (children or adults) and to provide them with protection and support (Collins et al., 2010). An adults' caregiving system can be activated in response to their loved one's stress and discomfort, which promotes their support providing towards this loved one. Similar to the attachment system, individuals may resort to using either hyperactivation (e.g., overinvolvement or offering support even though it is not needed by the partner) or deactivation (e.g., distancing oneself from the situation or the partner who is seeking or needing comfort) caregiving strategies (Canteberry & Gillath, 2012). Individuals with greater attachment insecurity tend to use hyperactivation or deactivation caregiving strategies (Collins et al., 2010).

Attachment Diathesis-Stress Model (Simpson & Rholes, 1994, 2012). According to the Attachment Diathesis Model, insecure attachment acts as a diathesis that can generate

maladaptive support seeking or providing responses to stressful events. In congruence with attachment theory, Simpson and Rholes (2012) argue that individuals may respond differently to stress according to their attachment orientation. Further, these authors distinguish between contexts of acute stress and chronic stress, arguing that both can activate the attachment system and caregiving systems, but noting that stress and support responses may be different in each context given that acute stress is time limited, while chronic stress is not. Acute stressors, whether external or internal to the relationship, are thought to temporarily activate working models in order to evoke behaviours aimed at reducing the individual's distress, such that insecurely attached individuals are more likely to use either hyperactivation or deactivation strategies for support seeking or support providing, which is less effective at obtaining or providing effective or responsive support, therefore, at helping the individual reduce their stress. These authors highlight, however, that when partners provide responsive support in manner that corresponds to the need of the support seeker, their stress can subside. Simpson and Rholes (2012) add, however, that chronic stressors are different to this effect given that the source of stress is continuous and remains present for long periods of time. As such, support provided by a romantic partner, even if responsive and appropriate, may not fully reduce the activation of the stressed individual's attachment system. Consequently, the attachment system of individuals experiencing chronic stress may remain activated for prolonged amounts of time. The authors argue that this, ultimately, can increase baseline levels of attachment insecurity and thus, further perpetuate their experiences of stress and their use of ineffective support related behaviours.

Summary of Theories

In taking together these theories, it appears that romantic partners can act as a crucial resource for support seeking and providing to each other. The means through which individuals

tend to seek or provide support to their partner in times of stress, however, can vary according to the level to which they use attachment and caregiving hyperactivation and/or deactivation, which are activated by either being stressed (i.e., attachment system) or perceiving that one's partner is stressed (i.e., caregiving system). If the support that is being provided is perceived as helpful by the support recipient, this can alleviate the support seeking partner's stress. However, this appears to be somewhat more difficult in contexts of chronic stress given that chronic stressors persist through time, which can make it more difficult for an individual's stress to fully subside even if they perceive that they are receiving support that corresponds to their needs.

Acute Stress and Support Seeking or Providing Responses in Couples

As delineated above, when individuals experience stress, certain factors, such as their tendencies for deactivation or hyperactivation of their attachment and caregiving systems, may interfere with their ability to provide support to or seek it from a partner effectively. As such, research on factors contributing to the variability in support related responses between romantic partners is particularly important to this effect. Within the literature on support related desires and behaviours between romantic partners, researchers have explored the impact of various sources of stress, (e.g., acute or chronic, external or internal to the romantic relationship, experimentally induced or naturally occurring stress) using different measures (e.g., self report or observed, self-report from the support seeker or provider's perspective, general support in the relationship or specific to an event or context).

Given that acute stressors are time limited, these make for a suitable context in which to explore the variability in how romantic partners may respond in terms of support seeking or providing to the same stressor, which will be explored in the first study of the present thesis. Within the literature on acute stressors and support responses in couples, most have focused their

work on stressors that are external to the relationship (Randall & Bodenmann, 2009). This may be due to the fact that internal relationship stressors consist of those originating from within the relationship only, as such, internal stressors are much more limited than external stressors. Additionally, although external stressors originate from outside of the relationship (e.g., stressors at work), they tend to spill over into the relationship such that they can become a relationship problem or an internal stressor (e.g., in the case of a partner feeling upset that their partner did not provide them with effective support; Randall & Bodenmann, 2009). As such, focusing on external stressors, which will be the case of the first study of the current thesis, is particularly important to shed light on some of the ways factors external to the relationship might spill into the relationship, through the ways in which partners respond in terms of support seeking or providing to each other.

Within the empirical literature focusing on couple's support related desires or behaviours in response to acute stress, regardless of whether the stressor is external or internal to the relationship, researchers have generally relied on stress induction methods, as opposed to observation of naturally occurring stress or using self-report measures to measure a current and pre-existing acute stress. Stress induction will also be used in the first study of the current thesis as it consists of a method that allows for greater control over the study environment and more control over potential biases (Thompson & Panacek, 2006). Among studies using induced external stressors, specifically, most have experimentally induced stress by making participants believe they were going to participate in a stressful task or procedure (Campbell et al., 2001; Dewitte et al., 2010; Meuwly et al., 2012; Mikulincer & Florian, 1997; Rholes et al., 1999; Simpson et al., 1992; Simpson et al., 2002), while some have aimed to trigger an acute stress response by building on the partners' already existing individual stresses (external to the

relationship), such as by asking them to discuss a personal stressful problem unrelated to their romantic relationship or some personal goals to their partner (Collins & Feeney, 2000; Feeney, 2004). To our knowledge, only one study has explored support related behaviours in a naturally occurring stressful (or potentially stressful) context likely to activate support seeking or providing behaviours. In their study, Fraley and Shaver (1998) observed couples' support related behaviours (e.g., proximity seeking, physical contact) in couples who were about to separate at an airport. The couples were observed while together in the airport until one partner got on the plane and the other left the airport. Consistent with attachment theory, their results suggested that women with greater attachment avoidance (measured by self-reported questionnaires administered to both partners prior to their separation) were less likely to maintain proximity to their partner and to have eye contact with them, were more likely to pull away from their partner, and their partners were less likely to seek or provide care and support to them, prior to separating. Despite the fact that the first study of the present thesis will prioritise experimentally induced acute stress, as opposed to naturally occurring stress, the findings from this study contribute to informing the present thesis' hypotheses given their focus on romantic attachment and proximity behaviours in a context of acute stress.

Regarding participants' experience of stress, some studies do not explicitly measure participants' levels of stress following stress induction. Doing so is particularly important given that, although it is assumed that stress induction measures will induce stress, such situations will likely trigger differing levels of stress among participants, ranging from high stress to no stress at all. Among those that have explicitly measured participant's levels of stress, most have relied on using self-report measures, as will be the case in the first study of the present thesis. Others have also used observational and coding methods or measuring participants' cortisol levels (Dewitte et

al., 2010; Meuwly et al., 2012). Although observational methods allow the opportunity to observe nonverbal and verbal signs of distress that would not come up in a self-report measure, relying only on observational ratings of distress can be limited given that distress is not always noticeable by others, particularly in the case of individuals who use deactivation strategies as they may not appear distressed even if they feel stressed. Using self-report measures, despite its own limitation of potential desirability biases, allows to reduce this limitation.

One of the biggest sources of variability among studies exploring support related behaviours in couples in contexts of acute stress lies in their measures of support seeking or providing responses. Although measuring similar or related constructs using various means (e.g., self-report questionnaires, observation) and perspectives (i.e., the support seeker, the provider or an observer) can be valuable over time to test whether hypotheses may hold across multiple different perspectives, this creates challenges when it comes to comparing studies and compiling their general findings. For example, within studies that have used observational and behavioural coding of support related responses, some studies coded a different set of behaviours for the support seekers (e.g., reassurance seeking, proximity seeking) and the support providers (e.g., emotional support and reassurance provision) within the same study (Collins & Feeney, 2000; Rholes et al., 1999; Simpson et al., 1992; Simpson et al., 2002; Simpson et al., 2007), while others have coded the same set of behaviours for both the support seeker and provider (Campbell et al., 2001; Cambell et al. 2005, Dewitte et al., 2010; Simpson et al., 1996; Simpson et al., 2010). One study opted to experimentally manipulate and induce the type of support provided (emotional, instrumental or none), rather than observing the participant's actual support providing tendencies, to explore the impact of each type of support responses to stress on distress (Mikulincer & Florian, 1997). In addition to observational measures, some studies have also used

self-reported measures to assess either the support provider or the support seeker's perception of their own or their partner's support in the current context (Campbell et al. 2005; Collins & Feeney, 2000; Simpson et al., 1996; Simpson, et al., 2010), while others have used measures of support that reflect general support tendencies, such as the support seeker's perception of their partner's general support provision quality (Feeney, 2004), or the support seeker's perception of how the couple (including themselves and the partner) generally copes with external stressors (Meuwly et al., 2012). Combining both partner's support into one variable can provide interesting information about the individual's overall perception of the couple's coping. However, studies that explore each partner's unique perspective of their own and/or their partner's support tendencies are particularly valuable as they allow researchers to explore potential interactions between an individual and their partner, such as by using actor-partner analyses, which will be used in the first study of the present thesis. It appears that most of the studies presented above have explored at least some actor-partner links, however, there is significant variability in the factors included in such analyses between studies (e.g., exploring how one partner's anger is linked to the other partner's anger without looking at the actor-partner links between stress and support), making it difficult to compare and compile the findings.

Despite these differences in the methodologies and variables used in the literature on couples support related responses in contexts of acute stress, findings are mostly coherent with one another, as well as with the previously presented theories. Among studies that have explored the direct links between stress experienced by support seekers and their own or their partner's support providing behaviours, findings generally suggest that those experiencing greater stress tend to seek more support or proximity to their partner, and support providers of partners in a stressful situation tend to provide more support to stressed partners. Only Simpson et al. (2010)

found the opposite pattern (i.e., those who have more distressed partners tend to behave less supportively towards them). One possible explanation is that stress was solely measured by observers who coded the interaction, and, thus, may not have reflected individuals' levels of actual stress. Additionally, preliminary correlations indicated a strong correlation between each partner's level of distress during their stress inducing conversation. Their analyses further revealed that individuals who were more distressed themselves also provided less support to their partner. As such, it is possible that there may have been a strong spillover effect in this context, especially when considering that the stress inducing conversation pertained to a pre-existing area of conflict within the relationship (i.e., internal stressor). Findings also suggest that attachment tendencies are linked to support seeking or providing related responses in contexts of stress. Overall, findings suggest that, in contexts of acute stress, individuals who generally use hyperactivation attachment or caregiving strategies mostly seek proximity to their partner when they are stressed (although this can be requested or demonstrated through less effective or indirect strategies), and, as support providers, tend to use more negative forms of support such as overinvolvement, criticizing or blaming the partner. Those who generally use deactivation tend to distance themselves from their partners in contexts of stress, both as support seekers who are experiencing stress or as support providers to a partner experiencing stress. In sum, the empirical literature reviewed above complements the previously reviewed theories suggesting that experiencing stress can be associated with using different support seeking or providing strategies according to certain factors, such as the level of stress experienced by the individual, the perception of the partner's stress or hyperactivation and deactivation tendencies.

Summary of Research Findings

In sum, research suggests that, in general, when individuals experience stress, they tend to desire to seek support from loved ones to help soothe their distress. Similarly, when an individual witnesses a loved one's distress, they also tend to provide support to this loved one. The support sought or provided in such contexts, can, however be effective or not. Attachment and caregiving tendencies of hyperactivation or deactivation appear to be among the factors that can interfere with one's ability to effectively seek support from a partner or provide it to a partner. Despite the current research suggesting that both hyperactivation and deactivation of the attachment system can be linked to support seeking or providing behaviours in laboratory situations of acute stress, the links between hyperactivation and deactivation of the caregiving system and support seeking or providing behaviours in such context remains unexplored. Thus, the first study aims to fill in this gap by exploring the moderating role of hyperactivation and deactivation in the association between stress and emotional support seeking or providing desires towards the romantic partner.

Despite the fact that the means through which support can be sought or provided to a loved one may vary, the impact of the support that one receives on their own experience of stress can also vary. When support is provided effectively and in a manner that corresponds with the recipients' needs and desires, it can help to reduce some of the negative outcomes related to stress, whether acute or chronic. This link will be further explored in the second study of the current thesis, such that we will explore the moderating link of perception of support quality within the relationship on the experiences of stress over time. Research relevant to this link is further detailed in the following section.

Chronic Stress and Perception of Couple Support

Given the detrimental effects of stress, particularly chronic stress due to its continuous nature (Shaw et al., 2018), exploring the factors that can contribute to one's experience of stress, such as support from a romantic partner, is crucial to better understand how to manage it. Research on the associations between chronic stress and support related behaviours among couples generally focuses on general chronic stress as the result of a combination of multiple life stressors (e.g., Brock & Lawrence, 2014), chronic illnesses (e.g., Traa et al., 2015), or parenting (e.g., Camisasca et al., 2014). As previously mentioned, even stresses that originate from outside of the relationship tend to spill over into the relationship. As such, chronic stressors tend to be considered external and internal stressors simultaneously given that over time, the spill over often makes it become a stressor relevant to both partners in the relationship such that it becomes an internal stress within the romantic relationship (Simpson & Rholes, 2012). Considering that different sources of chronic stress can each be associated with their own unique challenges (e.g., coping with a chronic illness vs parenting demands); we will henceforth narrow our focus to the literature surrounding chronic stress in the context of parenting only as it is the focus of the second study of the present thesis.

Among possible chronic stressors, parenthood consists of one of the greatest adjustment that most couples will experience (Mangelsdorf et al., 2011). Parenting stress is a form of stress that occurs uniquely in parenting when parents experience discrepancies between the parenting demands, their own expectations and their actual resources allowing them to perform in their parenting role (Abidin, 1992; Deater-Deckard, 2004). More specifically, parenting stress generally occurs as a function of difficulties with managing children's behaviours, or of managing daily parenting tasks (e.g., children's schedules). It is a universally experienced type

of stress that can affect parents from different sociodemographic groups and can be triggered in multiple parenting contexts (e.g., at home or in a grocery store; Crnic & Low, 2002). Some suggest that chronic parenting stress may play a bigger role in increased psychological distress (anxiety and depression) than major stressful life events (Quittner et al., 1990) and that it appears to be the most relevant form of stress associated with parenting behaviours (Deater-Deckard, 1998). Various studies have documented the negative associations of parenting stress with parenting and children's wellbeing, such as less responsive parenting, lower parenting self-efficacy, and increased child behaviour problems or difficulties in cognitive development (Deater-Deckard & Panneton, 2017; Ward & Lee, 2020). Parenting stress also appears to remain stable over time, although research on the stability of parenting stress is sparse. Some suggest that levels of parenting stress remain similar across the first five years of children's life (Crnic et al., 2005; Williams & Parra, 2019) and as well as the first five years of early adolescence (Putnick et al., 2010). To our knowledge, however, studies have yet to explore parents' experiences of parenting stress in mid-childhood nor across developmental periods. The second study of the current thesis aims to contribute to filling in this gap by exploring parenting stress measured during the preschool and the school years. Given that parenting stress appears to remain stable, based on what is known so far, it is imperative to better understand factors that can help to cope with it, particularly for parents who experience high levels of parenting stress, such as support between partners.

The notion of "coparenting" is particularly relevant to this effect. Coparenting is defined as the way parents who are rearing one or several children together support and coordinate each other in their role of parents and in sharing responsibilities for childrearing (Feinberg, 2003). Whereas parenting consists of providing physical and emotional sustenance, protection and

promoting development of a child, coparenting requires doing so harmoniously with another parent (Feinberg, 2003). In the *ecological model of coparenting* (Feinberg, 2003), coparenting quality is determined by the combination of individual variables (e.g., parent and child characteristics), family variables (e.g., couple relationship) and extra-familial factors. They highlight that when parents are able to coparent harmoniously, this can act as a buffer to reduce parents' experiences of parenting stress from early childhood to adolescence.

Within the literature on stress and support related behaviours between romantic partners who are parents, studies have often used measures of parenting stress specifically, rather than general life stress, given that it relates directly to the stress experienced in the context of parenting, as is the case in the current thesis. Some studies, however, do not explicitly measure parent's reported level of stress (Rholes et al., 2001; Simpson et al., 2003), but rather measure change in behaviours between romantic partners (including support seeking and providing) from pre- to post- birth, based on the assumption that this is a likely stressful adjustment. As an alternative to measuring parent's experience of stress, some have explored the presence of stressors, such as the demands placed on the individuals by the family and work-family conflicts (e.g., Kohn et al., 2012). Although it is generally understood that the transition to parenthood can be stressful, and that experiencing multiple parenting related stressors will likely increase stress, considering the transition to parenthood or parenthood itself as inherently stressful or negative is erroneous given that almost half of couples do not experience it as negative, some even reporting improvements on some levels of their relationship (Kluwer, 2010). As such, measuring parents' levels of stress is particularly important to better understand the variability in parents' levels of parenting stress, rather than to assume that parenting is experienced as stressful.

Despite the narrow focus of our overview of the literature on studies that explored support related behaviours in couples who are parents in relation to stress, there remains some variability in the measures of support used in research in this area. This is especially true with regards to the type of support related behaviours explored and the perspective from whom they are reported. Most studies have relied on self-reported measures of support related responses between parents. To our knowledge, only one study observed support behaviours between parents during a home visit (Belsky et al., 1995). Among those who measured self-reported support related responses, much of the research has only focused on one parent's perception. Those focusing on mothers asked them to report their own perception of general spousal supportiveness in their relationship with their partner (Kanter et al., 2019), their own perception of the coparenting quality in the relationship (Kang et al., 2020), or their own perception of marital intimacy in the relationship, a support proxy which comprises items on support seeking and providing (Chester & Blandon, 2016). Only one study focused solely on fathers, and they explored perceptions of mutual coparenting support in their relationship (Bronte-Tinkew et al., 2010). Taken together, these studies can provide us with a glimpse of whether the links between stress and support may be similar for men and women. In general, these studies are consistent in suggesting that mothers and fathers who report perceiving greater support in their relationship tend to experience lower parenting stress, whether it be coparenting or general support. Interestingly, Kanter et al. (2019) found the opposite pattern when children are between 1-3 years (i.e., greater support is linked with greater parenting stress), contrary to when they are between 3 and 5 years old (i.e., greater support is linked with lower parenting stress). The authors suggest that this may be due to the fact that mothers experience higher levels of parenting stress when their child is very young, as such, although they can receive greater

support, the support they are provided may not be enough to reduce parenting stress. An important drawback to only having one partner included in studies on dyadic processes, such as mutual support, is that actor-partner analyses exploring the impact of each partner's variables on the other cannot be conducted, hence why a dyadic perspective was prioritized in the present thesis.

Among studies with couple samples, there is also variability in the measures used to explore support related responses. Some explored *general* supportiveness, either by asking each partner to report their own perception of their partner's general supportiveness (Kohn et al., 2012), or by asking mothers to report their general support seeking tendencies from their partner, and both mothers and fathers to report the father's general support provision towards the mother (Rholes et al., 2001; Simpson et al., 2003). Others explored *coparenting* dimensions specifically, such as both parents' perception of the overall coparenting quality in the relationship (Camisasca et al., 2014; Kang et al., 2020; McDaniel et al., 2018), or specific dimensions of coparenting such as coparenting support and or coparenting undermining (Shoppe-Sullivan et al., 2016; Solmeyer & Feinberg, 2011). Using different measures of support between parents can create some confusion in the literature, particularly since general relationship support and coparenting support are different concepts. Although they overlap when they exist within the same individuals (i.e., couples who are parents), the romantic relationship and coparenting relationship are not the same. In fact, the romantic relationship serves to satisfy the emotional and sexual needs of each partner, which are independent of the parents' relationship with their children, while the coparenting relationship serves to provide a secure environment for the child to grow up in (Tissot et al., 2016). That being said, some research suggests that when parents appear to be good caregivers in one relationship, such as the romantic relationship, they are also better

caregivers in other relationships, such as in parenting (Hart et al., 2017; Millings et al., 2013). As such, it may be that once a parent possesses the capacity to provide responsive caregiving in one aspect of their relationship (e.g., romantic relationship), they also may be better equipped to offer support to that same partner in other aspects of their relationship (e.g., coparenting). Despite the possible overlaps between the romantic relationship and the coparenting relationship, the current thesis' second study prioritised the use of a measure of coparenting support given that it relates more closely to the context of its respective study (i.e., parenting), as opposed to a measure of general support within the parents' romantic relationship.

In sum, despite the differences that exist in the literature on stress and support related behaviours in couples who are parents, the findings are generally consistent with one another, as well as the theories that were previously presented. That is, it appears that effective support in the parents' relationship can act as a buffer to reducing parenting stress, such that parents who perceive greater support in their coparenting relationship also tend to experience less parenting stress. This link over time, however, remains unknown, such that no study has yet to explore the moderating effect of coparenting on parenting stress measured at different time periods. In addition, research on parents of children in developmental periods beyond infancy and toddlerhood, such as the school years, is much sparser. That being said, research focusing on the school years is particularly important as it imposes various adjustments that can be stressful given that school-aged children require more parental supervision and discipline, while also desiring more autonomy (Millings et al., 2012).

The Current Studies

The current thesis aims to deepen our understanding of the links between stress and support related desires and behaviours between romantic partners in different contexts. In taking into

consideration some of the gaps and limitations of the literature reviewed above, each study uniquely contributes to the research field on stress and social support in couples by focusing on specific yet distinct long-term couple samples (young adults vs parents), types of stresses (induced acute stress vs chronic stress) as well as support related desires or behaviours relevant to the context in which they are measured (proximity seeking/emotional support vs coparenting support/combinations of emotional, instrumental and informational support). Such differences between these studies' samples, contexts, and variables of interest are crucial to the understanding of support related desires or behaviours between romantic partners as it can vary largely according to the situation in which it is sought or provided. Both studies also complement each other in that the first one focuses on how stress may be associated with one's support seeking or providing responses, while the second focuses on the how each partner's perception of support is associated with their experiences of stress. Each study explores actor-partner associations (i.e., analyses exploring links between an individual's variables and their partner's variables), which allows for a better understanding of the interplay between each partners' variables. As such, taken together, they provide a broad overview of couples' experiences of stress and support in contexts of acute and chronic stress.

