Non-Suicidal Self-Injury Through the Lens of Young Adults' Romantic Relationship Functioning

Christine Levesque

A thesis submitted in partial fulfillment of the requirements for the

Doctorate in Philosophy degree in Experimental Psychology

School of Psychology

Faculty of Social Sciences

University of Ottawa

À mes enfants, Antoine, Cédric et Alexi pour votre amour inconditionnel.

Summary of Thesis

Non-suicidal self-injury (NSSI) is the direct, purposeful self-infliction of injury, which results in tissue damage, is performed without conscious suicidal intent and through methods that are not socially sanctioned (Nixon & Heath, 2009). The phenomenon of self-injurious behaviours is alarming, especially among adolescents and young adults (Muehlenkamp, 2005). In fact, it is estimated that lifetime prevalence of NSSI in young adults within the general population is around 12% to 38% (for reviews, see Heath, Schaub, Holly, & Nixon, 2009; Jacobson & Gould, 2007; Rodham & Hawton, 2009). While this proportion declines when assessing recent NSSI (i.e., usually performed in the past six months or in the past year), the numbers are still disturbing with 2.5% to 12.5% of young adults reporting current NSSI (for reviews, see Heath et al., 2009; Jacobson & Gould, 2007; Rodham & Hawton, 2009). The goal of this thesis is to investigate the associations between romantic relationships and NSSI in young adults and to address two major limitations that emerge from the literature, namely: a) several theoretical hypotheses have yet to be validated despite considerable advances in the scientific study of NSSI; and b) with the exception of one study, the few studies available relating romantic relationships and NSSI solely focused on the individual level of analysis instead of including both partners in the model. This goal will be addressed through three articles, each targeting specific objectives.

For the sake of methodological rigor and for adequate evaluation of the constructs under study, the purpose of the first study was to validate the factorial structure of the English version of the *Dyadic Coping Inventory* (DCI; Bodenmann, 2008). A confirmatory factor analysis (CFA) corroborated the measurement theory of the DCI by revealing the presence of five coping factors (i.e., stress communication, supportive dyadic coping, delegated dyadic coping, negative dyadic coping, common dyadic coping) and two target factors (i.e., one's own dyadic coping and partner's dyadic coping). The English DCI also demonstrated good

internal reliability and yielded preliminary evidence of concurrent validity. All together, these findings lead to the conclusion that the English DCI is an accurate and reliable measure of dyadic coping, and that researchers can use the English DCI confidently in their research to evaluate dyadic coping processes. The established factorial structure of the English DCI was then used in subsequent studies of this thesis.

The purpose of the second study was to investigate direct and indirect associations between insecure romantic attachment, difficulties in emotion regulation and common dyadic coping strategies, and endorsement of NSSI behaviours. From an empirical standpoint, this study is the first to explore these specific relationships in one comprehensive model, targeting both interpersonal and intrapersonal strategies to deal with stressful experiences and the role it might have on one's NSSI behaviours. Overall, the results revealed that difficulties in emotion regulation mediated the relationships between romantic attachment insecurity (i.e., attachment anxiety and attachment avoidance) and NSSI, whereas no such effects were found for common dyadic coping strategies. Findings from this study suggest that intrapersonal strategies (i.e., emotion regulation) might be more influential on one's NSSI behaviours than behavioural strategies (i.e., common dyadic coping). This study also offers a first step towards the understanding of the romantic relational context of individuals struggling with NSSI behaviours. The next step remains to explore the couple as the unit of analysis rather than focusing on only one member of the relationship, giving way to the third study of this thesis.

The primary aim of the third study was to generate a general portrait of young women's romantic relationship functioning, distinguishing women who recently self-injured from those who have never self-injured. This study was designed to permit the exploration of not only the individual-level effects, but also potential effects from the romantic partner. Through a series of nonparametric Mann-Whitney U tests, results revealed that women who

engage in NSSI behaviours are more likely to report subjective distress in the form of attachment anxiety and distrust compared to women who do not engage in NSSI behaviours. They also reported good, but slightly lower levels of, relationship satisfaction and adaptive dyadic coping strategies compared to women who have never engaged in NSSI. Findings also showed that partners of women who engage in NSSI behaviour reported more attachment anxiety than partners of women who do not engage in NSSI behaviours. The women and their partner's reports about their romantic relationship experiences provide unique insight into the similarities and differences of individuals who self-injure and those who do not. Furthermore, a cursory exploration of the partners' NSSI behaviours revealed that nearly one-third of the partners in a relationship with women who self-injured also reported having recently engaged in NSSI behaviours. These findings add some depth to the understanding of the relational context of those who are struggling with NSSI and provide future directions in research.

Remerciements

Me voilà donc au terme de cette thèse qui représente un chapitre important de ma vie, avec ses hauts et ses bas, ses rires et ses larmes. Ce chemin, jamais linéaire, aux embranchements multiples et aux détours nombreux, est celui d'un apprentissage professionnel, mais surtout personnel. À la relecture complète de ma thèse, dix ans plus tard, je constate une grande évolution et j'en suis extrêmement fière. À chaque étape de ce périple, j'ai grandi et évolué. J'ai eu la chance de m'entourer de personnes formidables qui ont, chacune à leur façon, et ce, à différentes étapes de mon cheminement, contribué d'une manière ou d'une autre à la réalisation de cette thèse doctorale.

Marie-France, merci pour ta disponibilité et ta sensibilité envers chacun de tes étudiants. Merci pour ton ouverture à nos caractères et à notre touche propre en recherche. Merci pour la liberté que tu nous laisses en nous témoignant ta confiance dans notre travail. Ce sont cette confiance et cette liberté qui, à mon avis, nous laissent spontanément faire ressortir le meilleur de nous-mêmes dans notre travail et comme personne. Merci de reconnaître nos efforts et nos difficultés. Merci pour la relation que nous avons pu développer depuis mon entrée au doctorat. Merci de ton ouverture face à mon projet de devenir mère, trois fois plutôt qu'une, pendant mes études doctorales. Merci d'avoir gardé confiance en moi. Tu as beaucoup facilité la longue traversée de ce merveilleux périple, comme d'ailleurs mes chers collègues de bureau avec qui j'ai tissé des liens plus que professionnels.

Angela, Josée et Kim, j'ai été très heureuse de partager mes années de doctorat avec vous. Merci pour le bel esprit de solidarité, de soutien, de compréhension, de sensibilité les unes envers les autres et d'encouragements mutuels. Merci pour tout le côté social et l'humour qui rendent la vie tellement plus légère au quotidien. J'ai apprécié toutes nos discussions, majoritairement non professionnelles! Ce fut une chance de partager avec vous des repas exceptionnels dans les meilleurs restos de la ville. Vous avez tellement embelli mes

années à l'université et je souhaite de tout cœur qu'on se suive de près ou de loin dans la suite de nos aventures respectives. Jodi, it was a true pleasure and an incredible privilege to work with you. I respect and admire your work for its remarkable scientific value. Thank you for all your ideas and for your help in many ways.

Ces remerciements ne seraient pas complets sans la mention de ma famille. Merci à mes parents, Maurice et Nicole, de m'avoir donné le goût des études, de m'avoir encouragé et de m'avoir transmis des valeurs indispensables dans le milieu scientifique : la persévérance et le dépassement de soi. Merci de votre soutien, de votre confiance indéfectible dans mes choix et de votre amour inconditionnel. Les mots me manquent pour remercier à sa juste valeur mon conjoint, Francis, sans qui je n'aurais pu maintenir ce projet à flot au travers des aléas de la vie. Merci d'avoir toujours cru en moi et en mon potentiel. Merci de ton soutien, de ton écoute, mais surtout de ta compréhension dont tu as toujours fait preuve à mon égard. Merci de partager ma vie, mes passions et mes rêves les plus fous. Merci d'être là, merci d'être toi. Antoine, Cédric et Alexi, vous êtes une source de bonheur inestimable. Merci de me faire voir la beauté de la vie à travers vos yeux d'enfants. Vous ne cesserez jamais de m'émerveiller. Vous êtes ma plus grande fierté.

Mes remerciements s'étendent également aux membres de mon comité de thèse, Dr Jean-François Bureau, Dre Élisa Romano, Dr Dave Miranda et Dre Catherine Bégin, pour l'intérêt qu'ils ont porté à mon projet de recherche en acceptant d'évaluer mon travail et de l'enrichir par leurs propositions. Je tiens également à remercier toutes les personnes qui ont participé ou contribué, de près ou de loin, à la réalisation de cette thèse.

Statement of Co-Authorship

Along with a General Introduction and a General Discussion, this thesis comprises three original studies. The first study, entitled "Validation of the English Version of the *Dyadic Coping Inventory* (DCI)," was published in *Measurement and Evaluation in Counseling and Development*. The second study, entitled "The Mediating Effects of Emotion Regulation and Dyadic Coping on the Relationship Between Romantic Attachment and Non-Suicidal Self-Injury," was recently published in *Journal of Youth and Adolescence*. The third study, entitled "Young Women With and Without Non-Suicidal Self-Injury: A Comparison of Romantic Relationship Functioning," is being prepared for submission to a peer-reviewed journal. Each study has been prepared and formatted according to the submission requirements of the journals to which they were or will be submitted.

Thesis author, Christine Levesque, appears as the primary author of all three studies along with her thesis supervisor, Dr. Marie-France Lafontaine, who appears as the second author. The primary author participated in every step involved in the preparation of the manuscripts, including the review of the literature, the conception of the studies, the ethics approval procedures, the recruitment processes, the data collection, the statistical analyses, and the writing of the manuscripts. The second author provided global oversight of the project and served as a main advisor for the thesis. The first study was prepared in collaboration with Dr. Angela Caron and Dr. Josée Fitzpatrick who participated during the recruitment process, assisted during data collection, and reviewed the final manuscript. The second and third study was prepared in collaboration with Dr. Jean-François Bureau who served an invaluable role by monitoring and providing guidance on major aspects of the project.

Table of Contents

List of Tables and Figures

List of Appendices

Chapter I

General Introduction

General Introduction

Toward a Better Understanding of Non-Suicidal Self-Injury

Non-suicidal self-injury (NSSI) is defined as a direct, purposeful self-inflicted injury, resulting in tissue damage, performed without conscious suicidal intent and through methods that are not socially sanctioned (Nixon & Heath, 2009). Tattoos and body piercing, for example, are not considered NSSI, as they are behaviours generally socially accepted. Typical methods include, but are not limited to, skin cutting, burning, hitting, severe scratching, and interfering with wound healing (Briere & Gil, 1998; Favazza, 1998; Klonsky, 2007; Muehlenkamp, 2005), with skin cutting being the most common method (Klonsky, 2007). Furthermore, individuals who engage in NSSI generally tend to use more than one method and injure several parts of their body (Gratz, 2001; Lloyd-Richardson, Nock, & Prinstein, 2009; Whitlock, Eckenrode, & Silverman, 2006). Evidence to date suggests that the average age of onset of NSSI is between 12 and 14 years and that following an act of self-injury, repetition of the behaviour is common, regardless of age of onset (for a review, see Rodham & Hawton, 2009). Although more frequent in pre-adolescence/adolescence, the onset of NSSI may also occur during other developmental periods of life. Indeed, a study by Whitlock et al. (2006) revealed that a significant proportion of participants (38.6%) reported engaging in NSSI for the first time between the ages of 17 and 24 years. The phenomenon of self-injurious behaviours is alarming, especially among adolescents and young adults (Muehlenkamp, 2005). In fact, it is estimated that lifetime prevalence of NSSI in young adults within the general population is around 12% to 38% (for reviews, see Heath, Schaub, Holly, & Nixon, 2009; Jacobson & Gould, 2007; Muehlenkamp, 2014; Rodham & Hawton, 2009; Whitlock & Selekman, 2014). While this proportion declines when assessing recent NSSI (i.e., usually performed in the past six months or in the past year), the numbers are still disturbing with 2.5% to 12.5% of young adults reporting current NSSI (for reviews, see

Heath et al., 2009; Jacobson & Gould, 2007; Rodham & Hawton, 2009; Whitlock & Selekman, 2014).

Although NSSI is considered distinct from suicide attempts (Muehlenkamp, 2014), a study conducted by Nock, Joiner, Gordon, Lloyd-Richardson, and Prinstein (2006) showed that 70% of those engaging in NSSI reported a suicide attempt at some point and 55% reported multiple attempts. This high-risk trajectory is alarming and must be treated as an urgent priority for public health and safety. Not to mention that when individuals are about to engage in suicidal behaviours, they usually report extreme psychological distress beforehand (Crowell, Derbidge, & Beauchaine, 2014). The high prevalence of NSSI paired with the potentially severe consequences on physical health (e.g., accidental death; Motz, 2009) of this behaviour has created a significant interest in research to better understand the nature of this behaviour. Furthermore, for many years, the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) solely conceptualized NSSI as a symptom underlying mental health disorders, such as borderline personality disorder (BPD). However, a number of studies revealed the presence of NSSI behaviours among community-based individuals without BPD (e.g., Glenn & Klonsky, 2013), which suggests that NSSI may be a separate condition. Consequently, NSSI was proposed to be included in the DSM as a unique and new clinical diagnosis (Muehlenkamp, 2005). Although this proposition was rejected on the basis that more research is needed before they can implement this change, the revised version of the DSM-5 added NSSI disorder as a distinct condition in need of additional study. This underlines the importance of doing additional empirical research to contribute to a more comprehensive understanding of NSSI.

Gender Differences and NSSI

Research on gender differences in NSSI has been of longstanding interest and is still relevant. Empirical studies have produced inconsistent results in terms of gender differences

related to the prevalence of NSSI. While some studies shows a higher rate among women (e.g., Laye-Gindhu & Schonert-Reichl, 2005; Whitlock et al., 2006), other studies demonstrate no significant difference (e.g., Levesque, Lafontaine, Bureau, Cloutier, & Dandurand, 2010; Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007). To shed light on these inconsistencies, Bresin and Schoenleber (2015) conducted a meta-analysis on this subject. The meta-analysis included 120 studies and comprised a total of 245 506 participants. Results revealed a small effect size (*OR = 1.5)*, attesting that women are slightly more likely than men to report having engaged in NSSI behaviours. This difference was also more important in clinical samples than in community and college samples. In addition to prevalence rate, recent findings suggest that NSSI may also differ for men and women in terms of the methods used to self-injured and the location of the body where the mutilation occurs (Bresin & Schoenleber, 2015; Sornberger, Heath, Toste, & McLouth, 2012; Whitlock et al., 2006). More precisely, women tend to report more methods that generally involve bleeding (e.g., cutting and scratching) and more injuries to the arms and legs, while men tend to report more burning and self-hitting behaviours (e.g., hitting and banging) as well as more injuries to the chest, face, and genitals.

Some researchers have also raised the idea that men and women may engage in NSSI for different reasons (for a review, see Fox, Millner, Mukerji, & Nock, 2018). Whitlock et al. (2011) tried to shed light on this hypothesis, revealing that men are more likely to report engaging in NSSI to get physiological stimulation (e.g., to get a rush), whereas women are more likely to report engaging in NSSI for affect regulation and self-control reasons, and because of overwhelming urges. Moreover, men are more likely than women to occasionally engage in NSSI in the presence of others and under the influence of drugs and/or alcohol (Whitlock et al, 2011).

Course and Developmental Pathways of NSSI

The adolescence period is marked by the complexity and rapidity of change at different levels: psychological, social, moral, cognitive, sexual, and spiritual maturity (Whitlock & Selekman, 2014). During this time, adolescents are trying various strategies to reach and maintain an emotional balance. Thus, it is likely that maladaptive methods of coping, such as NSSI arise in this stage of life (Whitlock & Selekman, 2014). It is not without noting that adolescence is also the most likely period of onset for most major mental disorders (Kessler et al., 2005). For otherwise well-functioning individuals, it is possible that NSSI behaviours may be of short duration (Whitlock et al., 2006), whereas for others, NSSI will progress from adolescence to young adulthood. NSSI is a phenomenon without borders; it affects individuals of all ages. Considered as a transition period, emerging adulthood can be challenging (Miller & Joe, 2018). The search for identity from adolescence gives way to the search for intimacy (Erikson, 1968). According to Erikson (1968), young adults feel the need and the desire to form intimate close relationships. If unsuccessful, isolation and social distance are then strengthened (Erikson, 1973). By entering into the adult world, individuals must learn to fly on their own and face the many challenges that come with it (e.g., choosing a career, being engaged in a romantic relationship, being financially independent). For some individuals, the challenges associated with each stage of life may increase the likelihood of NSSI and should therefore be considered in any conceptualization of NSSI risk (Crowell et al., 2014). Indeed, theoreticians in the field of NSSI have hypothesized for years about what might push an individual to engage in such dangerous behaviour (e.g., Suyemoto, 1998), concluding that risk factors of NSSI can be categorized into two distinct processes that will be described below: intrapersonal and interpersonal processes (Crowell et al., 2014).

Intrapersonal Processes of NSSI

Emotion regulation is the common denominator of all intrapersonal theories of NSSI

(Selby, Joiner, & Ribeiro, 2014) and is conceptualized as the ability to effectively manage and respond to an emotional experience (Rolston & Lloyd-Richardson, 2016). Specifically, emotion regulation is comprised of the awareness, understanding, and acceptance of emotions, along with the ability to control negative emotions in order to restrain impulsive behaviours (Gratz & Roemer, 2014). The processes of emotion regulation may be automatic or controlled, conscious or unconscious, and can diminish, intensify or simply maintain the emotion (whether positive or negative) in a healthy way to achieve one's goal (Gross & Thompson, 2007). In contrast, emotion dysregulation implies a maladaptive and inappropriate use of emotion regulation strategies (D'Agostino, Covanti, Monti, & Starcevic, 2017). While emotion regulation processes cannot be directly observed as they occur internally, emotion dysregulation is often reflected in maladaptive behaviours (Crowell et al., 2014). When emotions interfere with an individual's functioning, there is presumably a problem with the regulation of emotions (Cole & Hall, 2008). In fact, most psychological disorders are characterized by poor regulation of emotions (Beauchaine, 2001; Beauchaine, Gatzke-Kopp, & Mead, 2007; D'Agostino et al., 2017). It is therefore not surprising that research indicates most individuals who self-injure do so in order to relieve unwanted negative feelings (Jacobson & Batejan, 2014; Klonsky, 2007). In this field of thought, NSSI is viewed as a maladaptive way to modulate negative affect.

Nock and Prinstein (2004, 2005) first developed a four-function model of NSSI in which two of the functions are specifically connected to affect regulation. The *automatic negative reinforcement* (ANR) function suggests that individuals engage in NSSI as a strategy for reducing aversive affective or cognitive states. This proposed function has been shown to be the most common function reported by individuals engaging in NSSI (Chapman, Gratz, & Brown, 2006; Klonsky, 2007; Nock & Prinstein, 2004, 2005). The *automatic positive reinforcement* (APR) function suggests that NSSI is performed to generate internal emotional

state. Both functions received considerable empirical support in the literature (for a review, see Nock & Cha, 2009). In addition to Nock and Prinstein's (2004, 2005) model, Chapman et al. (2006) developed the Experiential Avoidance Model of NSSI. In this model, NSSI is also viewed as a method for escaping unwanted internal experiences, such as negative emotions. However, the authors go one step further by proposing that repetitive use of NSSI may be due to a conditioned response of the behaviour (i.e., negative reinforcement). Indeed, by avoiding negative emotions through self-injuring, NSSI then becomes rewarding in its way and is likely to increase in frequency (Selby et al., 2014). That said, although NSSI may produce a temporary relief, it is not an effective long-term emotion regulation strategy (Crowell et al., 2014).

Interpersonal Processes of NSSI

While it is clear in research that social motivations are not the sole driving force behind NSSI, they still represent a crucial part of the puzzle at understanding these destructive behaviours (Selby et al., 2014). Researchers have developed models that emphasize the role of interpersonal relationship experiences in developing and maintaining NSSI behaviours (for a review, see Prinstein, Guerry, Browne, & Rancourt, 2009). From a developmental standpoint, theorists suggest that adverse childhood experiences, such as maltreatment, parental deprivation, and poor or inconsistent caregiving, may play a role in later development of NSSI (for reviews, see Nock, 2009, and Yates, 2004). Theorists also propose that current interpersonal stressors, such as rejection or loss and conflict with a family member or a romantic partner, can engender NSSI behaviours. For some individuals, NSSI may be motivated mainly by interpersonal goals. In fact, Nock and Prinstein (2004, 2005) proposed two functions of NSSI related with social concerns. The *social positive reinforcement* (SPR) function suggests that individuals engage in NSSI to get a response from

others, whereas the *social negative reinforcement* (SNR) proposes that individuals engage in NSSI to escape interpersonal demands or to avoid punishment.

Integrative Models of NSSI

Self-injurious behaviours appear to result from the interaction of both intrapersonal (i.e., emotion dysregulation) and interpersonal (i.e., interpersonal distress) factors (Crowell et al., 2014). The influence of these factors on NSSI is much stronger when explored as a whole rather than isolated. Although first develop for borderline personality disorder (BPD), Linehan's (1993) biosocial theory is one of the most established and well-known theories for the development of NSSI behaviours including both intrapersonal and interpersonal factors. Her theory suggests there is an increased likelihood of NSSI for individuals with high emotional vulnerability (i.e., higher sensitivity to both positive and negative emotional stimuli, intense experience of emotions, and slower return to emotional baseline state). Linehan (1993) also proposed that although emotional vulnerability and emotion dysregulation are rooted in one's biological predispositions, it may be exacerbated by invalidating developmental environment. An invalidating environment is characterized by abuse, neglect, absence of support during emotional distress, and/or a constant rejection or invalidation of one's emotions. Within this context, the communication of emotions becomes extremely difficult and extreme expressions of emotions are often needed to receive responses from others (Crowell, Beauchaine, & Linehan, 2009). Therefore, individuals living in an unhealthy environment are prone to problematic interpersonal relationships and difficulty controlling and regulating emotions, increasing their likelihood of practicing maladaptive behaviours such as NSSI.

An integrative model of NSSI was proposed by Nock (2009) and was more recently complemented by Jacobson and Batejan (2014). The model includes both distal and proximal risk factors for NSSI. More precisely, the model asserts that both biological predispositions

(i.e., high emotional reactivity and biological abnormalities) and environmental risks (i.e., childhood abuse/maltreatment, familial hostility/criticism, and childhood separation/loss) are likely to create intrapersonal (i.e., high aversive emotions and cognitions, poor distress tolerance, and alexithymia) and interpersonal (i.e., poor communication and problem-solving skills) vulnerabilities for engaging in NSSI. The interaction of these vulnerabilities with stressful life events influences whether an individual will develop intense negative affect, dissociative state or numbness, and/or feelings of helplessness with regard to social demands. Nock (2009) also proposed six NSSI-specific hypotheses to explain why some individuals engage in NSSI while others choose alternative methods to regulate their emotions and deal with interpersonal difficulties. First, the social learning hypothesis suggests that individuals are more likely to engage in NSSI if they have seen their peers engage in NSSI. Second, the self-punishment hypothesis postulates that NSSI could be used for self-directed abuse resulting from one's self-depreciation. Third, the social signaling hypothesis suggests that NSSI could be used when healthy methods of communication have not elicited a desired response from others in the past. Fourth, the pragmatic hypothesis proposes that the use of NSSI is appealing as it is effective, easy, and convenient to regulate emotions. Fifth, the opiate hypothesis suggests that some individuals feel no or little pain when self-injuring, and thus are not discouraged by this particularity of NSSI. Lastly, the implicit identification hypothesis stipulates that NSSI becomes part of one's identity and is used as a default method for dealing with stressful situations. To conclude Nock's (2009) model, Jacobson and Batejan (2014) added the reinforcing and maintaining mechanisms operant in repeated NSSI, which are the automatic reinforcement (i.e., by decreasing negative affect or increasing positive affect) and the social reinforcement (i.e., by increasing attention from others).