The objective of Study 1 is to examine the impact of experimentally induced stress (i.e., acute stress) on emotional support seeking and providing between romantic partners in a fictitious stressful laboratory scenario. Additionally, we examine the moderating role of each partner's combined romantic attachment and caregiving (using factor scores called hyperactivation and deactivation of the attachment and caregiving dimensions) on the association between stress and desire to seek support from or provide support to the romantic partner. Using such factor scores allows us to further expand upon existing research given that caregiving tendencies have yet to be taken into consideration in exploring support tendencies in

experimentally induced stressful contexts, despite support providing being a proxy to the caregiving system. Analyses consist of four two-way moderations, two of which are for support seeker variables and the other two for support provider variables. Within the two models for support seekers and support providers, one model includes actor hyperactivation and deactivation as moderators of the association between stress and desire to be with the partner, while the other model includes partner hyperactivation and deactivation as moderators.

With regards to hypotheses for partners in the support seeker role, we expect that support seekers' perceived levels of stress will be positively associated with their own desire to be with the support provider during the stress experiment. We expect that this association will be stronger for support seekers with higher hyperactivation scores (i.e., high attachment anxiety, high controlling and compulsive caregiving) and weaker for those with lower hyperactivation scores (i.e., low attachment anxiety, low controlling and compulsive caregiving). Conversely, we expect that this association will be weaker in individuals with higher deactivation scores (i.e., high attachment avoidance, low caregiving proximity and sensitivity) compared to those with lower deactivation scores (i.e., low attachment avoidance, high caregiving proximity and sensitivity). Additionally, we expect that the partner's tendency for hyperactivation or deactivation will moderate the association between support seekers' perceived levels of stress during the experiment and their desire to be with their partner. That is, we expect that this association will be weaker in support seekers whose partners report higher levels of hyperactivation or deactivation compared to those whose partners report lower levels of hyperactivation or deactivation.

In terms of hypotheses for partners in the support provider role, we expect that support providers' perception of support seekers' stress will be positively associated with their desire to

be with the support seeker during the stress experiment. We expect that this association will be stronger for support providers with higher hyperactivation scores and weaker for those with lower hyperactivation scores. Conversely, we expect that this association will be weaker in support providers with higher deactivation scores compared to those with lower deactivation scores. Additionally, we expect that the partner's tendency for hyperactivation or deactivation will moderate the association between the support providers' perception of support seekers' stress during the experiment and their desire to be with their partner. That is, we expect that this association will be stronger in support providers whose partners report higher levels of hyperactivation compared to those whose partners report lower levels of hyperactivation. Conversely, we expected that this association would be weaker in support providers whose partners report higher deactivation scores compared to those who's partners report lower deactivation scores.

The objective of Study 2 is to examine the longitudinal associations between parenting stress measured at two time points separated by approximately 5 years (i.e., chronic stress), as well as the moderating effect of coparenting support in this association in biparental families. More specifically, we explore how mothers and fathers' parenting stress reported during the first time point is associated with their own and their partner's parenting stress during the second time point, as well as whether parents' perception of the quality of support in their coparenting relationship moderates this association. Analyses for this study consist of moderated path analyses using the Actor-Partner Interdependence Model. Given that the majority of research on parenting stress and coparenting focuses on the early years of parenting, we aim to expand on existing research by using a sample of couples who are parents of children from early to mid-childhood.

Regarding cross-sectional hypotheses, we expect that mothers and fathers' greater levels of parenting stress will be linked to their partner's greater levels of parenting stress at each time point, and that greater perceived coparenting support will be associated with their own and their partner's lower parenting stress during the second time point. Regarding longitudinal hypotheses, we expect that mothers and fathers' levels of parenting stress during the first time point will be positively related to their own as well as their partner's parenting stress during the second time point. We also hypothesize that mothers and fathers' perception of coparenting support in their relationship will moderate these links such that it will be stronger in mothers and fathers who report lower perceived coparenting support, and weaker in mothers and fathers who report greater perceived coparenting support.

In summary, both studies possess many strengths and innovative components that will promote a more profound understanding of support between romantic partners in contexts of stress. More specifically, given the crucial role of effective and responsive support on relationship functioning, this thesis aims to broaden our understanding of how different support related behaviours and desires may be linked to stress, whether acute or chronic. The implications of each study will be discussed throughout their respective studies, and further elaborated in the General Discussion.

Chapter II

I'll be There for You: Couples' Support Providing and Seeking Behaviors in a Stressful Situation

A manuscript version of this study is published in *Marriage & Family Review*.

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Abstract

We examined the associations between stress and support seeking or providing in couples during a stressful situation, as well as the moderating role of hyperactivation and deactivation of the attachment and caregiving systems. One hundred nine mixed sex Canadian couples completed questionnaires on romantic attachment and romantic caregiving. Following this, couples participated in an experimental procedure aiming to induce stress, where each partner was assigned either the role of support seeker or support provider. Results indicated that support seekers with higher stress or higher hyperactivation reported a greater desire to be with their partner during the procedure, while those with higher deactivation reported a lower desire to be with their partner. Support providers with higher hyperactivation also reported a greater desire to accompany their partner. Support providers perception of their partner's stress significantly interacted with their partner's level of deactivation in its association with support providers' desire to accompany their partner. The findings emphasize the importance of considering individuals' general romantic attachment and caregiving tendencies to conceptualize romantic partners support responses to each other.

Keywords: support seeking; support providing; couples; romantic attachment; caregiving

I'll be There for You: Couples' Support Providing and Seeking Behaviors in a Stressful Situation

Throughout their lifetime, every couple will face a variety of adverse situations. Although effective support can originate from various sources, romantic partners are among the most important sources of an individual's social support, particularly during difficult times (Taylor, 2012). Support behaviors in romantic relationships are a dyadic process involving both support seeking and support providing. Support seeking behaviors, as well as the quality of the support provided, have been linked to both partner's efforts in supporting each other and both partners' perceptions of the threat or stressor (Collins & Feeney, 2000). Attachment theory provides an interesting framework to understand support between romantic partners, where support is understood as involving an interaction between the attachment (i.e., support seeking) and the caregiving (i.e., support providing) systems (Bowlby, 1969/1982). However, despite support being a dyadic process, research exploring the links between romantic attachment or caregiving, and support seeking or providing, among samples of couples remains fewer compared to samples of individuals.

The present study aimed to deepen our understanding of how romantic partners' perceived level of stress influences their desire to seek or to provide support to one another in a in-laboratory stressful situation. Although research suggests that both the romantic attachment and caregiving systems can be linked with specific situational support-related behaviors between romantic partners (e.g., Feeney & Collins, 2003), previous research exploring such links in a stressful laboratory task have only focused on romantic attachment. As such, we sought to extend previous literature by combining each partner's romantic attachment and caregiving tendencies (i.e., also called dispositional attachment and caregiving, see below) into constructs called

hyperactivation and *deactivation* of the attachment and caregiving systems. More specifically, we explored the effect of hyperactivation and deactivation of the attachment and caregiving systems in moderating the association between stress and the desire to seek or provide support using dyadic analyses.

The Attachment and Caregiving Systems

Attachment theory suggests that attachment is formed in early infancy through caregiver-child interactions (Bowlby, 1969/1982). Children develop internal working models that consist of expectations regarding whether others are likely to provide support when it is needed and whether one is worth receiving that support (Bowlby, 1969/1982). When children's caregivers are available, responsive, and warm, they develop a sense of security in knowing that they are worthy of others' love and can count on them for support. As adults, securely attached individuals value intimacy, as they have a positive sense of self-worth and positive expectations of others. Thus, in times of need, the securely attached individual's attachment system is activated, fostering their tendency to seek support from loved ones. The caregiving system is parallel to the attachment system. Also thought to develop through parent-child interactions, this system serves to motivate individuals to reduce the suffering of dependent others (children or adults) and to provide them with protection and support (Mikulincer & Shaver, 2016). When children experience responsive, available, and warm parenting, this also provides them with positive models of how to effectively provide caregiving themselves (Gillath et al., 2016). In adults, the caregiving system is activated when individuals notice their loved one's signs of distress (Canteberry & Gillath, 2012). If support behaviors are perceived to have been successful at appeasing the partner's needs and distress, the caregiving system is then deactivated.

In adult romantic relationships, the attachment and the caregiving systems are complimentary and reciprocal in nature (Hazan & Shaver, 1987). On the one hand, the attachment system influences distressed individuals' support seeking from their romantic partner, as it serves as a mechanism through which they aim to have their own needs and distress attended to. On the other hand, individuals' caregiving system influences their support providing to their distressed partner, as it serves as a mechanism through which they can attend to their partners' needs and distress. Thus, while the attachment system is self-focused and serves to ensure individuals' own safety and to reduce their own risk of being harmed, the complimentary caregiving system is other-focused and serves to reduce the risk of the loved one being harmed.

Although the attachment system in one partner and the caregiving system of the other partner can serve a complementary purpose, both systems exist within each individual and are closely linked. Individuals with higher attachment security generally also provide more effective caregiving (Gillath et al., 2016). When individuals manifest a sense of security in their worth and in their trust of others' responsiveness, they generally possess the capacity to put aside their own needs in order to attend to the distress of their partner. Supporting this assertion, research suggests that attachment security is linked with optimal caregiving towards the romantic partner (e.g., Péloquin et al.,2013; Péloquin et al., 2014; Péloquin et al., 2011). Considering the important link between these two systems in adult romantic relationships, several studies have aimed to examine them using different means and in various contexts. Many studies have measured participants' self-reported general or relationship-specific romantic attachment and caregiving through questionnaires (also called *dispositional* attachment or caregiving as it reflects whether an individual's attachment or caregiving tendencies are secure or insecure; e.g., Feeney & Collins, 2001; Kunce & Shaver, 1994; Millings et al., 2012). Conversely, others have

explored support seeking and support providing desires (e.g., desire for intimacy, desire to be with the partner) or behaviors (e.g., asking for reassurance, physical contact, writing a letter of support) as indexes of *situational* romantic attachment or caregiving in specific contexts (e.g., Collins & Feeney, 2000, Crowell et al., 2002; Farrell et al., 2016; Simpson et al., 1992). Dispositional attachment and caregiving are, however, not synonymous to situational attachment and caregiving related desires or behaviors in specific contexts, where the latter may also be associated with particular aspects of the context (e.g., Feeney & Collins, 2001). Nevertheless, research does suggest that they are linked, such that attachment and caregiving tendencies tend to influence attachment and caregiving-related desires and behaviors in specific contexts (e.g., Collins & Feeney, 2000; Dewitte et al., 2010; Feeney & Collins, 2003). Such research is particularly valuable for exploring the interactions between dispositional attachment/caregiving and specific contextual variables, in their association with situational attachment/caregiving.

Regarding dispositional romantic attachment, the internal working models developed throughout an individual's life can be conceptualised, in adults, as attachment anxiety (i.e., preoccupation with relationships and fear of rejection and/or abandonment) and attachment avoidance (i.e., discomfort with closeness and distrust of others), where low attachment anxiety and avoidance indicate a secure attachment, and higher levels of either or both suggests attachment insecurity (Brennan et al., 1998). When in distress, anxiously attached individuals tend to use *hyperactivation* strategies, which involves the need to draw attention to their own distress and therefore, such individuals persistently seek reassurance from their partner. Avoidantly attached individuals tend to use *deactivation* strategies when they are distressed, which involves a denial of attachment needs for comfort and support and therefore, such individuals tend to withdraw from their partner and prefer to manage their distress on their own

(Mikulincer & Shaver, 2007). Similarly, when a loved one is in need, individuals can also manifest caregiving strategies in the forms of *hyperactivation* (e.g., overinvolvement) or *deactivation* (e.g., distancing oneself from the situation) (Canteberry & Gillath, 2012). In romantic relationships, Kunce and Shaver (1994) identified four dimensions of caregiving between partners: proximity (i.e., offering physical and emotional closeness as means of comforting the distressed partner), sensitivity (i.e., able to interpret the partners' needs and distress cues), controlling (i.e., minimizing the partner's problem-solving attempts) and compulsive (i.e., being overinvolved in the partner's life and problems regardless of the partner's actual needs). Within the same individual, hyperactivation of the attachment system (e.g., in individuals with high levels of attachment anxiety) is believed to be linked with hyperactivation of the caregiving system (i.e., controlling and compulsive caregiving), while deactivation of the attachment system (i.e., in individuals with high levels of attachment avoidance) is believed to be linked with deactivation of the caregiving system (e.g., Bouaziz et al., 2013; Feeney & Collins, 2001; Kunce & Shaver, 1994).

Stress, Attachment and Caregiving

Given that the attachment and caregiving systems are activated by stress (Simpson & Rholes, 2017), it is important to consider the role that stress plays in some of the many distressing experiences that couples can encounter throughout their lifetime. Responding to a partner's needs in different situations is complex and requires an individual to be attuned to their partner's current needs in order to provide them with appropriate support according to the situation (Cutrona, 1990). In this regard, some empirical research has focused on examining the support providing and seeking desires and behaviors of individuals involved in a romantic relationship in various stressful contexts. Overall, several studies have found that the more an

individual is stressed, the more support they tend to seek from their partner, and the more support their partner tends to provide (Bodenmann et al., 2015; Brock & Lawrence, 2014; Collins & Feeney, 2000; Collins et al., 2014; Feeney & Collins, 2001). However, research using attachment theory as a framework suggests that dispositional romantic attachment and caregiving may influence each partner's situational responses to one another in stressful contexts (Simpson & Rholes, 2017).

To investigate this issue, some studies have aimed to reproduce a stressful environment in order to examine individuals' support providing and seeking desires and behaviors in different contexts (e.g., Collins & Feeney, 2000; Dewitte et al., 2010; Farrell et al., 2016; Mikulincer & Florian, 2000; Simpson et al., 1992). Among individuals who tend to use hyperactivation strategies, these studies suggest that support seekers with high levels of attachment anxiety tend to seek both proximity and distance from their partner in experimentally induced stressful situations (e.g., Dewitte et al., 2010). However, support seekers with partners who report high levels of anxiety tend to distance themselves from their partner in stressful contexts (Campbell et al., 2001). Despite these direct links between support seeker's attachment anxiety and support behaviors, studies exploring the moderating effect of attachment anxiety on the association between support seeker stress and support seeking have not found significant interaction effects (Simpson et al., 1992; Simpson et al., 2002). As support providers, individuals with high levels of attachment anxiety tend to provide ineffective support to their partner, such that they are less responsive and use more forms of negative support, such as being dismissive, avoiding, criticizing, or blaming their partner (Collins & Feeney, 2000; Campbell et al., 2001). Support providers whose partner reports high levels of attachment anxiety provide more proximity to their partners when their partners are in a distressing situation (Dewitte et al., 2010).

With regards to individuals who tend to use deactivation strategies, these studies suggest that, overall, support seekers with high levels of avoidance tend to seek less support and comfort from their partner in stressful contexts (Collins & Feeney, 2000; Simpson et al., 1992; Simpson et al., 2002). In addition, such individuals may be more likely to psychologically distance themselves from their partner, as well as to act more irritated or critical towards their partner (Campbell et al., 2001). The level of attachment avoidance also seems to moderate the association between individuals' levels of stress and their support seeking tendencies, such that individuals with higher attachment avoidance appear to either seek low levels of support from their partner regardless of how stressed they are (Collins & Feeney, 2000), or to seek even less support from their partner the more stressed they are (Simpson et al., 1992). Further, when an individual seeks support from a romantic partner with higher levels of avoidance, they report feeling more aggravated and irritated towards their partner, regardless of their own attachment (Campbell et al., 2001). Regarding the provision of support to a romantic partner during an experimentally induced stressful situation, support providers with higher levels of avoidance tend to provide less comfort and support to their partner (Simpson et al., 1992; Simpson et al., 2002), as well as more distance and less proximity to their partner (Campbell et al., 2001; Dewitte et al., 2010). In addition to attachment avoidance being directly linked to support behaviors, it also appears to moderate the link between stress and support related behaviors, such that support providers with high attachment avoidance tend to provide decreasing levels of support the more their partner is stressed (Simpson et al., 1992). Support providers whose partner reports high levels of avoidance also display more distance from them (Dewitte et al., 2010).

Overall, these findings suggest that it is important to nuance the link between stress and support seeking or providing in couples, and that dispositional attachment may be an interesting

factor to consider in this effect. Indeed, existing literature suggests that, in stressful laboratory contexts, individuals with greater romantic attachment anxiety, who tend to use hyperactivation attachment strategies, seek more support from their partner and tend to provide poor quality support when their partner is in need. Moreover, individuals with greater romantic attachment avoidance, who tend to use deactivation attachment strategies, seek less support from their partner and tend to provide less support to their partner in distress. To our knowledge, no research has yet to examine how hyperactivated and deactivated caregiving strategies may be directly associated with support seeking or providing, or how it may modify the links between perceived stress and support seeking or providing. That said, since the attachment and caregiving systems are complementary, it appears pertinent to explore the moderating effects of these two systems simultaneously to obtain a more comprehensive understanding of these associations. Previous research lacks focus on moderation effects of such associations. However, exploring moderating effects is particularly valuable in helping us to further nuance our understanding of the links between the attachment and caregiving systems and support providing and seeking.

The Current Study: Objectives and Hypotheses

The present study aimed to examine the dyadic links between levels of stress and support seeking or support providing in couples during an in-laboratory stressful situation. We also examined the moderating role of each partner's combined dispositional romantic attachment and caregiving (using factor scores called hyperactivation and deactivation of the attachment and caregiving dimensions; henceforth referred to as *hyperactivation* and *deactivation*, respectively) on the association between stress and desire to seek or provide support. We used a dyadic perspective allowing us to examine both actor and partner effects. *Actor effects* refer to the effects of one's own independent variable on one's own dependent variable (e.g., link between

support seeker's hyperactivation of the attachment and caregiving system and their own desire to be with the support provider). Similarly, *partner effects* refer to the extent to which one's own independent variable is linked with a partner's dependent variable, or the extent to which a partner's independent variable is linked to one's own dependent variable (e.g., link between support seeker's hyperactivation of the attachment and caregiving system and the support provider's desire to be with the support seeker). More specifically, in terms of analyses, we conducted four two-way moderations, two of which were for support seeker variables and the other two for support provider variables (see Figure 1 for the conceptual model).

Hypotheses for Partners in the Support Seeker Role

Actor Effects. We hypothesized that support seekers' perceived levels of stress would be positively associated with their desire to be with the support provider during the stress experiment. We expected that this association would be stronger for individuals with higher hyperactivation scores and weaker for those with lower hyperactivation scores. Conversely, we expected that this association would be weaker in individuals with higher deactivation scores compared to those with lower deactivation scores.

Partner Effects. We also expected that the partner's tendency for hyperactivation or deactivation would moderate the association between support seekers' perceived levels of stress during the experiment and their desire to be with their partner. That is, we hypothesized that the more stress support seekers experienced, the more they would desire to be in the presence of their partner. However, we expected that this association would be weaker in individuals whose partner reports higher levels of hyperactivation or deactivation compared to those whose partner reports lower levels of hyperactivation or deactivation.

Hypotheses for Partners in the Support Provider Role

Actor Effects. We hypothesized that support providers' perception of support seekers' stress would be positively associated with their desire to be with the support seeker during the experiment. We expected that this association would be stronger for individuals with higher hyperactivation scores and weaker for those with lower hyperactivation scores. Conversely, we expected that this association would be weaker in individuals with higher deactivation scores compared to those with lower deactivation scores.

Partner Effects. We also expected that the partner's tendency for hyperactivation or deactivation would moderate the association between the support providers' perception of support seekers' stress during the experiment and their desire to be with their partner. That is, we hypothesized that the more support providers' believed the support seeker experienced stress during the experiment, the more they would desire to be in their presence. However, we expected that this association would be stronger in individuals whose partner reports higher levels of hyperactivation compared to those whose partner reports lower levels of hyperactivation. Conversely, we expected that this association would be weaker in individuals whose partners report higher deactivation scores compared to those with lower deactivation scores.

Method

Participants

The sample for the current study included 109 mixed-sex English-speaking Canadian couples. Eligibility criteria included: (a) being 18 years of age or older, (b) being involved in a romantic relationship with their partner for at least 12 months, and (c) cohabitating with their partner for at least 6 months. A total of 128 couples had initially participated in the current study, however, nineteen of these couples were removed (14.8%) as they only completed the online

questionnaire package and did not wish to participate in the experimental procedure used in the current study.

The mean age of the final sample was of 33.86 years (*SD* = 13.60; range = 63.25). On average, participants had been in their relationship for 6.25 years (*SD* = 6.32) and had been cohabitating for 4.36 years (*SD* = 6.10). Eighty-three individual participants (38.1%) described their marital status as married, 119 (54.6%) common-law, 1 (0.5%) separated and 15 (6.9%) legally single (i.e., living together for less than a year). Among participants, 206 (94.5%) described their ethnicity as White, two (0.9%) as Black, six (2.8%) as Asian, three (1.4%) as Hispanic, and one (0.5%) as Middle Eastern. About three quarters of the participants did not have any children with their current partner (*n* = 169; 77.5%). Among participants reporting having children with their current partners, 18 (8.3%) had one child, 11 (5%) had two children and 4 (1.8%) had three. Sixteen individuals did not report whether they had children with their current partner. One hundred forty (64.2%) participants had a university education, 33 (15.1%) a college education and 45 (20.6%) a high school education. Mean annual gross revenue of the final sample was 44 685$ (*SD* = 28 259 $; range = 145 000$).

Procedure

Procedures for this study were approved by the university's Office of Research Ethics and Integrity. This study was part of a larger longitudinal research project that comprised three participation time points each separated by a 12-month period. Participants for T1 were recruited from the community through newspapers, advertisements and brochures around the university's campus and the city as well as during social events in the region. The present study included only those who participated in the second time point (T2) since the in-laboratory stressful situation used for the current study was conducted at T2. A total of 224 couples had participated at the

first time point of the study (T1) . Only 63 of these couples participated at T2 because the rest (n = 171 couples) separated or did not wish to participate at T2. As such, attrition rate from T1 to T2 was of 72%. Repeated measures ANOVA (where gender was included as a factor to account for the interdependence between romantic partners) comparing participants who participated at T1 only and those who participated at T1 and T2 revealed similar ages (($F(1) = 0.018$, $p = .895$), ethnicity ($F(1) = 1.156$, $p = .284$) relationship length ($F(1) = .157$, $p = .692$), attachment avoidance ($F(1) = .047$ $p = .829$), and attachment anxiety ($F(1) = 0.479$, $p = .490$). In order to ensure that the sample at T2 was large enough to reach the required statistical power, more couples (n = 65) were recruited from the community through the same recruitment methods as T1. Among the current study's final sample of 109 couples, 52 (48%) had participated at T1 and 57 (52%) were recruited at T2. Couples, recruited at T1 or newly recruited, who were interested in participating in the second time point of the current study were invited to contact the research assistant who informed them of the purpose of the study, its procedures as well as confidentiality and ethical considerations. Although recruited at different time points, repeated measures ANOVAs indicated that both samples reported similar age ($F(1) = 0.115$, $p = .736$), ethnicity ($F(1) = 0.076$, $p = .785$), and relationship length ($F(1) = 2.812$, $p = .097$).The research assistant planned a testing session of two and a half hours at the University with couples who were interested and eligible. Those who were not interested in participating in a lab testing session had the option of only completing the questionnaire package online, and were therefore excluded from the current analyses. During the testing session, each partner read a detailed explanation of the study's procedures and signed the consent form. Then, partners were each asked to independently fill out pre-experimentation measures in a room with divided workspaces. These questionnaires gathered information on sociodemographic characteristics, couple functioning and

psychological wellbeing. From these measures, only the Experiences in Close Relationships-12 (ECR-12; Lafontaine et al., 2016) and Caregiving Questionnaire (CQ; Kunce & Shaver, 1994) were used for this study. Then, couples participated in the current study's experimental procedure.

In-Laboratory Stressful Situation

Once participants had completed the questionnaire package, they were given the Positive and Negative Affect Schedule to complete (Watson et al.,1988). This served to ensure that support providing and seeking was not influenced by the participant's mood during the procedure (Mikulincer et al., 2005). The research assistant then told the partners that one of them had been randomly selected to participate in a series of procedures that generally arouse stress and anxiety in most people, and that the goal of these procedures was to study individuals' reactions to stress. The exact nature of the stressful procedures was not specified, as the participants were not truly going to participate in any stressful procedure. Rather, the purpose of these statements was to generate stress and anxiety in the participants, which is a standard stress induction procedure used with couples (e.g., Simpson et al., 1992; Simpson et al., 2002). The partner who was selected to "participate" in the stressful situation (i.e., hereafter referred to as the support seeker) was taken to another room to complete a short questionnaire measuring their stress level and their desire for partner support during the stressful situation (see Experimentation measures section) and was told to wait until the experiment was ready to begin. During that time, the other partner (i.e., hereafter referred to as the support provider) remained in the main lab and was asked to complete items measuring their perception of their partner's level of stress as well as their desire to be with their partner during the stressful situation (see Experimentation measures section). The roles of "support seeker" and "support provider" were counterbalanced

for gender and randomly assigned. Once both partners were done completing their questionnaires, they were reunited in the main lab and debriefed regarding the true goals of study. Couples were given CAD$50 as compensation for their participation.

Measures

Pre-Experimentation Measures

The following measures were completed prior to the in-laboratory stressful situation, as part of a questionnaire package that required about 20 minutes to complete.

Sociodemographic Information. This questionnaire inquired about participants' personal demographic information (e.g., age, gender, ethnicity) and relationship-related information (e.g., length of relationship, length of cohabitation, marital status, number of children).

Hyperactivation and Deactivation of the Attachment and Caregiving Dimensions. As previously mentioned, attachment and caregiving are two parallel systems that interact with one another. We, therefore, administered the two empirically validated scales of dispositional romantic attachment and caregiving described below, following which we conducted a principal component analysis (PCA) on all the attachment and caregiving dimensions with the goal of obtaining two distinct factors representing the hyperactivation and deactivation of each system. This method of organising the aforementioned variables allows us to take into account the shared variance of both the attachment and caregiving systems (e.g., Gabbay & Lafontaine, 2017).

Romantic Attachment was assessed using the ECR-12 (Lafontaine et al., 2016), which measures dispositional romantic attachment (i.e., general attachment patterns in romantic relationships) using 12 items. The ECR-12 is an abbreviated version of the original (Brennan et al., 1988), which comprised 36 items. The ECR-12 is composed of 2 subscales: attachment

anxiety (e.g., “I worry about being abandoned”) and attachment avoidance (e.g., “I don’t feel comfortable opening up to romantic partners”). Participants evaluate the extent to which they identify with each item using a 7-point Likert scale from 1 *(strongly disagree)* to 7 *(strongly agree).* Once respective items are reversed, the score of each subscale corresponds to the mean of its items. Higher scores indicate greater levels of attachment anxiety and attachment avoidance. The psychometric properties of the ECR-12 are considered equivalent to those of the original ECR (Lafontaine et al., 2016). The ECR-12 has demonstrated a good internal consistency across different samples (anxiety: $\alpha = 0.78$ to 0.87; avoidance: $\alpha = 0.74$ to 0.83) as well as an excellent test-rest reliability (Lafontaine et al., 2015). Alphas for the current study are of $\alpha = 0.83$ for the avoidance scale and $\alpha = 0.87$ for the anxiety scale.

Romantic caregiving was assessed using the CQ (Kunce & Shaver, 1994), which measures dispositional caregiving towards the romantic partner using 32 items. It comprises 4 subscales: proximity (e.g., “When my partner seems to want or need a hug, I’m glad to provide it”), sensitivity (e.g., “I am very attentive to my partner’s nonverbal signals for help and support”), control (e.g., “I tend to be too domineering when trying to help my partner”), and compulsive caregiving (e.g., “I tend to get overinvolved in my partner’s problems and difficulties”). Each subscale is composed of eight items rated on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). Once respective items are reverse scored, the mean of each subscale is calculated. Higher scores are indicative of higher proximity, sensitivity, control and compulsive caregiving, respectively. The CQ has demonstrated good internal consistency for all four scales (proximity scale: $\alpha = .83$; sensitivity scale: $\alpha = .83$, controlling caregiving scale: $\alpha = .87$; and compulsive caregiving scale: $\alpha = .80$) and test-retest reliability (Kunce & Shaver,

1994). Alphas for the current study were the following: proximity scale: α = .83; sensitivity scale: α = .89, controlling caregiving scale: α = .87; and compulsive caregiving scale: α = .74.

A PCA was conducted using all participants, including both the support seekers' and support providers' scores on the ECR dimensions (anxiety and avoidance) and the CG subscales (proximity, sensitivity, control and compulsive caregiving). The observed Kaiser-Meyer-Olkin coefficient was .70 and Bartlett's test of sphericity was significant, $\chi 2$ (15) = 282.759, $p < .0001$, suggesting that the data was appropriate for this analysis. We used a direct oblimin rotation for transformation as factors were correlated above .32 (Tabachnick & Fiddell, 2019). Both the Scree Plot and Kaiser's stopping rule revealed a 2-component solution. Factor loadings ranged from .44 to .84 for the first component (*deactivation*), and from .63 to .87 for the second component (*hyperactivation*). The deactivation component explained 41.31% of the variance, while the hyperactivation explained 23.65%. The final pattern matrix is presented in Table 1. Composites of z-scores were then created for each factor using the scale scores of variables loading onto each factor score. The factor score for deactivation comprised individual's attachment avoidance score, their reversed caregiving proximity score and their reversed caregiving sensitivity score, while hyperactivation comprised their attachment anxiety score, their compulsive caregiving score and their controlling caregiving score. Although caregiving control cross-loaded onto both factors (.44 on the deactivation component and .63 on the hyperactivation component), it was included in the hyperactivation factor based on theoretical grounds; that is, the tendency to offer controlling support without accounting for the true needs of the partner is more typically understood as a hyperactivation strategy (Mikulincer, 2006). Alphas and mean inter-item correlation were α =.71 and r = .45 for the deactivation component and α = .68 and r = .42 for the hyperactivation component.

In-Laboratory Stressful Situation Measures

Mood. The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) is a 20-item questionnaire that measures two dimensions of affect: positive and negative. Each subscale is composed of 10 adjectives describing either positive (e.g., interested, excited, strong) or negative (e.g., distressed, upset, guilty) affect rated on a 5-point Likert scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Subscale scores are obtained by calculating the sum of respective items. The PANAS has demonstrated good internal consistency (positive affect: α =.88 and negative affect: α = .87) and test-retest reliability (Watson et al., 1988). Alphas for the current study are the following: positive affect: α =.89; negative affect: α = .82.

Support Seeker's Perceived Level of Stress and Desire to be with the Partner during the Experiment. The following items were created for the purpose of this study, inspired by those used by Mikulincer et al. (2005) during a similar procedure, to measure situational support seeking. Only partners in the support seeking role responded to these items, while they were alone in a separate room from their partner (i.e., support provider) waiting for the stress experiment to begin. The support seeker's perceived level of stress while waiting for the stress experiment to begin was measured using one item (i.e., "How much stress or anxiety are you feeling right now?"), rated on a 7-item Likert scale from 1 *(not at all)* to 7 *(very much).* The desire to be with the partner during the experiment was measured using one item (i.e., "To what extent do you wish you could be with your partner during this stressful task?"), rated on a 7-item Likert scale from 1 *(not at all)* to 7 *(very much).*

Support Provider's Perception of Partner Stress and Desire to be with the Partner during the Experiment. The following items were also created for the purpose of this study, inspired by those used by Mikulincer et al. (2005) during a similar procedure, to measure

situational support providing. Only partners in the support providing role completed these items, while they were left alone in the main lab as they waited for their partner (i.e., support seeker) to take part in the stress experiment. The support provider's perception of their partners' level of stress about the experiment was measured using one item (i.e., "How much stress, or anxiety, do you think your partner was feeling as he/she left this room?"), rated on a 7-item Likert scale from 1 *(not at all)* to 7 *(very much).* The desire to be with the partner during the experiment was measured using one item (i.e., "To what extent do you wish you could be with your partner during this stressful task?"), rated on a 7-point Likert scale from 1 (*not at all*) to 7 (*very much*).

Data Analyses

We conducted all statistical analyses using IBM SPSS Statistics (Version 24.0). Prior to testing the hypotheses, we conducted preliminary analyses to examine missing data, outliers and whether the data satisfies the assumptions of normality, linearity and homoscedasticity (Tabachnick & Fidell, 2019). Following this, we explored descriptive statistics and intercorrelations among all variables. Next, we conducted correlations or one-way analyses of variance (ANOVAs) among sociodemographic variables, mood and outcome variables to identify possible covariates. Regarding the main analyses, we conducted four two-way moderation models using PROCESS, a regression path analysis modelling tool compatible for use in IBM SPSS Statistics (Hayes, 2013). Within the models for support seekers and support providers, one model included actor hyperactivation and deactivation, while the other model included partner hyperactivation and deactivation (see Figure 1 for conceptual models). Standardized effect sizes obtained from these analyses were interpreted using guidance from recommended cut offs, where R^2 between .02 -.12 or β between .10 -.29 are considered small effect sizes, R^2 between .13 -.25 or β between .30 -.49 are considered medium effect sizes, and

$R^2 \geq .26$ or $\beta \geq .50$ are considered large effect sizes (Cohen, 1988; Nieminen, 2022). Post-hoc probing of significant interaction effects was explored using simple slope analyses examining the association between the independent variable (e.g., support seeker stress) and the dependent variable (e.g., support seeker desire to be with the support provider during the experiment) at –1SD, 0 and +1 SD of the moderator variable (Aiken & West, 1991).

Results

Preliminary Analyses

Prior to conducting analyses, an additional 16 participants were removed from the sample of 109 couples (218 individuals) who completed all questionnaires and participated in the laboratory situation due to reporting they suspected deception (i.e., had doubts about whether the support seeker was actually going to participate in a stressful situation), upon being asked about it at the end of the laboratory visit. This being said, their data for hyperactivation and deactivation of the attachment and caregiving system were retained to be included as "partner" variables in their partner's moderation analyses. Following this, a missing data analysis using Little's Missing Completely at Random (MCAR) test revealed that data were missing completely at random ($\chi^2 = 1674.38$, $p = .183$) and at less than 5%. We used single imputation using the Expectation maximisation (EM) method in SPSS to estimate missing values. Examination of Z scores revealed three univariate outliers on the attachment avoidance scale, one univariate outlier on the caregiving sensitivity scale and four univariate outliers on the negative affect scale, which were handled following recommendations from Tabachnick and Fidell (2019). More specifically, given that only one univariate outlier was found on the caregiving scale, winsorization was used (i.e., transforming the outlier to one score lower than the next lowest score). The attachment avoidance scale was transformed using square root transformations. For the negative affect scale,

square root transformations and log transformations were unsuccessful at removing outliers. This scale was, therefore, kept untransformed for now for the analyses exploring assumptions. Once this was done, a Mahalanobis distance analysis then revealed one multivariate outlier, which was removed from the sample. Following this, we examined the assumptions of normality, linearity and homoscedasticity through skewness, kurtosis, as well as using boxplots, scatterplots and histograms. Data were found to be normally distributed, with the exception of the negative affect scale, for which transformations were also unsuccessful at improving the distribution. The use of non-parametric tests for analyses linked with this subscale accounted for its non normal distribution.

Descriptive Statistics and Correlations

Means, standard deviations and correlations for all variables of interest (i.e., hyperactivation, deactivation. support seekers' perceived level of stress and desire to be with the support provider, support providers' perception of support seeker stress and desire to be with the support seeker) were assessed separately for support providers and support seekers. We also conducted two-way repeated measures ANOVAs (where gender was included as a factor to account for the interdependence between romantic partners) to examine potential differences on these variables between support providers and support seekers. Correlations between all the study variables are presented in Table 2. Results indicated some significant correlations in their expected directions. More specifically, support seekers' hyperactivation was positively and significantly associated with support seekers' deactivation as well as with support seekers' perceived level of stress. Support providers' hyperactivation was also positively and significantly associated with support seekers' deactivation and with support providers' desire to be with the support seeker during the experiment. Finally, support seeker's perceived level of stress was

positively and significantly associated with their desire to be with the support provider during the experiment, while support seeker deactivation was negatively and significantly linked with their desire to be with the support provider during the experiment. Means, standard deviations and ANOVAs' results for all study variables are presented in Table 3. Results revealed no significant differences between support seekers and support providers on romantic attachment or caregiving variables.

Next, we explored potential covariates by examining the link between sociodemographic variables or participant`s mood and the study's dependent variables (i.e., support seeker or provider desire to be with their partner during the experiment). Pearson's correlations were used for continuous and normally distributed variables and revealed no significant correlations between participants' age, length of relationship, length of cohabitation, number of children with current partner nor of participant's positive affect during the experiment with support seekers or support providers' desire to be with their partner during the experiment. Spearman's correlations revealed no significant association between participant's negative affect during the experiment and support seekers or providers' desire to be with their partner during the experiment. One-way ANOVAs were used for categorical variables and revealed no significant associations between participants' gender, marital status, employment status, nor ethnicity with support seekers or providers' desire to be with their partner during the experiment.

Moderation Analyses

We conducted a total of four moderation models. Two of these models examined the support seekers while the other two examined the support providers. The two moderators (i.e., hyperactivation and deactivation) in each model were entered simultaneously (i.e., PROCESS's

Model 2) to account for their shared variance. Independent and moderator variables were grand-mean centered in all analyses to reduce multicollinearity. All results are presented in Table 4.

Support Seeker Models

In the first model, we included support seeker hyperactivation and deactivation as simultaneous *actor* moderators of the association between support seekers' perceived level of stress and their own desire to be with their partner during the experiment. Results indicated a medium and significant effect of the total model on the support seeker's desire to be with their partner during their experiment ($F(5, 93) = 5.897$, $p < .001$, $R^2 = .241$). Results revealed a small and significant positive association between support seekers' perceived level of stress or hyperactivation and their desire to be with the support provider during the experiment. Support seeker deactivation was also significantly and negatively associated, at a medium effect size, with their desire to be with the support provider during the experiment. No other significant effects were found.

The second model included support provider's hyperactivation and deactivation scores as *partner* moderators of the association between support seeker's perceived level of stress and their desire to be with their partner during the experiment. Results revealed a small and significant effect of the total model on the support seeker's desire to be with the support provider during the experiment ($F(5, 87) = 2.358$, $p = .0467$, $R^2 = .119$). Results indicated a medium and significant positive association between support seekers' perceived level of stress and their desire to be with the support provider during the experiment. No other significant effects were found.

Support Provider Models

In the third model, we included support providers' own hyperactivation and deactivation scores as simultaneous *actor* moderators of the association between their perception of their

partner's level of stress and their own desire to be with their partner during the experiment. Results revealed a small and non-significant effect of the total model, on the support provider's desire to be with the support seeker during the experiment ($F(5, 96) = 1.602$, $p = .167$, $R^2 = .077$. Results revealed, however, a small and significant positive association between the support provider's hyperactivation score and their desire to be with their partner during the experiment. No other significant effects were found.

The fourth model included support seekers' hyperactivation and deactivation scores as *partner* moderators of the association between the support providers' perception of support seekers' level of stress and their own desire to be with the support seeker during the experiment. Results indicated a small and non-significant effect of the total model on the support provider's desire to be with the support seeker during the experiment ($F(5, 88) = 1.252$, $p = .292$, $R^2 = .066$). However, results revealed a significant interaction between support provider perception of support seeker stress and support seeker deactivation and is illustrated in Figure 2. Corresponding simple slope effects revealed a small and non-significant positive association between support providers' desire to be with their partner during the stressful experiment and their perception of their partner's level of stress when their partners reported low levels of deactivation. Conversely, simple slopes indicated a small and non-significant negative association between support providers' desire to be with their partner during the stressful experiment and their perception of their partner's level of stress when their partners reported high levels of deactivation. No other significant effects were found.

Discussion

Living in a world filled with uncertainty, it is inevitable to encounter challenges that generate distress. In order to thrive and to surmount these, it is essential that individuals be able

to effectively reach out for support from reliable loved ones, as well as to provide it to them. Although many adults can spend a significant portion of their adulthood without being involved in a romantic relationship, for those involved in a romantic relationship, the romantic partner generally consists of their primary source of support. Thus, it is crucial that partners rely on each other for support to provide each other with strength and resiliency, allowing them to face the hardships of life and, ultimately, their survival in this unpredictable world. The present study aimed to examine the dyadic links between levels of stress and support seeking or support providing in couples during an in-laboratory stressful situation. We also examined the role of hyperactivation and deactivation of the dispositional attachment and caregiving dimensions on moderating the association between stress and desire to seek or provide support. Studies have demonstrated that there is a link between stress and support seeking or providing, and that romantic attachment and caregiving processes may influence this link (e.g., Feeney & Collins, 2001). This is the first study, to our knowledge, to expand on such research by examining the simultaneous effects of the attachment and caregiving systems in this association, using hyperactivation and deactivation components.

As expected, results indicated that support seekers' higher level of perceived stress was directly associated with their greater desire to be with their partner during the stress experiment (Models 1 and 2). However, contrary to expectations, support providers' perception of their partner's level of stress was not statistically associated with their desire to be with the support seeker during the stress experiment (Model 3). Regarding moderation effects, the present study's results indicated a significant partner interaction effect, such that when support seekers reported a low level of deactivation, the link between the support providers' perception of the support seekers' level of stress and their own desire to be with the support seeker during the stress

experiment was positive, though this simple slope effect was non-significant (Model 4). On the contrary, when support seekers reported a high level of deactivation, this same link was negative, though this simple slope effect was also non-significant. Contrary to expectations, no other significant actor or partner moderation effects were found. Interestingly, the present study's results revealed some direct links between our predicted moderator variables (i.e., hyperactivation or deactivation) and support seekers' or support providers' desire to be with their partner during the experiment (Models 1 and 3), which will be described in detail below.

Support Seeking

Regarding individuals in the support seeker role, the present study's results only revealed direct actor effects. Although these results did not support the present study's hypothesized conceptual moderation models, such findings suggest that support seekers' levels of stress, hyperactivation and deactivation are each individually and directly linked with their desire to be with the support provider during the stress experiment (Model 1). That is, it appears that support seekers with either higher levels of stress (small effect to medium effect size) or greater levels of hyperactivation report a greater desire to be with their partner during the stress experiment, while support seekers with greater levels of deactivation report a lower desire to be with their partner during the stress experiment. Such results are in line with previous studies indicating that when individuals experience more distress, they seek more support from their romantic partners, at a small effect size (e.g., Collins & Feeney, 2000). In addition, these findings provide further support for the basic notion that when individuals are faced with a stressful situation that generates distress within them, they generally desire to receive support from their romantic partners. Dispositional attachment and caregiving tendencies (i.e., hyperactivation or deactivation) was expected to moderate the association between support seeker levels of stress

and desire to be with the support provider during the stress experiment. Although the absence of statistically significant findings regarding the moderating effect of hyperactivation on the association between support seekers' level of stress and support seeking is consistent with some previous literature (Simpson et al., 1992; Simpson et al., 2002), the lack of significant findings regarding the moderating effect of deactivation on this association is inconsistent with previous studies (Collins & Feeney, 2000; Simpson et al., 1992). That being said, Collins and Feeney (2000) reported the standardized effect sizes for the interaction between stress and support seeker avoidance in predicting their support seeking and also found a small, but statistically significant effect. Considering that the current study also found a small effect of this link, it is possible that a type II error occurred, such that a larger sample size could have revealed a significant effect for this interaction. Another possible explanation for the absence of significance in these moderation effects could be that support seekers in the current study's sample who reported high levels of hyperactivation or deactivation may have a general tendency to seek either greater proximity or greater distance from their partners, regardless of their levels of stress. The current study's sample reported similar levels of romantic attachment and romantic caregiving variables as previous studies using the same questionnaires (Gabbay & Lafontaine, 2017; Millings & Walsh, 2009; Péloquin et al., 2014). As such, support seekers may tend to lean towards wanting to be with the support provider during the experiment or not, regardless of the distress generated by the stress experiment. The current study's results indicated significant direct links between support seekers levels of hyperactivation or deactivation and their desire to be with the support provider during the stress experiment supports this idea. More specifically, support seekers with greater levels of hyperactivation reported a greater desire to be with the support provider during the stress experiment, while those with greater levels of deactivation reported a lower desire to

be with the support provider during the stress experiment. These findings are in line with existing literature suggesting that individuals with greater attachment anxiety tend to seek more (although, at times, indirect or conflicting) support from their partner, while individuals with greater attachment avoidance tend to seek less support from their partner in stressful laboratory situations (e.g., Campbell et al., 2001; Collins & Feeney, 2000; Dewitte et al. 2010), though previous studies report negligible to small effect sizes of these associations, while the current study found small to medium effect sizes.