Romantic Relationship Experiences

While there are several models and theories used to understand self-injurious behaviours, as detailed above, other theories outside the field of NSSI make particularly interesting contributions when it comes to analyzing self-injurious behaviours through the lens of relational context. The attachment theory is currently one of the predominant theories underlying intimate relationships research, as it provides a powerful and comprehensive model of the influence that unhealthy intimate relationships may have on one's functioning (Diamond & Fagundes, 2008). The attachment theory allows a good understanding of the relational circumstances surrounding maladaptive behaviours and brings an interesting perspective of the phenomenon of NSSI. However, before analyzing NSSI through the lens of the attachment theory, an overview of the theory is in order. Furthermore, several other relational constructs such as caregiving, dyadic trust, relationship satisfaction, and dyadic coping can be understood within the attachment theory framework (Cassidy & Shaver, 2008). All of these constructs can increase our global understanding of romantic relationship experiences, and thus will also be described in the sections below.

The attachment theory. From an ethological perspective, John Bowlby (1969/1982, 1973, 1980) conceptualized attachment as a behavioural system used to optimise a child's probability of adaptation and survival. This system can be activated if the child is exposed to threatening situations causing emotional distress (Bowlby, 1969/1982). When activated, the behavioural attachment system calls for an intrinsic motivation to search for and maintain proximity with an attachment figure (i.e., primary strategy), which is usually the parent (Bowlby, 1969/1982). Repeated attachment-related experiences are internalized by the child and become the foundation of broader mental representations of the self and others, which Bowlby referred to as *internal working models* (Bretherton, 1991; Vaughn et al., 2006). While mental representations of the self reflect the child's feelings toward his merit to receive love

and support from others, mental representations of others relate to the child's perception of the attachment figure's availability when needed.

It was with Mary Ainsworth's work in the 1960s and 1970s (Ainsworth, Blehar, Waters, & Wall, 1978) that different styles of parent-child attachment emerged: *secure attachment*, *ambivalent attachment*, and *avoidant attachment*. In 1986, Main and Solomon proposed a forth attachment style, namely, *disorganized attachment*. Children with secure attachment have confidence in the availability of their attachment figure and generally feel safe. In fact, these children are likely to have attachment figures that adequately respond to their attachment needs (Weinfield, Sroufe Egeland, & Carlson, 2008). Conversely, if the attachment figure does not adequately respond to the child's needs, the child may develop an insecure attachment. Because the search for proximity with the attachment figure is unsuccessful, children with insecure attachment then adopt secondary strategies that overactivate (i.e., hyperactivating strategies) or inhibit (i.e., deactivating strategies) the attachment behavioural system (Cassidy & Kobak, 1988). If the attachment figure is inconsistently responsive or very intrusive, this may lead the child to develop hyperactivating strategies, whereas if the attachment figure is distant, cold, rigid, or rejecting to the child's need it may lead to the development of deactivating strategies (Mikulincer & Shaver, 2016a). While *hyperactivating strategies* are associated with ambivalent attachment and characterized by intense and persistent attempts to obtain proximity with the attachment figure (e.g., children engage in excessively dependent behaviour, contact maintenance, and clinginess), *deactivating strategies* are associated with avoidant attachment and aim to inhibit the system by avoiding any proximity with the attachment figure, whether physical or emotional (e.g., children ignore their attachment figures, reject their offers of assistance, and reduce expressions of affection and intimacy; Mikulincer & Shaver, 2008; Mikulincer & Shaver, 2016a). Children with disorganised attachment, on the other hand, tend to use both strategies

inconsistently. These behavioural attachment strategies will affect many facets of a child's life, such as their future relationship experiences, their expectations towards others, the expression of their feelings, and how they will behave in various situations during their life (Collins & Read, 1994; Fraley & Shaver, 2000; Pallini, Baiocco, Schneider, Madigan, & Atkinson, 2014; Shaver & Mikulincer, 2002). Although it is possible that the attachment representations developed during childhood can persist throughout time, an increased number of researches suggest that subsequent interpersonal relationships and life experiences can alter these mental representations (for a review, see McConnell & Moss, 2011). The attachment style does not define the individual per se, but rather the individual's usual approach toward a specific relationship.

In the 1980s, Hazan and Shaver (1987) sought to determine whether romantic attachment processes in adulthood was analogous to that of childhood. Inspired by the work of Ainsworth et al. (1978), Hazan and Shaver (1987) developed an attachment model for adults comprised of three attachment styles, namely, *secure*, *anxious*, and *avoidant*. Thereafter, Bartholomew and Horowitz (1991) completed Hazan and Shaver's (1987) model by integrating dichotomous representations of the self and others, which can be either positive or negative. From these dimensions, a conceptual model of four adult romantic attachment styles arose: *secure* (i.e., positive representations of the self and others), *preoccupied* (i.e., negative representations of the self, positive representations of others), *dismissing* (i.e., positive representations of the self, negative representations of others) and *fearful* (i.e., negative representations of the self and others).

There is a long-standing debate among researchers in the field of romantic adult attachment about whether individual differences are better captured using categorical or continuous models. Conceptually, in a categorical model, the term "style" refers to a more rigid, inflexible constructs, which is not representative of romantic adult attachment

representations and where individual variability is lost. Empirical research also demonstrated that individual differences in adult attachment appear more consistent with a dimensional approach rather than a categorical model (Fraley, Hudson, Heffernan, & Segal, 2015; Fraley & Waller, 1998). For these reasons, researchers are currently favouring a two-dimensional approach of romantic adult attachment (i.e., attachment anxiety and attachment avoidance; Brennan, Clark, & Shaver, 1998). While the attachment anxiety dimension refers to the representations of the self and to the degree of which an individual is concerned about being abandoned or rejected, the attachment avoidance dimension refers to the representations of others and is manifested as a discomfort with emotional intimacy and dependency in a relationship (Brennan et al., 1998). Attachment anxiety is characterised by the use of secondary hyperactivating strategies as described previously, whereas avoidance attachment is characterised by the use of secondary deactivation strategies (Mikulincer & Shaver, 2008). Furthermore, while insecure attachment is characterised by the presence of a high level of attachment anxiety and/or attachment avoidance, secure attachment is characterised by low levels of both dimensions (Feeney, 2008).

Caregiving. As an attempt to elaborate on the developmental trajectory of caregiving, Solomon and George (1996) proposed that the representation of the self as a caregiver develops in adolescence. Bowlby (1969/1982) refers to caregiving as a behavioural system distinct, but complementary, to that of attachment. While the attachment system involves *seeking* care and protection from an attachment figure, the caregiving system translates into *providing* for the needs and protection of an attached individual (Bowlby, 1969/1982; Solomon & George, 1996). In adulthood, romantic partners represent an important source of support and care (Collins, 2003). Therefore, when the attachment system of one partner is activated, it then triggers the caregiving system of the other partner. In romantic relationships, both members of the couple constantly alternate between the need for security and

reassurance and the provision of care to the other partner. For that reason, the dynamic interplay between the attachment and the caregiving systems is crucial to the well functioning of romantic relationships (Mikulincer, 2006).

As a figure of attachment, the main function of the caregiver is to provide a *safe haven* (i.e., comfort to a partner in times of stress) and a *secure base* (i.e., support for a partner's personal strivings and ambitions) for their partner (Feeney & Woodhouse, 2016). Good caregivers are able to give a sense of security to their partner by providing emotional comfort and facilitating problem resolution (Feeney & Woodhouse, 2016). In order to maintain this sense of security, it is essential for caregivers to be sensitive and responsive to their partner's needs and signals of distress (Feeney & Collins, 2014). In contrast, there are many ways a caregiver may be insensitive or unresponsive to their partner's needs (Feeney & Woodhouse, 2016). For example, the caregiver may misinterpret or voluntary ignore their partner's signals of distress. Further, the caregiver may respond late, inconsistently, or inappropriately to a partner's needs, or even behave in a rejecting manner.

According to Kunce and Shaver (1994) there are four dimensions that characterize caregiving behaviours in romantic relationships. While the *sensitivity vs. insensitivity* dimension refers the ability to accurately recognize and interpret a partner's needs and signals of distress, the *proximity vs. distance* dimension refers to the willingness to offer physical and emotional closeness to a partner with the intention of comforting the latter. The *cooperation vs. control* dimension reflects the degree of cooperation in one's attempts to help a partner solve problems. Finally, the *compulsive caregiving* dimension refers to intrusion or over-involvement in a partner's problems and is considered a maladaptive expression of caregiving.

Dyadic trust. Interpersonal trust is an essential component of the quality of a relationship as it is critical to the development, maintenance, and stability of functional and

satisfying romantic relationships (Campbell, Simpson, Boldry, & Rubin, 2010; Simpson, 2007). In fact, trust is a key component of the attachment theory (Mikulincer & Shaver, 2003). It reflects the extent to which individuals believe they can count on their romantic partner to meet their most fundamental needs and to facilitate their most significant goals (Campbell et al., 2010). The development of trust in a relationship is believed to be the result of a process of reducing uncertainty (Holmes & Rempel, 1989). Thus, even if individuals rely on their past experiences to choose whether or not to trust others, the level of trust in the current partner depends largely on the partner's attributes and the dynamics of the current relationship (Campbell et al., 2010).

According to Larzelere and Huston (1980), there are two particularly interesting attributions specific to the assessment of one's interpersonal trust. The first attribution concerns the partner's *benevolence*, which refers to the partner's main motivation behind the interest of one's welfare. In other words, one seeks to determine whether their partner is acting solely on one's welfare or is acting on their own well-being. Although both motivations may often lead to the same behaviour from their partner, it may not always be the case (Larzelere & Huston, 1980). Therefore, knowing their partner's internal motivation may influence whether one has confidence in their partner's availability in times of need. The second form of attribution refers to the partner's *honesty*. Larzelere and Huston (1980) suggest that the degree of trust felt will also depend on one's faith towards their partner's commitment.

Relationship satisfaction. Relationship satisfaction refers to the degree to which individuals feel satisfied of their romantic relationship (Spanier, 1976). From an attachment perspective, relationship satisfaction is acquired by the growing feeling of security and confidence towards one's romantic partner (Mikulincer & Shaver, 2016b). The satisfaction of the relationship is expected to increase as partners become a mutual effective and reliable

source of support (Mikulincer & Shaver, 2016b). Relationship satisfaction is considered one of the most studied constructs within the field of romantic relationships (Fincham, Rogge, & Beach, 2018). This substantial interest in relationship satisfaction stems from the belief that it predicts whether a relationship will last or dissolve (Berscheid & Regan, 2005; Favez, 2013). In fact, as demonstrated by numerous longitudinal studies, relationship satisfaction acts as a protective factor of conflict and relationship breakdown (for a review, see Karney & Bradbury, 1995). In addition to predicting relationship dissolution, there is clear evidence that relationship satisfaction also plays a significant role in one's physical and psychological health (for a review, see Fincham et al., 2018). Further, relationship dissatisfaction is reported as one of the most common reasons for consulting mental health services with a romantic partner (Halford, 2011), and the consequences resulting from relationship dissatisfaction can be critical and wide-reaching (Lee, 2016).

Dyadic coping. If an individual experiences a stressful event, it is highly likely their romantic partner will also be affected by their stress because of their shared concerns, resources, goals, and social ties (Cutrona, Bodenmann, Randall, Clavél, & Johnson, 2018). There are two dominant approaches in the literature that explain how couples react when one or both partners experience some distress: the social support approach (e.g., Cutrona, 1996) and the dyadic coping approach (e.g., Bodenmann, 1995, 1997, 2005). These two approaches overlap on several aspects. In fact, they often occur simultaneously in response to the same stressor, in addition to using the same kind of coping and assistance to others (Bodenmann, 2005; Cutrona et al., 2018). The main difference between these two approaches is that while social support explicitly involves a provider and a recipient of support, common dyadic coping involves coequal partners facing difficulties as a team (Cutrona et al., 2018).

The most widely used dyadic coping model is Bodenmann's systematic transactional model (STM; Bodenmann, 1995, 1997, 2005). The STM is based upon the assumption that

there is interdependence between partners' stress and coping processes, which are considered as series of dyadic actions and transactions that affect and modify the relational system (Cutrona et al., 2018). According to the STM, the process by which couples face stressful experiences begins, above all, with the communication of the stressor to the partner, whether verbally or nonverbally. After the disclosure, the partner then perceives and interprets the stress signals and responds with either positive or negative coping strategies. The stress appraisal process, first elaborated by Lazarus and Folkman (1984), was initially seen as an individual process. However, in the STM, Bodenmann (1995, 1997, 2005) considered that the stress appraisal process is better conceptualized as a dyadic process, including both individual and joint appraisals of the stressor by both members of the couple. In that perspective, the stressor then becomes a *we-stress* rather than an *I-stress*, which also facilitate a team approach to cope with the problems rather than an individual approach (Cutrona et al., 2018).

According to Bodenmann (1995, 1997, 2005), various approaches of dyadic coping may be employed within romantic relationships, categorized as either positive or negative dyadic coping strategies. *Negative dyadic coping* refers to support provided unwillingly and in an insincere manner, which minimizes the seriousness of the partner's stress. Positive dyadic coping includes *supportive*, *delegated,* and *common dyadic coping.* Supportive dyadic coping refers to one assisting their partner in their coping efforts by providing emotion-oriented or problem-oriented support. Delegated dyadic coping refers to one adopting their partner's usual responsibilities to help alleviate their partner's feelings of stress. Whereas negative, supportive, and delegated strategies of dyadic coping overlap with traditional social support (i.e., one unwillingly or willingly helps their partner to reduce their partner's stress), common dyadic coping involves a situation in which both partners share responsibility for the stressor and work together, as a team, to deal with it (Cutrona et al., 2018). This

interdependent process reflected in common dyadic coping serves not only to deal with the stressful situation, but also to protect the relationship from detrimental effects that the stress imposes on the relational system (Cutronal et al., 2018). Furthermore, from an attachment standpoint, dyadic coping provides one of the most direct evidence that the partner will be a reliable source of support and plays an important role in building cognitions of trustworthiness (Cutrona, Russell, & Gardner, 2005).

Romantic Relationship Experiences and NSSI

When adolescence gives way to the period of emerging adulthood, romantic relationships take a different turn as they tend to be more serious and involve a deeper level of physical and emotional intimacy (Arnett, 2000). In fact, romantic relationships during emerging adulthood tend to become one of the most important relationships in one's life (Collins, 2003). However, this is not without the many challenges that come with this critical time in life (Arnett, 2000). Emerging adulthood therefore represents a particularly interesting period for understanding the effects that romantic relationship experiences might have on maladaptive coping behaviours such as NSSI. The literature has shown that one's relation system can play a significant role in the development and/or maintenance of self-injurious behaviours (Nock, 2014). In fact, individuals who self-injure have likely experienced interpersonal distress (Jacobson & Batejan, 2014). Moreover, there are well-known associations between romantic relationship functioning and psychological distress (for a review, see Kansky, 2018), which is also related to NSSI (Richmond, Hasking, & Meaney, 2017). For all the reasons mentioned above, the present thesis will focus on the possible associations between relevant romantic relationship experiences and NSSI behaviours.

The study of romantic relationship experiences in relation to NSSI is in its infancy, such that empirical research on this specific subject was essentially non-existent prior to the 2000s. Only a few studies have explored the associations between these two constructs and

most of these studies have focused exclusively on insecure romantic attachment. More precisely, a study comprised of 518 university students (171 males; 347 females), aged between 17 and 62 years old, revealed that participants with NSSI behaviours reported more attachment anxiety and avoidance than participants without such behaviours (Braga & Gonçalves, 2014). The authors used a lifetime measure of NSSI, such that 16.2% of their sample reported having self-injured at some point in their lives. Findings from another recent study composed of 263 young adults (32 males; 231 females), aged between 17 and 25 years old, revealed that although attachment anxiety was positively correlated with the presence of NSSI behaviours in the past six months, no correlation was found in regards to attachment avoidance (Caron, Lafontaine, & Bureau, 2017). It should also be noted that attachment anxiety did not reach significance in subsequent direct linear discriminant analyses. A third study, comprised of 537 university students (108 males; 429 females), found that attachment anxiety was significantly associated to recent NSSI behaviours in women, but not in men (Levesque et al., 2010). No significant association was found for attachment avoidance in both men and women.

Researchers have also begun to explore the mechanisms by which romantic attachment and NSSI relate together. Indeed, findings from a recent study revealed that emotion regulation mediated the associations between four subdomains of romantic relationships (i.e., attachment anxiety, attachment avoidance, violence victimization, and violence perpetration) and NSSI (Silva, Machado, Moreira, Ramalho, & Gonçalves, 2017). Participants were 566 college students (154 males; 412 females) between the ages of 18 and 35 years old. In similar vein, Fitzpatrick et al. (2013) assessed the mediational role of behavioural self-soothing on romantic attachment and NSSI in young adults, aged between 17 and 25 years old, and were able to confirm the model in women (n = 855), but not in men (n = 200).

Although researchers and theoreticians acknowledge the fact that one's thoughts, emotions, and behaviours are likely influenced by those of a romantic partner (Kenny, Kashy, & Cook, 2006), previous studies on romantic relationships and NSSI have exclusively focused, with the exception of one study (Fung, 2006), on actor effects and have not investigated the influence of the partner's functioning on one's self-injurious behaviours (*partner effect*). Fung's (2006) study was composed of 40 (35 inpatients and 5 outpatients) deliberate self-harm (DSH; might include suicidal intent) patients and their romantic partners (33 partners) along with 52 matched control couples. Results indicated that DSH patients had significantly more life stress and higher attachment anxiety than non-DSH participants. In regards to partner's effects, no significant result was found for insecure attachment, although the partner's depressive symptoms was found to be a significant risk factor for DSH behaviours. The author also concludes that the association between one's attachment anxiety and DSH behaviours was mediated by both one's own life stress and the partner's depressive symptoms. This result, however, should be interpreted with caution as no indirect effect was tested and the analyses performed to test the mediational model were less than optimal (i.e., correlation and hierarchical regression analyses).

To capture a more complete picture of one's romantic relationship functioning, various important indicators of the quality of the relationship must be evaluated in addition to romantic attachment. The constructs presented earlier (i.e., caregiving, dyadic trust, relationship satisfaction, and dyadic coping) all target different aspects of the relationship (i.e., emotional, cognitive, or behavioural) and are all essential to the understanding and assessment of one's romantic relationship functioning. Despite the need to evaluate all facets of the relationship, current empirical research remains very limited. In fact, to our knowledge, Caron et al. (2017) are the only researchers that have explored one's own caregiving in relation to current NSSI behaviours. Unfortunately, findings were inconclusive as no

significant results were obtained. On a similar note, Braga and Gonçalves (2014) found no association between trust in others and lifetime NSSI behaviours. Furthermore, although researchers have made negative empirical connections between relationship satisfaction and suicidal ideation (e.g., Till, Tran, & Niederkrotenthaler, 2017), no studies to date have explored the association between romantic relationship satisfaction and self-injurious behaviours. In similar vein, although no empirical studies to date have considered dyadic coping as a potential risk factor for self-injurious behaviours, some studies have made links between maladaptive general coping strategies and NSSI (e.g., Ren et al., 2018).

Notwithstanding the scarcity of empirical research pertaining to romantic relationship functioning and self-injurious behaviours, the theoretical support for this relation is quite strong. As mentioned earlier, troubled romantic relationship functioning is renowned to be associated to psychological distress (for a review, see Kansky, 2018), which is also related to self-injurious behaviours (Richmond et al., 2017). Furthermore, the fact that the association between malfunctioning parent-child relationships and NSSI is already well established in the empirical literature (for reviews, see Arbuthnott & Lewis, 2015; Buckmaster, McNulty, & Guerin, 2018) and that all the theoretical models developed to explain this relation can easily be applied to romantic relationships gives another reason to pursue the investigation of the role romantic relationships may play in NSSI. Empirical contributions in this field of research would complement the current literature by creating a clearer picture of the particularities of the relational context of individuals engaging in these self-destructive behaviours.

The Current Studies

The goal of the current thesis is to investigate NSSI through the lens of young adults' romantic relationship functioning and to remedy the two major limitations that emerge from the literature reviewed above, namely, a) despite considerable advances in the scientific study of NSSI, progress pertaining to investigating romantic relationship experiences is lacking

although several theoretical hypotheses remain to be validated; and b) with the exception of one study, the other few studies available relating romantic relationships and NSSI solely focused on the individual level of analysis instead of including both partners in the model. This goal will be addressed through three articles, each targeting specific objectives.

First, considering the importance of evaluating dyadic coping strategies as an integral part of romantic relationship functioning, and the absence of English psychometric tools dedicated to its measurement, the first study focuses on the validation of the English version of the Dyadic Coping Inventory (DCI; Bodenmann, 2008). Although the use of Bodenmann's (2008) English version of the questionnaire is common practice in the field, it has never been validated beforehand. In practice, there are two main types of analyses aimed at reproducing observed relationships among a group of indicators with a smaller set of latent variables (Brown & Moore, 2012), namely, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is based on a data-driven approach and is employed as an exploratory technique, whereas CFA is a theory-driven statistical technique used when the underlying structure of a measure has already been established on prior empirical and theoretical grounds (Brown & Moore, 2012). Given that the DCI has already been validated in various other languages (e.g., German, French, and Italian; Ledermann et al., 2010) and the factor structure of the DCI is well known to researchers, a CFA technique is prioritized in this first study. The established factorial structure of the DCI will then be used in the second and third study.

The second study consists of an investigation of a conceptual model exploring both intrapersonal (i.e., emotion regulation) and interpersonal (i.e., dyadic coping) strategies for dealing with stressful situations as mediators of the relation between romantic attachment and self-injurious behaviours. This study is the first to explore these specific links in one integrative model and is intended to clarify the perplexity regarding which dimension of romantic attachment, if not both, is associated with NSSI behaviours. The third study is

unique in seeking to specifically understand how romantic relationship functioning may differ between women who are struggling with NSSI and, in contrast, women who have never self-injured. This study offers a distinctive contribution by taking a dyadic approach, using both the participant's reports of relational experiences and their partner's reports.

In summary, although more empirical work is clearly needed to explore the potential role of romantic relationships on young adults' self-injurious behaviours, there is convincing theoretical evidences suggesting that this relation may exist. This thesis aims to illustrate a larger picture of self-injurious individuals' relational experiences through the lens of romantic attachment framework. The hypotheses and implications of each study are discussed in detail throughout their respective chapters of the current thesis and in the General Discussion.

Chapter II

Validation of the English Version of the *Dyadic Coping Inventory* (DCI)

A manuscript version of this study is published in *Measurement and Evaluation in Counseling and Development*. The current version of the manuscript may slightly differ from the published version.

Levesque, C., Lafontaine, M.-F., Caron, A., & Fitzpatrick, J. (2014). Validation of the English version of the Dyadic Coping Inventory (DCI). *Measurement and Evaluation in Counseling and Development, 47,* 216-226. doi:10.1177/0748175614522272

Author Note

This research was funded by a Joseph-Armand Bombardier Doctoral scholarship from the Social Sciences and Humanities Research Council and an Ontario Graduate Scholarship from the Ontario Provincial Government.

Abstract

The purpose of this study was to validate the English version of the original German Dyadic Coping Inventory. Results indicated that the English version of the Dyadic Coping Inventory is a valid and reliable measure of dyadic coping in a sample of 709 heterosexual university students.

Keywords: couple, dyadic coping, questionnaire validation

Validation of the English Version of the *Dyadic Coping Inventory* (DCI)

In past decades, the empirical study of coping has typically been limited to research examining individuals' coping mechanisms as they pertain to personal well-being. However, researchers have acknowledged the importance of studying coping in the context of romantic relationships (Revenson, Kayser, & Bodenmann, 2005). Findings from a growing body of literature reveal a unique association between dyadic coping and other relationship functioning characteristics (Bodenmann, 2005; Bodenmann, Pihet, & Kayser, 2006; Papp & Witt, 2010); specifically, romantic partners who lack necessary dyadic coping mechanisms essential to effective stress management experience detrimental effects to their romantic relationships (e.g., diminished relationship satisfaction) and a greater incidence of divorce and separation (e.g., Bodenmann, 2005). These findings highlight the important role dyadic coping plays in romantic relationships. However, the fact that most researchers are currently using a non-validated questionnaire to assess dyadic coping processes may hinder the production of sound research pertaining to romantic relationships. In light of the absence of empirically-supported measures of dyadic coping in English, this study was undertaken to validate the widely-used English translation of the original German *Dyadic Coping Inventory* (DCI; Bodenmann, 2008). The purpose of the present study was to examine the factor structure of the English version of the DCI and provide evidence of its reliability in a sample of romantically-involved heterosexual individuals.