Additionally, the current study's results did not reveal any statistically significant partner effects of support providers' hyperactivation or deactivation on moderating the link between support seekers' perceived levels of stress and their desire to be with the support provider during the stress experiment (Model 2). One explanation could be that in anticipating inadequate support from their partners, support seekers with support providing partners who are more insecurely attached or who tend to provide ineffective caregiving may tend to rely on more indirect support seeking strategies, such as sulking or hinting (e.g., Collins & Feeney, 2000), rather than directly manifesting a greater or lower desire to be in the presence of the support provider. Finally, it is also possible that individuals' support seeking may be influenced by one's own dispositional tendencies to a greater extent than those of their partners. This would be consistent with findings from a correlational study by Sachdev (2006), who found that most support seekers' perceptions of their partners characteristics, including their partner's romantic attachment, were not linked to their support seeking behaviors, and that even those that were linked (e.g., perceptions of partner's relational competency) were not as important as their own attachment in influencing support seeking behaviors. Although we did not measure participants' perception of their partner's attachment, when looking at the current study's variables associated

with support seeker's desire to be with their partner, effect sizes are greater for actor hyperactivation (small effect; β = .217) and deactivation (medium effect; β = -.347) than those for partner hyperactivation (negligible effect; β = -.058) and deactivation (small effect; β = -.116).

Support Providing

Regarding individuals in the support provider role, the current study's results surprisingly indicated no significant association between their perception of the support seeker's level of stress and their desire to be with the support seeker during the stress experiment (Models 3 and 4). It is to be noted that support providers overall reported a high desire to be with the support seekers during the stress experiment. Considering that reporting one's own desire to accompany the partner during a stressful task reflects a prosocial behavior, is it possible that social desirability may have inflated support providers' scores on this item (Sassenrath, 2019). Additionally, in order for an individual to provide responsive support that is appropriate to the situation, this requires not only effective skills, but also access to cues, such as verbal and non-verbal cues (Collins et al., 2009). As such, it is possible that the non-significant link between the support providers' perception of the support seekers' stress and their desire to be with the support seeker was in part due to the fact that the support provider and support seeker were in two different rooms. This prevented the support providers from accessing the support seekers' verbal or non-verbal hints to help them understand the experience of their partners and to help inform their support providing decision. Finally, another explanation could be that, although the support providers' perception of support seekers' levels of stress was self-reported, this could be considered a partner variable, as it requires assuming the partner's psychological experience. Conversely, the support providers' report of their own desire to accompany the support seeker

during the stress experiment represents an actor variable. The current study's findings indicated that support providers who reported greater hyperactivation reported a greater desire to be with the support seekers in the experiment (Model 3). The effect size for this association was small, while that of the link between support providers' perception of support seekers' stress and their desire to be with the support seeker was negligible. As such, it may be that a support provider's own hyperactivation tendencies surpasses that of their perception of their partners' distress in influencing their own support providing desires (Collins et al., 2009).

Furthermore, as expected, the current study's results revealed one significant partner moderation effect, suggesting that the association between support providers' perception of their partner's stress and their own desire to accompany the support seeker during the stress experiment may vary according to their support seeking partner's levels of deactivation. Though all simple slopes were not statistically significant, they indicated a small effect size (which is generally the case for partner effects) of the association between support providers' perception of their partner's stress and their own desire to be with the support seeker during the stress experiment at high and low levels of deactivation. That is, they indicated that when support seekers' deactivation was high, support providers' perception of the support seeker's greater levels of stress was non-significantly linked to their own lower desire to be with the support seeker during the experiment (Model 4). On the contrary, when support seekers' deactivation was low, support provider's perception of the support seeker's greater levels of stress was non-significantly linked to their own greater desire to be with the support seeker during the experiment. This is consistent with both empirical and theoretical literature (e.g., Collins et al., 2009, Dewitte et al., 2010), suggesting that support providers', in particular those whose support seeking partners report greater levels of deactivation, may recognise that these support seekers

tend to withdraw or want to be left alone when experiencing higher levels of stress. Support providers may be able to discern their partner's needs (such as a need for proximity or distance) based on their partners tendencies (e.g., hyperactivation or deactivation) in some scenarios, though more research on these associations is needed to confirm these interpretations. It is possible that the same moderation effect was not found for partner hyperactivation, given that the literature suggests that individuals with higher levels of anxiety tend to report more contradictory behaviors of support seeking than individuals with high levels of avoidance (e.g., see Sachdev, 2006 for a review). For example, they may at times desire increased proximity to their partners, and increased distance at other times, due to their conflicting need for closeness with their partner, as well as their coexisting resentment towards their partner's lack of availability to their liking. This can ultimately make it difficult for a support providing partner to estimate their partner's desires.

Limitations and Future Research

First, our sample was mainly comprised of young adults in mixed-sex relationships, who had no children, who identified as White, and who were highly educated, which limits the external validity of our results to other populations. However, as previously noted, the current sample's scores on romantic attachment and romantic caregiving variables were similar to those reported by other studies. Although couple's personal and relational characteristics did not play a statistical role in understanding the current study's models, future studies could continue to explore whether such models might hold across samples of couples who differ on these characteristics by developing research designs that allow for such comparisons (e.g., recruiting a large sample in which half the participants have children, and the other half don't). Second, although the directionality of the associations between the study variables was generally inferred

based on Attachment theory, the correlational nature of our study limits causal inferences. Third, due to having used self-report measures, the responses may be biased. Future studies could incorporate observational methods to assess support providing or seeking through communication or behaviors. Fourth, it is important to acknowledge that although we used a standard stress-induction procedure for couples (e.g., Simpson et al., 1992; Simpson et al., 2002), support seekers and providers in our study generally reported moderate to low levels of stress during the experiment. More specifically, among support seekers, 70.7% rated their stress as lower than the mid-point of the scale, 12.1% rated their stress levels at the mid-point of the scale and 17.2% rated their stress levels above the mid-point of the scale). Among support providers, 50% rated their stress as lower than the mid-point of the scale, 19.6% rated their stress levels at the mid-point of the scale and 30.4% rated their stress levels above the mid-point of the scale). Therefore, it is possible that this procedure did not generate enough stress in certain participants to activate their attachment and caregiving systems, which could explain some of the present study's null findings. Fifth, although our measures of support were inspired by those used in previous similar research protocols (Mikulincer et al., 2005), it is possible that participants' desire to accompany their partners during the experiment reflected their curiosity regarding the experimental procedures, rather than a desire to support their partner. Future studies using similar protocols may want to consider specifying the nature of the desire to accompany the partner (i.e., to offer support). That being said, it is also possible that participants who desired to participate in this study possessed particular characteristics that were not measured in the current study (e.g., empathy, relationship satisfaction or commitment) which could explain some of our results, such as the fact that support providers overall reported a high desire to be with their partner during the stressful experiment regardless of their perception of their partner's stress.

Such variables could be entered into the conceptual model in future studies. Finally, considering the stressful context consisted of a specific in-laboratory scenario, this may not be generalizable to other stressful contexts encountered by couples in their daily lives. Thus, future studies could explore the pertinence of similar models in other stressful situations, including some that may be closer to relationship stressors (e.g., discussing a common source of relationship distress, infidelity threats, coparenting). Conversely, future studies with the aim of to continuing the examination of similar specific laboratory scenarios could explore the possible impact of other variables that are closely linked with the specific context, such as experimental conditions reflecting proximity vs distance (e.g., anticipating the presence of the partner during the experiment vs being told the partner will not be allowed to come). Given that attachment theory applies to all close relationships, testing similar models across other family relationships (e.g., parent-child, siblings) could also be particularly interesting.

Implications

The current study is particularly important to understand the links between stress and support which enrich our understanding of attachment theory. Although the study's scope was not to test any interventions or practices, the results correspond with existing clinical models of change. For instance, Emotionally Focused Therapy (EFT) for couples emphasizes the negative interaction patterns that are present in distressed couple relationships and conceptualizes them in terms of emotional disconnection and insecure attachment (Johnson, 2019). When one's attachment system is activated in times of stress, insecurely attached individuals have a tendency to use secondary attachment strategies (i.e., hyperactivation or deactivation), rather than primary attachment strategies (e.g., acknowledging one's own attachment needs and correspondingly reaching out to the partner for help). Thus, rather than directly seeking support from the partner

and having their nervous system be calmed by the support providing partner, those who generally use secondary attachment strategies are left with distress and limited abilities to engage constructively with their partner. As such, EFT provides a space through which a clinician can help reduce the use of such strategies and develop secure bonding events, ultimately increasing mutually responsive interactions and emotional connection between the romantic partners.

Conclusions

The current study sought to further explore the complex, yet fundamental commonality to all relationships, support between romantic partners. The couple relationship is a privileged place for partners to coregulate and process stresses both internal and external to the relationship. This relationship can be a safe haven where partners are attachment figures to each other, and, as a result, become an important source of proximity, security and comfort. It is a unique context in which distressed partners may alleviate each other's distress and soothe their activated attachment systems in times of stress. The current study's findings highlight that when romantic partners experience stress, they generally desire to seek support from their romantic partner. Beyond this, the current study's results also highlight that general support seeking and providing tendencies (i.e., dispositional attachment and caregiving) is also directly linked to support seeking and providing to and from a romantic partner in specific contexts of stress. Moreover, the current study's results highlight the complementary functions of the attachment and caregiving systems through the fact that they can be combined in a manner to generate empirically coherent components of nonoptimal hyperactivation and deactivation, and that the exploration of these constructs leads to results similar to previous research. While we encourage practitioners to consider such findings to inform clinical work, we also believe that continuing to

conduct research exploring the combination of the attachment and caregiving systems deserves merit and, therefore, encourage future studies to so.

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Table 1

Factor Loadings for Principal Component Analysis with Direct Oblimin Rotation of Romantic Attachment and Caregiving Scales

Variable	Component	
	Deactivation	Hyperactivation
Attachment avoidance	**.79**	-.12
Attachment anxiety	-.03	**.76**
Caregiving proximity	**-.84**	.07
Caregiving sensitivity	**-.72**	-.19
Controlling caregiving	**.44**	**.63**
Compulsive caregiving	-.11	**.87**

Note. $N = 218$; Factor loadings > .32 are in bold

Table 2

Intercorrelations between Hyperactivation, Deactivation and Study Variables for Support Seekers and Support Providers Separately

	1	2	3	4	5	6	7	8
1. Support seeker hyperactivation	-	.15	.40**	.03	.24*	-.08	.18	.10
2. Support provider hyperactivation		-	.23*	.19	.06	-.08	-.05	.21*
3. Support seeker deactivation			-	.14	.15	.01	-.20*	-.02
4. Support provider deactivation				-	.13	.17	-.08	-.05
5. Support seekers' perceived level of stress					-	.17	.31**	-.26*
6. Support providers' perception of support seeker stress						-	.16	-.02
7. Support seekers' desire to be with the support provider							-	.01
8. Support providers' desire to be with the support seeker								-

Note. $N = 109$; $^{*}p < .05$, $^{**}p < .01$.

Table 3

Means, Standard Deviations and Mean Differences Between Support Seekers and Support Providers Across All Study Variables

	Support Seeker (n = 100) M (SD)	Support Provider (n = 102) M (SD)	F	df	p
Hyperactivation	.01 (2.44)	-.08 (2.21)	.001	1	.982
Deactivation	.16 (2.38)	-.27 (2.31)	.532	1	.468
Support seekers' perceived level of stress	2.91 (1.27)	-	-	-	-
Support seekers' desire to be with the support provider	3.94 (1.88)	-	-	-	-
Support providers' perception of support seeker stress	-	3.57 (1.59)	-	-	-
Support providers' desire to be with the support seeker	-	5.23 (1.60)	-	-	-

Table 4

Moderation Analysis Predicting the Desire to be with the Partner During the Experiment

	b (SE)	*β*	*t*	*p*	R^2
Support Seekers' perceived level of stress (*n* = 100)		Model 1			
Stress	**.426 (.143)**	**.286**	**2.959**	**.004**	-
Support seeker hyperactivation	**.177 (.078)**	**.217**	**2.258**	**.026**	-
Support seeker deactivation	**-.278 (.078)**	**-.347**	**-3.554**	**.001**	-
Stress*Support seeker hyperactivation	-.101 (.055)	-.158	-1.819	.072	.027
Stress*Support seeker deactivation	.105 (.062)	.166	1.677	.097	.023
		Model 2			
Stress	**.490 (.150)**	**.331**	**3.261**	**.002**	-
Support provider hyperactivation	-.047 (.092)	-.058	-.510	.612	-
Support provider deactivation	-.094 (.083)	-.116	-1.135	.260	-
Stress*Support provider hyperactivation	.015 (.074)	.023	.203	.840	.000
Stress*Support provider deactivation	.006 (.059)	.009	.102	.919	.000
Support Providers' perception of their partner's level of stress (*n* = 102)		Model 3			
Perception of support seeker stress	-.037 (.102)	-.037	-.362	.718	-
Support provider hyperactivation	**.189 (.076)**	**.274**	**2.485**	**.015**	-
Support provider deactivation	-.079 (.080)	-.115	-.983	.328	-
Stress*Support provider hyperactivation	.037 (.045)	.084	.813	.418	.006
Stress*Support provider deactivation	.047 (.042)	.109	1.116	.267	.012
		Model 4			
Perception of support seeker stress	-.020 (.109)	-.020	-.182	.856	-
Support seeker hyperactivation	.129 (.079)	.187	1.644	.104	-
Support seeker deactivation	-.044 (.085)	-.064	-.513	.610	-
Stress*Support seeker hyperactivation	.064 (.047)	.146	1.364	.176	.020
Stress*Support seeker deactivation	**-.107 (.052)**	**-.249**	**-2.053**	**.043**	**.045**

Figure 1

Conceptual Actor-Partner Moderation Models of the Relationship Between Stress and Desire to be with the Partner During the Experiment for Support Seekers and Support Providers

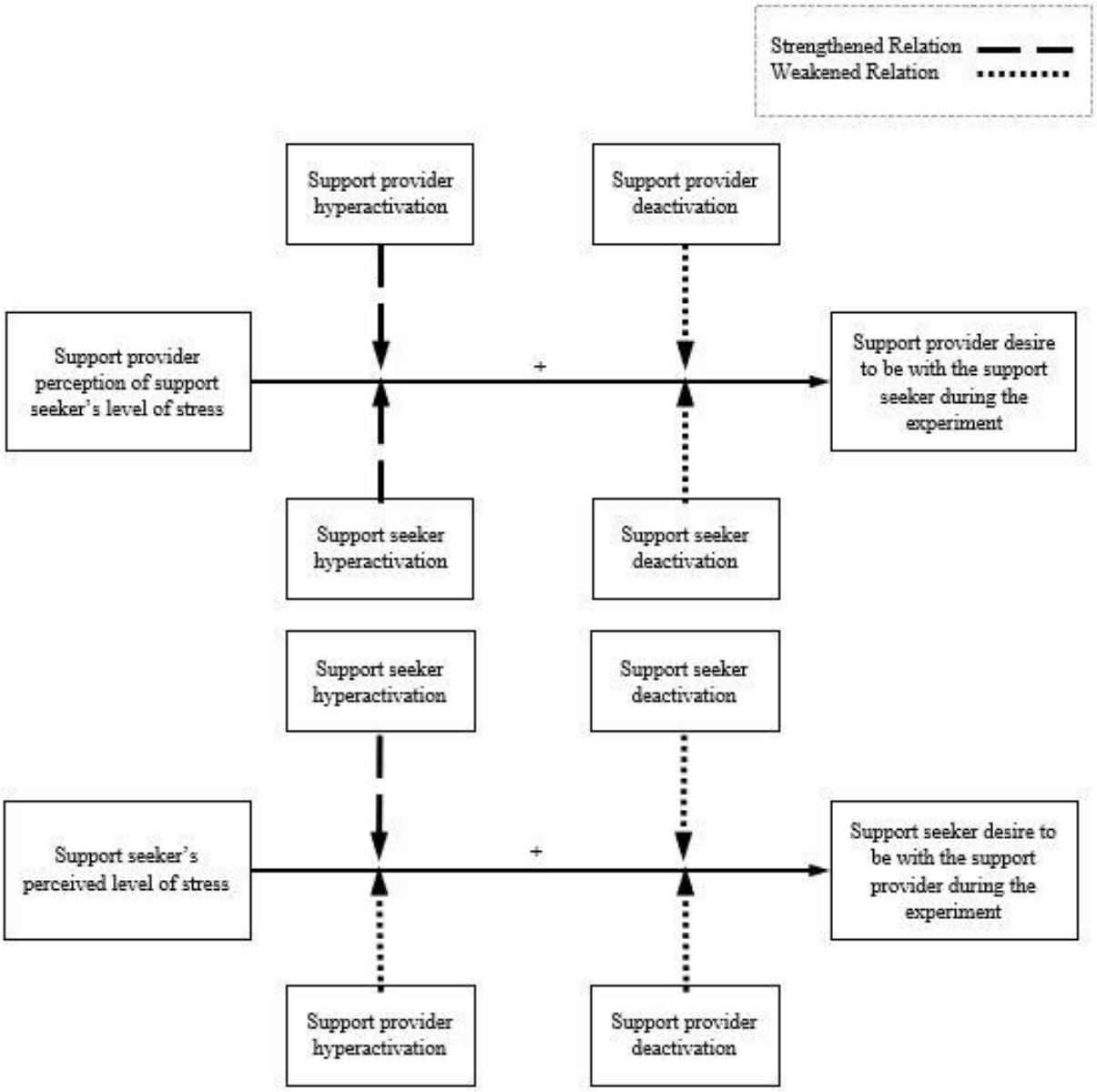
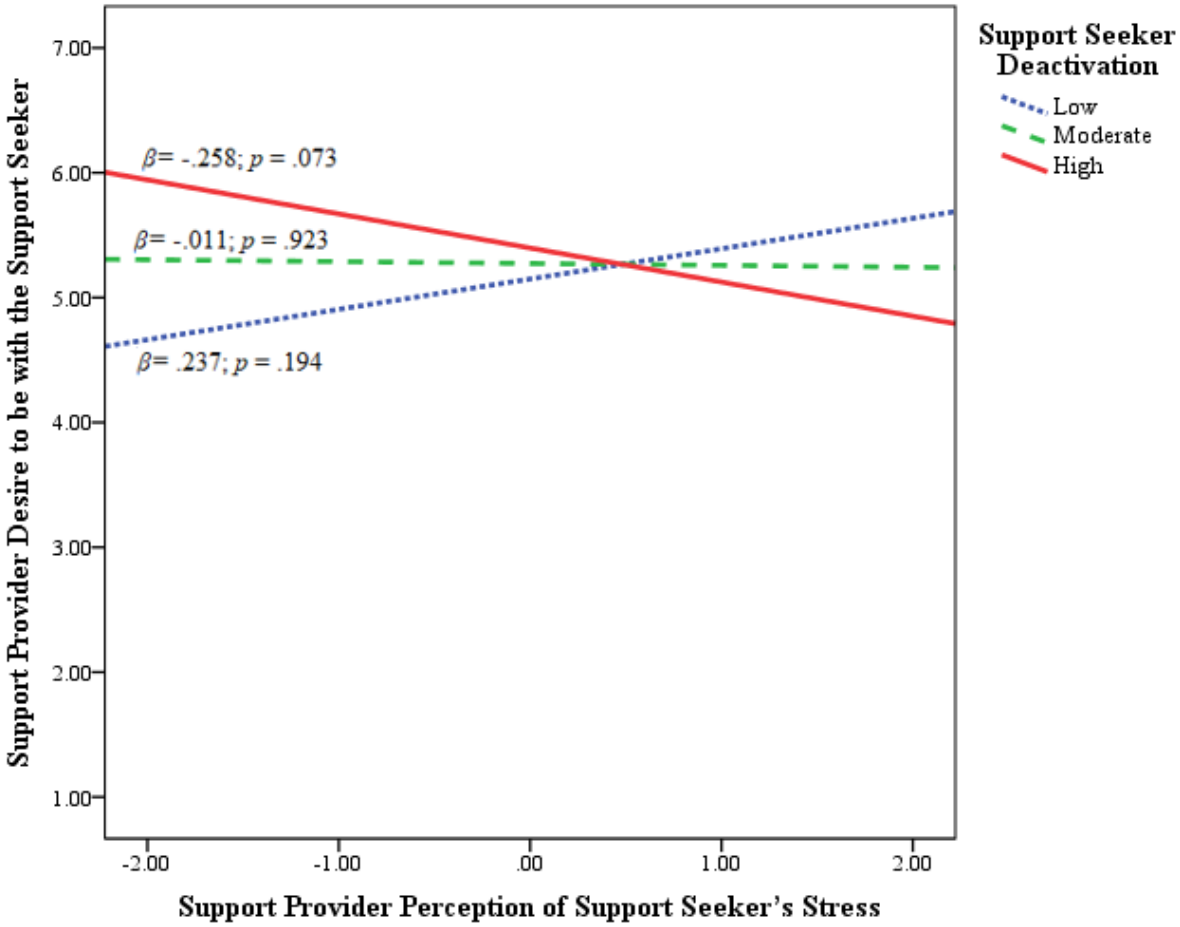


Figure 2

Moderating Effect of Support Seeker Deactivation on the Link between Support Provider Perception of the Support Seeker's Stress and Support Provider Desire to be with the Support Seeker during the Experiment



Chapter III

Are we There for Each Other? Longitudinal Associations Between Parenting Stress and Coparenting in Parents of Preschool and School-Aged Children

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Abstract

It is well known that parenthood can be particularly stressful. However, less is known about the stability of parenting stress across children's developmental periods. Certain correlates to parenting stress, such as coparenting support between parents, also appear to play a crucial role in childrearing. The current study aims to shed light on the longitudinal associations between parenting stress during the preschool and school years, along with the moderating effect of coparenting support in this association. Eighty-two heterosexual couples who are parents completed the Parenting Stress Index at Time 1 and Time 2 and the Coparenting Relationship Scale at Time 2. Actor-Partner path analyses revealed that greater parenting stress in each parent was related to their partner's greater parenting stress at each time point, but only to their own greater parenting stress 5 years later. The association between fathers' parenting stress at both time points was weaker in fathers who reported greater perceived coparenting support. Helping parents reduce their parenting stress and learn to support each other effectively as coparents may be important parenting intervention avenues.

Keywords: parenting stress, coparenting, coparenting support, couple, parents

Are we There for Each Other? Longitudinal Associations Between Parenting Stress and Coparenting in Parents of Preschool and School-Aged Children

As parenting involves a great deal of responsibilities, it is common for parents to experience stress. Parenting stress, which is a distinct form of stress from those experienced in other domains of life, arises when parents experience discrepancies between parenting demands, their own expectations and their actual resources allowing them to perform in their parenting role (Abidin, 1992). Given that this form of stress relates directly to the parenting experience, it is not surprising that research suggests that it may be the most relevant form of stress associated with parenting behaviors (Deater-Deckard, 1998).