Several definitions of dyadic coping have been proposed in recent decades. Whereas some authors have defined dyadic coping as individual coping efforts which function within the context of romantic relationships (e.g., Pearlin & Schooler, 1978), other authors have defined dyadic coping as an interaction between each partner's individual coping efforts (e.g., Barbarin, Hughes, & Chesler, 1985). Although authors of earlier definitions of dyadic coping suggest that one's own coping is related to that of his or her partner, dyadic coping remained

conceptualized and measured as individual variables. In contrast, Bodenmann (1995, 1997, 2005) conceptualized dyadic coping as a dyadic phenomenon that can be defined as a *stress communication* process that initiates both partners' coping responses. According to this stress communication process, one partner's appraisal of stress is communicated (verbally or nonverbally) to a romantic partner, who then perceives and interprets these stress signals and responds with either positive or negative coping strategies in an attempt to reduce their partner's stress (Bodenmann, 1995, 1997, 2005).

Bodenmann (1995, 1997, 2005) described various different types of dyadic coping employed within romantic dyads. *Negative dyadic coping* refers to support that is provided unwillingly, and in an insincere manner which minimizes the seriousness of the partner's stress. *Positive dyadic coping* refers to three types of dyadic coping strategies: *supportive*, *delegated,* and *common dyadic coping.* Supportive dyadic coping refers to assisting one's partner in their coping efforts (e.g., employing empathic understanding, helping the partner to see the stressful situation in a new light, or demonstrating solidarity to the partner), while delegated dyadic coping refers to one partner adopting the other's usual responsibilities in order to help alleviate that partner's feelings of stress. Whereas negative, supportive, and delegated types of dyadic coping involve one partner unwillingly or willingly helping the other partner to reduce that partner's stress, common dyadic coping refers to circumstances in which both members of a dyad experience stress and make mutual efforts to diminish such stress by coping together (e.g., sharing of feelings, mutual commitment, relaxing together).

Overview of Literature on Dyadic Coping as Described by Bodenmann

In recent years, increasing empirical attention is being paid to exploring the role of dyadic coping on romantic relationship functioning, with a number of studies having produced interesting results that merit elaboration. Firstly, dyadic coping strategies have been compared in recent literature to individual coping strategies. More precisely, a research

conducted by Papp and Witt (2010) revealed that dyadic coping strategies were significantly stronger predictors of various facets of relationship functioning (e.g., relationship satisfaction, negative partner interactions) than were individual coping strategies. Further bolstering evidence for the important role held by dyadic coping, Bodenmann (2005) conducted a meta-analysis investigating links between dyadic coping and marital satisfaction. The meta-analysis included 13 studies and comprised a total of 783 couples. Findings indicated that in all 13 studies examined, positive dyadic coping was linked to better marital functioning and greater relationship satisfaction (d = 1.3). Furthermore, Bodenmann and Cina (2006) conducted a longitudinal study examining stress and coping among 62 couples in Switzerland, with results demonstrating that couples who use less negative individual coping strategies, and rely more frequently on means of dyadic coping to manage stress were more stable and satisfied five years post-study.

In addition to the direct links between dyadic coping and relationship satisfaction and maintenance, recent literature suggests that dyadic coping may also serve to explain associations between related relationship variables. Studies encompassing complex models of romantic relationship functioning have begun to examine dyadic coping as a possible mediator and moderator of links between varied relationship dimensions. For example, a study conducted by Kardatzke (2009) measured the influences of adult attachment and dyadic coping on relationship satisfaction. Results indicated that dyadic coping partially mediated the links between both dimensions of attachment (i.e., attachment avoidance and attachment anxiety) and relationship satisfaction. To our knowledge, this was the first study to demonstrate that romantic attachment may impact relationship satisfaction through dyadic coping processes. Furthermore, a study conducted by Bodenmann, Meuwly, Bradbury, Gmelch, and Ledermann (2010) indicated that dyadic coping may be a possible moderator of the associations between stress, anger, and verbal aggression. Results revealed that dyadic

coping may attenuate the associations between stress and both anger and verbal aggression. More specifically, findings indicated that there may be more reports of verbal aggression when stress is low among individuals reporting maladaptive skills for coping with stress (i.e. low levels of individual coping, positive dyadic coping, and common dyadic coping as well as high levels of negative dyadic coping) compared to individuals with adaptive coping strategies.

Measures of Dyadic Coping

Although there are several self-report questionnaires on general coping for adults (for a review, see Schwarzer & Schwarzer, 1996), to our knowledge, there are only two self-report questionnaires in English pertaining to dyadic coping. The first of the two questionnaires was developed by Coyne and Smith (1991), entitled *Relationship-Focused Coping Scale*. This measure examines the extent to which each member of a couple uses *active engagement* (i.e., involving their partner in discussions, inquiring how their partner feels, and using other constructive problem-solving strategies) and *protective buffering* (i.e., hiding concerns, denying worries, and yielding to their partner to avoid disagreements) as ways of coping interdependently. The second measure, entitled *Questionnaire to Assess Dyadic Coping as a Tendency* (FDCT-N; Bodenmann, 2000), is the only self-report questionnaire that specifically pertains to stress communication and dyadic coping as described by Bodenmann. The *Dyadic Coping Inventory* (DCI; Bodenmann, 2008) was derived from the FDCT-N, and is essentially a shorter version of the original 68-item FDCT-N. The original German DCI demonstrated satisfactory psychometric properties (see Table 1; Ledermann et al., 2010). Published validation studies on numerous language adaptations of the DCI (e.g., German, French, and Italian) exist, but the English version of the DCI has not been validated (Ledermann et al., 2010). When validating the DCI in German, French, and Italian, Lederman et al. (2010) conducted separate exploratory factor analyses on the items measuring one's own coping

behaviours, the partner's coping behaviours, and common coping behaviours. Although the analyses conducted by Lederman et al. (2010) served to identify the underlying factor structure of the DCI, a confirmatory factor analysis is needed to statistically verify the proposed factor structure in one model.

On the basis of the theoretical and empirical literature reviewed above, there is an appreciable and continuously expanding body of evidence that attests to the important role held by dyadic coping in romantic relationship functioning. Despite these considerable advances in the scientific study, progress pertaining to investigating the quality of available measures of dyadic coping is lacking. The primary objective of the present study was to examine the factor structure of the English version of the DCI along with its internal consistency and its concurrent validity. This study constitutes a unique contribution to dyadic coping literature, as the English version of the DCI has not been validated, yet constitutes one of the only available questionnaires of stress communication and dyadic coping among couples.

Hypotheses

Factor Structure

The English version of the DCI was expected to replicate the structure of the original German DCI, with dimensions encompassing five coping factors (stress communication, supportive dyadic coping, delegated dyadic coping, negative dyadic coping, and common dyadic coping) and two target factors (one's own dyadic coping and partner's dyadic coping). Although each coping factor represents distinct constructs, it was expected that all factors would be moderately correlated with one another. Correlations were also expected between the target factors, as was found in the original study evaluating the German version of the DCI (Ledermann et al., 2010).

Concurrent Validity

Given that previous research has demonstrated a significant relationship between dyadic coping and relationship satisfaction (Bodenmann, 2005; Bodenmann & Cina, 2006; Papp & Witt, 2010; Wunderer & Schneewind, 2008), it was expected that stress communication, common dyadic coping, supportive dyadic coping, delegated dyadic coping, as well as one's own and the partner's dyadic coping would correlate positively and moderately with one's own relationship satisfaction, while negative dyadic coping would be correlated negatively.

Method

Participants

Students enrolled in introductory experimental psychology courses offered at an Eastern Canadian university were invited to participate in the present study. The sample was composed of 709 Anglophone students involved in heterosexual romantic relationships. The majority of participants were female (79.4%) and Caucasian (81.1%). The sample also encompassed a minimal representation of Asian (8.0%), Black (2.7%), Hispanic (1.3%), and other racial backgrounds (6.9%). The mean age of participants was 19.54 years (*SD* = 1.74, range = 17 to 30), with an average romantic relationship duration of 1.24 years (*SD* = 1.31, range = 1 month to 8.5 years). The majority of participants reported that they were not cohabiting with their partner (91.0%), and did not have any children with that partner (79.0%) at the time of participation.

Procedure

Participants voluntarily registered for the study through a program offering first year psychology students opportunities to participate in research conducted at their university of study in exchange for two added percentage points toward their final grade. This study was part of a larger research project investigating the influence of intimate relationships on

negative coping strategies. Once registered, participants were subsequently provided access to a secure Internet link which directed them to an online questionnaire package, and were assigned a five-digit identification code used to ensure complete anonymity. The questionnaire package included information outlining the voluntary nature of the research and participants' right to discontinue their participation at any time, consequence-free. Informed consent was assumed upon participants' completion of the questionnaire package. The present study has been approved by the university research ethics committee (project approval number 06-08-04).

Measures

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

Dyadic Coping Inventory (DCI; Bodenmann, 2008). This 37-item measure assesses the degree to which couples support and actively help one another during times of stress. The English version of the DCI is a translation of the original German DCI undertaken by Bodenmann and his team. A native English speaker first translated the questionnaire from German to English. A backtranslation was then undertaken by a native German speaker with a good knowledge of English, and was subsequently compared to the original version (Bodenmann, 2008). Respondents use a five-point Likert scale, ranging from (1) *Very rarely* to (5) *Very often*, to rate their own coping (i.e., stress communication, supportive dyadic coping, delegated dyadic coping, and negative dyadic coping), their perception of their partner's coping (i.e., stress communication, supportive dyadic coping, delegated dyadic coping, and negative dyadic coping), and their perception of how they cope as a couple (i.e., common dyadic coping). A sample item from each subscale is as follows: *I tell my partner openly how I feel and that I would appreciate his/her support* (stress communication); *I show*

empathy and understanding to my partner (supportive dyadic coping); *I take on things that my partner would normally do in order to help him/her out* (delegated dyadic coping); *When my partner is stressed, I tend to withdraw* (negative dyadic coping); *We engage in a serious discussion about the problem and think through what has to be done* (common dyadic coping). The DCI also contains two items which allow respondents to evaluate their experiences of common dyadic coping. Subscale scores are obtained by summing the scores of the respective subscale items, with elevated subscale scores denoting greater levels of the constructs measured by each subscale (e.g., greater partner stress communication, or greater common dyadic coping). Psychometric properties for the English version of the DCI have yet to be examined.

Dyadic Adjustment Scale (DAS-4; Sabourin, Valois, & Lussier, 2005). The DAS–4 is a brief four-item measure of relationship satisfaction derived from the original 32-item DAS (Spanier, 1976). The first three items (e.g., *How often do you discuss or have you considered divorce, separation, or terminating your relationship?*) employ a six-point Likert scale, with responses ranging from (0) *All the time* to (5) *Never*. The fourth item employs a seven-point Likert scale, with responses ranging from (0) *Extremely unhappy* to (6) *Perfectly happy*. A global score is obtained by summing all items (some items are reverse coded), with elevated scores representing increased relationship satisfaction (global score ranging from 0 to 21). The DAS-4 has been demonstrated to hold greater predictive validity (couple dissolution over a two-year period) than the DAS-32 (Sabourin et al., 2005). Furthermore, reliability statistics performed in the present study on the DAS-4 demonstrate good internal reliability, with a Cronbach's alpha of .74, as compared to .84, as reported by Sabourin and colleagues (2005).

Results

Preliminary Analyses

A total of 786 participants participated in this ongoing study. Forty participants failed to complete the questionnaire beyond the first few questions and their questionnaire data were therefore excluded from further analyses. In order to optimize the sample size, missing values were estimated using Expectation Maximization (EM) from the remaining 746 participants. None of the items had more than 5% missing values, indicating that this option was appropriate for use (Tabachnick & Fidell, 2007). In addition, data from 37 participants were detected as multivariate outliers and subsequently removed from the analyses, leaving a total of 709 participants.

Confirmatory Factor Analyses

A confirmatory factor analysis (CFA) was conducted to confirm the factor structure of the *Dyadic Coping Inventory*. The model was composed of five coping factors (stress communication, supportive dyadic coping, delegated dyadic doping, negative dyadic coping, and common dyadic coping) and two target factors (one's own dyadic coping and partner's dyadic coping) that loaded on the items that were not common dyadic coping items. Correlation paths were allowed between the five coping factors as well as between the two target factors. Bootstrapping (500 samples) was used in order to manage the presence of multivariate nonnormal data within the subsample (Byrne, 2010).

Following guidelines produced by Hu and Bentler (1999), several indices to assess goodness of fit of the models were used: the comparative fit index (CFI; values greater than .90 indicate a reasonable fit of the data while values close to .95 or greater indicate a model that fits the data well), the root mean square error of approximation (RMSEA; values close to .06 or less indicate a model that fits well), the standardized root mean square residual (SRMR; values close to .08 or less indicate a good fit of the model), and the ratio of chi-

square relative to the degrees of freedom (χ2/df; although there is no consensus regarding an acceptable ratio for this statistic (Hooper, Coughlan, & Mullen, 2008), recommendations range from as high as 5 (Wheaton, Muthen, Alwin, & Summers, 1977) to as low as 2 (Tabachnick & Fidell, 2007)). Based on these guidelines, the fit of the model was deemed inadequate ($\chi^2(519) = 2271.16$, $p < .001$; $\chi^2/df = 4.38$; CFI = .83; RMSEA = .07; SRMR = .07).

Inspection of the modification indexes revealed that some items (items 2, 3, 8, 17, 18 23, 35) had significant correlated errors with other items and/or had low factor loadings. Those items were therefore removed from the model. The fit of the final model was then deemed satisfactory ($\chi^2(315) = 1142.72$, $p < .001$; $\chi^2/df = 3.63$; CFI = .91; RMSEA = .06; SRMR = .05). All the items had significant path estimates (standardized factor loadings are presented in Table 2). This model yielded significant correlations between each of the coping factors (ranging from small to strong correlations; see Table 3) as well as between the target factors ($r = .27$, $p < .001$).

Reliability

Reliability coefficients for the coping factors (stress communication, supportive dyadic coping, delegated dyadic coping, negative dyadic coping, and common dyadic coping) and the target factors (one's own dyadic coping and partner's dyadic coping) are presented in Table 2. Reliability coefficients for the coping factors were found to be reliable, as were the target factors (alpha coefficients ranging from .69 to .85).

Concurrent Validity

In order to establish concurrent validity, all the factors were correlated with relationship satisfaction (see Table 4). Both the coping factors and the target factors demonstrated a moderate association with relationship satisfaction, with correlations ranging from .47 to .54, with the exception of the delegated dyadic coping factor which indicated a

lower, albeit still significant correlation (r = .26).

Discussion

The objective of the present study was to validate the English version of the original German DCI, which is a measure of stress communication and dyadic coping. Results supported the use of the English DCI in a sample of romantically-involved heterosexual individuals by replicating the factor structure of the original DCI. The English DCI also demonstrated good reliability and yielded preliminary evidence of concurrent validity.

Specifically, results from the CFA confirmed the presence of five coping factors (stress communication, supportive dyadic coping, delegated dyadic coping, negative dyadic coping, common dyadic coping) and two target factors (one's Own dyadic coping and partner's dyadic coping). However, the proposed factor structure was only replicated after excluding four of eight items from the stress communication factor (Items 2, 3, 17, and 18), two items out of ten from the supportive dyadic coping factor (Items 8 and 23), and one item out of five from the common dyadic coping factor (Item 35). Those items were removed from further analysis because they either had error terms correlated with other error terms in the model and/or had low factor loadings, indicating specification error.

More precisely, all of the deleted items from the stress communication factor (i.e., *I ask my partner to do things for me when I have too much to do*; *My partner asks me to do things for him/her when he/she has too much to do*; *I show my partner through my behaviour that I am not doing well or when I have problems*; *My partner shows me through his/her behaviour that he/she is not doing well or when he/she has problems*) were easily removed from the model, as the underlying dimension measured by these items is encompassed within broader items that loaded on the same factor (i.e., *I tell my partner openly how I feel and that I would appreciate his/her support*; *My partner tells me openly how he/she feels and that he/she would appreciate my support*). Similarly, the deleted item from the common dyadic

coping factor (i.e., *We are affectionate to each other, make love and try that way to cope with stress)* also had correlated error tem with another item in the same factor that was related to partners helping each other by relaxing or spending time engaged in close activities together. With regard to the supportive dyadic coping factor, the two deleted items (i.e., *My partner helps me to see stressful situations in a different light* and *I tell my partner that his/her stress is not that bad and help him/her to see the situation in a different light*) demonstrated low factor loadings, which could result from the construction of the items. To illustrate, telling a romantic partner that their stress is not that bad could perhaps be interpreted by the respondents as trivializing or minimizing the stress that one is experiencing. Fortunately, the remaining items are still representative of Bodenmann's systemic-transactional perspective of dyadic coping and still consist of five coping factors and two target factors. The analyses conducted in this study should be replicated to further investigate this finding.[1]

Intercorrelations among coping factors and between the two target factors suggest: a) that all the different types of dyadic coping (i.e., stress communication, supportive dyadic coping, delegated dyadic coping, negative dyadic coping, and common dyadic coping) are associated with each other, and b) that one's own dyadic coping is related to one's own perception of their partner's dyadic coping. These results replicate the previous findings of Ledermann and colleagues (2010), and also suggest possible interactions between one's own dyadic coping and one's perception of their partner's dyadic coping strategies. Such potential interactions may be worthy of further empirical exploration. Moreover, if one's own dyadic coping is influenced by their partner's dyadic coping, and poor dyadic coping strategies are related to poor relationship satisfaction (e.g., Bodenmann, 2005), it may be relevant to

[1] After the publication of the current article, another validation study on the English DCI was published (Randall, Hilpert, Jimenez-Arista, Walsh, & Bodenmann, 2015). Randall et al. (2015) found similar results to the one presented in the current study, although they differentiated supportive dyadic coping and common dyadic coping into emotion-focused and problem-focused behaviours.

explore actor-partner effects between dyadic coping and relationship satisfaction in order to explore whether an individual's poor dyadic coping strategies could have a negative impact on their partner's relationship satisfaction.

Reliability coefficients were found to be comparable to the original version of the questionnaire for all factors (Ledermann et al., 2010). Based on George and Mallery's (2003) rule of thumb for evaluating alpha coefficients (i.e., > .9 excellent, .8 good, .7 acceptable, .6 questionable, .5 poor, and < .5 unacceptable), all factors demonstrated acceptable to good reliability (Cronbach's alpha varied from .78 to .85), except for the stress communication scale (Cronbah's alpha = .69). The lower reliability of the stress communication scale may be due mainly to the decrease in the number of items of the scale. However, reliability coefficients between .65 and .70 are considered minimally acceptable (DeVellis, 1991) and therefore, the stress communication scale does not constitute a poor quality scale.

Concurrent validity was supported through positive associations found between relationship satisfaction and stress communication, supportive, delegated, common dyadic coping, as well as one's own and the partner's dyadic coping and through a negative association with negative dyadic coping. As such, this finding suggests that individuals who generally employ positive dyadic coping strategies and less negative dyadic coping strategies report being more satisfied in their romantic relationships. All correlations were moderate, thus paralleling findings produced by the original version of the DCI.

As described above, dyadic coping is an important predictor of relationship quality, relationship development, and diverse relationship outcomes, as it serves as a means whereby couples manage daily stressors in an effective and adaptive way (Widmer, Cina, Charvoz, Shantinath, & Bodenmann, 2005). Professionals working with couples should be mindful of the impact that dyadic coping strategies may have on romantic relationship functioning. For example, fewer positive dyadic coping skills and greater negative dyadic coping skills may be

important risk factors for relationship dissatisfaction and dissolution Having an operational measure of dyadic coping available in English may hold much clinical utility, as it can better equip professionals to implement appropriate assessment and intervention strategies for those seeking couple therapy.

Despite the implications of this study, certain methodological limitations exist. Firstly, the sample consisted largely of young adults who do not cohabit with their partners, and may therefore not represent the dyadic coping experiences of couples comprising different age categories and living arrangements. Additional studies are needed in order to replicate the factor structure of the English DCI when completed by individuals of different cultural groups, sexual identities, and romantic relationship experiences (e.g., distressed couples, same-sex couples), as the present study's sample consisted largely of Caucasian, heterosexual females involved in their current romantic relationship for under two years. Future research should also evaluate different components of validity for the English version of the DCI (i.e., test-retest, discriminant, convergent, predictive, and incremental validity). Finally, it would be of great value to gather more data on men in order to test for gender factorial invariance.

Overall, the results presented in this study suggest that the English version of the DCI is a valid instrument for assessing stress communication and dyadic coping in young adults involved in heterosexual romantic relationships. Such results serve to provide researchers and clinicians with a psychometrically sound measure of dyadic coping available in the English language. This study was conducted with hopes that its findings may encourage the continued empirical investigation of the role of dyadic coping in explaining romantic relationship functioning.

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Table 1

Psychometric Properties of the Original German Dyadic Coping Inventory

Subscales	Range of factor loadings for EFA	Range of factor loadings for CFA	Cronbach's alpha	Correlations with marital quality
One's own dyadic coping				
Stress communication	.76 - .82	.56 – .76	.80	.41
Supportive dyadic coping	.54 - .76	.49 – .80	.76	.45
Delegated dyadic coping	.86 - .90	.84 – .89	.86	.27
Negative dyadic coping	.54 - .74	.28 – .71	.61	-.51
Partner's dyadic coping				
Stress communication	.71 - .84	.52 – .90	.82	.31
Supportive dyadic coping	.53 - .87	.60 – .82	.82	.68
Delegated dyadic coping	.84 - .87	.80 – .85	.81	.36
Negative dyadic coping	.63 - .77	.45 – .75	.66	-.60
Common dyadic coping	.35 - .87	.16 – .91	.70	.54

Note. EFA = Exploratory Factor Analysis; CFA = Confirmatory Factor Analysis.

Table 2

Standardized Factor Loadings of the Confirmatory Factor Analysis

Items	Stress Communication	Supportive Dyadic Coping	Delegated Dyadic Coping	Negative Dyadic Coping	Common Dyadic Coping	One's Own Dyadic Coping	Partner's Dyadic Coping
1	.61					.42	
2	-					-	
3	-					-	
4	.45					.16	
20		.55				.61	
21		.54				.52	
23		-				-	
24		.53				.24	
29		.62				.16	
28			.64			.11	
30			.66			.27	
22				.59		-.28	
25				.61		-.31	
26				.58		-.39	
27				.62		-.33	
16	.68						.33
17	-						-
18	-						-
19	.58						.19

Table 2 (*continued*)

Items	Stress Communication	Supportive Dyadic Coping	Delegated Dyadic Coping	Negative Dyadic Coping	Common Dyadic Coping	One's Own Dyadic Coping	Partner's Dyadic Coping
5		.52					.65
6		.41					.59
8		-					-
9		.55					.35
13		.59					.20
12			.71				.24
14			.70				.38
7				.50			-.28
10				.53			-.43
11				.53			-.37
15				.57			-.46
31					.83		
32					.81		
33					.86		
34					.47		
35					-		
α	.69	.84	.78	.85	.81	.83	.85

Table 3

Intercorrelations Between the Coping Factors

	1	2	3	4	5
1. Stress Communication	-	.77***	.50***	-.48***	.74***
2. Supportive		-	.44***	-.66***	.89***
3. Delegated			-	-.15**	.47***
4. Negative				-	-.58***
5. Common					-

Note. ** $p < .01$. *** $p < .001$.