Parenting stress is associated with various negative impacts on parenting and children's wellbeing, such as less responsive parenting or reduced parenting self-efficacy, and increased child behavior problems or difficulties in cognitive development (Deater-Deckard & Panneton, 2017; Ward & Lee, 2020). Research on the stability of parenting stress over children's different developmental stages remains limited. Some suggest that parenting stress appears to be stable up to at least the first five years of children's life (Crnic et al., 2005; Williams & Parra, 2019) and stable over the first five years of early adolescence (Putnick et al., 2010). Given the stability of parenting stress, it is crucial that parents for whom it is high and stable learn to cope with parenting stress.

Coparenting appears to be important to this effect. Some research suggests that greater coparenting support between parents is linked to lower parenting stress (e.g., Schoppe-Sullivan et al., 2016). Coparenting is defined as the way parents who are rearing one or several children together support and coordinate each other in their role of parents and in sharing responsibilities for childrearing (Feinberg, 2003). Children who grow up in positive coparenting environments

tend to develop healthier behavioral and interactional skills as well as better emotion regulation abilities than those who grow up in hostile environments (Karreman et al., 2008). Although most of the research on coparenting focuses on parents of infants, fostering a positive coparenting environment remains just as important throughout children's other developmental stages (Mangelsdorf et al., 2011). This remains true in parents of school-aged children as a child's family context is often their main social context outside of school and, thus, plays a crucial role in shaping their behaviors at school (Stright & Neitzel, 2003). The link between parenting stress and coparenting support, along with the stability of parenting stress, is seldom explored in parents of children in mid-childhood. Further, despite the dyadic nature of coparenting support (i.e., mutual support between each parent in their coparenting role), the associations between one partner's coparenting support and their partner's variables (e.g., parenting stress) remains less explored. Exploring dyadic associations in parents who are also a couple is particularly important given that they likely have more frequent interactions and interconnections than parents who are separated. As such, the current study aims to expand on previous research by exploring the longitudinal links between parenting stress measured at two different time points separated by 5 years, and the moderating effect of coparenting support in this association using a dyadic approach to research.

Theoretical Models of the Links between Parenting Stress and Coparenting Support

The links between parenting stress and coparenting quality in biparental families can be conceptualised from many different theoretical frameworks. Researchers have guided their understanding of the parenting system through frameworks such as those focusing on the determinants of parental functioning (Abidin, 1992) or coparenting quality (Feinberg, 2003). These frameworks generally suggest that parenting stress or coparenting behaviors are

determined by multiple factors and that both can interact with each other. Abidin's parenting stress model (1992) suggests that parenting stress is a result of the interaction between the parent's characteristics (e.g., their personality, attachment orientation) and their children's characteristics (e.g., their personality, mood), in which greater parenting stress is the results of difficulties experienced in any or all of these domains. Drawing from multiple parenting theories, Feinberg (2003) proposed a model focusing specifically on coparenting. They suggest that parents' supportiveness of each other, their affirmation of the other's competency as a parent, and their acknowledgement and respect of the other's contributions (i.e., coparenting support, one of the dimensions of coparenting) can act as a buffer to parenting stress. That is, they suggest coparenting support is associated to reduced parenting stress in parents of children from childhood through adolescence. This framework can apply to intact or separated parents as it considers that the coparenting relationship is a unique relationship that exists separately from the romantic relationship, given that it can continue to exist in parents who are separated.

Despite a clear distinction between the coparenting relationship and the romantic relationship, there is some overlap between both systems in biparental families given that the coparenting and the romantic relationships exist within the same individuals (Margolin et al., 2001). As such, frameworks from which to conceptualise behaviors between romantic partners, such as attachment theory (Bowlby, 1969/1982), have also been applied to the understanding of romantic relationships including among coparents (e.g., Schoppe-Sullivan et al., 2016). Fundamentally, the attachment theory is an interpersonal theory that conceptualises certain dyadic emotion regulation processes, such as individuals' support seeking and support providing responses to stress. According to attachment theory, romantic partners are a crucial resource to each other to cope with stress. More specifically, adults may seek support from loved ones in

times of stress or provide support to a loved one in response to their stress. Simpson and Rholes (2012) proposed a diathesis-stress process model, where they distinguished between the impact of acute and chronic stressors on responses to stress. Although experiencing high levels of stress may reduce one's ability to effectively seek support form a partner when it is needed, they suggest that having a partner who is responsive can help to successfully alleviate the distressed partners' stress. However, in the context of high levels of chronic stress, such as parenting stress, having a generally responsive and supportive partner may not be sufficient to help fully soothe the individual experiencing chronic stress. Over time, the individual may continue to experience stress and feel less satisfied with the support they receive. Thus, effective coparenting support from a partner may help to buffer the level of parenting stress over time but may not be sufficient to help it fully subside, such that parents who experience greater parenting stress may tend to continue to experience it through time.

Empirical Links Between Parenting Stress and Coparenting Support

The literature exploring the links between stress and support related desires or behaviors in couples tend to be consistent with the previously discussed theories. The associations between stress and different forms of support between romantic partners have been explored in various contexts. Research generally suggests that perceiving that one is receiving adequate support from the romantic partner can buffer the negative effects of stress over time (e.g., low marital satisfaction; Dehle et al., 2001).

Parenthood is one of the many contexts in which the links between stress and relationship support have been studied. The transition to parenthood has received particular interest given that this period consists of an immense adjustment for couples (Mangelsdorf et al., 2011). Research focusing on parenting stress and coparenting is particularly relevant given that these englobe

specific types of stressors and support behaviors that are closely linked to the parenting experience. Studies exploring the links between parenting stress and coparenting during infancy have found that a greater level of coparenting support is linked with less parenting stress measured at that same time point (Belsky et al., 1995; Solmeyer & Feinberg, 2011), as well as less parenting stress measured at a later time point (Kang et al., 2020; Schoppe-Sullivan et al., 2016). Yet much less focus has been given to parenting children of other age groups. Bronte-Tinkew et al. (2010) explored the links between parenting stress, engagement in parenting and coparenting support in fathers of toddlers (range 5 months to 2.6 years old) and found that fathers' perception of a more supportive coparenting relationship with their partner and more engagement in parenting was associated with their lower levels of parenting stress, measured at the same time point. McDaniel et al. (2018) also explored the daily predictors of coparenting in a sample of parents of toddlers (5 years or younger) over a 14-day period and found that, on days where parents reported experiencing lower parenting stress, they also reported perceiving a better coparenting quality with their partner.

Focusing on parents of children in mid-childhood is particularly compelling as the parenting demands evolve as children grow older. Parenting school-aged children involves particular demands because, at this age, children require more parental supervision and discipline, while, simultaneously, children increasingly desire autonomy (Millings et al., 2012). To our knowledge, only two studies have explored such links in parents of older children, including those of mid-childhood. In a cross-sectional study, Camisasca et al. (2014) explored the mediating role of coparenting between parents' marital adjustment and parenting stress in parents of children between 6 and 11 years old. They found that higher levels of marital adjustment indicators (e.g., dyadic consensus, dyadic satisfaction) were indirectly linked to lower

levels of parenting stress via a more positive coparenting relationship. Delvecchio et al., (2015) explored the mediating role of coparenting quality in the link between parents' anxiety and their parenting stress in a sample of parents of children from 1-13 years old. The researchers found that both mothers and fathers' own greater anxiety was linked to their perception of a poorer coparenting quality which, in turn, was linked to their own greater parenting stress.

Given that coparenting requires various dyadic interactions between parents in which they work together to raise their child, regardless of the developmental stage of the child, exploring dyadic associations between parents is important, particularly in biparental families where parents likely have more frequent interactions than separated parents. Dyadic associations include actor and partner effects. *Actor* effects, which are explored in most studies, refer to the effects of one's own independent variable on one's own dependent variable (e.g., associations between mothers' level of parenting stress and mothers' perception of coparenting support in the relationship). On the contrary, *partner* effects refer to the extent to which one's own independent variable is linked with a partner's dependent variable (e.g., associations between mothers' level of parenting stress and fathers' perception of coparenting support in the relationship). Among studies exploring the links between parenting stress and coparenting quality, only three explored partner effects between parenting stress and coparenting quality. Schoppe-Sullivan et al. (2016) found that mothers' perception of a supportive coparenting relationship was associated with fathers' lower levels of parenting stress. McDaniel et al. (2018), however, found no partner effects between parenting stress and coparenting quality. With regards to parenting stress, two studies found that parenting stress reported by mothers and fathers is linked to one another, such that when one parent experiences greater stress, their partner also tends to experience greater stress at that same time point (Delvecchio et al., 2015; Schoppe-Sullivan et al., 2016).

Research focusing on the chronicity of parenting stress over time appears to be less common than research exploring its correlates. Given that we know that parenting stress is associated with negative impacts on parenting and children's wellbeing, it is important to better understand how levels of parenting stress are associated across different age periods. This is particularly pertinent to shed light on the possible necessity for parenting intervention programs for parents of children beyond infancy. Despite a few studies suggesting that parenting stress tends to remain stable through time, intervention programs for parents mainly target young parents (Nunes et al., 2021). Among longitudinal studies focusing on the preschool years, parenting stress appears to be stable when measured at 3, 6- and 12-months post-partum (Kang, et al., 2020), when measured at one, three, and five years old (Williams & Parra, 2019), and at three, four and five years old (Crnic et al., 2005). Parenting stress also appears to be stable when measured daily over 14 days in parents of children of 5 years or less (McDaniel et al., 2018). Studies focusing on older age groups and on the chronicity of parenting stress across developmental stages remains scarce. Putnick et al., (2010) found that parenting stress appears to be stable across the transition from mid-childhood to adolescence (i.e., between 10 and 14 years old). However, to our knowledge, the levels of parenting stress across time experienced by parents with preschool and school aged children remains unexplored, despite the differences that can occur between these two periods (e.g., new potential sources of stress for children and parents, children's increased desire for autonomy). Though not longitudinal, Delvecchio et al. (2015) conducted a cross-sectional study and found similar levels of parenting stress between parents of children aged one to five years old and parents of children aged six to 13 years old, suggesting that parentings stress may tend to be similar over this transition period. Only one study explored partner effects of parenting stress in longitudinal research. Putnick et al. (2010)

explored partner effects across time points only, but not within each time point, and found that when mothers and fathers of 10-year-old children reported greater parenting stress, their partner also reported greater parenting stress when their child was 14 years old.

In sum, more research is needed to further understand the associations between parenting stress over time and its association with coparenting, particularly in parents of children of older age groups. Although it appears that better coparenting quality may be linked to lower parenting stress, this link remains less explored in parents of children in mid childhood, and partner effects have yet to be examined at that age group. Further, parenting stress levels throughout mid-childhood and across developmental stages remains less explored, and the moderators of this association even less so. As such, combining actor-partner analyses with longitudinal data collected from both parents at two time points representing preschool and school-aged periods will allow us to address some of the current gaps in the literature on parenting stress over time and on its association to coparenting.

The Current Study

The present study seeks to extend the literature on factors contributing to parenting stress experiences in biparental families. More specifically, the goal is to examine the longitudinal associations between mothers' and fathers' own as well as their partner's parenting stress measured at two different time points separated by 5 years and the moderating effect of coparenting support on this association. Most research on parenting stress and coparenting focuses on the links between one parent's self-reported variables (e.g., parenting stress) and their other self-reported variables (e.g., coparenting). Hence, the current study will also aim to build upon literature by examining both actor and partner effects using a dyadic approach. More specifically, moderated path analyses using the Actor-Partner Interdependence Model (APIM;

Kenny et al., 2006) will be conducted (see Figure 1 for a visual representation of the model). Regarding cross-sectional hypotheses, we expected that mothers and fathers' greater levels of parenting stress will be linked to their partner's greater levels of parenting stress at each time point, and that greater perceived coparenting support will be associated with their own and their partner's lower parenting stress during the second time point. Regarding longitudinal hypotheses, we expected that mothers and fathers' levels of parenting stress during the first time point will be positively related to their own as well as their partner's parenting stress five years later. We also hypothesized that mothers and fathers' perception of coparenting support in their relationship will moderate these links such that it will be stronger in mothers and fathers who reported lower perceived coparenting support, and weaker in mothers and fathers who reported greater perceived coparenting support.

Method

Participants

The current sample for this study included 82 heterosexual couples (164 individuals) who were parents of at least one child in mid-childhood. To participate in this study, participants had to a) speak either English or French, b) have a child aged between 3 and 5 years old at the first participation time point (T1) who was living with both parents, c) have that same child remain living with both parents at the second participation time point (T2) (i.e., about 5 years later), and d) be in a relationship and live with the same partner at T1 and T2. Families in which children were living with a non-biological parent were included in the study if the stepparent had lived in the home for at least 2 years prior to T1 and was considered a parental figure to the child. Families where the participating child had siblings (younger or older) were also included. Same-sex parent families were welcomed to participate, however, none did. A total of 316 individuals (158 couples) participated at T1. Two hundred and three of these individuals (coming from 107

of the couples from T1) participated at T2 because some couples had moved, some had separated, some did not wish to participate at T2, and some never replied. Attrition rate from T1 to T2 for participants who participated in at least one component of the study at T2 was, therefore, of 32% (i.e., 158 couples at T1 and 107 of these at T2), which is within the expected range for longitudinal studies on families. From this sample of 203 individuals who participated at T2, 16 individuals (7.9%) were removed as they separated between T1 and T2, and, thus, did not meet the current study's criteria. Four more individuals (1.9%) were removed as they did not wish to participate in the questionnaire component of the study. Nineteen additional individuals (9.5%) were removed as their partner did not participate in the questionnaire part of the current study.

The mean age of the current sample at T2 (N = 82 couples) was of 40.13 years (SD = 4.85) for mothers and of 41.73 (SD = 5.97) for fathers. On average, couples had been in their relationship for 15.21 years (SD = 3.77) and had been cohabitating for 13.64 (SD = 3.33) years. Seventy-five couples (91.5%) reported being married, five couples (6.1%) reported being in a common-law relationship, one couple (1.2%) reported being remarried, and one couple (1.2%) did not report their marital status. Mothers and fathers' reported number of children with their current partner, highest level of education, ethnicity, and income are reported in Table 1. The mean age of the child participating in the study was of 3.78 years (SD = 0.67) at T1 and 8.66 years (SD = 1.19) at T2. Among the 66 families who had more than one child, the mean age of the siblings was of 7.33 (SD = 4.57) and the mean age difference between the child participating in the study and their siblings was of 3.78 (SD = 2.72) at the second participation time point. The average time elapsed between participation between T1 and T2 was 4.88 years (SD = 1.12).

Analyses were conducted to compare sociodemographic data between individuals who only participated at T1 and those who participated at both time points (i.e., those included in the current study), using the sociodemographic information reported by each sample at T1. *T*-tests were used for continuous data and Chi-square tests were used for categorical data. These analyses revealed no significant differences of child's age, child's gender, child's number of siblings, family's annual gross income, whether the parents own or rent their home, parents' marital status, parents' occupation, parents' ethnicity, nor parenting stress between each sample. Only mothers' level of education appeared to differ between these samples, with this difference representing a small effect size ($\chi(2) = 10.064$, $\varphi = .25$ $p = .007$). Among those who participated at T1 only, 12.2% of mothers reported a high school degree, 21.6% a college degree and 66.2% a university degree, while among those who participated at both timepoints, 2.4% of mothers reported a high school degree, 11% a college degree and 86.6% a university degree. Fathers' level of education, however, was not significantly different between both samples.

Procedure

Procedures for this study were approved by the university's Office of Research Ethics and Integrity. This study was part of a larger longitudinal study on families that comprised two participation time points.

Time 1

Participants for Time 1 (T1) were recruited from the community between 2008 and 2014 through advertisements posted in newspapers, on the radio, and online. At T1, participants were invited to two separate laboratory visits (one per parent, accompanied with the same child) where they read and signed a consent form, participated in child-parent tasks or child-only tasks, and where the parents completed a questionnaire package including the Parenting Stress Index (PSI;

Abidin, 1995) used in the current study. These visits were held in counterbalanced order for parents' gender (i.e., first visit alternated between mother or father).

Time 2

Families who had participated at T1 were contacted by phone or email by a research assistant and invited to participate at Time 2 (T2) about 5 years later. Once participants agreed to participate in the second phase of the study, parents were sent the consent form by email. Participation at T2 included a home visit, two laboratory visits (one per parent, accompanied with the same child as T1) and the completion of a questionnaire package, including the PSI and the Coparenting Relationship Scale (CRS; Feinberg et al., 2012). The present study only used information gathered from the questionnaire packages as the activities completed during the laboratory visits at both timepoints and the home visit at T2 focused on the interactions between parents and their children, rather than the interactions between the parents.

Measures

Sociodemographic Questionnaire at T2

A questionnaire collected demographic information from the participants (e.g., age, gender, ethnicity) and information on their romantic relationship (e.g., length of the relationship, cohabitation, marital status, number of children).

Parenting Stress at T1 and T2

The Parenting Stress Index (PSI; Abidin, 1995) measured mothers and father's perception of parenting stress while thinking of the child that they are the most concerned about using 101 self-report items. Parents were specifically instructed to complete this questionnaire in considering their relationship with this child. The PSI is composed of two domains: the child domain (perceived challenges associated with their child´s behavior) and the parent domain

(general stress associated with the conciliation of parenting role and other roles). The child domain is measured through six subscales: distractibility/hyperactivity, adaptability, reinforces parent, demandingness, mood, and acceptability. The parent domain is measured through seven subscales: competence, isolation, attachment, health, role restriction, depression, and spouse/partner relationship. Parents evaluate the extent to which they identify with each item using a 5-point Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). In accordance with the PSI's guidelines and manual, the total PSI score consists of the sum of the child and parent domain scores. A total score was calculated at T1 and at T2 separately. Higher scores indicated greater levels of parenting stress at each time point. The PSI was validated for use with parents of children between 1-12 years old. It has demonstrated acceptable concurrent, construct, discriminant, and factorial validity and reliability (Abidin, 1995). Cronbach's alpha coefficients in the current sample were of .94 for mothers and fathers at Time 1 and .95 for mothers and fathers at Time 2.

Coparenting Support at T2

The Coparenting Relationship Scale (CRS; Feinberg et al., 2012) measured the respondent's perception of coparenting quality using 35 items. It comprises seven subscales: coparenting agreement, coparenting closeness, coparenting support, coparenting undermining, endorse partner parenting, division of labor, and exposure to conflict. Only the coparenting support (6 items, e.g., "When I'm at my wits end as a parent, my partner gives me the extra support I need" or "My partner asks my opinion on issues related to parenting") subscale was used in the current study, similarly to other studies on coparenting and parenting stress (e.g., Schoppe-Sullivan et al., 2016). This subscale was chosen based on its relevance to the attachment (support seeking) and caregiving (support providing) systems. Items are rated using a

7-point Likert scale from 0 (*Not true of us*) to 6 (*Very true of us*). Higher mean scores indicate that the respondent perceives greater coparenting support in their relationship. This measure has demonstrated good internal consistency across gender and different data collection time points for the support subscale (α = .86 to .89; Feinberg et al., 2012). Alpha coefficients for the current study were of .89 for mothers and .91 for fathers on the coparenting support subscale.

Data Analyses

Prior to testing the hypotheses, preliminary analyses were conducted using IBM SPSS Statistics (Version 24.0) to examine missing data, outliers and whether the data satisfies the assumptions of normality, linearity, and homoscedasticity (Kline, 2016). Following this, we explored descriptive statistics and intercorrelations among all variables. Next, we conducted correlations or paired t-tests among sociodemographic variables and outcome variables to identify possible covariates. The main analytic strategy consisted of a moderation path analysis based on the Actor-Partner Interdependence Model (APIM) using MPlus 8.5 (Kenny et al., 2006). The APIM is the most suitable for analyzing dyadic samples as it was specifically conceptualised to capture dependence in dyads (Kenny et al., 2006). Moreover, path analyses are more appropriate for this study given that they require fewer participants than the equivalent model would with latent-variables structural models (Wolf et al., 2013). Prior to testing the hypothesized model, an omnibus test of distinguishability was conducted to assess whether mothers and fathers should be considered as distinguishable partners (Kenny et al., 2006). The hypothesized model was then tested. This model included two independent variables (mothers' and fathers' parenting stress at T1), two moderator variables (mothers' and fathers' perceived coparenting support at T2), two interaction effects (mothers' parenting stress at T1 * mothers' perceived coparenting support at T2 and fathers' parenting stress at T1 * fathers' perceived

coparenting support at T2) and two dependent variables (mothers' and fathers' parenting stress at T2). Following recommendations from Kelloway (2015), model fit (i.e., how well the model explains the data) was evaluated using the Chi-square statistic (χ^2; $p > .05$ indicates a good fit), the root mean square error of approximation (RMSEA; ≤.06 indicates a good fit), the comparative fit index (CFI; ≥ .95 indicates a good fit) and the standardised root mean square residual (SRMR; ≤ .09 indicates a good model fit). Post-hoc probing of significant interaction effects was explored using simple slope analyses examining the association between the independent variable (e.g., parenting stress at T1) and the dependent variable (e.g., parenting stress at T2) at – 1SD, 0 and +1 SD of the moderator variable (Aiken & West, 1991). Standardized effect sizes obtained from these analyses were interpreted using guidance from recommended cut offs, where β between .10 -.29 are considered small effect sizes, β between .30 -.49 are considered medium effect sizes, and $\beta \geq .50$ are considered large effect sizes (Cohen, 1988; Nieminen, 2022).

Results

Preliminary Analyses

According to Little's Missing Completely at Random (MCAR) test, data were missing completely at random ($\chi^2 = 5011.18$; $p = 1.000$), and questionnaires items were missing at less than 5%. We used single imputation using the Expectation maximisation (EM) method to estimate the missing values of these items. Examination of Z scores revealed three univariate outliers on the parenting stress scale at T2. However, considering that these outlying scores reflected possible scores on its respective scale and that a Mahalanobis distance analysis revealed no multivariate outliers, these univariate outliers were retained.

Following this, assumptions of normality, linearity and homoscedasticity of data were examined through skewness, kurtosis, as well as using boxplots, scatterplots, and histograms. Data were found to be slightly positively skewed on mothers' and father's parenting stress score at T2. MPlus provides maximum likelihood estimations with standard errors (MLM), which consists of a robust test statistic for model evaluation that can be used as an alternative to transformations when dealing with non-normality (Kline, 2016).

Descriptive Statistics and Correlations

The means, standard deviations, and correlations were assessed separately for mothers and fathers for all variables of interest. Potential gender differences were also examined through paired *t*-tests on each study variable. Pearson correlations, means, and standard deviations are presented in Table 2. Results indicated significant correlations between parenting stress at T1, parenting stress at T2 and coparenting support at T2 in the expected directions. All study variables were moderately correlated between mothers and fathers. Paired *t*-tests indicated no significant gender differences on parenting stress at T1 ($t(81) = .822$, $p = .413$, $d = .09$), parenting stress at T2 ($t(81) = 1.237$, $p = .220$, $d = .14$), nor coparenting support at T2 ($t(81) = 0.738$, $p = .463$, $d = .08$).

Following this, we conducted Pearson's correlations, or Spearman's correlations for non-normally distributed data, among our sociodemographic variables and the study's dependent variables (i.e., parenting stress at T2) to examine potential covariates. These were conducted separately for men and women to control for the non-independence of the data. Results revealed no significant association between age, length of the relationship, length of the cohabitation, nor number of children and parenting stress at T2.

Actor-Partner Interdependence Model Using Path Analyses

The omnibus test of distinguishability was first conducted to assess whether mothers and fathers should be considered as distinguishable partners by imposing specific constraints on the covariances, variances, and means of the study variables. The test of distinguishability yielded a chi-square statistic of χ^2 (18) = 55.496, p = .000 suggesting that members can be statistically distinguished based on their gender. The hypothesized APIM model was estimated using MLM. This saturated model revealed two significant direct actor effects and one significant interaction effect (see Table 3 for standardized coefficients of all paths included in the "initial model"). In order to move away from a saturated model and to generate a more parsimonious model, model-trimming was applied using a meaningfulness criterion ($\beta < .05$) in which paths with a standardized path coefficient smaller than $\beta = .05$ were constrained to zero (Wuensch, 2016). Two paths were constrained to zero, that is, the path from mothers' parenting stress at T1 to fathers' parenting stress at T2, and the path from the interaction between mothers' parenting stress at T1 and mothers' coparenting support at T2 to fathers' parenting stress at T2. Fit indices for this model suggested that it was well adjusted to the data, χ^2 (2) = .002, p = .998, RMSEA = .00, CFI= 1.00, SRMR = .00. Standardized coefficients for all paths of this model are presented in Table 3 under the "trimmed model" section. Results indicated significant positive associations and large effect sizes between mothers' and fathers' parenting stress at T1 and their own parenting stress at T2 (actor effects), where mothers and fathers who reported greater levels of parenting stress at T1 also reported greater levels of parenting stress at T2. The model also indicated significant and positive correlations between mothers and fathers' level of parenting stress at T1 (r = 0.281; p = .002; small effect size) and at T2 (r = 0.249; p = .008; small effect size). One significant partner effect, with a small effect size, was revealed indicating that

mothers' greater perceived coparenting support at T2 was associated with fathers' lower level of parenting stress at T2. One interaction effect was also found suggesting that father's perception of coparenting support at T2 moderates the association between their own parenting stress at T1 and at T2. Simple slopes indicated that the association between father's parenting stress at T1 and T2 remained significant and positive regardless of fathers' perceived coparenting support in their relationship. However, the positive association between fathers' parenting stress at T1 and T2 was stronger when fathers' reported low perceived coparenting support at T2 (β = .746, p = .000; large effect size) than when they reported moderate perceived coparenting support at T2 (β = .600, p = .000; large effect size), and stronger than when they reported high perceived coparenting support at T2 (β = .455, p = .007; medium effect size). This moderation effect is illustrated in Figure 2.

Discussion

Parents' behaviors and interactions with one another play a central role in shaping their children's development and social relationships. As parenting can be particularly stressful, it is important that partners support each other by engaging in effective coparenting. Some studies even suggest that coparenting is more strongly related to child functioning than each parent's individual parenting (Karreman et al., 2008). The present study aimed to address some of the gaps in the parenting stress and coparenting literature by exploring the longitudinal and dyadic links between parents' parenting stress measured at two time points during the preschool and school years, separated by 5 years, and the moderating role of coparenting support in these longitudinal links. We found that both mothers and fathers' greater parenting stress during the first time point was linked to their own, but not their partners' greater parenting stress five years later. We also found that fathers' perception of coparenting support at T2 moderated this

association such that it was stronger when fathers reported lower perceived coparenting support at T2 and weaker when they reported greater coparenting support at T2. Furthermore, we found that mothers' greater perceived coparenting support at T2 was associated with fathers' lower parenting stress at T2. Such findings are important as they highlight that parenting stress can persist over time, but that perceptions of coparenting support may buffer it, ultimately helping to inform intervention avenues for parents struggling with high parenting stress or coparenting difficulties.

Such findings are consistent with the literature on parenting stress measured over time (e.g., Williams & Parra, 2019) as well as those exploring the dyadic associations of parenting stress within a same developmental period (Delvecchio et al., 2015). These results suggest that parenting stress remains stable across time, and possibly from preschool to the school years. Given that similar findings have been identified in different age groups (e.g., Crnic et al., 2005; Putnick et al., 2010; Williams & Parra, 2019), it is possible that parents' may carry over their levels of parenting stress throughout their children's life. Since children's needs also tend to evolve between developmental periods, such as between preschool and the school years (e.g., Millings et al., 2012), these changes may also generate their own particular sources of parenting stress at different developmental periods. Contrary to our expectations, however, mothers and fathers' parenting stress during the first time point was not directly linked to their partner's stress five years later. The current study's results indicate a small and positive, but non-significant, effect of the association between fathers' parenting stress at T1 and mother's parenting stress at T2, which is similar to the results found by Putnick et al. (2010) who found small and significant effects between fathers' parenting stress variables at T1 and mothers' parenting stress variables at T2. Considering that path analyses using the APIM typically require a larger sample size, it is

possible that a type II effect occurred. Nevertheless, this does not mean that partner's variables do not play any role in one's experience of parenting stress. In fact, our results suggest that more parenting stress in one parent was linked to more parenting stress in their partners within both time points, suggesting that there may still be some spillover between parents' parenting stress or shared variance in parent's experiences of parenting stress given that they are responding to the same stressors. Thus, despite the absence of significant partner associations in parenting stress over time, each partner's parenting stress remains linked with each other within each time point, highlighting the importance of considering the dyad in understanding experiences of parenting stress. Future studies could expand on such findings by focusing specifically on the possible directionality of the spillover effects of parenting stress between each partner. For example, studies exploring the impact of a specific parenting stressor (e.g., child's mood, such as a recent tantrum or emotional outburst from the child) experienced by one parent on the other parent at that same time point, as well as at a later time point, could be particularly interesting to this effect. This being said, it is also possible that partners' variables are more strongly linked to individuals' parenting stress measured at the same time, rather than at a later time. Our result suggesting that mothers' perception of greater coparenting support was directly linked to fathers' lower parenting stress measured during the same time period appears to support this. Although this finding only appeared in the trimmed model, this effect remained small in both models, which is similar to a previous study exploring the link between mothers' perception of coparenting support and fathers' parenting stress (Schoppe-Sullivan et al., 2016).

The current study's moderation findings are also generally consistent with the theoretical and empirical literature on the links between coparenting and parenting stress. Our results revealed that the association between fathers' greater parenting stress during the first time point

with their greater parenting stress five years later was weaker when fathers reported greater coparenting support, and stronger when fathers reported lower coparenting support without changing the direction of the link. These results further suggest that while parenting stress tends to remain stable over these five years during mid-childhood, one's own perception of coparenting support may be helpful in buffering one's own parenting stress over time. This finding is consistent with parenting and couple theories suggesting that, although support from a partner or coparent may not be sufficient to help one's own stress fully subside, it can help to cope with it to slightly reduce it. The absence of this moderation effect in mothers, however, does not correspond with our hypotheses. One possibility is that there may be potential gender differences in the associations between coparenting support and parenting stress. For example, some of the research on support behaviors in couples suggests that men tend to rely more heavily on their partner's support and to obtain greater benefits from their partner's support (e.g., better health or wellbeing) compared to women (Taylor, 2012). This author explains that this may be due to the fact that women tend to have broader sources of support than men from which they seek and obtain support. It may also be that other variables that are linked to the association between mother's coparenting support and parenting stress were not considered in the current study. For example, Schoppe-Sullivan et al. (2016) found that when mothers reported a low parenting self-efficacy (i.e., confidence in their ability to parent competently and effectively), their higher parenting stress was linked with their lower perceived coparenting support, but this link was not significant in mothers who reported high parenting self-efficacy. Thus, coparenting support may moderate mothers' parenting stress over time only when their self-efficacy is low.

Limitations and Future Research

Although the current study addressed multiple gaps in the literature on parenting stress and coparenting quality, it presents some limitations. First, the sample consisted of mixed-sex parent relationships, who mostly identified as White, highly educated and who reported a high annual family income, which limits the generalizability of our results to other populations (e.g., those with a lower socio-economic status). Although a significantly greater portion of mothers reported a university education in those who participated at both time points compared to those who only participated at T1, it remains that the majority of both samples had a university degree. It is worth noting, however, that 21.96% of the sample identified as people of color (e.g., Black, Chinese, Japanese, Hispanic, Arab), which is similar to the study's city demographics (World Population Review, 2016). Additionally, participants reported similar levels of coparenting support and parenting stress as previous studies (Abidin & Wilfong, 1989; Benzies et al., 2007; Feinberg, 2012; Schoppe-Sullivan et al., 2016). Future studies could explore the pertinence of similar models in other parent groups, such as parents of children of older ages (e.g., adolescents), or those with a lower socioeconomic status (i.e., less education, less family income). Second, our variables were measured using self-report questionnaires, which could induce some social desirability, lack of introspection, or memory recall biases. Future studies could incorporate observational measures of coparenting (e.g., observing parents interacting in coparenting activities). Third, despite the theoretical support for our model and the longitudinal component of the parenting stress variable, the correlational nature of our data does not allow us to infer a causal relationship between parenting stress over time, and its association with the quality of the coparenting relationship. It is possible that there is a bidirectional link between parenting stress and coparenting. Unfortunately, the coparenting measure was only added to the

study at T2 given that it was not available until the end of the recruitment and testing period for T1. This does not allow us to explore the longitudinal and bidirectional links between parenting stress and coparenting. Longitudinal studies measuring facets of coparenting at multiple time points could further inform us on the temporal sequence of the links between parenting stress and coparenting quality. Finally, as previously mentioned, our small sample size due to recruitment limitations (e.g., larger longitudinal study requiring parents to have a child of a specific age, and to have both parents participate at two time points separated by about 5 years) reduced our statistical power and possibly increased the chance of a type II error. Despite this, future studies should continue to explore the factors linked with parenting stress and coparenting using longitudinal designs to further our understanding of both.

Conclusion

When parenting together, romantic partners are required to be there for each other in order to cope with the stresses of parenting. Our results suggest that the couple's ability to do so may mitigate their experiences of parenting stress. The current study's findings, indeed, highlight that parents' perception of mutual supportiveness in their coparenting relationship, and their affirmation, acknowledgment, and respect of each other's parenting (i.e., coparenting support) can moderate levels of parenting stress experienced by fathers during the preschool years and the school years. The current study is particularly novel in that we explored both parents' parenting stress measured at two time points during the preschool and the school years, separated by five years. Our findings highlight that parenting stress appears to remain similar over time, suggesting that it may be important for parents who are dealing with high parenting stress or coparenting difficulties to seek help as soon as possible.

Such results hold important implications for intervention programs aimed at helping parents of children in preschool to the school age who are experiencing parenting difficulties. Our results suggest that focusing on reducing parenting stress and improving coparenting support may be important avenues. As outlined in coparenting and couple frameworks, individuals experiencing great chronic stress are more likely to use ineffective coping strategies and to seek and provide less effective support to their partner. As such, programs focusing on reducing sources of parenting stress (e.g., increasing access to health, mental health, and financial resources) as well as teaching parents strategies to cope with stress (e.g., good sleep hygiene, mindfulness, emotion regulation strategies) may not only help to reduce parenting stress but may also improve the quality of the coparenting relationship. Among the various strategies and intervention programs that exist for stress management, mindfulness-based stress reduction (MBSR; Kabat-Zinn, 2003) and mindfulness-based cognitive therapy (MBCT; Segal et al., 2002), have strong evidence for success in helping individuals improve their overall wellbeing and stress management (Querstret, et al., 2020). Unfortunately, their impact on parenting stress specifically remains unknown and more research would be needed to determine whether such strategies could also help alleviate parenting stress. That being said, it is not always possible to reduce sources of parenting stress, and in the case of chronic stress, the resources required to cope with it may, at times, surpass one's own capabilities. As such, it is also important to provide parents with additional parenting tools to help each other effectively. The present study's findings highlight that tools to help improve coparenting quality may be particularly beneficial for fathers. Among available programs (see Nunes et al., 2021 for a recent review of coparenting programs), only one targets both reducing parenting stress and increasing coparenting quality through educational and support materials provided in online or in person classes (Family

Foundations, 2020). Further, most coparenting programs target very specific populations (e.g., at risk families, parents expecting their first child or parents of infants) and only two of those included in the recent meta-analysis (Nunes et al., 2021) are available to non-clinical and community samples of parents of children who are older than infants. Our results suggest that parenting stress and lower coparenting quality can, in fact, also be present in parents of children beyond toddlerhood. Thus, intervention programs available to these populations may be important. Additionally, coparenting is multifaceted, and our results highlight that even some of its individual facets (i.e., coparenting support) can act as a buffer to fathers' parenting stress. Programs focusing on only one aspect of coparenting (e.g., reducing conflict and negative interactions) may not necessarily provide parents with the tools required to increase coparenting support. Intervention programs focusing on multiple components of coparenting could perhaps be more beneficial to help parents improve their overall coparenting relationship.

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Table 1
Sociodemographic Information Reported by Mothers and Fathers

	Mothers	Fathers
	N (%)	*N* (%)
Number of children with current partner		
One child	16 (19.5%)	16 (19.5%)
Two children	42 (51.2%)	43 (52.4%)
Three children	14 (17.1%)	13 (15.9%)
Four Children	9 (11.0%)	8 (9.8%)
Seven Children	0 (0.0%)	1 (1.2%)
No response	1 (1.2%)	1 (1.2%)
Highest degree of education attained		
Graduate university	25 (30.5%)	26 (31.7%)
Undergraduate university	47 (57.3%)	33 (40.2%)
College	8 (9.8%)	18 (22.0%)
High school	1 (1.2%)	5 (6.1%)
No response	1 (1.2%)	1 (1.2%)
Ethnicity		
White	62 (75.6%)	66 (80.5%)
Black	3 (8.7%)	4 (4.9%)
Chinese	4 (4.9%)	1 (1.2%)
Japanese	1 (1.2%)	0 (0.0%)
South Asian (East Indian, Pakistani, Sri Lanka, etc.)	4 (4.9%)	5 (6.1%)
Hispanic	0 (0.0%)	1 (1.2%)
Arab	2 (2.4%)	3 (3.7%)
Other (e.g., Mixed, Indigenous, Caribbean, Ukranian)	5 (6.1%)	1 (1.2%)
No response	1 (1.2%)	1 (1.2%)
Annual gross family income (i.e., both parents income per year, before deductions)		
100 000$ or more	59 (72.0%)	63 (76.8%)
75 000$ - 99 999$	9 (11.0%)	6 (7.3%)
50 000$ - 74 999$	4 (4.9%)	6 (7.3%)
40 000$ - 49 999$	3 (3.7%)	2 (2.4%)
39 999$ or less	4 (4.7%)	3 (3.7%)
No response	3 (3.7%)	2 (2.4%)

Note. *N* = 164; Responses reflect the participants' answers and may differ between mothers and fathers based on their interpretation of the sociodemographic question.

Table 2

Bivariate Correlations, Means, and Standard Deviations for Parenting Stress at T1, Parenting Stress at T2 and Coparenting Support at T2 for Mothers and Fathers

Variable	1	2	3	4	5	6
1. Mother Parenting Stress at T1	-	.28 (.011)	.69 (.000)	.22 (.044)	-.33 (.002)	-.11 (.335)
2. Father Parenting Stress at T1		-	.29 (.009)	.61 (.000)	-.10 (.425)	-.26 (.017)
3. Mother Parenting Stress at T2			-	.37 (.001)	-.36 (.001)	.12 (.284)
4. Father Parenting Stress at T2				-	-.24 (.034)	-.24 (.030)
5. Mother Coparenting Support at T2					-	.36 (.001)
6. Father Coparenting Support at T2						-
Mean (SD)	208.70 (37.84)	204.87 (32.03)	221.46 (43.00)	214.89 (42.76)	4.42 (1.43)	4.29 (1.38)

Note. $N = 82$; The p value for each correlation coefficient is presented in parentheses.

Table 3

Standardized Actor and Partner Effects of the Moderation Model of the Relationship Between Mothers' and Fathers' Parenting Stress at T1 and Parenting Stress at T2 by Coparenting Support at T2

	Mother Parenting Stress at T2			Father Parenting Stress at T2		
	Initial Model					
	β	*S.E.*	*p*	β	*S.E.*	*p*
Mother Parenting Stress at T1	**0.547**	**0.250**	**.029**	-0.014	0.321	.965
Father Parenting Stress at T1	0.236	0.261	.365	**1.053**	**0.248**	**.000**
Mother Coparenting Support at T2	-0.297	0.502	.554	-0.210	0.557	.706
Father Coparenting Support at T2	0.298	0.468	.524	0.921	0.472	.051
Mother Parenting Stress at T1 * Mother Coparenting Support at T2	0.132	0.477	.781	0.025	0.507	.960
Father Parenting Stress at T1 * Father Coparenting Support at T2	-0.267	0.464	.565	**-0.941**	**0.460**	**.041**
	Trimmed Model					
Mother Parenting Stress at T1	**0.550**	**0.256**	**.031**	0.000	0.000	-
Father Parenting Stress at T1	0.236	0.260	.363	**1.053**	**0.248**	**.000**
Mother Coparenting Support at T2	-0.291	0.502	.562	**-0.184**	**0.055**	**.001**
Father Coparenting Support at T2	0.299	0.468	.523	0.921	0.472	.050
Mother Parenting Stress at T1 * Mother Coparenting Support at T2	0.127	0.472	.788	0.000	0.000	-
Father Parenting Stress at T1 * Father Coparenting Support at T2	-0.267	0.464	.564	**-0.941**	**0.460**	**.041**

Note. $N = 82$; Significant results are in bold.

Figure 1

Actor-Partner Interdependence Model of the Associations between Mothers and Fathers' Parenting Stress at T1 and Mothers and Fathers' Parenting Stress at T2, Moderated by Mothers and Fathers' Coparenting Support Measured at T2

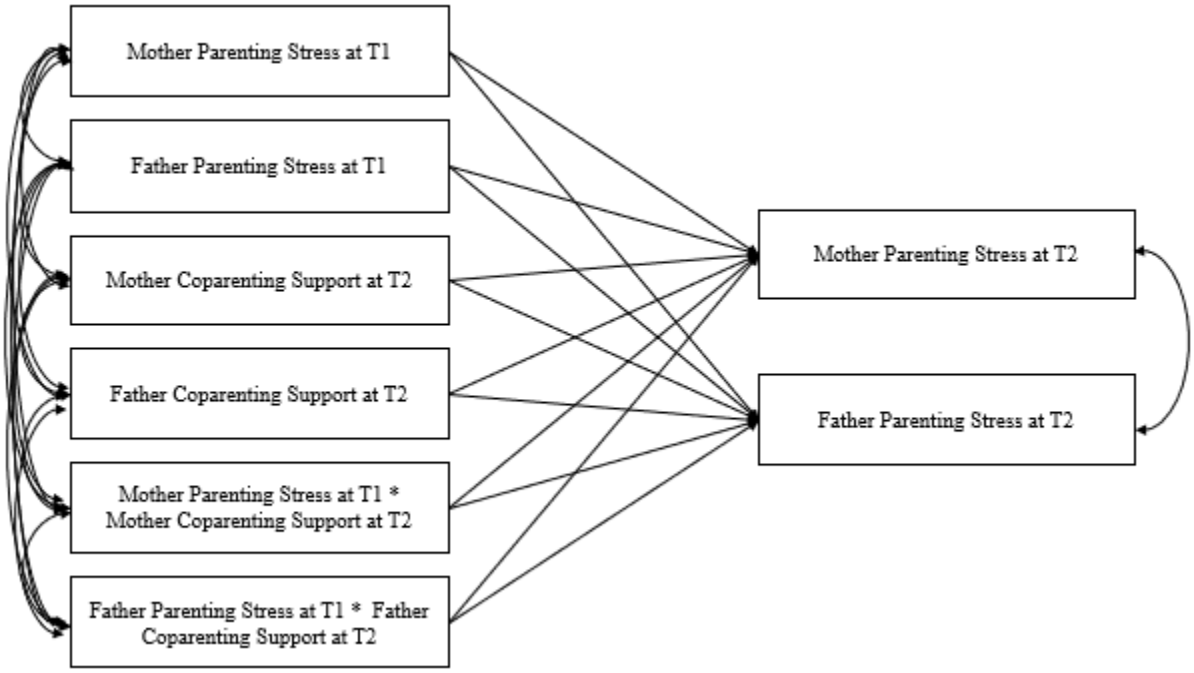
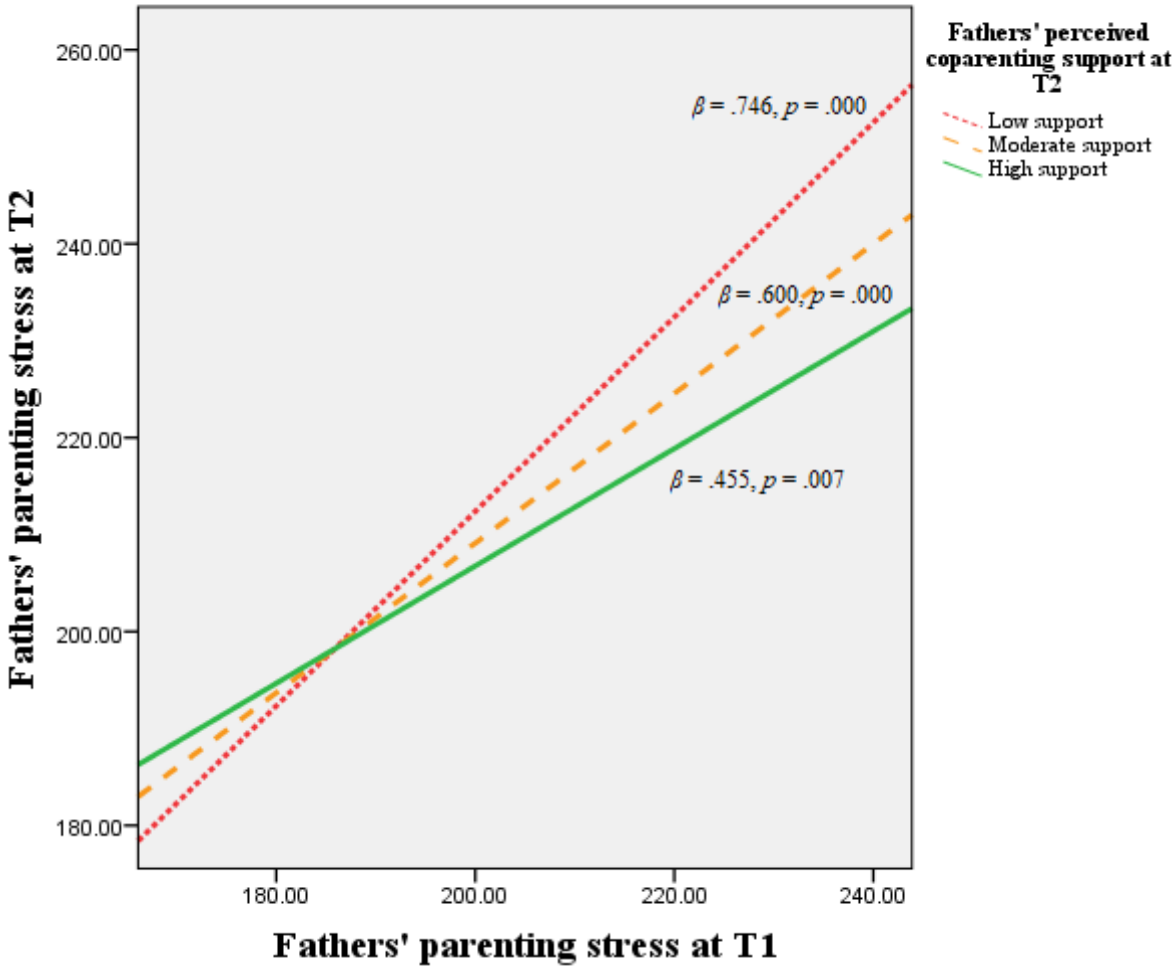