Table 4

Concurrent Validity Correlations

Factors	Relationship Satisfaction
Coping Factors	
Stress Communication	.47***
Supportive Dyadic Coping	.53***
Delegated Dyadic Coping	.26***
Negative Dyadic Coping	-.54***
Common Dyadic Coping	.47***
Target Factors	
One's Own Dyadic Coping	.54***
Partner's Dyadic Coping	.53***

Note. * $p < .05$. *** $p < .001$.

Chapter III

The Mediating Effects of Emotion Regulation and Dyadic Coping on the Relationship Between Romantic Attachment and Non-Suicidal Self-Injury

A manuscript version of this study is published in the *Journal of Youth and Adolescence*. The current version of the manuscript may slightly differ from the published version.

Levesque, C., & Lafontaine, M.-F., & Bureau, J.-F. (2017). The Mediating Effects of Emotion Regulation and Dyadic Coping on the Relationship Between Romantic Attachment and Non-Suicidal Self-Injury. *Journal of Youth and Adolescence, 46,* 277-287. doi:10.1007/s10964-016-0547-6

Author Note

This research was funded by a Joseph-Armand Bombardier Doctoral scholarship from the Social Sciences and Humanities Research Council and an Ontario Graduate Scholarship from the Ontario Provincial Government.

Abstract

Insecure attachment is believed to play a fundamental role in non-suicidal self-injury (NSSI). In fact, the quality of parent-child attachment relationships has become an emerging topic attracting a growing number of theoretical and research contributions in the field of NSSI. However, despite these considerable advances in the scientific study of NSSI, progress pertaining to investigating the quality of romantic attachment relationship is lacking. In an effort to expand current knowledge, the present study aims to not only explore the relationships between romantic attachment and NSSI, but also to explore the mechanisms by which these two variables relate by examining the mediating role that emotion regulation and dyadic coping might play in this relationship. Participants consisted of 797 (81.9% female) university students, all of whom were involved in a romantic relationship for at least six months and between the ages of 17 and 25. Results revealed that although difficulties in emotion regulation mediated the relationships between romantic attachment insecurity (i.e., attachment anxiety and avoidance) and NSSI, dyadic coping was not found to be a significant mediator. These results highlight the importance of attachment security and internal processes to manage stress in the prevention of NSSI.

Keywords: dyadic coping, emotion regulation, non-suicidal self-injury, romantic attachment

The Mediating Effects of Emotion Regulation and Dyadic Coping on the Relationship Between Romantic Attachment and Non-Suicidal Self-Injury

Having a secure attachment is regarded as one of the most important characteristics attributed to psychological well-being. In fact, both positive and negative outcomes have been linked with the level of one's own attachment security and insecurity, respectively (Cassidy & Shaver, 2008). Among the negative outcomes, insecure attachment is believed to play a fundamental role in non-suicidal self-injury (NSSI) (e.g., Yates, 2004). NSSI is defined as the direct, purposeful self-infliction of injury, which results in tissue damage, performed without conscious suicidal intent and through methods that are not socially sanctioned (Nixon & Heath, 2009). Lifetime prevalence of NSSI in university populations is estimated between 12% and 37% (for a review, see Muehlenkamp, 2014). The quality of parent-child attachment relationships has become a hot topic of interest, attracting a growing number of theoretical and research contributions in the field of NSSI. However, questions remain as to whether and how the quality of romantic attachment relationships influences NSSI behavior. In an effort to expand current knowledge, the goal of the current study is to explore the relationship between romantic attachment and NSSI behavior over the past six months in a sample of university students. Beyond this direct link, the adult attachment theory also allows us to include both intrapersonal (i.e., emotion regulation strategies) and interpersonal (i.e., dyadic coping strategies) explanatory variables to explain this connection.

Brief Overview of Adult Attachment Theory

Attachment is conceptualized as an *attachment behavioral system*, which organizes behaviors within the individual in an effort to increase the likelihood of adaptation and survival (Bowlby, 1969/1982). Drawing on ethological theories, Bowlby (1969/1982) proposed that the organization of attachment behaviors involves a control system perspective that is subject to activation by diverse circumstances. The purpose of the activated attachment

system is to protect the individual from threats, alleviate distress, as well as elicit the inherent motivation for proximity with attachment figures (Bowlby, 1969/1982). The well-being of the attachment system plays a critical role in individuals' global, interpersonal, and mental well-being (Hazan & Shaver, 1987).

Repeated attachment-related experiences with primary caregivers are internalized within the individual and become the foundation for broader mental representations (Bretherton, 1991; Vaughn et al., 2006), which Bowlby referred to as *internal working models*. These internal working models persist throughout the lifespan and guide expectations, perceptions, and behaviors in future relationships (Collin & Read, 1994). Although attachment representations with primary caregivers can be stable in time, a growing body of research shows that subsequent important relationships and experiences can alter them (e.g., Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996). Indeed, individuals can simultaneously hold multiple mental representations (Baldwin et al., 1996; Caron, Lafontaine, Bureau, Levesque, & Johnson, 2012; Collins & Read, 1994). For instance, an individual's general attachment style, or attachment with one parent, may not necessarily predict their attachment with romantic partners (Baldwin et al., 1996), which highlights the importance of assessing specific attachment relationships. Given that romantic relationship often becomes one of the most important dyadic relationships in young adulthood, the current study will focus exclusively on romantic attachment.

Romantic attachment is currently conceptualized in terms of two dimensions: *attachment anxiety* and *attachment avoidance* (Brennan, Clark, & Shaver, 1998). Attachment anxiety is defined as an extreme preoccupation, a fear of rejection and abandonment, as well as a need for extreme closeness with a romantic partner. Attachment avoidance refers to an excessive need for self-reliance, as well as a discomfort with intimacy and interdependence with a romantic partner. Individuals with low attachment anxiety and low attachment

avoidance are considered to be securely attached while individuals with high attachment anxiety and/or low attachment avoidance are considered insecurely attached.

Romantic Attachment and NSSI

Theoretical evidence. Nock and Prinstein (2004, 2005) developed a four-function model of NSSI emerging from two dichotomous underlying dimensions: *reinforcement*, that can be either *positive* (i.e., when NSSI is followed by a favorable stimulus) or *negative* (i.e., when NSSI is followed by the removal of an aversive stimulus); and *contingencies*, that can be either *automatic* (i.e., influence of intrapersonal dynamics on NSSI) or *social* (i.e., influence of interpersonal dynamics on NSSI). Two of those functions may provide a reason as to why insecurely attached individuals engage in NSSI. First, individuals with high attachment anxiety might endorse NSSI behavior in order to receive attention from their romantic partner, which corresponds to the *social positive reinforcement* function. Furthermore, individuals with high attachment avoidance might use NSSI to facilitate an escape from undesired situations with their romantic partner, which represents the *social negative reinforcement* function of the model. Suyemoto (1998) also suggested that insecurely attached individuals are more likely to engage in NSSI because both insecure attachment and NSSI are associated with the inability to manage anger and social interactions, as well as the failure to self-regulate emotions. According to Yates (2004), NSSI may also reflect a physical manifestation of an individual's negative representations of the self and others. As a result, these individuals are more likely to isolate themselves from the social world and its support in times of stress, which increases the likelihood of engaging in NSSI behavior.

Empirical evidence. Although empirical research on romantic attachment and NSSI yielded significant results, inconsistencies are present regarding which dimensions of insecure romantic attachment is linked to NSSI. While some studies using university students

samples found that only attachment anxiety was associated with NSSI (Levesque, Lafontaine, Bureau, Cloutier, & Dandurand, 2010) or deliberate self-harm (DSH; might include suicidal intent; Fung, 2006), others demonstrated that both dimensions (attachment anxiety and avoidance) were linked to NSSI (Braga & Gonçalves, 2014; Fitzpatrick et al., 2013). More research is necessary in order to validate the relationship between dimensions of insecure romantic attachment and NSSI. In order to have a better understanding of this relation, it is also essential to explore the mechanisms by which these two dimensions relate together.

The Mediational Roles of Emotion Regulation and Dyadic Coping

Theoretical evidence. It is well known that romantic attachment security has a positive impact on affect regulation strategies (Mikulincer & Shaver, 2007), in which affect regulation is a broader construct including, but not limited to, emotion regulation and coping (Gross & Thompson, 2007). As defined by Gratz and Roemer (2004), emotion regulation is conceptualized as the awareness, understanding, and acceptance of emotions, paired with the ability to control impulsive behaviors and to engage in adequate emotion management skills flexibly to modulate emotional responses when experiencing negative emotions. Lack of any of these abilities is an indicator of difficulties with emotion regulation (Gratz & Roomer, 2004). In contrast, dyadic coping is viewed as a stress communication process that triggers both partners' reactions in order to relieve each other's or shared stresses (Bodenmann, 2005). On the one hand, healthy dyadic coping strategies involve aiding the romantic partner in their coping efforts to alleviate their or shared stresses. On the other hand, poor dyadic coping strategies include a display of insincere demeanor and reluctance when helping the romantic partner (Bodenmann, 2005).

Bowlby (1979) considered emotions to be important regulatory mechanisms within attachment relationships. In fact, individuals with secure romantic attachment tend to use security-based strategies of emotions regulation, which are intended to maintain supportive

intimate relationships, alleviating distress, and increase personal adjustment (Shaver & Mikulincer, 2002; 2007). Contrary to this, individuals with high attachment anxiety tend to sustain and exaggerate these undesirable emotions, which keep their attachment system activated, thereby retaining all their energy focused on threatening aspects instead of focusing on the potentially functional aspects of emotional experiences (Shaver & Mikulincer, 2007). Individuals with high attachment avoidance tend to regulate their emotions by trying to block or inhibit any emotional state that could activate their attachment system (Mikulincer & Shaver, 2003). Interestingly, although hyperactivating and deactivating attachment strategies lead to opposite emotional experiences (i.e., intensification and suppression of emotions, respectively), both result in dysfunctional emotion regulation and interfere with adequate coping (Shaver & Mikulincer, 2007). Indeed, in addition to emotion regulation, the level of one's own attachment security appears to shape how people cope with stressful situations within the context of intimate relationships (Mikulincer & Shaver, 2008). Attachment theory suggest that securely attached individuals tend to cope with stress by engaging in problem solving and seeking support from attachment figures when necessary, whereas insecurely attached individuals tend to use more inadequate coping strategies (Mikulincer & Shaver, 2008).

Attachment insecurity is theoretically understood as being a predictor of both difficulties in emotion regulation and dyadic coping strategies. Although both emotion regulation and dyadic coping share a common goal, which is to alleviate stress, they are considered distinct constructs (Monteiro, Balogun, & Oratile, 2014). More specifically, while emotion regulation involves intrinsic processes to regulate the internal emotional state (Gross, 1998), dyadic coping involves deliberate efforts to manage stressful circumstances. Given that emotion regulation can be thought of as an intrapersonal strategy to deal with stress, and dyadic coping is conceptualized as a behavioral strategy, dyadic coping is also likely to be

influenced by emotion regulation. Indeed, this relationship was also empirically demonstrated in a recent study from Monteiro et al. (2014).

Inadequate affect regulation strategies are also hypothesized to play an important role in the development and maintenance of mental health dysfunctions, such as NSSI behavior (Nock, 2009). One of the most established theories about the development and maintenance of NSSI suggests that unhealthy relationships (e.g., insecure attachment) may lead to the development of poor emotion regulation skills, which in turn increases the likelihood of NSSI (Linehan, 1993). Furthermore, the desire to alleviate negative emotions is often cited as the most frequent reason for engaging in NSSI (for a review, see Klonsky, 2007), and falls in the *automatic negative reinforcement* function of Nock and Prinstein's (2004, 2005) model, elaborated earlier. Moreover, according to Nock and Cha's (2009) model, predisposing factors such as cognitive-emotional-biological vulnerability (e.g., high emotion reactivity) and social vulnerability (e.g., poor relationships quality), may make individuals susceptible to experiencing difficulties in emotion regulation. These factors may also predispose individuals to experience a lack of social problem-solving (coping) or communication skills needed to respond adequately to a stressful event. Difficulties in emotion regulation, as well as lacking adequate coping and communication skills, may then lead the individual to engage in NSSI, especially if triggered by a stressful event and/or the situation presents high social demands.

Empirical evidence. The relationships between romantic attachment and emotion regulation, as well as with dyadic coping, have received empirical support in literature. More precisely, both dimensions of insecure romantic attachment (i.e., attachment anxiety and avoidance) were found to be related to difficulties in emotion regulation (e.g., Guzmán-González, Lafontaine, & Levesque, 2016; Han, 2010; Marganska, Gallagher, & Miranda, 2013; Morel & Papouchis, 2015) and general coping (e.g., Myers & Vetere, 2002; Pascuzzo, Cyr, & Moss, 2013). To our knowledge, only one study has explored the empirical link

between romantic attachment and dyadic coping (Kardatzke, 2009). In that study, dyadic coping partially mediated the relationships between both romantic attachment dimensions and relationship satisfaction in a sample of 191 married graduate counselling students.

When the interest to study NSSI began to grow, one of the most studied variables was emotion regulation. In fact, significant empirical evidence exists to corroborate the relationship between emotion dysregulation and self-injurious behaviors (e.g., Heath, Toste, Nedecheva, & Charlebois, 2008; Holly, 2011; Yurkowski et al., 2015). It is also well known that maladaptive methods of coping may lead to NSSI (Laye-Gindhu & Schonert-Reichl, 2005). Empirical research also supports this assertion by showing significant relations between maladapted coping strategies and self-injurious behaviors (e.g., Andover, Pepper, & Gibb, 2007; Cawood & Huprich, 2011; McMahon et al., 2013). However, it is important to note that, to our knowledge, no study to date has examined the relationship between NSSI and *dyadic* coping in particular.

Hypotheses

Based on theories and previous research, it is plausible to assume that romantic attachment insecurity fosters the use of greater maladapted emotion regulation and dyadic coping strategies, which then increases likelihood of having engaged in NSSI behavior in the past six months. The current study was undertaken to explore this question, as no study to date had explored these specific relationships in one theoretical model. Therefore, it is expected that: (1) insecure romantic attachment (i.e., attachment anxiety and avoidance) will be positively associated with difficulties in emotion regulation and NSSI, and negatively associated with dyadic coping; (2) difficulties in emotion regulation will be negatively associated with dyadic coping; (3) difficulties in emotion regulation will be positively associated with NSSI, while dyadic coping will be negatively associated with NSSI; (4) difficulties in emotion regulation will mediate the relationships between insecure romantic

attachment (both dimensions) and dyadic coping; (5) dyadic coping will mediate the relationship between emotion regulation and NSSI; and (6) difficulties in emotion regulation and dyadic coping will mediate the relationships between insecure romantic attachment (both dimensions) and NSSI.

Method

Participants

To be eligible to participate in this study, participants must have a good knowledge of English, be between the ages of 17 and 25 years old, and currently involved in a romantic relationship for at least six months. The sample was composed of 914 students enrolled in introductory psychology courses at a Canadian university. Of these, 109 participants were excluded from further analyses for failing to provide sufficient information about their NSSI behavior. An additional eight participants were eliminated for falling to complete the questionnaire package, leaving a total of 797 participants (81.9% female). The mean age of participants was 19.65 years (SD = 1.68, range = 17 to 25.8) and the average duration of the romantic relationship was 1.88 years (SD = 1.34, range = 6 months to 10 years). The racial background of the participants was 73.8% Caucasian, 8.4% Asian, 4.9% Black, 4.9% Middle Eastern, 2% Latino/Hispanic and 6% of other racial background. The majority of the participants was in a heterosexual relationship (96.6%), not cohabiting with their partner (87.8%), and did not have children with their current partner (85.7%).

Of the 797 participants included in the final sample, 6.9% (n = 55) reported having engaged in NSSI at least once in the past six months. No significant gender difference was found with respect to engagement in NSSI behavior (χ^2 [1, N = 797] = .12, p = .73). The most frequently reported method for NSSI was cutting (12.7%) and scratching (12.7%), followed by hitting (10.9%). Lower arms and wrists were the most common injured areas of the body (27.3%), followed by thighs and knees (18.2%), hands and fingers (16.4%), as well as upper

arms and elbows (16.4%). Average age of onset for NSSI was 14.13 years (*SD* = 3.46).

Procedure

The study was conducted within the Integrated System of Psychology Research (ISPR) of a Canadian university. By means of ISPR, participants voluntarily registered to participate in the study and were subsequently provided access to a secure and encrypted Internet link (Survey Monkey) to complete the questionnaires online. Participants were provided additional credit, appended to their final course grade, to compensate for their participation. The questionnaire package included information that outlined the voluntary nature of the research and indicated that participants were free to discontinue their participation at any time without consequence. Completion of the battery of questionnaires was assumed to indicate informed consent. Students were provided with a list of psychological resources, in case they wished to speak to a professional about any questions or concerns. Finally, to ensure anonymity, the questionnaires were coded with five-digit numbers. The present study has been approved by the university Social Sciences and Humanities Research Ethics Board (project approval number 06-08-04B).

Measures

Demographic information. Participants were asked to provide personal (i.e., age, gender, ethnicity/racial background, and living arrangements) and relationship demographic information (i.e., number of children and length of relationship).

Romantic attachment. The Short-Form Experiences in Close Relationships (ECR-12; Lafontaine et al., 2015) is a 12-item measure derived from the original 36-item ECR (Brennan et al., 1998). This questionnaire evaluates romantic attachment along two dimensions, namely attachment anxiety (e.g., "*I need a lot of reassurance that I am loved by my partner*") and attachment avoidance (e.g., "*I don't feel comfortable opening up to romantic partners*"). Each scale includes 6 items that are rated on a 7-point Likert scale

ranging from *strongly disagree* to *strongly agree*. The average score for each scale ranges between 1 and 7. Elevated scores represent greater anxiety and avoidance. Psychometric properties of the ECR-12 were found to be as good as the original version of the ECR and stronger than those of an existing shorter form (Lafontaine et al., 2015). Indeed, Lafontaine and colleagues demonstrated good one-year test-retest reliability, good convergent and predictive validity, as well as acceptable to good internal consistency scores across diverse samples (Cronbach's alphas ranging from .78 to .87 for the anxiety subscale and .74 to .83 for the avoidance subscale). Reliability coefficients for the current study were good with Cronbach's alphas of .89 for the attachment anxiety scale and .84 for the attachment avoidance scale.

Emotion regulation. The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item questionnaire that measures several components of emotion regulation, including non-acceptance of emotional responses (e.g., *When I'm upset, I feel guilty for feeling that way*), difficulties engaging in goal-directed behavior (e.g., *When I'm upset, I have difficulty concentrating*), impulse control difficulties (e.g., *When I'm upset, I lose control over my behaviors*), lack of emotional awareness (e.g., *When I'm upset, I acknowledge my emotions*; reverse score), limited access to emotion regulation strategies (e.g., *When I'm upset, I believe that I will remain that way for a long time*), and lack of emotional clarity (e.g., *I have difficulty making sense out of my feelings*). Each item is rated on a 5-point Likert scale ranging from 1= *almost never* to 5= *almost always*. Items are summed to yield a total score (ranging from 36 to 180), as well as subscale scores, with elevated scores representing greater difficulties in emotion regulation. In the current study, only the total score will be used, which demonstrated a high reliability coefficient ($\alpha = .93$), good test-retest validity, and adequate construct and predictive validity (Gratz & Roemer, 2004). For the current study, the reliability coefficient of the total score was evaluated at .94.

Dyadic coping. The Dyadic Coping Inventory (DCI; Bodenmann, 2008) is a 37-item measure that assesses the degree to which couples support and actively help one another during times of stress. Respondents use a 5-point Likert scale (ranging from 1 = *Very rarely* to 5 = *Very often*) to rate their own coping (i.e., stress communication, supportive dyadic coping, delegated dyadic coping, and negative dyadic coping), their perception of their partner's coping (i.e., stress communication, supportive dyadic coping, delegated dyadic coping, and negative dyadic coping), and their perception of how they cope as a couple (i.e., common dyadic coping). Subscale scores are obtained by summing the scores of the respective subscale items, with elevated subscale scores denoting greater levels of the constructs measured by each subscale (e.g., greater common dyadic coping). Only common dyadic coping will be used in the present study, as it is the only subscale that allows participants to self-evaluate how both they and their partner cope as a couple in time of stress. A previous study reported a good reliability coefficient for common dyadic coping (Cronbach's alpha of .81) and demonstrated preliminary evidence of concurrent validity of the DCI (Levesque, Lafontaine, Caron, & Fitzpatrick, 2014). Cronbach's alpha for common dyadic coping in the current study was .87.

Non-suicidal self-injury. The Ottawa Self-Injury Inventory (OSI; Cloutier & Nixon, 2003) measures current or past NSSI behavior, reported functions of NSSI, NSSI thoughts, and addictive features of NSSI. The OSI consists of 27 items (and several sub-items) that assess cognitive, affective, behavioral, and environmental elements of NSSI. The inventory includes both quantitative (dichotomous, categorical, and continuous) and qualitative (open-ended) items. The occurrence of NSSI will be determined by responses to the following question *"How often in the past six months have you actually injured yourself without the intention to kill yourself?"* Responses are rated on a 5-point scale (*not at all, 1–5 times, monthly, weekly, daily*). For the current study, the latter responses will be further collapsed to

create a dichotomous variable representing the presence or the absence of NSSI behavior in the past six months, with *not at all* ratings reflecting a *no* category, and all other responses indicating an endorsement of NSSI. Internal structure, convergent evidence of the initial functions, and addictive features of the OSI have been demonstrated in previous studies (Guérin-Marion, Martin, Deneault, Lafontaine, & Bureau, 2018; Martin et al., 2013).

Results

Preliminary Analyses

In order to optimize the sample size, missing values for the relevant items (excluding NSSI engagement) were estimated using Expectation Maximization method. None of the items had more than 5% missing values, indicating that this option was appropriate for use (Tabachnick & Fidell, 2007). Means, standard deviations, and intercorrelations for the main variables are presented in Table 1. Results demonstrated significant correlations between all the main variables, with the exception of NSSI and attachment avoidance as well as NSSI and dyadic coping. Potential covariates including gender, age, living arrangements (e.g., living at home with parents, living in a rented accommodation with romantic partner, roommates, or alone), and length of relationship were examined although none were included in further analyses due to non-significant associations with the outcome variable of having engaged in NSSI behavior in the past six months.

Multiple Mediation Analysis

Multiple mediation analysis was conducted using MPlus software, version 6.12 (Muthén & Muthén, 2011). This software permits the use of a robust estimator (WLSMV: Weighted Least Square Mean- and Variance-adjusted) that does not assume normally distributed variables and provides the best option for handling dichotomous outcome (Brown, 2006). To test the model, endorsement of NSSI behavior in the past six months (dichotomous variable) was entered as the dependent variable with romantic attachment (attachment anxiety

and avoidance) as independent variables; difficulties in emotion regulation and dyadic coping were entered as mediators. As hypothesized, a direct path linking difficulties in emotion regulation to dyadic coping was also included in the model. All variables were entered as latent variables, with the exception of NSSI, which was entered as a dichotomous observed variable. In order to create stable indicators for each latent variable (attachment anxiety, attachment avoidance, difficulties in emotion regulation, and dyadic coping), respective items were divided randomly to one of three parcels and subsequently averaged (Little, Cunningham, Shahar, & Widaman, 2002). Bias corrected (BC) confidence intervals were used with the bootstrapping (5000 samples) method in order to obtain more powerful confidence interval (CI) limits for indirect effects (Preacher & Hayes, 2008). The Weighted Root Mean Square Residual (WRMR) is a descriptive fit index that is believed to be better suited for dichotomous outcomes (Yu, 2002). Following guidelines produced by Yu (2002), a WRMR of less than 1.0 indicates good fit of the model. As such, the model of the current study was considered to have an adequate fit (WRMR = .86). Results are discussed in terms of direct (see Figure 1) and indirect effects (see Table 2).

Direct effects. Results revealed that neither attachment anxiety nor attachment avoidance were directly associated with endorsement of NSSI behavior. Moreover, while attachment avoidance was associated with both difficulties in emotion regulation and poor dyadic coping, attachment anxiety was only associated with difficulties in emotion regulation. In line with the hypotheses, difficulties in emotion regulation were associated with poor dyadic coping and an increased likelihood of having engaged in NSSI during the past six months. However, counter to expectation, poor dyadic coping was not associated with NSSI.

Indirect effects. As hypothesized, insecure romantic attachment (both attachment anxiety and attachment avoidance) was indirectly associated with poor dyadic coping and

NSSI engagement through difficulties in emotion regulation. However, the indirect effects between insecure romantic attachment and NSSI through dyadic coping were not significant, as well as the indirect effect between difficulties in emotion regulation and NSSI through dyadic coping.

Alternative Models

In order to ascertain the robustness of the model tested, two alternative plausible models were examined. The first alternative model included NSSI as a categorical outcome variable with five response categories. The same results were obtained as the model that included NSSI as a dichotomous outcome variable. The second alternative model included emotion regulation as the predictor variable and romantic attachment as the mediator variable. This was tested in order to rule out the possibility that difficulties in emotion regulation precede romantic attachment. No significant indirect effect was obtained between difficulties in emotion regulation and NSSI for this specific model.

Discussion

Researchers have developed models that emphasize the role of interpersonal relationships and experiences in developing and maintaining NSSI behaviors (e.g., Nock and Prinstein, 2004, 2005). The attachment theory provides an excellent explanatory framework for NSSI in this context. However, while much of the research pertaining to the role of attachment on NSSI explored parent-child attachment relationships, there is a gap in the scientific world pertaining to romantic attachment relationships. Given the importance of these relationships in young adulthood (Collins, 2003), and the determining impact of romantic relationships on psychological well-being (Karremans & Finkenauer, 2012), the influence of romantic attachment in NSSI should be further explored along with explanatory variable for this relationship. The purpose of the present study was therefore to investigate an innovative, theoretically-grounded model specifying the direct and indirect associations

between insecure romantic attachment, difficulties in emotion regulation, dyadic coping, and endorsement of NSSI behavior in a sample of university students. Findings from the current study corroborate those of previous studies demonstrating that NSSI is an important phenomenon among university population, in both men and women (e.g., Heath et al., 2008; Levesque et al., 2010).

Findings revealed that difficulties in emotion regulation mediated the relationship between romantic attachment (i.e., attachment anxiety and avoidance) and dyadic coping. This is consistent with our hypotheses and supports the literature on attachment, which stipulates that individuals with high attachment anxiety and/or attachment avoidance have difficulties with the general process of regulating their own emotions (Mikulincer & Shaver, 2003; Shaver & Mikulincer, 2007), which lead to the use of inadequate coping strategies (Shaver & Mikulincer, 2007). In fact, several recent studies attest to the positive relationship between insecure romantic attachment and difficulties in emotion regulation (e.g., Guzmán-González et al., 2016; Han, 2010; Marganska et al., 2013; Morel & Papouchis, 2015) as well as with coping (e.g., Myers & Vetere, 2002; Pascuzzo et al., 2013). However, given that much of the existing research has been conducted with general coping (for an exception, see Kardatzke, 2009), this study extends past research by demonstrating direct and/or indirect association between insecure romantic attachment and poor dyadic coping strategies. That is, individuals with high attachment anxiety and/or high attachment avoidance tend to have difficulty regulating their emotions, which leads them to use poor dyadic coping strategies to deal with their stress (e.g., tendency to withdraw instead of helping each other, providing support in an insincere way).

In line with our hypotheses, findings also revealed that difficulties in emotion regulation mediated the association between insecure romantic attachment (i.e., attachment anxiety and avoidance) and NSSI. Although no direct effect was found between romantic

attachment and NSSI, this result is coherent with past research (e.g., Yurkowski et al., 2015) and with Linehan's theory (1993), suggesting that unhealthy relationships could be related to NSSI by means of difficulties in emotion regulation processes. It is worthy of note, that although past research has shown inconsistencies in their results regarding which dimension of insecure romantic attachment is associated with NSSI (Braga & Gonçalves, 2014; Fitzpatrick et al., 2013; Fung, 2006; Levesque et al., 2010), the findings of the present study suggest that both attachment anxiety and attachment avoidance are related to NSSI. In fact, both dimensions tend to result in dysfunctional emotion regulation processes in their own way (Shaver & Mikulincer, 2007), which can then increase the likelihood of engaging in NSSI behavior (Nock, 2009).

Contrary to our expectations, although difficulties in emotion regulation was found to mediate the link between insecure romantic attachment and NSSI, dyadic coping was not. Despite the fact that both emotion regulation and dyadic coping are considered strategies to deal with stress (intrapersonal and behavioral, respectively), it would seem that insecure romantic attachment does not work through dyadic coping to influence NSSI. In fact, there was no evidence of any direct effect between dyadic coping and NSSI, which provides an explanation as to why mediations including this relation were not significant. This suggests that, with regards to NSSI, individuals would be more affected by what is happening inside themselves (i.e., intrapersonal strategies) rather than what they are externalizing (i.e., behavioral strategies). Furthermore, compared to emotion regulation, which refers only to oneself, dyadic coping includes conjoint efforts of both partners. This could explain the lack of relation between dyadic coping and NSSI, given that previous research has found that personal variables have more effect on one's own functioning than variables including other's behaviors (e.g., Levesque, Lafontaine, Caron, Flesch, & Bjornson, 2014; Péloquin, Lafontaine, & Brassard, 2011). Furthermore, the lack of relationship between dyadic coping

and NSSI could be attributed to the fact that the sample of the current study consisted largely of individuals who do not live with their romantic partners and are in the first few years of their relationship. Hence, in this situation, it is possible that mutual efforts to manage stressful situations as a couple do not have as great an influence on one's NSSI behavior.

Limitations of the current study should be noted. First, the cross-sectional design employed in the current study precludes directionality and makes it impossible to conclusively establish a causal relationship between the variables in question. Future studies may employ longitudinal designs to allow examining temporal sequencing between variables in play. Second, all of the data came from self-report measures, which could have resulted in shared source and shared method variance. A multi-method approach that includes more objective measures than self-report questionnaires may provide a better understanding of the relevant concepts and further inform the nature of the associations between romantic attachment, emotion regulation, dyadic coping, and NSSI. Third, given that most psychology classes include a greater proportion of women than men, the recruitment method did not favor equal gender representation. In addition, given that the sample was comprised of university students between the ages of 17 and 25 years old, it is possible that the results are not representative of the general population, individuals experiencing clinical distress, and/or individuals involved in long-term relationships and living with their romantic partner. Furthermore, participants in the current study were predominately Caucasians and the majority were involved in a heterosexual relationship. Consequently, the results may not generalize to other ethnic/racial groups or to persons in homosexual relationships. Future research is needed in order to replicate our results with other populations. Fourth, a study including not only the individual but also the partner would permit exploration of both actor (e.g., the influence of one's own romantic attachment on one's own NSSI behavior) and partner (e.g., the influence of the partner's romantic attachment on one's own NSSI behavior)

effects on one's own NSSI behavior. An Actor-Partner Interdependence Model (APIM; Kenny, Kashy, & Cook, 2006) would permit such analyses in future research and may provide a better understanding of the influence that interactions between partners may have on one's own NSSI behavior.

Conclusion

The current study serves to highlight the complex associations between insecure romantic attachment, difficulties in emotion regulation, dyadic coping, and NSSI within a mediational model. More specifically, our findings demonstrate that difficulties in emotion regulation do mediate the relationships between insecure romantic attachment and NSSI behavior. However, no such mediational relationship was found in regards to dyadic coping.

From a clinical standpoint, young adulthood in a university setting represents the beginning of a new chapter in life full of changes and demands. This period is often characterized by the departure of the family nest and the beginning of a serious romantic relationship. All these life events undoubtedly generate and/or maintain emotional tumult and could lead to undesirable behaviors like NSSI. Given the potentially severe consequences of NSSI (e.g., accidental death), it is important to prevent this behavior and develop adequate treatment to help individuals who struggle with this behavior. Treatments for self-injury targeting emotion regulation have already been shown to be effective (for a review, see Gratz, 2007 and Ougrin, Tranah, Stahl, Moran, & Asarnow, 2015). In line with those treatments, results from the current study also emphasizes the fact that treatments should act on how individuals manage their stress internally (i.e., emotion regulation) rather than externally (i.e., dyadic coping). Furthermore, the current study extends past research by suggesting that young adults could benefit from NSSI treatments, as it may help them develop the necessary skills that would increase the likelihood of developing a secure attachment within their

romantic relationship. The current study displays a complex pattern of mediations that represent a first step toward demystifying NSSI behavior.

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Table 1

Descriptive Statistics and Intercorrelations for Romantic Attachment, Difficulties in Emotion Regulation, Dyadic Coping, and Non-Suicidal Self-Injury (NSSI)

	Possible Range	Mean	*SD*	1.	2.	3.	4.	5.
1. Anxiety	1-7	3.66	1.53	-	.17***	.53***	-.13***	.16***
2. Avoidance	1-7	2.55	1.16		-	.26***	-.51***	.05
3. Difficulties in Emotion Regulation	36-180	84.10	22.17			-	-.23***	.25***
4. Dyadic Coping	4-20	15.46	3.46				-	-.05
5. NSSI		.07	.25					-

Note. ***$p < .001$.

Table 2

Standardized Indirect Effects from Romantic Attachment to NSSI Through Difficulties in Emotion Regulation and Dyadic Coping

					BC 95% CI	
Predictor	Mediator	Outcome	Estimate	*SE*	*LL*	*UL*
Avoidance	Difficulties in Emotion Regulation	NSSI	.076***	.021	.035	.117
Avoidance	Dyadic Coping	NSSI	-.017	.046	-.107	.073
Anxiety	Difficulties in Emotion Regulation	NSSI	.212***	.042	.130	.293
Anxiety	Dyadic Coping	NSSI	.000	.004	-.008	.008
Difficulties in Emotion Regulation	Dyadic Coping	NSSI	-.003	.010	-.022	.016
Anxiety	Difficulties in Emotion Regulation	Dyadic Coping	-.057*	.027	-.110	-.003
Avoidance	Difficulties in Emotion Regulation	Dyadic Coping	-.020*	.010	-.040	-.001

Note. *$p < .05$. ***$p < .001$.

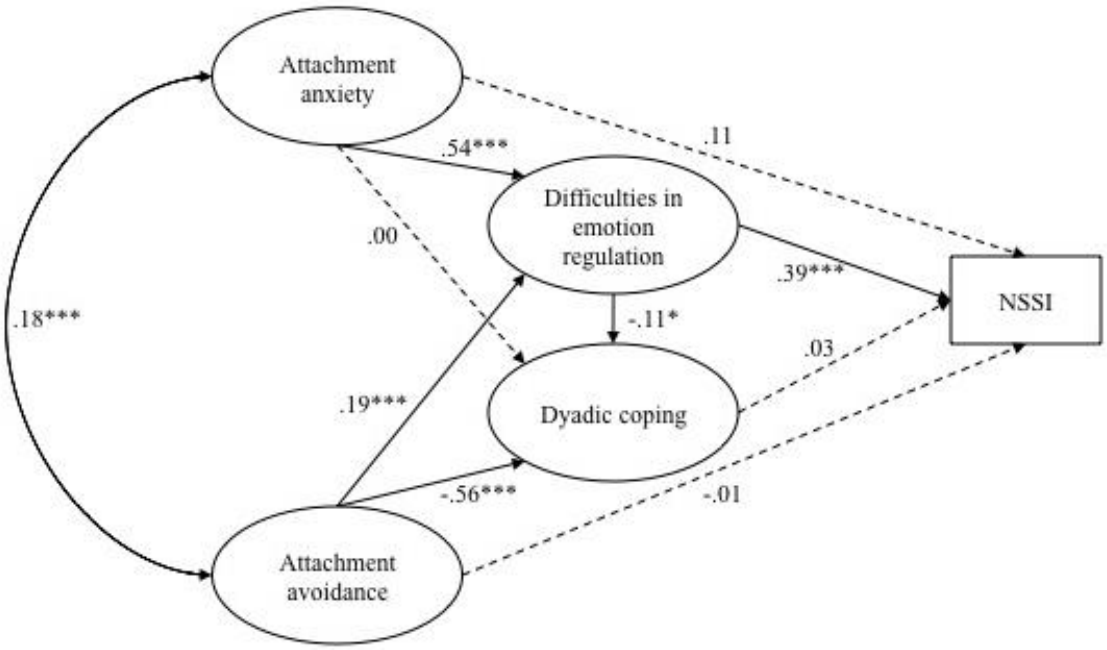

Figure 1. Standardized coefficients for the mediating role of emotion regulation and dyadic coping in the associations between romantic attachment and NSSI. Solid lines represent significant direct effects while dotted lines represent non-significant direct effect.

*$p < .05$. ***$p < .001$.

Chapter IV

Young Women With and Without Non-Suicidal Self-Injury: A Comparison of Romantic Relationship Functioning

Christine Levesque, Marie-France Lafontaine, and Jean-François Bureau

Author Note

This research was funded by a Joseph-Armand Bombardier Doctoral scholarship from the Social Sciences and Humanities Research Council and an Ontario Graduate Scholarship from the Ontario Provincial Government.

Abstract

The literature affirms that the interpersonal context of an individual struggling with non-suicidal self-injury (NSSI) is of critical importance. In contrast to the relatively large body of research that has explored the influence of peer and family relationship functioning on NSSI, very little is known in regard to young adults' romantic relationship functioning. The purpose of the current study is to offer, through a dyadic approach (i.e., actor-partner effects), a unique portrait of the relevant indicators of romantic relationship functioning (i.e., romantic attachment, dyadic trust, dyadic coping, relationship satisfaction, and caregiving) that distinguish young women who have engaged in NSSI behaviours from those who have not. Participants consisted of 20 women who indicated having engaged in NSSI in the past six months and 20 women who had never engaged in NSSI behaviours, along with their respective male partner. Results revealed that women who self-injure are more likely to report subjective distress in the form of attachment anxiety and distrust as well as less relationship satisfaction and less adaptive dyadic coping strategies compared to women who do not engage in such behaviours. Findings also showed that partners of women who self-injured reported more attachment anxiety than partners of women who do not engage in NSSI behaviours. These results highlight the importance of exploring the dynamics within romantic relationships and the effect it can have on one's own self-injurious behaviours, especially for the development of effective prevention and intervention strategies.

Keywords: non-suicidal self-injury, relationship functioning, romantic relationship

Young Women With and Without Non-Suicidal Self-Injury: A Comparison of Romantic Relationship Functioning

A growing interest in better understanding the nature of non-suicidal self-injury (NSSI) behaviours is evidenced by the increase in research in this field over the past few decades. NSSI is defined as the deliberate, self-inflicted destruction of body tissue, performed without suicidal intent and through methods that are not socially sanctioned (Nixon & Heath, 2009). The interpersonal context of an individual struggling with NSSI is of critical importance in elucidating the onset and continuance of this behaviour (Nock, 2014). In fact, individuals who self-injure are more likely to have experienced interpersonal distress than those who have never engage in NSSI (Jacobson & Batejan, 2014). Despite this finding, in contrast to the relatively large body of research that has explored the influence of family relationship functioning on NSSI (for reviews, see Arbuthnott & Lewis, 2015; Buckmaster, McNulty, & Guerin, 2018), very little is known in regard to young adults' romantic relationship functioning.

Given the heightened importance of romantic relationships during young adulthood (Collins, 2003) and the unique challenges characterized by this stage in life (Arnett, 2000), young adulthood represents a particularly crucial period, where romantic relationship functioning might influence or buffer the adoption of maladaptive coping behaviours such as NSSI. Research also suggests that romantic relationships have greater impact, whether positive or negative, on women's affective states compared to their male partner (Sprecher & Sedikides, 1993). Indeed, women tend to experience both greater positive well-being and greater distress within their relationship compared to their male partner (Wood, Rhodes, & Whelan, 1989). Paired with the fact that women tend to significantly report more history of NSSI behaviours than men (Bresin & Schoenleber, 2015), studying the influence of young women's relationship functioning on their self-injurious behaviours is of greatest importance.

The study of romantic relationship functioning contributes to the general knowledge of risk factors that may influence or prevent young women's engagement in NSSI. Thus, the purpose of the current study is to offer a unique portrait of the relevant indicators of romantic relationship functioning (i.e., romantic attachment, dyadic trust, dyadic coping, relationship satisfaction, and caregiving) that distinguish young women who have engaged in NSSI in the past six months from those who have not. Furthermore, given the fact there is evidence that partners influence each other's thoughts, emotions, and behaviours (Kenny, Kashy, & Cook, 2006), and that empirical research pertaining to romantic relationships and NSSI mainly focused on the individual as the unit of evaluation rather than on the couple, a dyadic model (i.e., actor-partner effects) is proposed for the current study.

Interpersonal Models of NSSI

It is well known that social factors may have a powerful effect on the experience of NSSI (Heilbron, Franklin, Guerry, & Prinstein, 2014). A good understanding of interpersonal theories behind these behaviours could help explain the associations between romantic relationship functioning and NSSI. Although the majority of interpersonal theories of NSSI were developed based on parent-child relationships, most can be adapted for romantic relationships.

The boundaries model of NSSI takes roots in the representations of the self and others. Theorists suggest that some individuals may have difficulties distinguishing the self from others, and thus they may engage in NSSI to make that distinction (Suyemoto, 1998; Suyemoto & MacDonald, 1995). This cognitive barrier also means that when these individuals harbour negative perceptions toward a loved one, they also experience that same negativity toward themselves (Jacobson & Batejan, 2014). This suggests that being involved in an unsatisfactory relationship could be one of many risk factors for engaging in NSSI. Moreover, when these individuals experience a loss, whether real or perceived, it is also

possible that they experience it as a loss of the self (Jacobson & Batejan, 2014). For these individuals, engaging in NSSI may allow them to feel the distinction between themselves and others.

Nock and Prinstein (2004, 2005) proposed a model for NSSI functions, which included two dimensions of social reinforcement. The first function, *social positive reinforcement*, refers to the use of NSSI as a means to elicit desired responses from others. The second function, *social negative reinforcement*, refers to the use of NSSI as a means to avoid unwanted situations and escape from interpersonal demands. Furthermore, Linehan's (1993) theory suggests that NSSI could be the result of negative interpersonal experiences characterized by inappropriate or inconsistent responses of the surrounding to one's emotions and needs.

Altogether, the theoretical interpersonal models described above offer interesting insights suggesting that women who self-injure and women who do not engage in such behaviours may report distinct romantic relationship functioning characteristics. Furthermore, both researchers and theoreticians acknowledge that individuals involved in a romantic relationship influence each other's thoughts, emotions, and behaviours (Kenny et al., 2006). Specifically, the behaviour of one partner is likely to have an influence on the behaviour of the other partner. It is then possible to suggest that NSSI behaviours may be influenced not only by the individual's romantic relationship functioning (actor effect), but also by the partner's romantic relationship functioning (partner effect). This distinction generates the central question of the current study: Are there distinct actor and partner effects of romantic relationship functioning on women's NSSI behaviours?

Empirical Evidences Between Romantic Relationship Functioning and NSSI

A handful of studies have independently explored the influence of some indicators of the quality of romantic relationship functioning on self-injurious behaviours. These studies

focus mainly on romantic attachment and provide convergent support for a positive relationship between insecure romantic attachment and NSSI. Specifically, Braga and Gonçalves' (2014) study revealed that university students with NSSI behaviours reported more attachment anxiety and avoidance than students without such behaviours. Finding from another study revealed that attachment anxiety was significantly related to NSSI in women, but not in men (Levesque, Lafontaine, Bureau, Cloutier, & Dandurand, 2010). No association was found in regard to attachment avoidance. Furthermore, findings from another study revealed that although attachment anxiety was positively correlated with the presence of NSSI behaviours, no correlation was found for attachment avoidance (Caron, Lafontaine, & Bureau, 2017). It is worth mentioning, however, that attachment anxiety was not significant in further direct linear discriminant analyses. In addition to direct effects, researchers have also demonstrated significant indirect effects of insecure romantic attachment on NSSI through emotion dysregulation strategies (Levesque, Lafontaine, & Bureau, 2017; Silva, Machado, Moreira, Ramalho, & Gonçalves, 2017). Fitzpatrick et al. (2013) also confirm this model in women, but not in men.

Apart from one study that examined a clinical sample (Fung, 2006), previous studies in this field of research have solely focused on actor effects instead of focusing on both actor and partner effects. Findings from Fung's (2006) study revealed that deliberate self-harm (DSH; might include suicidal intent) patients had significantly more life stress and higher attachment anxiety than non-DSH participants. Although no partner effect was found for insecure attachment, the study identified depressive symptoms of the partner as a significant risk factor associated with DSH behaviours. Fung (2006) also concludes that both one's own life stress and depressive symptoms of the partner mediated the effect of one's own attachment anxiety in predicting DSH behaviours. However, no indirect effect was tested and suboptimal analyses were conducted to test the mediational model (i.e., correlation and

hierarchical regression analyses).

In order to fully understand the functioning of a relationship, various indicators of the relation must be evaluated in addition to romantic attachment. Indeed, dyadic trust, dyadic coping, relationship satisfaction, and caregiving all represent relational constructs that can be understood within the attachment theory framework and are considered essential for the assessment of romantic relationship functioning (Cassidy & Shaver, 2008). The attachment system, which refers to the search for care and protection of an attachment figure, is indeed complemented by the caregiving system, which is reflected by the action of providing for the needs and protection of an attached individual (Bowlby, 1969/1982; Solomon & George, 1996). Dyadic trust is also a key element of the attachment theory in that it reflects the extent to which individuals believe their romantic partner will be there in times of need (Campbell, Simpson, Boldry, & Rubin, 2010; Mikulincer & Shaver, 2003). This feeling of security and trust towards a romantic partner is then translated into a feeling of relationship satisfaction (Mikulincer & Shaver, 2016). Another component of romantic relationship functioning relates to the way couples deal with a stressful situation. In fact, the stress experienced by one partner within the relationship often affects the other partner because of their shared concerns, resources, goals, and social ties (Cutrona, Bodenmann, Randall, Clavél, & Johnson, 2018). For individuals involved in a healthy relationship, a team effort (i.e., dyadic coping) approach is often used to cope with the stressors rather than an individual approach; this shared sense of onus contributes to emotional stability for both partners (Cutrona et al., 2018).

To our knowledge, only one study has explored the link between one's own dyadic trust and NSSI and found no significant result (Braga & Gonçalves, 2014). In similar vein, Caron et al. (2017) found no association between one's own caregiving and self-injurious behaviours. Likewise, Levesque et al. (2017) found no association between dyadic coping

and NSSI. These three studies are the only studies that have explored these relationships to date. Furthermore, although there are no empirical studies that have yet considered romantic relationship satisfaction as a potential risk factor for self-injurious behaviours, researchers have made negative empirical connections between relationship satisfaction and suicidal ideation (e.g., Till, Tran, & Niederkrotenthaler, 2017). Although there is a lack of conclusive empirical research relating to romantic relationship functioning and NSSI behaviours, altogether, theoretical support for this relation is quite strong. Not to mention that romantic relationship functioning is well known to be linked to psychological distress (for a review, see Kansky, 2018), which is related to NSSI (Richmond, Hasking, & Meaney, 2017). It is therefore essential to pursue empirical contributions in this field of research to create a clearer picture of the individuals suffering from self-injurious behaviours.

The Current Study

Despite the fact that theories suggest a possible association between NSSI and indicators of romantic relationship functioning, empirical research testing this relation is only in the early stages. Although the majority of studies pertaining to NSSI have explored social factors through parent-child and peer relationships, the influence of romantic relationship experiences on NSSI behaviours requires further attention. Furthermore, previous work linking romantic relationships and NSSI often failed to investigate both actor and partner effects. Therefore, the purpose of the current study is to compare various indicators of romantic relationship functioning of young women who engaged in NSSI behaviours to those who have never engaged in NSSI behaviours by providing a more complete picture of their romantic experiences in one original study. Multiple indicators of the quality of romantic relationship functioning were then compared between two matched samples of women: women who had engaged in NSSI behaviours in the past six months (subsequently referred to as NSSI women) and women who had never self-injured in their lifetime (subsequently

referred to as non-NSSI women). Drawing from theoretical contributions, compared to non-NSSI women, it is expected that NSSI women will demonstrate suboptimal relationship functioning, such as (a) higher levels of insecure romantic attachment (i.e., attachment anxiety and avoidance), (b) lower levels of dyadic trust, (c) lower levels of relationship satisfaction, (d) lower levels of dyadic coping (i.e., one's own dyadic coping, partner's dyadic coping, and common dyadic coping), (e) lower levels of positive caregiving (i.e., proximity, sensitivity, and cooperative), and (f) higher levels of negative caregiving (i.e., compulsive).