Figure 2

Moderating Effect of Fathers' Perceived Coparenting Support on the Link between Father's Parenting Stress at T1 and Fathers' Parenting Stress at T2



General Discussion

Summary of Objectives and Strengths

The overall goal of the current thesis was to examine how stress may be associated with support providing and seeking desires and behaviours in couples. It is known that individuals' romantic partner can act as a crucial resource for emotional coregulation in times of stress, which can help a distressed individual alleviate their stress. However, theory and research also suggest that experiencing stress may be linked with using less effective support providing or seeking behaviours through certain factors, such as the attachment and caregiving systems. As such, guided by stress and support theories and existing research, the current thesis sought to further explore associations between stress and support in couples in contexts of acute and chronic stress. The main goal of the first study was to explore whether romantic partners' stress was associated with their support providing or seeking desire in a specific stressful scenario (i.e., acute stress), as well as to explore whether hyperactivation and deactivation of their attachment and caregiving systems moderated these associations. This study encompasses noteworthy theoretical, methodological, and statistical strengths given that it provides a unique and comprehensive dyadic glance at the links between acute stress, the attachment and caregiving systems and support seeking or providing tendencies in the context of an acutely stressful situation. By grouping the attachment and caregiving systems into hyperactivation and deactivation scores, this study allows us to further nuance the links between stress and support seeking or providing through the lens of the non-optimal coping strategies discussed in attachment theory. Additionally, recruiting couples among which both partners were willing to participate in an experimental laboratory procedure, a sometimes difficult to recruit population,

offered the possibility of using actor-partner analyses to assess dyadic interactions between romantic partners in a specific context of stress, based on their general tendencies.

The main goal of the second study was to explore whether romantic partners' parenting stress (i.e., chronic stress) was associated with their own as well as their partner's parenting stress about 5 years later, as well as to explore whether their perception of support in their coparenting relationship moderated this association, in couples who are parents. This study also provides its own notable strengths with regards to theoretical framework, methodology and statistical analyses. Drawing from both the attachment theory and Feinberg's coparenting model, this study reveals findings consistent with these frameworks, providing some evidence for the notion that there may be an overlap between the romantic and coparenting relationship in couples who also coparent. Furthermore, exploring such associations using longitudinal data from a sample of couples who are parents of children in the preschool years to the school years, provided some insights into the links between parenting stress and coparenting support within a relatively understudied population in research, that is, parents of children beyond infancy and toddlerhood. Using a sample of couples also allowed for the implementation of sophisticated dyadic analyses to explore links between partners' variables.

Summary of Key Findings and Interpretations

The first study examined the association between experimentally induced stress and individuals' desire to accompany their partner during a stressful procedure (i.e., support provision) or their desire to have their partner accompany them during a stressful procedure (i.e., support seeking) in an in-laboratory fictitious stressful scenario. We also examined the moderating role of each partner's hyperactivation and deactivation of the combined attachment and caregiving systems on the association between stress and desire to seek or provide support to

or from the romantic partner. Results partially supported the suggested theoretical model. Main findings indicated that individuals who experienced higher levels of stress desired to seek support from their romantic partner suggesting that the romantic partner can act as an important resource for support in times of stress. Additionally, although support seeker models revealed no significant partner nor moderation effects, results indicated that support seekers' hyperactivation was directly linked to their greater desire to be with the support providing partner during the experiment and their deactivation was directly linked to their lower desire to be with the support providing partner during the experiment. Given that this sample reports similar levels of romantic attachment and caregiving as other samples, it is possible that support seekers who report high levels of hyperactivation or deactivation may have a general tendency to seek either greater proximity or greater distance from their partners, regardless of their levels of stress. This is also consistent with research suggesting that support seeker's own tendencies may be greater predictors of their desire to be with their partner during the stress experiment than their partners' variables (e.g., Sachdev, 2006). This may also apply to support providers. Similarly, among direct actor and partner effect within support provider models, only support provider activation was significantly and directly linked to support providers' greater desire to be with their partner during the experiment. In addition to this link, despite both models for support providing being overall non-significant, moderation analyses revealed a significant interaction between support providers perception of their partner's stress and their support seeking partner's level of deactivation in its association with support providers' desire to accompany their partner during the stress experiment. More specifically, non-significant simple slopes indicated that that when the support seeking partners reported a low level of deactivation (i.e., low attachment avoidance, high caregiving proximity and sensitivity), the support providers' greater perception of the

support seekers' level of stress was associated with their own greater desire to be with the support seeker during the stress experiment. On the contrary, when the support seeking partner reported a high level of deactivation (i.e., high attachment avoidance, low caregiving proximity and sensitivity), the support providers' greater perception of the support seekers' level of stress was non-significantly associated with their own lower desire to be with the support seeker during the stress experiment. These results suggest that support providers, particularly those of partners who tend to use deactivation strategies, may be aware of their partners' tendency to withdraw or to distance themselves when experiencing stress.

The second study explored the dyadic link between parents' levels of parenting stress measured at two time points separated by 5 years, as well as the moderating effect of parents' perception of coparenting support during the school years in this association. Overall, results revealed that both mothers and fathers' greater level of parenting stress at the first time point was linked to their own greater parenting stress at the second time point, suggesting that parents may carry over their levels of parenting stress over their children's earlier years of life. It is also possible, however, that some may resolve the sources of parenting stress in preschool, but that the changes in parenting demands from preschool to the school age (Millings et al., 2012) generate their own particular sources of stress. As such, parents may also continue to experience similar levels of parenting stress between these two periods as a result of new emerging parenting stressors during the school age. This study's results also indicated that mothers and fathers' levels of parenting stress were correlated within each time period, suggesting that there may be some spillover between parents' experiences of parenting stress within each time period. It is also possible that parents report similar levels of parenting stress to each other given that they are faced with the same parenting stressors (e.g., same children and home environment). In

addition to these findings, this study's results also indicated that when fathers perceived more coparenting support in their relationship, the association between their own greater parenting stress during the first time point and their own greater parenting stress during the second time point was weaker than in fathers who perceived lower coparenting support in their relationship. This finding suggests that coparenting support may sometimes act as a buffer to fathers' experiences of parenting stress over time. Interestingly, our findings within the trimmed model also revealed a direct significant association between mothers' perception of more coparenting support in their relationship and fathers' experiences of lower parenting stress at that same time period. This finding highlights the importance of considering the dyadic links between stress and support in couples given that it suggests that one partner's perception of the support in the relationship may correspond with the other's levels of stress.

In addition to the unique contribution of each study, taken together, these studies offer insight into romantic partners' support related desires and behaviours when couples are faced with different stressors, whether acute or chronic. First, comparing the results across studies presents a picture demonstrating how stress may be uniquely linked with support related desires or behaviours in couples in contexts of acute or chronic stress. Among direct links between stress and support, as previously mentioned in the description of study 1 results, support seekers reported a greater desire to be in the company of their romantic partner when they reported greater levels of stress about participating in the stressful procedure, even when controlling for their hyperactivation and deactivation tendencies. Similarly, results from study 2 suggested that fathers tend to report less parenting stress in their relationship when mothers perceived more coparenting support in their relationship during the school years. Both these results are consistent with the idea that support from a romantic partner can act as a valuable resource for managing

stress (Johnson, 2019). As reviewed earlier, longitudinal and moderation analyses for the second study further revealed that fathers who experience greater parenting stress at the first time point also tend to report greater parenting stress at the second time point, but this link is weaker in fathers who perceive greater coparenting support in their relationship. Taken together and in coherence with the attachment-diathesis stress model, these findings suggest that in a context of acute stress, individuals who experience greater stress tend to turn towards their partner for support to help alleviate it. However, in a context of chronic stress, although perceiving that one is receiving effective support from a partner can help to alleviate one's stress, it may not be sufficient to fully alleviate it. As such, those who tend to experience greater chronic stress, such as parenting stress, may continue to experience parenting stress throughout time even when they perceive they are receiving greater support.

Second, although it is clear across both studies that an individuals' own variables are linked with their own support related desires or behaviours, or their own stress measured at a later time, both studies also provide some evidence for the interdependent nature of the couple relationship. In the first study, the results suggest that the association between support providers' perception of their support seeking partner's level of stress and their desire to be with the support seeker during the stressful experiment is moderated by the support seeker's level of deactivation. As previously mentioned, such findings are particularly important as they suggest that support providers of partners who report greater deactivation tendencies may be aware of their partners' needs and desires (i.e., distance) according to their general tendencies in some contexts of stress. Thus, partners may tend to try accommodating or respecting these desires based on what they know of their partner's general responses to stress or support seeking preferences. In the second study, as previously discussed, the results revealed that mothers' perception of more coparenting

support in their relationship was associated with fathers' reports of lower parenting stress. Such finding is important in highlighting that one's experience of stress can be coherent with the partner's perception of the relationship (i.e., of the support in the relationship). Furthermore, study 2 also revealed that when mothers experienced greater parenting stress, fathers also experienced greater parenting stress during the same time period, which suggests some spillover between couples' experiences of stress. Taken together, both studies' results provide some evidence that the relationship between stress and support related desires or behaviours may be better understood at the dyadic level, rather than only at the individual level of the person experiencing the stress, both in the context of acute or chronic stress.

Summary of Implications Across Studies

Given that the current thesis is comprised of studies developed based on strong theoretical grounds, thorough research methodologies and statistical analyses, it has a number of implications. The present thesis' results were generally coherent with the main theories of stress and support. The first study was one of the few to combine the attachment and caregiving systems to explore hyperactivation and deactivation tendencies. Despite these being crucial components discussed in attachment theory, little research has directly explored the link between hyperactivation and deactivation tendencies with other variables in the context of couple support. The results of the first study are consistent with attachment theory in that they suggest that hyperactivation and deactivation are linked with certain support seeking or providing desires (i.e., greater proximity or distance from the partner). Such novel findings suggest that explicitly exploring hyperactivation and deactivation tendencies may be a valuable area of continued research for those wishing to explore the mechanisms through which romantic partners guide their support seeking or providing desires or behaviours. The second study's results provide

some support for both general theories of stress and support in couples, but also for those of the ecological model of coparenting (Feinberg, 2003) explaining that parents ability to coparent harmoniously can act as a buffer to reduce their experiences of parenting stress. In considering the results of both studies together, these support the attachment diathesis-stress model which nuances how stress and support may be linked to each other in contexts of acute or chronic stress. While partner support appears to be a source of support to whom individuals tend to reach out in times of acute stress, in contexts of chronic stress receiving support from a partner appears to be helpful in buffering stress experiences over time but may not be sufficient in itself to help fully alleviate it.

Given that findings from these studies highlight how experiences or perceptions of stress may be linked to support related desires or behaviours in romantic relationships, these also hold important implications that may be useful to inform clinical practices focusing on assessing and improving romantic partner support and responsiveness. Assessing romantic partners' responses to stressors in their relationship, including their distress or their understanding of their partner's distress, as well as their support seeking or providing responses to each other may be pertinent to the clinical assessment and conceptualization of couples' difficulties. As highlighted by the first study's results, examining their romantic attachment and caregiving tendencies may also prove to be relevant to understanding their interpersonal dynamics, particularly with regards to their response to their own or their partner's stress. Furthermore, the results support that treatments focusing on improving individuals' resources to cope with stress might be important clinical intervention avenues to helping distressed partners. These, in fact, lend support to some of the best clinical practices with regards to stress management. Among the various strategies and intervention programs for stress management, mindfulness-based stress reduction (MBSR;

Kabat-Zinn, 2003) and mindfulness-based cognitive therapy (MBCT; Segal et al., 2002), which was derived from MBSR, have strong evidence for success in helping individuals improve their overall wellbeing and stress management (Querstret, et al., 2020). These include various meditative techniques such as breathing meditation, body scanning techniques, and mindful yoga-inspired physical exercises and promote increased awareness of body sensations, thoughts emotions and sensory inputs (e.g., sight and sound) in typical day-to-day activities, ultimately helping individuals increase their psychological flexibility and their more optimal reactions and use of more optimal strategies in response to stressors. Meta-analyses suggest that such interventions are effective in reducing individuals' stress even in non-clinical samples (Querstret et al., 2020). The impact of these individual therapy programs on couple relationship wellbeing for non-clinical samples of couples (including parents), however, is not well known to our knowledge, though some mindfulness-based couple interventions have been shown to help partners reduce their stress and improve romantic relationship quality (see Winter et al., 2021 for a systematic review).

The present thesis' findings also provide evidence for the importance of couple intervention programs that help to improve responsiveness between romantic partners, such as Emotionally Focused Therapy for couples (EFT; Johnson, 2019) and the *Hold me Tight* brief couple intervention program (Johnson, 2008; Johnson, 2023). EFT is an empirically validated attachment-based approach (Morin-Turmel et al., 2020; Wiebe et al., 2016) focusing on developing secure bonding events between romantic partners and aiming to improve their emotion coregulation (including the optimal support seeking and providing), their mutually responsive interactions and their overall emotional connection. Within this therapeutic framework, lack of emotional responsiveness (i.e., a form of support) from the romantic partner

in response to distress is considered to shatter the assumption of having a secure connection with this partner and can generate additional distress in itself. As such, in EFT, romantic partners learn to express their attachment needs and increase their responsiveness to one another, which fosters an increasingly safe connection between them through which they can construct a more positive view of self and their partner, and ultimately, feel more competent and able to handle difficult life stressors as a team. Thus, EFT may be particularly helpful in helping couples increase their emotion regulation strategies to cope with stress on their own, as well as to increase effective coregulation between romantic partners in response to stress.

Although EFT provides a therapeutic framework that can be applied to couples experiencing a variety of sources of stress, including parenting stress, intervention programs focusing specifically on the reduction of parenting stress and increasing coparenting quality could also be particularly relevant for couples who are parents, as highlighted by the second study's findings. These findings are consistent with programs such as the Family Foundations Program (Family Foundations, 2020), which focuses on improving both couples' coparenting quality and also reducing their parenting stress through attending a series of didactic presentations, participating in couple communication exercises, practicing written worksheets, viewing educational videotaped vignettes of families, and contributing to group discussions. Despite some of their randomized trials suggesting that benefits on children's adjustment can persist until they are about 7 years old (Feinberg et al., 2014), the program specifically targets expecting parents or those with infants. Other coparenting programs exist, however, there is great variability in some of the interventions prioritised by each program, as well as for the targeted populations. A recent meta-analysis conducted by Nunes et al. (2021) revealed an overall small effect size (g = 0.21) of coparenting programs on outcomes linked with parents' own and

relationship wellbeing, including parenting stress. Among the 16 programs they included, only two targeted community samples, while others targeted at risk families (e.g., those with domestic violence, low income, adolescent parents), first time parents or divorced/separated parents. Of the two programs available for community samples, one targets parents of children in mid-childhood (4-8 years old; Cummings et al., 2008) and the other targets parents of adolescents (10-17; Miller-Graff et al., 2015). While both appear to be effective in helping parents improve their coparenting interactions (e.g., less marital conflicts and more support, increased constructive conflict behaviours and decreased destructive conflict behaviours), their impact on parenting stress is unknown. As such, it appears that effective programs focused on helping parents improve their coparenting quality remain limited in number, even more for those available to nonclinical community samples of parents of children who are beyond infancy or toddlerhood. Programs including a specific focus on parenting stress management are also lacking and could be particularly beneficial to help parents improve their coparenting experience.

Limitations and Directions for Future Research

Despite the strengths and contributions of the present thesis, some limitations should be considered when interpreting the results and to inform future research. First both studies relied entirely on self-reported questionnaires to measure the constructs of interest, which may introduce some bias. While using self-reported data has certain advantages (e.g., short administration time, clear scoring method), data collected from self-reported questionnaires may reflect other factors than those that are intended to be measured by the questionnaires (e.g., curiosity about the stress experiment in the first study). Additionally, participant's answers on any of the study variables in either study may have reflected social desirability (i.e., overreporting of more socially desirable or acceptable behaviours). This may be particularly true

with regards to measures of support providing given that it is a prosocial behaviour. Although they require more time and resources, using observational measures of support behaviours could help reduce social desirability biases. Observing both participants as they are awaiting together in a room prior to the stress experiment, for example, could allow for a more natural observation of their support seeking or providing tendencies. Future studies wishing to use a similar procedure may wish to instruct participants to wait in the room for about 10 minutes as they "set up" the fictitious stress experiment, which could allow external observers to code their behaviours related to support providing and support seeking desires and tendencies. Finally, with regards to stress, it is possible that self-report measures of stress do not accurately reflect participants actual levels of stress such that participants may under or over report their levels of stress for different reasons (e.g., lack of insight, social desirability). In the context of acute in laboratory procedures of stress, using a physiological measure of stress (e.g., cortisol or heart rate) could also provide another interesting indicator of arousal (i.e., stress), which is not susceptible to social desirability, though this method does require access to specific equipment and knowledge. It is to be noted, however, that another related limitation may be linked to participants reported levels of stress in the first study. That is, it is possible that the stress experiment, despite being a standard stress-induction procedure for couples (e.g., Simpson et al., 1992; Simpson et al., 2002), did not generate sufficient stress in some participants to activate their attachment and caregiving systems. Future studies wishing to continue to explore responses to stress external to the relationship could use other common stress induction techniques such at the Trier Social Stress Test (TSST; Kirschbaum et al., 1993).

Second, another limitation pertains to the use of correlational data and analyses, which does not allow the inference of causal mechanisms between our variables of interest in either

study. Despite the first study's use of a quasi-experimental design, which offers greater control over study variables and environment than non-experimental studies (like study 2), every participant completed the same task, which is a limitation. Including randomized assignment to different tasks (i.e., inclusion of a control group) is generally considered necessary for causal inference (Kim & Steiner, 2016). This offers even greater control over the study variables, the study environment and, therefore, over possible biases, compared to quasi-experimental studies. For example, future studies could randomly assign couples to a "stress condition" (i.e., couples who are informed that one of the partners will participate in a stressful task) and a "control condition" (i.e., couples who are informed that the partner will participate in a simple or easy task). This could allow for greater control over potential study biases, such as shedding light on the possibly that support providers may report a desire to accompany their partners out of curiosity for the experiment rather than out of desire to accompany their partner through a potentially stressful task. Such study, however, would require a greater sample size than that of the current study. Although the current studies' hypotheses both suggest a certain directionality, which were inferred based on strong theoretical grounds and previous research, the causal nature of these relationships cannot be inferred from our results. Despite this limitation, such results should still be considered an important step towards better understanding the associations between stress and romantic partner support in times of acute or chronic stress. Studies wishing to further explore this link in contexts of acute stress could also test rival alternative models to help control for this limit (Thompson et al., 2005). Those focusing on chronic stress may want to consider using longitudinal designs in which all variables of interest are administered at all time points to help clarify the temporal sequence between their associations.

Third, the current studies were comprised of mostly homogenous samples, which may limit the external validity of our findings. Despite the fact that both studies recruited participants from the general community representative of the Ottawa population (World Population Review, 2016), both samples consisted mainly of participants who identified as white, as being in a mixed-sex relationship and as highly educated (currently completing or having completed post-secondary education). As such, it is possible that results might be different in other populations of couples. For example, some studies suggest that physiological responses to acute stress might differ between individuals from lower or higher socio-economic status (SES; Lê-Scherban et al., 2018). Though physiological responses to stress were not the focus of the present thesis, this study suggests that there may be differences in stress reactions between higher and lower SES populations. Thus, replicating the present thesis' findings in lower SES populations might be necessary to determine the applicability of our findings to this population. Additionally, although our samples consisted solely of mixed-sex relationships, this was not an inclusion criteria to participate in either study. Some studies suggest that there may be differences in support providing or seeking dynamics between mixed-sex and same-sex couples (Umberson & Kroeger, 2016). Future studies could explicitly recruit couples from the LGBTQIA+ community to shed some light on the relationships between stress and support related desires and behaviours in diverse couples.