Furthermore, in order to fully comprehend the associations between romantic relationship functioning and NSSI behaviours, a dyadic approach is proposed for the current study. Therefore, exploratory analyses were also conducted on the same variables of interest for the partners of the participating women. More specifically, a group comparison analysis was conducted between partners of NSSI women (subsequently referred to as NSSI partners) and partners of non-NSSI women (subsequently referred to as the non-NSSI partners). Compared to non-NSSI partners, it is expected that NSSI partners will demonstrate suboptimal relationship functioning, such as (a) higher levels of insecure romantic attachment (i.e., attachment anxiety and avoidance), (b) lower levels of dyadic trust, (c) lower levels of relationship satisfaction, (d) lower levels of dyadic coping (i.e., one's own dyadic coping, partner's dyadic coping, and common dyadic coping), (e) lower levels of positive caregiving (i.e., proximity, sensitivity, and cooperative), and (f) higher levels of negative caregiving (i.e., compulsive).

Method

Participants

To be eligible to participate in this study, participants must have been (a) between 17 and 25 years of age and (b) currently involved in a heterosexual romantic relationship for at least six months. Both the participant and the partner were required to participate in the

current study. It should be noted that the partners were not imposed any eligibility criteria to participate in the study. Although both male and female were targeted during the recruitment process, only one male who had engaged in NSSI behaviours in the past six months participated in the current study. This result is consistent with a recent meta-analysis suggesting that women are more likely than men to report NSSI behaviours (Bresin & Schoenleber, 2015). For the sake of the consistency of the sample, only female participants were retained. All participants who indicated having engaged in NSSI behaviours in the past six months were matched by age with participants who had never engaged in NSSI behaviours. Therefore, the sample was composed of 20 NSSI women and 20 non-NSSI women, along with their respective romantic partner.

The mean age of NSSI women was 20.43 years (*SD* = 2.0, age range = 17.8 to 24.6) and 21.7 years (*SD* = 3.6, age range = 17.9 to 29.1) for their romantic partners. The average duration of romantic relationship was 2.2 years (*SD* = 1.2, range = 6 months to 5.2 years). The majority of NSSI women were not cohabiting with their partner (65%) at the time of participation, and none of them had children with their current partner. Most NSSI women indicated that their main daily occupation was being a student (80%), while other NSSI women identified as a white-collar worker (10%) or unemployed (5%). The remaining 5% of NSSI women preferred not to answer this question. Their romantic partners identified themselves as being a student (45%), blue-collar worker (25%), white-collar worker (15%), unemployed (5%), self-employed/business owner (5%), or other occupation (5%). Most NSSI women self-identified as being Caucasian (90%), while other NSSI women self-identified as being Asian (5%) or of other racial background (5%). Their romantic partners self-identified as being Caucasian (95%) or Middle Eastern (5%).

Of the 20 NSSI women, the most frequently reported methods of NSSI was cutting (30%), scratching (25%), and biting (20%). Lower arms and wrists were the most common

injured areas of the body (25%), followed by hands and fingers (15%), thighs and knees (10%), as well as inside the mouth (10%). Average age of onset for NSSI was 14.04 years (*SD* = 4.16). Interestingly, 30% (*n* = 6) of NSSI partners also reported having engaged in NSSI behaviours in the past six months, with an average age of onset of 14.22 years (*SD* = 2.15).

The mean age of non-NSSI women was 20.51 years (*SD* = 2.1, age range = 18.0 to 24.7) and 22.33 years (*SD* = 3.0, age range = 18.3 to 29.5) for their romantic partners. The average duration of romantic relationship was 2.0 years (*SD* = 1.4, range = 6 months to 7.1 years). The majority of non-NSSI women were not cohabiting with their partner (70%) at the time of participation, and only one participant (5%) had a child with their current partner. Most non-NSSI women indicated that their main daily occupation was being a student (85%), while other non-NSSI women identified as a white-collar worker (10%) or self-employed/business owner (5%). Their romantic partners identified themselves as being a student (60%), blue-collar worker (15%), self-employed/business owner (5%), or other occupation (20%). Most non-NSSI women self-identified as being Caucasian (75%), while other non-NSSI women identified as being Black (5%), Latino or Hispanic (5%), Middle Eastern (5%), or of other racial background (10%). Their romantic partners self-identified as being Caucasian (75%), Black (10%), Latino or Hispanic (5%), Middle Eastern (5%), or of other racial background (5%).

Procedure

Participants were recruited from two sources as part of a larger ongoing study. First, by means of the Integrated System of Psychology Research (ISPR) of a Canadian university, students voluntarily registered to participate in the study and were subsequently provided access to a secure and encrypted Internet link (*Survey Monkey*) to complete the questionnaires online. Within the survey, participants were prompted to provide the contact

information of their partner. Partners were then contacted to verify their interest in participating in the study. Participants were provided additional credits, appended to their final course grade, to compensate for their participation while their partner received a check of $20.

Second, participants were also recruited via ads posted online (i.e., Craigslist and Kijiji) or from ads posted on bulletin boards on the university campus. All potential participants who contacted the researcher were then given a verbal or written description of the study's procedures. Partners were also contacted to verify their interest in participating in the study. Participants were then invited with their romantic partner to independently complete a series of questionnaires either online or at the university campus. The participant and their partner received $20 each to compensate for their participation. Although recruited with distinct methods, both samples reported similar age ($t(38) = -1.73$. $p > .05$), ethnicity ($\chi^2(5) = 4.29$, $p > .05$), and relationship length ($t(38) = -.673$. $p > .05$). They were also comparable in terms of the distribution of NSSI versus non-NSSI ($\chi^2(1) = .10$, $p > .05$).

The questionnaire package included information that outlined the voluntary nature of participation and the right to withdraw from the study at any time without consequence. Completion of the questionnaire battery was assumed to indicate informed consent. A list of psychological resources was also provided to participants in case they wished to speak to a professional about any concerns. Finally, to ensure confidentiality, each participant was assigned a computer-generated random identification number. The same identification number was also assigned to the partner. No other identifying information was noted on the questionnaire. The present study has been approved by the university Social Sciences and Humanities Research Ethics Board (project approval number 06-08-04, 06-08-04B, 06-08-04C, H08-14-03).

Measures

Demographic information. Participants were asked to provide personal (i.e., age, gender, ethnicity/racial background, and living arrangements) and relationship demographic information (i.e., living arrangements and length of relationship).

Non-suicidal self-injury. The *Ottawa Self-Injury Inventory* (OSI; Cloutier & Nixon, 2003) measures current and/or past NSSI behaviours, reported functions of NSSI, NSSI thoughts, and addictive features of NSSI. The OSI consists of 27 items (and several sub-items) that assess cognitive, affective, behavioral, and environmental elements of NSSI. The inventory includes both quantitative (i.e., dichotomous, categorical, and continuous) and qualitative (i.e., open-ended) items. In the current study, the occurrence of lifetime and recent NSSI (i.e., past six months) was determined by these following questions respectively "Have you ever in your lifetime purposefully hurt yourself without the intention of killing yourself?" and "How often in the past six months have you actually injured yourself without the intention to kill yourself?" While responses for recent NSSI were rated on a 5-point scale (not at all, 1–5 times, monthly, weekly, daily), a choice response of "yes" or "no" was offered for lifetime NSSI. In the current study, choice responses for recent NSSI were collapsed to create a dichotomous variable representing the presence or the absence of recent NSSI, with *not at all* ratings reflecting a *no* category, and all other responses indicating an endorsement of recent NSSI. Internal structure, convergent evidence of the initial functions, and addictive features of the OSI have been demonstrated in previous studies (Guérin-Marion, Martin, Deneault, Lafontaine, & Bureau, 2018; Martin et al., 2013).

Romantic attachment. The *Short-Form Experiences in Close Relationships* (ECR-12; Lafontaine et al., 2016) is a 12-item measure derived from the original 36-item ECR (Brennan, Clark, & Shaver, 1998). This questionnaire evaluates two dimensions of insecure romantic attachment, namely, attachment anxiety (e.g., "I need a lot of reassurance that I am

loved by my partner") and attachment avoidance (e.g., "I don't feel comfortable opening up to romantic partners"). Each subscale includes 6 items that are rated on a 7-point Likert scale, with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Elevated scores represent greater attachment anxiety or attachment avoidance. Psychometric properties of the ECR-12 were found to be as good as the original 36-item ECR and stronger than those of an existing shorter form (Lafontaine et al., 2016). Lafontaine et al.'s (2016) study demonstrated that the ECR-12 has good 1-year test-retest reliability, good convergent and predictive validity, as well as acceptable to good internal consistency scores (Cronbach's alphas ranging from .78 to .87 for attachment anxiety and .74 to .83 for attachment avoidance) across diverse samples. In the current study, the ECR-12 demonstrated good internal reliability, with Cronbach's alphas of .84 for attachment anxiety and .79 for attachment avoidance for women (.86 and .84 respectively for the partners).

Relationship satisfaction. The *Dyadic Adjustment Scale* (DAS-4; Sabourin, Valois, & Lussier, 2005) is a four-item measure of relationship satisfaction derived from the original 32-item DAS (Spanier, 1976). The first three items (e.g., "How often do you discuss or have you considered divorce, separation, or terminating your relationship?") employ a 6-point Likert scale, with responses ranging from 0 (*all the time*) to 5 (*never*). The fourth item employs a 7-point Likert scale, with responses ranging from 0 (*extremely unhappy*) to 6 (*perfectly happy*). A global score is obtained by summing all items (some items are reverse coded), with elevated scores representing increased relationship satisfaction. The DAS-4 has demonstrated greater predictive validity (couple dissolution over a two-year period) than the DAS-32 and good internal consistency (Cronbach's alpha of .84; Sabourin et al., 2005). In the current study, the DAS-4 demonstrated good internal reliability, with a Cronbach's alpha of .85 for women (.70 for the partners).

Dyadic coping. The *Dyadic Coping Inventory* (DCI; Bodenmann, 2008) is a 37-item

measure that assesses the degree to which couples support and actively help one another during times of stress. Participants responded to each item based on a 5-point Likert scale, with responses ranging from 1 (*very rarely*) to 5 (*very often*), to rate their own coping (i.e., stress communication, supportive dyadic coping, delegated dyadic coping, and negative dyadic coping), their perception of their partner's coping (i.e., stress communication, supportive dyadic coping, delegated dyadic coping, and negative dyadic coping), and their perception of how they cope as a couple (i.e., common dyadic coping). Subscale scores are obtained by summing the scores of the respective subscale items. Elevated subscale scores represent greater levels of the constructs measured by each subscale (e.g., greater common dyadic coping). A previous study demonstrated preliminary evidence of concurrent validity of the DCI and reported good reliability coefficients for each subscale, with Cronbach's alphas ranging from of .81 to .85 (Levesque, Lafontaine, Caron, & Fitzpatrick, 2014). In the current study, the DCI subscales (i.e., one's own dyadic coping, perception of the partner's dyadic coping, and common dyadic coping) demonstrated good to excellent internal reliability for both the women (Cronbach's alphas were .79, .90, and .84, respectively) and their partner (.86, .87, and .93, respectively).

Dyadic trust. The *Dyadic Trust Scale* (DTS; Larzelere & Huston, 1980) is an 8-item measure of trust in a close relationship (e.g., "I feel that I can trust my partner completely"). Items are rated on a 7-point Likert scale, with responses ranging from 1 (*very strongly agree*) to 7 (*very strongly disagree*). A global score is obtained by summing all items (some items are reverse coded), with elevated scores representing increased relationship trust (global score ranging from 8 to 56). The DTS has demonstrated good to excellent face, construct, and discriminant validity, as well as excellent internal consistency with a Cronbach's alpha of .93 (Larzelere & Huston, 1980). In the current study, the DTS demonstrated excellent internal reliability, with a Cronbach's alpha of .96 for women and .91 for their partner.

Caregiving. The *Caregiving Questionnaire* (CQ; Kunce & Shaver, 1994) is a 32-item measure that assesses the provision of partner support in romantic relationships across four subscales: caregiving proximity (e.g., "When my partner seems to want or need a hug, I'm glad to provide it"), caregiving sensitivity (e.g., "I am very attentive to my partner's nonverbal signals for help and support"), cooperative caregiving (e.g., "I always respect my partner's ability to make his/her own decisions and solve his/her own problems"), and compulsive caregiving (e.g., "I frequently get too "wrapped up" in my partner's problems and needs"). Each scale includes 8 items that are rated on a 6-point Likert scale, with responses ranging from 1 (*not at all descriptive of me*) to 6 (*very descriptive of me*). Elevated scores represent greater proximity, sensitivity, cooperative, or compulsive caregiving. The CQ has demonstrated good internal consistency (Cronbach's alphas ranging from .80 to .87) in a previous validation study (Kunce & Shaver, 1994). In the current study, reliability coefficients for caregiving proximity, caregiving sensitivity, cooperative caregiving, and compulsive caregiving were acceptable for both the women (.75, .81, .85, and .80, respectively) and their partner (.92, .78, .79, and .63, respectively).

Results

Preliminary Analyses

None of the variables had more than 5% missing values, with the exception of one scale (i.e., dyadic trust scale) which had a proportion of 7.5% ($n = 3$). Although the proportion of missing values is believed to be directly related to the quality of statistical inferences (Dong & Peng, 2013), it is also believed that missing data patterns have greater influence on research results than the proportion of missing values (Tabachnick & Fidell, 2013). In the current study, the Little's MCAR test revealed that the missing data pattern might be assumed completely at random, $\chi^2(103) = 95.47$, $p = .688$, and thus the problem of missing data could be ignored (Tabachnick & Fidell, 2013). However, in order to optimize

the sample size, missing values for the relevant variables were estimated using the expectation maximization method.

Preliminary analyses revealed that the majority of the variables were not normally distributed. As this was expected given the nature of these scales, no transformations were applied to the data and nonparametric analyses were used in order to manage the presence of nonnormal data within the sample (Hogg, Tanis, & Zimmerman, 2015). No multivariate outliers were found in the data set. Table 1 presents the medians, means, standard deviations, and ranges for non-NSSI women and NSSI women on both their indicators and their partner's indicators of romantic relationship functioning.

The possible confounding influences of age was taken into account by the systematic matching approach used to create both the NSSI and non-NSSI comparison groups. Other potential covariates including recruitment method ($\chi^2(1) = .75$, $p > .05$); ethnicity ($\chi^2(5) = 4.61$, $p > .05$); living arrangements (i.e., living or not living with romantic partner, $\chi^2(1) = 0.11$, $p > .05$); length of relationship ($t(38) = 0.59$, $p > .05$); partner's age ($t(38) = -0.44$, $p > .05$); and partner's ethnicity ($\chi^2(4) = 4.47$, $p > .05$) were examined although none were included in further analyses due to non-significant associations with NSSI status.

Mann-Whitney U Tests

The Mann-Whitney U test is the most commonly used alternative to the independent-sample *t* test when the assumption of normality is violated (Norušis, 2008). The Mann-Whitney U test evaluates the likelihood that the data for each group derives from the same distribution (Howell, 2007). This test is particularly sensitive to differences in central tendency (Howell, 2007). The Mann-Whitney U test works on the principle of ranking the combined data values for the two groups rather than analyzing the actual data (Field, 2009). Then, it evaluates whether the average ranks for the two groups differ significantly from each other (Green & Salkind, 2008).

A series of nonparametric Mann-Whitney U tests was conducted to evaluate whether the variables of interest differed between NSSI women and non-NSSI women as well as between NSSI partners and non-NSSI partners. The results of the tests were mostly in the expected direction for the participant's variables (see Table 2). Results revealed a large effect size, such that NSSI women yielded higher scores on attachment anxiety and lower scores on trust compared to non-NSSI women. Furthermore, although not statistically significant, results revealed a medium effect size regarding women's levels of relationship satisfaction and one's own dyadic coping. More precisely, NSSI women reported lower levels of relationship satisfaction and one's own dyadic coping than non-NSSI women. No significant difference was found for attachment avoidance, common dyadic coping, partner's dyadic coping, and the caregiving variables. For the partner's variables (see Table 2), results revealed a medium effect size, showing that NSSI women have partners with higher ratings of attachment anxiety than those who are in relationship with non-NSSI women. No other significant difference was found between the two groups of partners.

Discussion

Based on interpersonal theoretical models of NSSI, the purpose of the current study was to compare young women who are currently struggling with NSSI behaviours with young women who have never engaged in such destructive behaviours on various important indicators of romantic relationship functioning (i.e., romantic attachment, dyadic trust, relationship satisfaction, dyadic coping, and caregiving). The current study also stands out by promoting a dyadic approach in investigating not only women's indicators of romantic relationship functioning but also those of their romantic partner.

According to the findings of the current study, it appears that young women's self-injury status is better defined by the women's own personal indicators of their romantic relationship functioning than by those of their romantic partner. Specifically, results showed

that compared to women who have never engaged in NSSI, women who self-injured in the past six months reported higher attachment anxiety and less confidence in their romantic partner. They also reported good, but slightly lower levels of, relationship satisfaction and adaptive dyadic coping strategies compared to women who have never engaged in NSSI. These women also tend to be in a relationship with a romantic partner who reports a higher level of attachment anxiety compared to partners of the women who have never self-injured.

Beyond theories developed specifically to self-injurious behaviours, the attachment theory provides an interesting theoretical framework for explaining this novel relational portrait of young women who struggle with self-injurious behaviours. From an attachment theory-based approach, insecure romantic attachment can be characterized by a fear of abandonment by their partner, a lack of trust, and/or negative expectations in a partner's availability when needed (Mikulincer, 1998). It is also well known in the literature that insecurely attached individuals tend to be less satisfied with their romantic relationship (Feeney, 2016). Insecurely attached individuals also tend to use less adequate coping strategies in general (Mikulincer & Shaver, 2008), and thus they might engage in NSSI as a way of coping with their poor relationship functioning. Moreover, romantic insecure attachment often leads to suboptimal support behaviours in the relationship (Mikulincer & Shaver, 2016). As such, instead of providing effective support, insecurely attached partners may also contribute to maintain one's repetitive NSSI behaviours. For example, having an anxiously attached partner who is overly demanding may lead an individual to engage in NSSI to avoid conflicts with the partner as interpersonal demands and stressors increase in frequency and emotional salience (Lloyd-Richardson, Nock, & Prinstein, 2009). Each of the romantic relationship functioning indicators examined will be reviewed in detail in the following sections.

Women's Indicators

First, in line with our hypotheses and in support with past empirical research (Braga & Gonçalves, 2014; Fitzpatrick et al., 2013; Fung, 2006; Levesque et al., 2010; Levesque et al., 2017; Silva et al., 2017), results of the current study revealed that women who struggle with NSSI reported a higher level of attachment anxiety compared to women who never engaged in such behaviours. As previously mentioned, it is possible that an individual self-injures as a mean to elicit a response, whether positive or negative, from a romantic partner (i.e., social positive reinforcement; Nock & Prinstein, 2004, 2005). In fact, attachment anxiety is associated with hyperactivating strategies, such as intense and insistent attempts to get attention from others (Mikulincer & Shaver, 2008). For these individuals, NSSI could represent a suboptimal way of eliciting a reaction from a romantic partner, an attention that might not have been given otherwise. It is worthy to note, however, that attachment avoidance was not found to play a significant role in NSSI. Inconsistencies are present in the empirical research literature regarding whether both dimensions of insecure romantic attachment (Braga & Gonçalves, 2014; Fitzpatrick et al., 2013; Levesque et al., 2017; Silva et al., 2017) relate to NSSI or only the anxiety dimension (Fung, 2006; Levesque et al., 2010). It may be that attachment avoidance is only related to NSSI through indirect associations. Akin to the current study, past research that found no relation between attachment avoidance and NSSI did not test for indirect effects between these two constructs (Fung, 2006; Levesque et al., 2010).

Findings also revealed that women who self-injured reported less trust in their romantic partner than women who do not engage in NSSI. This finding does not coincide with results from Braga and Gonçalves (2014) who found no such difference. This discrepancy may be partially attributed to the many methodological differences between their study and the current study. First, instrument choice may account for this discrepancy as

Braga and Gonçalves (2014) used a measure of general adult attachment and evaluated NSSI from a lifetime standpoint, whereas the current study used a measure specific to romantic attachment relationships and evaluated the occurrence of NSSI in the last six months. Second, while the sample of the current study was comprised of females involved in a heterosexual romantic relationship with their current partner for at least six months, Braga and Gonçalves (2014) used a sample comprised of both males and females and did not disclose any information regarding the nature of their participants' romantic relationship. Nevertheless, this finding is concordant with the literature and suggests that individuals who lack confidence in their romantic partner tend not to seek support from their partner in times of distress (Mikulincer, 1998), and could therefore turn to NSSI as a means to relieve negative feelings, which represent the most cited reason for engaging in NSSI (for a review, see Klonsky, 2007).

The current study is also the first to provide preliminary evidence for the possible negative association between relationship satisfaction and the use of NSSI behaviours. Although women who engage in NSSI tend to report being less satisfied in their romantic relationship than women who do not engage in NSSI behaviours (medium effect size, marginally significant), both groups reported being generally satisfied in their current relationship. For this reason, we cannot conclude that being involved in an unsatisfactory relationship contributes to the use of NSSI behaviours. More research is needed to determine the unique role of relationship satisfaction in NSSI.

Results also provide preliminary evidence that one's own dyadic coping strategies may be linked to one's own self-injurious behaviours. Although mainly tested with general coping, research shows that maladaptive coping methods may lead to engagement in NSSI behaviours (Laye-Gindhu & Schonert-Reichl, 2005). However, similar to relationship satisfaction, the results of the current study revealed that both groups reported generally

adaptive dyadic coping strategies, with a marginally lower level in self-injurious women. Therefore, the results of the current study suggest that individuals who are less able to assist their partners in their coping efforts in a supportive way may be more likely to be preoccupied by their own distress and more compelled to engage in NSSI behaviours. That being said, no significant result was found for the women's perception of her partner's coping and shared dyadic coping, suggesting that it is not so much the help of the romantic partner that matters, but one's own ability to handle the distress.

Contrary to our expectations, no significant association was detected between caregiving dimensions and NSSI, which is consistent with Caron et al.'s (2017) finding. Furthermore, results revealed that both groups of women reported good caregiving abilities, regardless of their NSSI status. It seems like caregiving (i.e., support provided to the partner) does not hold a unique role in explaining NSSI behaviours, at least not directly. Overall, the current study's findings suggest the action of *seeking* for care and protection from a romantic partner affects one's own NSSI behaviours more than the action of *providing* for one's needs. Interestingly, while both dyadic coping and caregiving represent an expression of support to the other partner, it is surprising that one's own dyadic coping was found to be marginally significant. However, the difference of results between the two constructs may be explained by the fact that the questionnaire measuring one's own dyadic coping (i.e., DCI) included questions relating to the search of support (e.g., *I tell my partner openly how I feel and that I would appreciate his/her support*).

Partner's Indicators

Although it was hypothesized that romantic relationship functioning of one's partner would also be associated with one's own NSSI behaviours, results revealed only one significant association. More specifically, it was found that partners of women who recently self-injured reported more attachment anxiety than partners of women who never engaged in

such behaviours. This finding is similar to Fung's (2006) finding. Having an overly demanding romantic partner may result in the use of NSSI as a means to escape the partner's insistent demands (i.e., the social negative reinforcement function of the model of NSSI function; Nock & Prinstein, 2004, 2005). The overly demanding partner may stop their excessive demands after noticing their partner's distress through their use of NSSI. Empirically testing this suboptimal cycle would be of great interest for future research.

Contrary to our hypotheses, no other partner effect was found. These findings suggest that the partner's attachment avoidance, dyadic trust, dyadic coping, relationship satisfaction, and caregiving do not significantly affect one's own NSSI behaviours. This tendency for more actor effects than partner effects could reflect the fact that an individual's emotions, thoughts, and behaviours are usually more strongly related to their own romantic relationship functioning then to that of their romantic partner (Knobloch & Theiss, 2011; Levesque, Lafontaine, Caron, Flesch, & Bjornson, 2014; Péloquin, Lafontaine, & Brassard, 2011). It might also be possible that, for example, the partner's romantic relationship functioning only affects the women's use of NSSI behaviours if the partner himself suffers from a certain distress. The psychological distress of the partner would then act as a moderator in the relationship. More research is needed before concluding that there is no link between the partner's romantic relationship functioning and the women's NSSI behaviours.

Another interesting finding supporting the previously mentioned hypothesis was that nearly one third of the partners of women who recently self-injured also reported having engaged in NSSI behaviours in the past six months. This demonstrates, among other things, that this group of partners was not representative of a homogeneous group. Social learning and modeling theories provide an excellent explanatory framework for understanding this result. In a context of a romantic relationship, it is possible that an individual imitates a romantic partner by engaging in NSSI to gain the same perceived benefits (e.g., relief from

unwanted negative feelings or arousals; Jacobson & Batejan, 2014). Engagement in NSSI behaviours could also be a way to create a bond with a loved one who is already struggling with NSSI (Jacobson & Batejan, 2014). These individuals might find it easier to communicate feelings between each other by sharing the same experiences (Rosen & Walsh, 1989). This could also explain the fact that some individuals who struggle with NSSI may prefer being in a relationship with a partner who also self-injures rather than with a partner who does not understand the behaviour. Future studies need to be carried out to investigate the relevance of romantic partner selection and socialization processes for young adults' engagement in NSSI.

Altogether, these results revealed that young women who engage in NSSI behaviours are more likely to report subjective distress in the form of attachment anxiety and distrust compared to young women who do not engage in NSSI behaviours. They also tend to report good, but slightly lower levels of, relationship satisfaction and adaptive dyadic coping strategies. These indicators are informative of the vulnerability that these women may feel and were found to be related not only to NSSI but also to psychological distress in general (for a review, see Kansky, 2018). Findings from the current study also showed that partners of women who self-injured reported more attachment anxiety than partners of women who do not engage in NSSI behaviours. This unique portrait of self-injurious women suggests that not only these women have to deal with their own subjective distress, but they also tend to be in a relationship with men who uses hyperactivating strategies to deal with their unmet attachment needs. In other words, both partners use intense and persistent attempts to obtain physical and emotional proximity with the other partner without any success. Combined with the possibility that the partner also engages in NSSI behaviours, this is certainly not the most suitable condition to help these women cope with their stress other than by self-injuring.

Limitations and Future Directions

Despite the unique contribution of the current study, several limitations need to be acknowledged. First, the correlational and descriptive nature of the current study prevents the statement of causality. Although research and theory assume an influence of interpersonal relationship functioning on NSSI, it is impossible to rule out the hypothesis that NSSI may also influence one's own relationship functioning. Longitudinal studies are more likely to suggest cause-and-effect relationships than cross-sectional studies and could help researchers establish sequences of events. Second, given that the sample was solely comprised of young women involved in a heterosexual relationship, the generalizability of the results to other populations is limited. Future research should replicate the current study with male participants, older participants as well as with participants involved in a same-sex relationship. Moreover, additional research into the mechanisms by which romantic relationship functioning and NSSI relate together would provide a better understanding of these associations, particularly by exploring actor-partner effects within larger couple samples. A promising avenue for future research might include a more in-depth look at the distinctions between couples in which both partners are self-injuring and couples where only one partner struggles with NSSI. Finally, exploring the potential differences between NSSI thoughts and NSSI behaviours would also add to the breadth and depth of the current study, as little attention has been devoted to individuals who have thoughts of self-injuring but refrain from acting on the impulse. These individuals are of particular interest as they may be at an increased risk of eventually engaging in self-injurious behaviours.

Notwithstanding these limitations, results from the current study highlight the importance of evaluating the romantic relationship context when assessing NSSI. Although there is no conscious intention of dying in NSSI, these behaviours still represent a unique predictor of eventual suicide (Joiner et al., 2005). Therefore, exploring every facet of this

destructive behaviour to better understand what distinguishes those who self-injure from those who do not is of crucial importance, as this knowledge can help identify individuals at risk from NSSI. Accordingly, understanding the dynamics within a romantic relationship and the effect it can have on one's own behaviour is also of great importance, especially for the development of effective prevention and intervention strategies. In conclusion, although many questions remain unanswered, the current study provides preliminary evidence and offers new insight into the literature on NSSI by exploring both actor and partner effects of various indicators of the quality of romantic relationship functioning on self-injurious behaviours of young women.

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Table 1

Descriptive Statistics for Non-NSSI and NSSI Women on Both Their Indicators and Their Partner's Indicators

		Non-NSSI Women (n = 20)			NSSI Women (n = 20)		
	Possible Range	Median	Mean	*SD*	Median	Mean	*SD*
Women's Indicators							
Attachment Anxiety	1-7	3.50	3.58	1.43	5.50	5.03	1.12
Attachment Avoidance	1-7	2.00	2.12	0.98	2.38	2.70	1.23
Dyadic Trust	8-56	46.50	45.15	9.73	21.00	27.85	16.29
Relationship Satisfaction	0-21	19.00	18.00	3.02	18.00	16.65	3.51
One's Own Dyadic Coping	12-60	53.00	51.86	4.38	51.00	48.70	5.89
Partner's Dyadic Coping	12-60	51.50	50.14	6.56	50.00	46.58	9.22
Common Dyadic Coping	4-20	17.50	16.80	3.37	16.00	15.57	3.34
Caregiving Proximity	1-6	5.56	5.40	0.56	5.25	5.10	0.76
Caregiving Sensitivity	1-6	4.94	4.93	0.75	4.75	4.84	0.70
Cooperative Caregiving	1-6	4.25	4.10	0.87	4.25	4.23	0.88

Compulsive Caregiving	1-6	3.31	3.36	0.89	3.56	3.72	1.06
Partner's Indicators							
Attachment Anxiety	1-7	2.50	2.91	1.56	3.92	3.81	1.23
Attachment Avoidance	1-7	3.06	2.63	1.37	2.25	2.42	0.98
Dyadic Trust	8-56	44.50	41.20	11.60	44.78	43.01	9.80
Relationship Satisfaction	0-21	17.50	16.87	3.70	17.00	16.15	3.31
One's Own Dyadic Coping	12-60	48.50	48.29	7.55	51.00	49.83	6.36
Partner's Dyadic Coping	12-60	50.00	48.00	7.03	47.00	47.33	7.96
Common Dyadic Coping	4-20	16.00	14.85	4.93	16.00	15.35	3.72
Caregiving Proximity	1-6	5.38	5.07	1.15	5.50	5.28	0.81
Caregiving Sensitivity	1-6	4.63	4.44	0.82	4.31	4.42	0.76
Cooperative Caregiving	1-6	4.63	4.48	0.84	4.44	4.37	0.74
Compulsive Caregiving	1-6	3.31	3.21	0.85	3.31	3.34	0.70

Table 2

Mann-Whitney U Results for Main Variables Differences Between Non-NSSI and NSSI Women on Both Their Indicators and Their Partner's Indicators

	m Rank						
	Non-NSSI Women (*n* = 20)	NSSI Women (*n* = 20)	*U*	*Z*	*r*	*η2*	*p*
Women's Indicators							
Attachment Anxiety	14.75	26.25	85.00**	-3.12	-0.49	0.24	.002
Attachment Avoidance	17.75	23.25	145.00	-1.49	-0.24	0.06	.136
Dyadic Trust	25.70	15.30	96.00**	-2.82	-0.45	0.20	.005
Relationship Satisfaction	23.70	17.30	136.00†	-1.75	-0.28	0.08	.080
One's Own Dyadic Coping	23.70	17.30	136.00†	-1.74	-0.27	0.08	.083
Partner's Dyadic Coping	22.75	18.25	155.00	-1.22	-0.19	0.04	.223
Common Dyadic Coping	23.08	17.93	148.50	-1.41	-0.22	0.05	.159
Caregiving Proximity	23.03	17.98	149.50	-1.37	-0.22	0.05	.170
Caregiving Sensitivity	20.88	20.13	192.50	-0.20	-0.03	0.00	.839

Cooperative Caregiving	20.20	20.80	194.00	-0.16	-0.03	0.00	.871
Compulsive Caregiving	18.53	22.48	160.50	-1.07	-0.17	0.03	.285
Partner's Indicators							
Attachment Anxiety	16.33	24.68	116.50*	-2.26	-0.36	0.13	.024
Attachment Avoidance	23.33	17.68	143.50	-1.53	-0.24	0.06	.126
Dyadic Trust	19.95	21.05	189.00	-0.30	-0.05	0.00	.766
Relationship Satisfaction	22.10	18.90	168.00	-0.87	-0.14	0.02	.384
One's Own Dyadic Coping	18.98	22.03	169.50	-0.83	-0.13	0.02	.409
Partner's Dyadic Coping	21.60	19.40	178.00	-0.60	-0.09	0.01	.551
Common Dyadic Coping	20.40	20.60	198.00	-0.06	-0.01	0.00	.957
Caregiving Proximity	19.45	21.55	179.00	-0.60	-0.09	0.01	.568
Caregiving Sensitivity	21.28	19.73	184.50	-0.42	-0.07	0.00	.674
Cooperative Caregiving	21.93	19.08	171.50	-0.77	-0.12	0.01	.440
Compulsive Caregiving	19.63	21.38	182.50	-0.47	-0.07	0.01	.635

Note. $^{\dagger} p < .10$. $*p < .05$. $**p < .01$.

Chapter V

General Discussion

General Discussion

Summary of Objectives, Key Findings, and Strengths

Based on the theoretical foundations of attachment, the current thesis proposed an exploration of the dynamics between romantic relationship functioning and non-suicidal self-injury (NSSI). It is worth mentioning that the integrity of any research depends, to a large extent, on the reliability of the measure used. Therefore, for the sake of methodological rigor and for adequate evaluation of the constructs assessed, the purpose of the first study was to validate the factorial structure of the English version of the Dyadic Coping Inventory (DCI; Bodenmann, 2008). A confirmatory factor analysis (CFA) corroborated the measurement theory of the DCI, revealing the presence of five coping factors (i.e., stress communication, supportive dyadic coping, delegated dyadic coping, negative dyadic coping, and common dyadic coping) and two target factors (i.e., one's own dyadic coping and partner's dyadic coping). The English DCI also demonstrated good internal reliability and yielded preliminary evidence of concurrent validity. All together, these findings led to the conclusion that the DCI is an accurate and reliable measure of dyadic coping and that researchers could use the English DCI confidently to evaluate dyadic coping processes. This study makes a substantial contribution to the literature, as there was no validated measure of dyadic coping in English, the official language of the scientific world. The established factorial structure of the English DCI was used in the subsequent two studies of the present thesis.

The purpose of the second study was to investigate direct and indirect associations between insecure romantic attachment, difficulties in emotion regulation and common dyadic coping strategies, and endorsement of NSSI behaviours. From an empirical standpoint, this study is the first to explore these specific relationships in one comprehensive model, targeting both interpersonal and intrapersonal strategies used to deal with stressful experiences and the relation they might have with one's NSSI behaviours. Overall, results revealed that

difficulties in emotion regulation mediated the relationships between romantic attachment insecurity (i.e., attachment anxiety and attachment avoidance) and NSSI, whereas no such effects were found for common dyadic coping strategies. In fact, there was no established direct effect between common dyadic coping and NSSI. Although both emotion regulation and common dyadic coping are considered strategies to manage stressful experiences, findings from this study suggest intrapersonal strategies (i.e., emotion regulation) might be more influential on one's NSSI behaviours than behavioural strategies (i.e., common dyadic coping). It is noteworthy that, compared to emotion regulation, common dyadic coping refers not only to the self, but also includes conjoint efforts of both partners to reduce internal stresses. Therefore, these results might have differed if general coping strategies were part of the model rather than dyadic coping strategies, as previous research clearly illustrates that personal variables have usually more effect on one's own functioning than variables including the partner's behaviours (e.g., Levesque, Lafontaine, Caron, Flesch, & Bjornson, 2014; Péloquin, Lafontaine, & Brassard, 2011). Findings from this study helped clarify the confusion regarding the associations between both dimensions of romantic attachment insecurity and NSSI, namely, they suggested these relationships might be better explained through one's difficulties in emotion regulation strategies than by direct associations. This study also offers a first step towards understanding the romantic relational context of individuals struggling with NSSI behaviours. The next step is to explore the couple as the unit of analysis rather than focusing on only one member of the relationship, giving way to the third study of the present thesis.

The primary aim of the third study was to generate a general portrait of young women's romantic relationship functioning, distinguishing women who recently self-injured from those who have never self-injured. An important highlight from this study is that it was designed to permit the exploration of both individual-level effects and potential effects from

the romantic partner. Through a series of nonparametric Mann-Whitney U tests, results revealed that women who self-injured were more likely to report subjective distress in the form of attachment anxiety and distrust. They also reported good, but slightly lower levels of, relationship satisfaction and adaptive dyadic coping strategies compared to women who have never engaged in NSSI. Findings also showed that partners of women who self-injured reported more attachment anxiety than partners of women who did not engage in NSSI behaviours. The women and their partner's reports about their romantic relationship experiences provided unique insight into the similarities and differences of individuals who self-injure and those who do not. In concordance to the results of the second study, findings from the third study suggest that one's own NSSI behaviours might be better explained by personal variables rather than by a partner's variables. Furthermore, a cursory exploration of the partners' NSSI behaviours revealed that nearly one-third of the partners in relationship with women who self-injured also reported having recently engaged in NSSI behaviours. This research effort definitely serves to add some depth to the understanding of the relational context of those who are struggling with NSSI and opens avenues to numerous future research ventures that will be discussed in the following section.

Collectively, the present thesis' studies offer insight into a largely unexplored aspect of the relational context of individuals struggling with NSSI. As previous research mostly focused on parental and peer relationships, the current thesis adds to the literature by enhancing the existing portrait of interpersonal relationship experiences of young adults with self-injurious behaviours. The current thesis' studies offer an interesting first research effort in the field. Of note, findings suggest that the partner does not influence one's own self-injurious behaviours as much as expected. Is this a reflection of reality or is this the result of a crucial missing element? Only future research can shed light on this questioning. Nevertheless, perhaps designing measures to specifically assess romantic relationship

functioning of individuals struggling with NSSI would offer more sensitivity, leading to more powerful results. For example, an individual may usually engage in positive dyadic coping to help their romantic partner in times of need, but their reaction to their partner's NSSI may lead them to use more negative dyadic coping strategies instead. This change of reaction may be the result of a misunderstanding of self-destructive behaviours. It is also possible that the action of self-injuring has a major impact on the other partner, which could affect their ability to provide effective support. In fact, a recent study demonstrated the significant effect of young people's (i.e., from 14 to 28 years of age) NSSI behaviours on siblings and parents (Ferrey et al., 2016). More precisely, in reaction to their children's NSSI, parents reported a variety of reactions (e.g., stress, onset of clinical depression). Parents also withdrew from social contact due to the perceived stigma associated with NSSI. Siblings felt responsible, worried, stressed, and upset by their brother/sister's NSSI behaviours. Ferrey et al.'s (2016) study highlights the considerable effect that NSSI can have on one's social environment, and there is no evidence suggesting that this effect could not also transpire in the context of romantic relationships. Therefore, it is possible that adverse reactions to a partner's NSSI create a feeling of interpersonal distress that will unequivocally affect the support one can offer to their romantic partner. Developing measures to assess romantic relationship functioning in a specific context where one partner is self-injuring would facilitate the identification of the other partner's reactions at that specific moment and the effect that these reactions may have on one's own NSSI behaviours.

From a clinical perspective, although romantic relationships did not emerge from the current thesis as central as expected in the explanation of one's own NSSI behaviours, the results obtained still highlight the possible complementary role that romantic relationships may have on NSSI. This conclusion is consistent with theory suggesting that NSSI may emerge or be maintained from the interaction of a multitude of interpersonal and

intrapersonal factors (Crowell, Derbidge, & Beauchaine, 2014). In fact, as demonstrated by the findings of the current thesis, it is essential to evaluate both interpersonal (e.g., romantic relationship functioning) and intrapersonal (e.g., difficulties in emotion regulation) factors that may contribute to NSSI behaviours in order to guide clinical intervention. The current thesis also contributes to the creation of a knowledge base that can inform clinical practice guidelines related to the assessment and treatment of NSSI in a relational context. More precisely, the conclusions from the current thesis' studies stress the need for clinicians to comprehensively assess both individual and relational experiences of clients who seek treatment for NSSI behaviours. This being said, NSSI is a prevalent behaviour often kept secret from the social environment (Ernhout & Whitlock, 2014). Given that NSSI is present in the symptomatology of some clinical disorders (Nock, 2014) and may act as a precursor of suicide (Klonsky, May, & Glenn, 2013), our prevalence data stresses that clinician should consistently assess for the presence of NSSI in their practice, even when the motive of consultation is not self-injury.

An important question has not been addressed in the current thesis: Why do so many individuals continue to perceive NSSI as an attractive option despite being aware of the potential severe physical consequences associated with this practice? Hooley and Franklin (2018) tried to elucidate this mystery by developing the benefits and barriers model of NSSI. This model is similar to the cost-benefit analysis (i.e., balance between the benefits and the barriers affects the decision to engage in the behaviour). The authors identified four main benefits of NSSI (i.e., improves affect, gratifies self-punishment desires, provides peer group affiliation, and communicates distress or strength) and five NSSI barriers (i.e., lack of exposure or awareness about NSSI, feelings of self-worth or positive view of the self, desire to avoid physical pain, aversion to NSSI stimuli, and social norms). The authors also suggest that the benefits are essential for understanding the functions of NSSI, but the barriers are

even more important for the prediction and treatment of NSSI. According to this model, any single barrier would sufficiently prevent NSSI behaviours and barrier-focused interventions should be prioritized over interventions targeting NSSI benefits.

To date, therapeutic treatments for NSSI have yet to be supported by empirical evidence (Turner, Austin, & Chapman, 2014). Despite the lack of empirical support, there are several treatment approaches, whether individually or in group therapy, to decrease NSSI behaviours. Three main guidelines emerged from these approaches (for a review, see Stanley, Fineran, & Brodsky, 2014): (a) clinicians should identify antecedents leading to NSSI and offer other coping methods that are not self-destructive; (b) clinicians should seek to understand and substitute the internal and external reinforcements of NSSI; and (c) clinicians should encourage the individual to acknowledge their negative thoughts and feelings without resorting to NSSI. Interestingly, these approaches are not aimed at creating or reinstating barriers of NSSI. According to the benefits and barriers model of NSSI (Hooley & Franklin, 2018), and from the result of the current thesis' studies, an attachment-based therapy, conducted whether individually (Brubacher, 2018; Johnson, 2019) or within couple therapy (Johnson, 2004), may be more effective at ceasing NSSI behaviours. In attachment-based therapy, the clinician works with the client to rebuild a positive sense of the self and others, which will eventually enhance the sense of relationship security and create a significant barrier to NSSI (Hooley & Franklin, 2018). A positive association with the self creates a sense of self-worth and self-value, while a positive association with others makes the call for help easier as trust returns in the partner. Attachment-based therapy also includes an emotional regulation component, which is in line with the findings from the current thesis' studies. In fact, creating a safe environment helps to soothe automatically generated underregulated distress, which strengthens emotion regulation capacities (Greenberg, 2004) that may also prevent the use of NSSI.

Limitations and Directions for Future Research

Despite the strengths and contributions of the present thesis, some limitations warrant further consideration. First, by using community samples, the samples are more representative of the general population than clinical samples. It remains, however, that no specific data pertaining to participants' mental health were collected in the present thesis' studies. It is therefore not possible to assert that the samples used in the present thesis did not share any characteristics specific to clinical samples. That being said, NSSI prevalence of the present thesis' studies are similar to what would be expected for community samples (for reviews, see Heath, Schaub, Holly, & Nixon, 2009; Jacobson & Gould, 2007; Rodham & Hawton, 2009), thus enhancing the confidence in the representability of the samples used. Indeed, individuals with psychiatric diagnoses and mental health issues are at increased risk of engaging in NSSI behaviours and hold higher prevalence rate of NSSI than individuals without mental health issues (for reviews, see Cipriano, Cella, & Cotrufo, 2017; Meszaros, Horvath, & Balazs, 2017). Future research should gather further information regarding participants' mental health and control for such component in their statistical analyses.

Another limitation related to samples concern the fact that these samples consisted of a largely homogenous group of participants mostly represented by women involved in a heterosexual relationship. One could wonder to what extent these samples differ from other samples from the community and if the findings presented in the present thesis are generalizable to broader populations of young adults struggling with NSSI. Knowing that an individual's beliefs, attitudes, and behaviours are all influenced by a variety of sociodemographic factors and social identities (Miville & Ferguson, 2014), it would be relevant that future research replicates the models presented in the current thesis with diversified samples. For example, an exploration of romantic relationship experiences and NSSI behaviours among sexual minority young adults would add to the literature, especially

since the research currently indicates a higher level of engagement in NSSI behaviours among these individuals compared to heterosexual individuals (e.g., Fox, Hooley et al., 2018; Tsypes, Lane, Paul, & Whitlock, 2016; Whitlock, Eckenrode, & Silverman, 2006). Indeed, the period of emerging adulthood is, among other things, characterized by the development of personal identity and by the revision of one's worldviews and perception of the self and others (Arnett, 2000). While this period of life is already considered as a critical period for the development of maladaptive behaviours such as NSSI, it is possible that sexual minority young adults might experience even greater distress than heterosexual individuals given societal and institutional adversities braved by sexual minorities, such as homophobia and heterosexism (Blosnich & Bossarte, 2012). Another interesting avenue for future research lies in the exploration of gender differences in the models explored in the current thesis. Although empirical research to date suggests a slightly higher prevalence of NSSI in women (for a review, see Bresin & Schoenleber, 2015), there is also evidence that men and women may engage in NSSI for different reasons (for a review, see Fox, Millner, Mukerji, & Nock, 2018). Unfortunately, the low proportion of males who participated in the current thesis' studies did not allow the exploration of gender differences. Therefore, future research could seek to replicate the models presented in the current thesis with male participants in order to create a romantic relational portrait representative of young men struggling with NSSI.

The generalizability of the current thesis' results may also be limited by the fact that the samples were mainly comprised of Caucasian participants. Although representative of most self-injury research, it is not possible to conclude that a different sample in terms of ethnic or cultural origins would lead to the same conclusions. Publications from Western countries with predominantly Caucasian samples dominate in the NSSI literature, and there is a clear underrepresentation of non-Western cultures and ethnic minority groups (Gholamrezaei, De Stefano, & Heath, 2017). Gholamrezaei et al.'s (2017) recent critical

review of empirical studies pertaining to NSSI in non-Western countries revealed some differences with traditional Western research. Their findings revealed that, in non-Western cultures, NSSI may be used more frequently to regulate social environment rather than to regulate emotions, the most endorsed function of NSSI in Western cultures. This finding suggests that non-Western cultures may be better represented by interpersonal NSSI models rather than by intrapersonal models. It is therefore relevant to question whether the results obtained in the present thesis' studies would have been stronger with a sample comprised of participants from different cultural or ethnic backgrounds. Such research would also benefit health workers (i.e., help them acquire a multi-cultural awareness) and provide an empirically based understanding of the cultural factors and context that may contribute to the development, maintenance, and/or reinforcement of NSSI behaviours.