Fourth, the smaller sample sizes of each study comprised certain statistical limitations, particularly for dyadic analyses. Some method related recruitment restrictions limited the sample sizes that were recruited for each study. Given that the first study required participants to travel to the research laboratory to take part in an experiment, participants may have been less inclined to participate. In fact, 15% of the total sample collected for this study only participated in the

survey portion of the study. Despite efforts to recruit the largest community sample possible at that time, the dyadic analyses for this study could not be conducted using the Actor-Partner Interdependence Model (APIM) due to insufficient power based on the parameters that would have been required to estimate the full moderation model including all paths and variables of interest. For the second study, although only the survey portion of the larger scale study was used, recruitment possibilities were also limited as participants needed to have participated at both time points of the longitudinal study, thus limiting the possibility of recruiting new participants at the second time point. Given that we conducted path analyses using the APIM for this study, which ideally requires slightly more statistical power than a sample of 82 couples can offer, it is possible that some significant effects were not detected (i.e., Type II error). In order to optimize statistical power, the inclusion of other concurrent variables was, therefore, limited. Future research may want to consider exploring the effects of other variables in the associations between parenting stress and coparenting quality. For example, recent studies suggest that reflective function (i.e., one's ability to mentalize and to identify mental states in oneself and others, such as one's partner or one's child; Choi-Kain & Gunderson, 2008) appears to be linked to better coparenting quality (Holtzinger, 2020; Jesse et al., 2018), and to lower parenting stress through greater perceptions of coparenting quality (Shai et al., 2017). It could be interesting to explore the possible mediating effect of reflective functioning in the associations between parenting stress at a specific time and coparenting quality following this stress using an APIM model to shed further light on these associations using a dyadic lens.

Fifth, another limitation to the present thesis pertains to the possibility of comparing both studies due to their multiple differences. For example, both studies differ in terms of samples (e.g., parents vs couples who are not necessarily parents), contexts (i.e., parenting vs laboratory

stressful situation), variables (e.g., parenting stress vs stress about participating in a stressful situation; chronic vs acute stress) and procedures (i.e., questionnaire completion vs in laboratory experiment). Although these differences allow to create a broader picture of some of the associations between stress experiences and support providing or seeking desires or tendencies in contexts of acute and chronic stress, they limit the possibility of making comparisons and inferences based on the results of both studies together.

The present thesis' findings point to other interesting potential research avenues within the area of stress and support in couples. As a whole, the current thesis aimed to provide some insight into some of the associations between romantic partners' stress and support in contexts of acute and chronic stress. Future studies may want to expand on this by considering the impact of experiencing both acute and chronic stresses at the same time. Although these are distinct forms of stresses, individuals will inevitably experience both throughout their lifetime, and will likely experience both at the same time on multiple occasions. As such, incorporating measures of both acute and chronic stresses into future studies could be an important step towards further reflecting individuals' actual life circumstances. Some studies suggest that experiencing acute and chronic stress may interact, such that individuals who are experiencing chronic stresses may be even more negatively reactive to acute stresses (Karney et al., 2005). To our knowledge, such interactions between acute and chronic stress have yet to be explored in their associations with support in couples. However, it is likely that experiencing various stresses could further negatively impact one's support related responses to stress, whether it be one's ability to effectively seek or provide support to the partner or one's perception of the support quality in the relationship, particularly if the individual reports an insecure romantic attachment.

Lastly, another prospective area of research that was not directly explored within the context of this thesis concerns the examination of the attachment and caregiving systems in their associations with parenting stress and coparenting. Within the context of coparenting between parents who remain a couple, the romantic relationship and the coparenting relationship are considered separate but remain interrelated. Research on the links between these two systems remains sparse. A few studies have examined the links between romantic attachment and coparenting quality or parenting stress. These suggest that parents with greater attachment anxiety or avoidance report less supportive and cooperative coparenting, and more conflict (Bouchard, 2014; Schoppe-Sullivan et al., 2016; Young et al., 2017), as well as more parenting stress (Alves et al., 2019; Howard, 2010). However, the romantic caregiving system's association to the coparenting system or to parenting stress remains unexplored to this day, as well as the potential moderation effect of the attachment and caregiving systems on the links between parent's stress and coparenting quality. It could be particularly interesting to explore, for example, the possible moderating links of hyperactivation and deactivation of the attachment and caregiving systems in the relationship between parenting stress and coparenting support within a given time frame. Additionally, studies could also explore possible double moderation effects of hyperactivation and or deactivation of the attachment and caregiving systems, and coparenting support in the longitudinal associations between parenting stress over time. Such studies would allow us to deepen our understanding of two distinct, yet related systems that coexist within couples who are parents.

General Conclusion

The current thesis aimed to contribute to the theoretical and empirical understanding of couples support related desires and behaviours in response to stress. Together, these studies help

contribute to our understanding of the interinfluences romantic partners may have on each other in times of stress. These results highlight the importance of looking beyond the unique perspective of the individual experiencing the stressor, and to consider the dyadic dynamics within the couple. This not only informs future research study designs to continue to consider the potential dyadic associations, but also holds clinical importance for the assessment and treatment of couple and parent distress. Furthermore, these results shed light on the possible implications of individual's general attachment and caregiving tendencies in specific contexts of stress and support. Findings suggesting that these general tendencies may be linked to individual's support seeking or providing response to their partner in times of stress also hold their own valuable contribution to both future research and clinical considerations.

In conclusion, stress is an unavoidable aspect of life that all individuals and couples will experience in their lifetime. Considering this, it is inevitable that romantic partners will be brought to seeking and providing support to and from each other at various times throughout the duration of their relationship. The take home message of the current thesis is that romantic partner support, indeed, can help to soften the experience of stress. The study of stress and support seeking and providing related desires and behaviours in couples will likely remain a valuable area of research that has the potential to continue to open doors towards more concrete applications in research and clinical work.

"Unity is strength"

References (General Introduction & General Discussion)

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Appendix A
Ethics Approval Notice – Study 1

Université d'Ottawa University of Ottawa
Service de subventions de recherche et déontologie Research Grants and Ethics Services

COMITÉ D'ÉTHIQUE DE LA RECHERCHE EN SCIENCES SOCIALES ET HUMANITÉS

ATTESTATION D'APPROBATION ÉTHIQUE

La présente attestation certifie que le Comité d'éthique de la recherche en sciences sociales et humanités (CER en SSH) de l'Université d'Ottawa a examiné la demande de prolongation d'approbation déontologique pour le projet de recherche **Successful Couple Relationships : Personal and Relationship Factors (Dossier #12-04-05)** présentée par Marie-France Lafontaine et Melody Matte de l'Ecole de psychologie de l'Université d'Ottawa. Le CER de l'Université d'Ottawa a déterminé que la demande respectait les principes déontologiques établis par l'Enoncé de politique des trois conseils et par les règles de procédure des Comités d'éthique de l'Université d'Ottawa et a donc accordé une approbation déontologique initiale le 7 février 2005.

La présente attestation est valide pour un an à partir de la date indiquée ci-dessous.

21 novembre 2007
Date

550, rue Cumberland 550 Cumberland Street
Ottawa (Ontario) K1N 6N5 Canada Ottawa, Ontario K1N 6N5 Canada

(613) 562-5841 • Téléc./Fax (613) 562-5338
http://www.uottawa.ca/services/research/rgo/index.html

Appendix B
Consent Form -Study 1

Identification Number: _____

Consent form

Successful couple relationships: Personal and relationship factors
Time 2 EXTENDED VERSION

I am invited to participate in the follow-up session of the above-mentioned research study conducted by the *Couple Research Lab* at the University of Ottawa under the direction of Dr. Marie-France Lafontaine. This project is funded by the Social Sciences and Humanities Research Council of Canada.

I understand that the purpose of the study is twofold: 1) to better understand individuals' functioning in their couple relationships, and 2) to investigate people's reaction to stress.

My participation will consist essentially of a 2 ½ hours testing session during which I will complete a questionnaire and participate in a 15-minute videotaped discussion on a topic that is a source of conflict in my relationship. Additionally, I, or my partner (based on a random selection), will be invited to take part in a situation and set of experimental procedures that arouse anxiety and distress in most people but that are neither dangerous nor physically demanding. Due to the nature of the experiment, I understand that I cannot be given details about the procedures at this point in time. However, I, or my partner, will be fully informed by the lab technician prior to the experiment and the researcher will answer any questions regarding the procedures after the experiment is completed.

The questionnaires cover a number of topics related to my background information, my couple satisfaction, my intimacy with my partner, perfectionism in my life and my relationship, my attachment in close relationships, my empathy toward my partner, my trust in my partner, my psychological well-being, how I resolve conflicts in my relationship, my sexual satisfaction, how my partner and I cope with difficult situations, the care I provide to my partner, and my overall life satisfaction.

I understand that some questions and the participation in the filmed discussion and in the stressful situation may cause some discomfort. Of course, I am not obligated to answer any questions or to participate in the filmed discussion or the stressful situation if I do not feel comfortable doing so. I also understand that if I feel tired during the testing session, I can ask for a break.

My participation in this study will contribute to the development of more comprehensive models of well-being and distress in the context of couple relationships.

I have been assured by the researcher that the information I will share will remain strictly confidential. I understand that the information will only be used for a research purpose and that confidentiality will be respected. My partner and I will be assigned identification numbers and only these numbers will appear on the questionnaires and consent forms. The consent forms and questionnaires will be stored separately in a locked cabinet (Couple Research Lab; 200 Lees) to ensure anonymity and only my identification number will be entered in the database on the computer. Moreover, my filmed discussion will be recorded on a DVD that will also be stored in a locked cabinet.

To compensate for our time and to thank us for our help, my partner and I will receive 40$ (per couple). The research laboratory will also provide a reserved parking space.

I am under no obligation to participate and if I choose to participate, I may withdraw from the study at any time, without suffering any negative consequences. If I choose to withdraw, all data gathered until the time of withdrawal will be either destroyed or used for research purpose, at my convenience.

If I have any questions about the study, I may contact the researchers at 613-562-5800, ext. 4471. If I need help, I can contact the **Distress Centre of Ottawa and Region** at 613-238-3311, **the Victim Crisis Offices**, Ottawa Police Service at 613-236-1222, and the **Anti-Violence Program Family Services** at 613-725-3601. If I have any ethical concerns regarding my participation in this study, I may contact the Protocol Officer for Ethics in Research, University of Ottawa, 550 Cumberland Street, Room 159, (613) 562-5841 or ethics@uottawa.ca.

I, _____, agree to participate in the above research study conducted by the *Couple Research Lab* at the University of Ottawa under the direction of Dr. Marie-France Lafontaine. There are two copies of the consent form, one of which is for me to keep.

_____ _____
Name of the participant Participant's signature
(Please print)
Sex of the Participant: Male ☐ Female ☐ Date: _____

_____
Researcher's signature
Dr. Marie-France Lafontaine, C. Psych.
Couple Research Lab
School of Psychology, University of Ottawa

☐ I am interested in the results of this study and wish to receive the *Couple Research Lab Newsletter*.

☐ E-mail: _____
☐ I do not have an E-mail address; please send it through regular mail.

In a few months, I may be contacted again in order to evaluate long-term effects of people's opinions. In the second phase of the study, I will be asked to fill out a questionnaire from home.

☐ I **accept** to be contacted again to participate in the second phase of the study.
☐ I **refuse** to be contacted again to participate in the second phase of the study.

If you plan to move soon, please indicate the name and phone number of a relative or a friend that we could contact in order to be able to contact you at a later point in time.

_____ (_____) _____
Name of a relative or a friend Phone number

Appendix C
Ethics Approval Notice – Study 2 (Time 1)

Université d'Ottawa University of Ottawa
Service de subventions de recherche et déontologie Research Grants and Ethics Services

COMITÉ D'ÉTHIQUE DE LA RECHERCHE
EN SCIENCES SOCIALES ET HUMANITÉS

ATTESTATION D'APPROBATION DÉONTOLOGIQUE

La présente attestation certifie que le Comité d'éthique de la recherche en Sciences Sociales et Humanités de l'Université d'Ottawa a examiné la demande d'approbation déontologique pour le projet intitulé **Validation of the Preschool Attachment Coding System: Associations with naturalistic observations (Dossier # 11-07-03)**, présenté par Jean-François Bureau de l'Ecole de psychologie. Le Comité d'éthique a déterminé que la demande respectait les principes déontologiques établis par l'Enoncé de politique des trois conseils et par les règles de procédure des Comités d'éthique de l'Université d'Ottawa et a donc accordé une catégorie 1a (approbation) à ce projet.

La présente attestation est valide pour un an à partir de la date indiquée ci-dessous.

11 février 2008
Date

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Appendix D
Ethics Approval Notice – Study 2 (Time 2)

File Number: H05-14-05 Date (mm/dd/yyyy): 07/28/2014

Université d'Ottawa University of Ottawa
Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

Ethics Approval Notice

Health Sciences and Science REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

First Name	Last Name	Affiliation	Role
Jean-François	Bureau	Social Sciences / Psychology	Principal Investigator
Marie-France	Lafontaine	Social Sciences / Psychology	Co-investigator
Celia	Hsiao	Health Sciences / Others	Co-investigator
Ellen	Moss	Social Sciences / Psychology	Co-investigator

File Number: H05-14-05

Type of Project: Professor

Title: Longitudinal Exploration of Family Systems Dynamic and Child Social Adaptation in Middle Childhood: The Role of Father-Child, Mother-Child, Siblings, and Parents Relationships

Approval Date (mm/dd/yyyy)	Expiry Date (mm/dd/yyyy)	Approval Type
07/28/2014	07/27/2015	Ia

Special Conditions / Comments:
N/A

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www.recherche.uottawa.ca/deontologie/ www.research.uottawa.ca/ethics/

File Number: 1035-14-05 Date (mm/dd/yyyy): 07/28/2014

Université d'Ottawa University of Ottawa
Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

This is to confirm that the University of Ottawa Research Ethics Board identified above, which operates in accordance with the Tri-Council Policy Statement (2010) and other applicable laws and regulations in Ontario, has examined and approved the ethics application for the above named research project. Ethics approval is valid for the period indicated above and subject to the conditions listed in the section entitled "Special Conditions / Comments".

During the course of the project, the protocol may not be modified without prior written approval from the REB except when necessary to remove participants from immediate endangerment or when the modification(s) pertain to only administrative or logistical components of the project (e.g., change of telephone number). Investigators must also promptly alert the REB of any changes which increase the risk to participant(s), any changes which considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project and safety of the participant(s). Modifications to the project, including consent and recruitment documentation, should be submitted to the Ethics Office for approval using the "Modification to research project" form available at: http://www.research.uottawa.ca/ethics/forms.html.

Please submit an annual report to the Ethics Office four weeks before the above-referenced expiry date to request a renewal of this ethics approval. To close the file, a final report must be submitted. These documents can be found at: http://www.research.uottawa.ca/ethics/forms.html.

If you have any questions, please do not hesitate to contact the Ethics Office at extension 5387 or by e-mail at: ethics@uOttawa.ca.

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Appendix E
Consent form – Study 2

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Psychologie | Psychology

Informed Consent Sheet for Parents

Longitudinal exploration of family systems dynamic and child social adaptation in early school years: The role of father-child, mother-child and parents relationships

Investigator: Jean-Francois Bureau, Professor, School of Psychology, University of Ottawa

You and your child are, once again, invited to take part in the continuation of the research study that is being conducted by researchers from the University of Ottawa and funded by the Social Sciences and Humanities Research Council of Canada.

Purpose of this study

In the current study, we want to follow-up with you and your family roughly four years after your last visit at the CARElab. We would like to explore the dynamics within various family systems (father-child and mother-child relationships; parent-child triad; co-parental relationship; couple relationship; sibling relationship) and how they relate to children's social adaptation in middle childhood within a longitudinal framework.This study also looks at the quality of the interactions of these various family systems in different contexts such as the home setting, school setting and lab setting.

In order to fully understand the contributions of family dynamics on children's development, we need to also take into account the interconnections of the different relationships involved. It is believed that this research will provide a better understanding of the contribution of family interactions to child social adaptation in early school years.

You are free to choose to participate or not participate in the second phase of this study.

Procedures

For this study, you and your child will be asked to participate in 3 study sessions. These 3 sessions will be completed within a 6 month time period. Below you will find a detailed explanation of what you will be asked to do at each of these sessions.

Session 1 (Home Visit):

For Session 1, you will be contacted by telephone or email by a Research Assistant (RA). Session 1 will take approximately an hour and a half to complete and will be audio- and video-recorded. The RA will schedule a convenient time for 2 RAs to videotape your family in their

home, during mealtime (lunch time or dinner time). The mealtime will be followed by a brief family board game. Then, you and your partner as well as your child will be asked to interact as a group of three for 15 minutes. After these tasks, you and your partner will participate in a 15-minute videotaped discussion on a topic that is a source of disagreement in your relationship while your child will play a game (videotaped) with his/her siblings (or alone, if no siblings) for a period of 10 minutes. Finally, you and your partner will both be asked to complete a questionnaire on your parenting stress.

During the home visit, written consent to contact the child's teacher will be requested from both parents. Then a research assistant will contact teachers by phone or by email and, in case of verbal agreement, will send a questionnaire package (30 min.) to be returned to our team by mail. Teachers will report on child social adaptation and academic performance.

Session 2a (Questionnaires)

Following Session 1 (Home Visit), a RA will send you a link to complete online questionnaires from the comfort of your home (paper questionnaire packages are also available). Session 2a will take approximately one hour to complete. These questionnaires ask general information about your family as well as questions about your couple relationship such as your relationship satisfaction, your self-esteem, and your trust in your romantic relationship.

Session 3 (Lab Visits):

You and your child's other parent will complete Session 3 at different times. One of you will complete Session 3 a month after Session 1 (Home Visit), and the other parent will complete Session 3, approximately 3 months after your child completes Session 3 for the first time. Session 3 will take approximately 2 hours to complete and will be audio- and video-recorded.

For Session 3, you and your child will be invited to the same research lab at the University of Ottawa. To begin the session, you will be asked to engage in a 5 minute free play interaction with your child.

Following the free play interaction, you and your child will complete a separation-reunion procedure. During the separation, you and your child will complete different tasks in two different rooms.

You will participate in an hour long interview about your childhood and your relationship with your parents. At the same time, the RA will administer a brief measure of your child's vocabulary, which will take 15 to 20 minutes. Please note that this activity will only occur during the first of the two lab sessions, and not for both. After, your child will complete a task with the RA that requires him/her to develop some stories using doll plays. Using the dolls, the RA will tell your child the beginnings of 6 different stories. Following each beginning, your child will be asked to continue and complete the stories using the dolls. This task will take approximately 30 minutes to complete. After the doll-play task, your child will complete a self-esteem assessment and will participate in a 15-minute interactive computer task on psychological well-being. The

self-esteem and the psychological well-being tasks will be replaced by self-reports of family (computer task) and sibling relationships in the second visit.

Following the interview, you will be reunited with your child. A snack will be provided for you and your child. You and your child will then participate in an emotional dialogue procedure where we would like for you and your child to remember a time when he/she felt a specific emotion and talk about what happened. This will be followed by a 2-minute playful interaction where you will be asked to think about what you do at home to make your child laugh. You will be asked to do this activity or action for 2 minutes with your child.

Session 2b (Questionnaires):

Following Session 3 (Lab Visit), a RA will send you another link to complete online questionnaires from the comfort of your home (paper questionnaire packages are also available). Session 2b will take approximately one hour to complete. These questionnaires ask about your well-being, your co-parenting relationship, your child's behaviour and your children's relationship (sibling relationship - if applicable).

Participant description

Over the last four years, 160 preschool children and their parents participated in the first phase of this study. All families will be invited to participate in phase 2 (the proposed project) of the study now that the children are between the ages of 7 and 9.

Are there any risks to participating in the research?

You may feel uncomfortable eating your meal in front of a video camera or inviting the RAs into your home. You may experience some discomfort during participation in the filmed discussion task. You may also feel uncomfortable answering some questions in the lab interview. Your child may feel uncomfortable with the stories that are part of the doll-play task or in answering questions that are part of the interactive computer task. The separation-reunion procedure and the emotional dialogue procedure could make you and/or your child emotionally uncomfortable. You may also feel uncomfortable answering some questions on the questionnaires. All of the discomforts that are a part of this study are likely to be small and are likely to last no more than a few minutes. If you and/or your child are too uncomfortable with any of the tasks or procedures that are a part of this study, you may choose not to complete the procedure(s) or withdraw from the study.

Are there any benefits to participating in the research?

You and your child may not directly benefit from this research. However, it is hoped that this study will help researchers and parents better understand the contribution of family interactions to child social adaptation in middle childhood.

Compensation

If you choose to participate in this study, you will be given $10 for the Home Visit and 20$ for the Lab Visit that you attend as well as 10$ per online questionnaire session (2 sessions for each parent). If you do not complete or withdraw from a session you will still be given the corresponding amount. This money should cover any expenses that you may have because of the study (i.e. gas, child care). Also, for participating in this study, your child will receive a toy from our treasure chest after each lab session.

Withdrawing from the study

If you decide not to take part in this study, that is alright. If you or your child decide to take part, but change your minds at any time, that is fine too. If you choose to withdraw, you still have the right to decide if the videos or questionnaire data (up to that point) may be used for the study and/or training purposes.

Limits of confidentiality

You and your child's personal information will be kept strictly confidential, except as required or permitted by law. If the Research Assistants believe your child is being abused or neglected, they will notify the principal investigator and the Children's Aid Society will be contacted, as required by law.

You and your child will be assigned a number. You and your child's interactions and questionnaire results will be recorded under this number and not under you or your child's name.

Your personal information and the data for this study will be kept for 10 years. After 10 years this information and data will be destroyed. All information and data will be kept in a locked filing cabinet and password protected computer in the School of Psychology at the University of Ottawa. Only the investigators, research assistants, and graduate students working on the project will have access to this data.

The results from this study may be used for training purposes. You and your child's names will not be identified in these training sessions.

If you wish, you can receive a summary of the study's results. You will be provided with this summary at the conclusion of the study.

Research Ethics

The Research Ethics Board is a group of people from scientific and non-scientific backgrounds who review research studies. Their goal is to ensure the protection of the rights and welfare of people involved in research. You may contact the Protocol Officer for Ethics in Research at the University of Ottawa for information regarding your rights in this research study or to make a complaint about the ethical conduct of this project. They can be reached at, (613) 562-5387 or by email at ethics@uottawa.ca.

There are two (2) copies of this consent form, one that the researchers keep, and one for you to keep.

Please feel free to contact Jean-François Bureau at (613) 562-5800 (ext. 4484) if you have any questions about this research study.

I, _____ consent to participate in the above research study by Jean-François Bureau of the School of Psychology in the faculty of Social Sciences at the University of Ottawa. I have received a copy of this consent form.

I have legal custody of my child and consent to allow my child to participate in this project.

_____
Participant's signature (as Parent)

_____
Printed name

_____
Date

I, _____ consent to let Jean-François Bureau of the School of Psychology in the faculty of Social Sciences at the University of Ottawa use the video for training purposes.
Yes: ____ No: _____

_____
Participant's signature (as Parent)

_____
Printed name

_____
Date

_____
Signature of person obtaining consent

_____
Printed name of person obtaining consent

_____
Date