One could also wonder if the results of the present thesis' studies would have been replicated with couples living together, as the majority of the participants were not cohabiting with their current romantic partner. On the one hand, living together inevitably leads to more physical presence of the other compared to couples who do not cohabit. Propinquity might facilitate the recognition of each other's distress and afford more opportunity to offer support to the other. On the other hand, cohabiting may lead to several conflicts that are not necessarily present in couples living separately, which increases the probability of activating the attachment system. Cohabiting also involves higher levels of constraints (e.g., moral obligations to stay and live together, joint financial investments and commitments, perceived consequences of terminating the relationship). Although these constraints do not always represent negative aspects of cohabitation (Rhoades, Stanley, & Markman, 2011), it could be harder to end an unhealthy relationship if the partners live together than if they were not. As a result, it is plausible to expect that the partners' attitudes and behaviours, whether positive or negative, might affect one's NSSI behaviours to a greater extent in cohabitating relationships

compared to couples that do not live together. More research is needed to shed light on this hypothesis.

Other limitations arising from the design of the current thesis' studies also deserve mention. The use of self-report measures as the only method of data collection, which depends solely on participants' accurate and honest responses, may have affected the studies' results to a certain extent. Social desirability, which is defined as a tendency to portray an overly positive image of the true self (Uziel, 2010), is one of the most susceptible response bias associated with self-report measures. Respondents may appear to be convinced and actually believe their positive self-depictions or they may also consciously and deliberately distort the reality to conform to socially acceptable values, avoid criticism, or gain social approval (King & Bruner, 2000; Paulhus, 2002; van de Mortel, 2008). In order to evaluate the potential effects of such bias, future research conducting self-report studies would benefit from including a measure of social desirability in their questionnaire battery.

Furthermore, although cross-sectional designs employed in the current thesis' studies offer several advantages (e.g., ease of assessing and cost-effectiveness), it prevents inferences of causality between the constructs under study (Shadish, Cook, & Campbell, 2002). While conclusions of directionality between romantic relationship experiences and NSSI cannot be confirmed, the models proposed in the current thesis were developed on strong theoretical grounds and should be considered as a needed first step toward a better understanding of these constructs. Regardless, longitudinal studies in future research would allow temporal sequencing and permit in-depth investigation of the predicted directional pathways between poor romantic relationships experiences and NSSI behaviours. Notwithstanding the constraints of longitudinal research (e.g., expensive and time consuming), a study assessing NSSI behaviours and romantic relationship functioning over a long period of time could offer a wealth of knowledge. Indeed, a study capturing romantic relationship functioning through

the different stages of life (i.e., adolescence, emerging adulthood, and adulthood) would take our understanding of the impact of these relations on NSSI to a higher and deeper level while following the evolution of both the relationship and the self-injurious behaviours.

The findings of the current thesis point to numerous areas for future research relating to romantic relationship experiences and self-injurious behaviours. As previously mentioned, there is a lack of literature on romantic relationship experiences and NSSI and more studies on these specific relationships are essential. An interesting result from the third study revealed that nearly one-third of the partners of self-injuring women also engaged in NSSI behaviours. Although the partner's NSSI behaviours were not the focus of this study, it opens the door to new research questions: Were the partner's NSSI behaviours present before the beginning of the relationship or did they arise during the relationship? Do couples experience more psychological distress when both partners engage in NSSI behaviours or when only one partner engages in NSSI behaviours? Does one feel more understood by a partner who shares the same experiences as them? Unfortunately, the current state of research on romantic relationships and NSSI is too limited to offer answers about such interrogations, further highlighting the importance of empirical research in this field. Potential studies exploring differences between relationships in which one or both members of the couple engaged in NSSI could complement the current body of literature that is largely focused on individuals instead of couples. Furthermore, in order to take better account of the dyadic nature of this phenomenon, the partner's NSSI behaviours should also be part of the conceptualization of any explanatory model of NSSI behaviours.

Lastly, another interesting topic that has not been addressed in the current thesis concerns the comparison between NSSI thoughts and NSSI behaviours. Although often associated together, NSSI thoughts are conceptualized separately as a cognitive process that do not necessarily result in NSSI behaviours (Crowell et al., 2014; Nixon, Cloutier, &

Aggarwal, 2002). A study by Brain, Haines, and Williams (1998) demonstrated that, in individuals who had previously self-injured, simply thinking about self-injury produced the physiological and emotional responses common to self-injurious behaviours. If the thoughts persisted, the risk of action increased. It is therefore critical to understand, evaluate, treat, and monitor both NSSI behaviours and NSSI thoughts. Notwithstanding the fact that the study of NSSI thoughts is in its infancy, recent research tends to suggest that constructs predicting NSSI thoughts may differ from those that predict NSSI behaviours. For example, a recent study revealed that both controlling and compulsive romantic caregiving behaviours predicted NSSI thoughts, but not NSSI behaviours (Caron, Lafontaine, & Bureau, 2017). Since NSSI thoughts often leads to NSSI behaviours, understanding the precipitant factors underlying NSSI thoughts and acting on them may contribute to the prevention of engaging in harmful self-injurious behaviours. Future research could therefore explore risk and protective factors specific to NSSI thoughts as compared to NSSI behaviours.

Conclusion

The emerging adulthood period is, in itself, a time of adaptation and presents numerous new challenges (Arnett, 2000). This period is also marked by a shift in interpersonal relationships characterized by a separation from the family nest to give more space to romantic relationships. While some individuals might prosper at this point in life, others may struggle and feel overwhelmed (Arnett & Tanner, 2006). This is where one might turn to maladaptive coping strategies in order to deal with inner stress and why romantic relationship experiences should also be considered in any conceptualization of NSSI risk. NSSI is a complex phenomenon often done secretly and well hidden from social environment (Ernhout & Whitlock, 2014). The peculiarity of romantic relationships is that NSSI becomes difficult to hide from the romantic partner when intimacy begins to grow. The present thesis was initiated to contribute to the advancement of theoretical development and empirical

understanding of the possible influence that romantic relationship experiences may have on NSSI behaviours. Across the studies comprising the present thesis, findings provide crucial evidence of that influence and support the need for continued investigation into the lens of interpersonal relationships when studying NSSI. Overall, the current thesis complements and extends prior work on the associations between interpersonal relationships and NSSI. It is hoped that in addition to contributing to the scientific realm via research, the current thesis will also contribute to the real world via application.

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Appendix A

Example of the Participant's Information Letter for Study I, II, and III

Dear Participant,

Thank you for choosing to participate in our research using the *Integrated System for Participation in Research* (ISPR). This project is being conducted by Dr. Marie-France Lafontaine and Dr. Jean-François Bureau at the University of Ottawa, and Ms. Paula Cloutier at the Children's Hospital of Eastern Ontario (CHEO), and has been approved by the University of Ottawa Research Ethics Board.

Your participation will contribute to our knowledge of the influences of romantic relationships in predicting different coping strategies in young adults.

Participation in the study will include the completion of these online questionnaires using *Survey Monkey*. Topics addressed by the questionnaires include your background information, your caregiving behaviours in your romantic relationship, your dyadic adjustment, your dyadic coping, your past and/or current self-injuring behaviors, your risk-taking behaviors, your romantic attachment style, your childhood experiences, your emotion regulation, and your perfectionism. It is important that these questionnaires express only your opinion; please respond independently, without assistance from others. Please note that sensitive questions about exposure to childhood abuse will be asked.

Completion of the questionnaires will take approximately one hour. When responding to the questions it is important to answer as honestly and accurately as possible. We also encourage you to not leave items unanswered; instead we ask that you select the response that most closely describes your thoughts and feelings about the particular question. However, you are not required to answer any items with which you are uncomfortable. Your participation in this research is entirely voluntary, and you are free to withdraw from answering the questionnaires at any time during your participation. By beginning to complete the following questionnaires, you are implying your consent to participate in the study. Once your responses have been submitted, you will be unable to withdraw from the study, as your responses are anonymous and we have no way of determining which answers are yours to remove.

We would like to remind you that this survey will take 60 minutes to complete. We suggest that you work at a time when you will not be distracted. However, should you be interrupted, know that you can close your browser and finish completing your survey at another time by using the link that was provided to you in the description of the study, in the ISPR website. Your answers will be saved until you submit your survey, at the end.

If someone else is going to use the same computer to participate (partner, friend, family, etc.), be sure you have submitted your survey beforehand. This way, a new survey will appear, and your answers will remain private.

Responses on all questionnaires will be kept both confidential and anonymous. The data uploaded from *Survey Monkey* will be saved in password protected computer files on the computers of the principal researcher. No hard copies of the data will be created. Data will be stored under the 5-digit code assigned to you by ISPR, and no individual identifiers (i.e.,

student number, email address, IP address) will be linked with your data. The data from all participants will be kept for a period of 10 years after the study's completion; all saved files of the data will be deleted in a secure manner from the computer at this time. The electronic data saved on *Survey Monkey* will be deleted from the Survey Monkey server at the end of each University semester, after the data has been uploaded from the server.

As compensation for your time, you will be awarded two credits toward your final course grade after submission of the online questionnaires (PSY 1101 and PSY 1501 only).

Should you have any questions or concerns regarding the study arise, please feel free to contact us at the emails and/or phone numbers listed below. **Should you wish to obtain assistance regarding any issues addressed in the questionnaires you may contact the Ottawa Distress Center (613-238-3311) or the Centre for Psychological Services at the University of Ottawa (613-562-5289). You may also refer to www.ementalhealth.ca for a comprehensive list of mental health resources available in the Ottawa region.** For any further information regarding your rights as a research participant please contact the Protocol Officer for Ethics in Research, 550 Cumberland Street, Room 159, (613)562-5841 or ethics@uottawa.ca.

Please print a copy of this letter for your records before proceeding.

Thank you for your participation in our research.

Sincerely,

The Research Team

Appendix B

Example of the Partner's Information Letter for Study III

Dear Participant,

Thank you for choosing to participate in our research. This project is being conducted by Dr. Jean-François Bureau and Dr. Marie-France Lafontaine at the University of Ottawa, and Ms. Paula Cloutier at the Children's Hospital of Eastern Ontario (CHEO), and has been approved by both the University of Ottawa Research Ethics Board and the CHEO Research Ethics Board.

Your participation will contribute to our knowledge of the influences of parental and intimate relationships in predicting different coping strategies in young adults. Participation in the study will include the completion of these online questionnaires for approximately 2 hours. Topics addressed by the questionnaires include your background information, your caregiving behaviours in your romantic relationship, your partner's romantic attachment style, your dyadic adjustment, your dyadic coping, your relationship behaviors, your relationship profile, your past and/or current self-injuring behaviours, your coping strategies and risk-taking behaviours, your comfort level in social relationships, your psychological adjustment, your current relationship with your parents and friends, your friendship relationship style, your caregiving behaviours in your relationship with your mother and father, your general relationship style, your perception of parental care, your romantic attachment style, your experiences in close relationships, and the quality of affective bond to your parents.

When responding it is important to answer the questions as honestly and accurately as possible. It is important that these questionnaires express only your opinion; please respond independently, without assistance from others. Please note that sensitive questions about exposure to childhood abuse, violence in current relationships, and loss and trauma experienced in childhood will be asked. It is possible that you experience some discomfort when answering these questions. This discomfort should be minimal and only last for a few minutes. Of course, you are not obligated to answer all questions if you are not comfortable to do so.

We would like to remind you that this survey will take 120 minutes to complete. We suggest that you work at a time when you will not be distracted. However, should you be interrupted, know that you can close your browser and finish completing your survey at another time by using the link that was provided to you in the description of the study, in the ISPR website. Your answers will be saved until you complete and submit your survey.

If someone else is going to use the same computer to participate (partner, friend, family, etc.), be sure you have submitted your survey beforehand. This way, a new survey will appear, and your answers will remain private.

Responses on all questionnaires will be kept confidential. The completed surveys will be kept for the duration of active study recruitment. You will be identified by a number and only this number will be entered in our database.

Are there any benefits to participating in the research?

Although you may not directly benefit from this research, it is hoped that this study will help researchers better understand how intimate relationships help young adults adjust to their social environments. To compensate you for your time and to thank you for your help, you will receive a check of $20.

Withdrawing from the study
You are under no obligation to participate in this study, and if you choose to participate, you may withdraw from the study at any time, without suffering negative consequences. If you withdraw, you may choose to let us use all data gathered until the time of withdrawal for research purposes, or to have us destroy them.

Should any questions or concerns regarding the study arise, please feel free to contact us at the emails and/or phone numbers listed below. **Should you wish to obtain assistance regarding any issues addressed in the questionnaires you may contact the Ottawa Distress Center (613-238-3311) or the Centre for Psychological Services at the University of Ottawa (613-562-5289). You may also refer to www.ementalhealth.ca for a comprehensive list of mental health resources available in the Ottawa region.** For any further information regarding your rights as a research participant please contact the Protocol Officer for Ethics in Research, 550 Cumberland Street, Room 159, (613)562-5841 or ethics@uottawa.ca.

Please print a copy of this letter for your records before proceeding.

Thank you for your participation in our research.

Sincerely,

Appendix C

Measure Used in Study I, II, & III

SOCIO DEMOGRAPHIC INFORMATION (SD)

The following questionnaire involves gathering information with respect to your socio demographic background. For each question, please circle the number beside the appropriate answer.

SD1. Indicate your sex.

1 = Male 2 = Female

SD2. What is your age, in years and months?

_____ years and _____ months

SD3a. What is your racial or ethnic background (circle as many as apply)?

1 = White/Caucasian
2 = Black
3 = Asian
4 = Latino or Hispanic
5 = Pacific Islander
6 = Middle Eastern
7 = Native Canadian/First nations/Métis
8 = Other, specify (SD3b): _____

SD4a. How many years have you lived in Canada?

1 = All my life
2 = Number of years _____and months: _____ (SD4b)

SD5. Indicate the highest educational degree you have received.

1 = Primary school
2 = High school
3 = College
4 = University

SD6a. What is your main daily occupation?

1 = Blue collar (construction, factory worker, manual work, etc.)
2 = White collar (administrator, lawyer, director, office worker, salesperson, etc.)
3 = Business owner or self-employed
4 = Unemployed
5 = Student
6 = Homemaker
7 = Other, specify: _____ (SD6b)

SD7. What is your monthly personal gross revenue (before tax and deductions)? _____

SD8. How often (do you/does your family) have problems paying for basic necessities (like food, clothing or rent)?

1 = Never
2 = Sometimes
3 = Often
4 = Don't know

SD9. As a child and adolescent, did you live primarily with :

1 = Both biological parents in the same home
2 = Both biological parents in separate homes (i.e., joint custody)
3 = One parent with regular access to other parent
4 = One parent with little or no access to other parent
5 = Adoptive parents
6 = Relatives (e.g. grand-parents)
7 = Foster parents/group home

SD10. Do you have a closer relationship with your mother or your father?

1 = Mother 2 = Father 3 = Equally close with mother and father 4 = I don't feel close to my parents

SD11a. Where do you currently live?

1 = At home with my parents (**Skip to question SD17**)
2 = In rented accommodations with roommates
3 = In rented accommodations with a romantic partner
4 = In a rented accommodation by yourself
5 = In a university residence
6 = Other, please specify _____ (SD11b)

If you do not live at home with your parents, how often…

	Never 1	Less than once a month 2	Once or twice per month 3	Once per week 4			More than once a week 5	
SD12.	do you visit your parent(s)?	1	2	3	4	5	n/a	
SD13.	do you call your parent(s)?	1	2	3	4	5	n/a	
SD14.	do you chat online or send email to your parent(s)?	1	2	3	4	5	n/a	
SD15.	do(es) your parent(s) visit you?	1	2	3	4	5	n/a	

Have you experienced one of the following events and if so, what was its consequence on your daily life and relationships in general?

Extremely harmful 1	Moderately harmful 2	Slightly harmful 3	No consequence 4	Slightly beneficial 5	Moderately beneficial 6	Extremely beneficial 7

				Consequences on your daily life and relationships
SD16.	Death of one of your parents (or both)?	1 = Yes	2 = No	
			Mother __	1 2 3 4 5 6 7
			Father __	1 2 3 4 5 6 7
	If **YES**: How old were you?			
	Mother: ___ years and ___months		Father: ___ years and ___months	

				Consequences on your daily life and relationships
SD17.	Death of one (or more) of your sibling(s)?	1 = Yes	2 = No	1 2 3 4 5 6 7
	If **YES**: How old were you? ___ years and ___months			
	• If more than one sibling, indicate the age at the death with the most negative impact on your daily life and relationships.			

				Consequences on your daily life and relationships
SD18.	Prolonged hospitalization of one of your parents due to serious illness?	1 = Yes	2 = No	
			Mother __	1 2 3 4 5 6 7
			Father __	1 2 3 4 5 6 7
	If **YES**: How old were you?			
	Mother: ___ years and ___months		Father: ___ years and ___months	
	* If more than one hospitalization for a parent, indicate the age at the hospitalization associated with the most negative impact on your daily life and relationships.			

				Consequences on your daily life and relationships
SD19.	Prolonged hospitalization of one of your siblings due to serious illness?	1 = Yes	2 = No	1 2 3 4 5 6 7
	If **YES**: How old were you? ___ years and _____months			
	* If more than one sibling hospitalized or more than one hospitalization per sibling, indicate the age at the hospitalization with the most negative impact on your daily life and relationships.			

			Consequences on your daily life and relationships						
SD20.	Divorce or separation of your parents?	1 = Yes 2 = No	1	2	3	4	5	6	7
	If **YES**: How old were you? ___ years and _____months								

Please answer the subsequent questions *referring to your childhood and adolescence* using the following scale:

Never	Sometimes	Often	Very often	I don't know
1	2	3	4	5

SD21.	How often did you witness verbal abuse between your parents? (e.g., yelling, insulting, name-calling, etc.)	1	2	3	4	5
SD22.	How often did you witness any physical violence between your parents? (e.g., hitting with hands, feet and/or objects, etc.)	1	2	3	4	5
SD23.	How often have you been put down, yelled at or insulted by one or both your parents?	1	2	3	4	5
SD24.	How often have you been hit or beaten by one or both of your parents?	1	2	3	4	5

SD25. Have you ever been sexually abused in your childhood or adolescence?

1 = Yes 2 = No

In the past year, have you consulted a mental health professional (psychologist, social worker, psychiatrist, etc.)…

SD26. …alone?

1 = Yes 2 = No **(skip to question SD28)**

SD27. Duration of services (e.g., 1 year and 2 months):

_____ years _____ months

SD28. …with your partner?

1 = Yes 2 = No **(skip to question SD30)** 3 = Not applicable **(skip to question SD30)**

SD29. Duration of services:

_____ years _____ months

SD30. …with your family?

1 = Yes 2 = No **(skip to question SD32)**

SD31. Duration of services:

_____ years _____ months

SD32. Are you *currently* seeing a mental health professional?

1 = Yes 2 = No

SD33. Have you ever needed help from one or more Centres for partners presenting violent behaviors or one or more shelters for domestic violence victims?

1 = Yes 2 = No

SD34. At the present time, what sexual orientation would best describe you?

1 = Homosexual (gay man or lesbian) 3 = Bisexual

2 = Heterosexual 4 = Uncertain

SD35. Are you *currently* involved in a romantic relationship?

1 = Yes 2 = No

If you are not in a romantic relationship at the present time, please go to the next questionnaire.

SD36. If your answer to the previous question was « yes », please specify which type of relationship best describes your current relationship.

1 = Homosexual (gay man or lesbian) 2 = Heterosexual

SD37. How long have you been in the current relationship, in years and months?

_____ years and _____ months

SD38. Are you *currently* living with your romantic partner?

1 = Yes 2 = No (**skip to question SD40a**)

SD39. If your answer to the previous question was « yes », how long have you been living with your partner, in years and months?

_____ years and _____ months

SD40a. What is your marital status?

1 = Married (**go to SD40b**)
2 = Common law
3 = Separated
4 = Divorced
5 = Single
6 = Widowed

SD40b. How long have you been married to your partner?

_____ years and _____ months

SD41. How many children do you have with your current partner? _____

SD42. Have you and your current partner separated in the past 12 months because of conflicts in the relationship?

1 = Yes 2 = No (**skip to question SD44**)

SD43. If your answer to the previous question was « yes », evaluate the consequences of this separation on your relationship when the event occurred.

1 = extremely harmful
2 = moderately harmful
3 = slightly harmful
4 = no consequence
5 = slightly beneficial
6 = moderately beneficial
7 = extremely beneficial

In the past 12 months, have you or your partner experienced the following events? If your answer is "yes", please indicate the person who experienced the event. Also, for each event experienced, evaluate its consequences on your romantic relationship when it occurred using the following scale.

Extremely harmful 1	Moderately harmful 2	Slightly harmful 3	No consequence 4	Slightly beneficial 5	Moderately beneficial 6	Extremely beneficial 7

				Consequences on your relationship						
SD44.	Pregnancy	1 = Yes	2 = No Me ___ My partner ___	1	2	3	4	5	6	7
SD45.	Miscarriage	1 = Yes	2 = No Me ___ My partner ___	1	2	3	4	5	6	7
SD46.	Abortion	1 = Yes	2 = No Me ___ My partner ___	1	2	3	4	5	6	7
SD47.	Our Marriage	1 = Yes	2 = No	1	2	3	4	5	6	7
SD48.	Our Engagement	1 = Yes	2 = No	1	2	3	4	5	6	7
SD49.	Serious illness or accident	1 = Yes	2 = No Me ___ My partner ___ Children ___ Other ___	1	2	3	4	5	6	7

SD50.	An affair	1 = Yes	2 = No Me ___ My partner ___	1	2	3	4	5	6	7
SD51.	Previous Relationship Divorce	1 = Yes	2 = No Me ___ My partner ___	1	2	3	4	5	6	7
SD52.	Death of a relative or close friend	1 = Yes	2 = No Me ___ My partner ___	1	2	3	4	5	6	7

				Consequences on your relationship						
SD53.	Mental Health Difficulties	1 = Yes	2 = No Me ___ My partner ___ Children ___ Other ___	1	2	3	4	5	6	7
SD54.	Physical Health Difficulties	1 = Yes	2 = No Me ___ My partner ___ Children ___ Other ___	1	2	3	4	5	6	7
SD55.	Chronic Pain	1 = Yes	2 = No Me ___ My partner ___	1	2	3	4	5	6	7
SD56.	Other major event in past 12 months? _____	1 = Yes	2 = No Me ___ My partner ___ Children ___ Other ___	1	2	3	4	5	6	7

Appendix D

Measure Used in Study I, II, & III

DYADIC COPING INVENTORY (DCI)

This scale is designed to measure how you and your partner cope with stress. Please respond spontaneously and as honestly as you can. Please respond to any item by circling the appropriate number, which is fitting to your personal situation. There are no wrong answers.

Very rarely	Rarely	Sometimes	Often	Very often
1	2	3	4	5

This section is about how you communicate your stress to your partner.						
DC1.	I let my partner know that I appreciate his/her practical support, advice, or help.	1	2	3	4	5
DC2.	I ask my partner to do things for me when I have too much to do.	1	2	3	4	5
DC3.	I show my partner through my behaviour that I am not doing well or when I have problems.	1	2	3	4	5
DC4.	I tell my partner openly how I feel and that I would appreciate his/her support.	1	2	3	4	5
This section is about what your partner does when you are feeling stressed.						
DC5.	My partner shows empathy and understanding to me.	1	2	3	4	5
DC6.	My partner expresses that he/she is on my side.	1	2	3	4	5
DC7.	My partner blames me for not coping well enough with stress.	1	2	3	4	5
DC8.	My partner helps me to see stressful situations in a different light.	1	2	3	4	5
DC9.	My partner listens to me and gives me the opportunity to communicate what really bothers me.	1	2	3	4	5
DC10.	My partner does not take my stress seriously.	1	2	3	4	5
DC11.	My partner provides support, but does so unwillingly and is unmotivated.	1	2	3	4	5
DC12.	My partner takes on things that I normally do in order to help me out.	1	2	3	4	5
DC13.	My partner helps me analyze the situation so that I can better face the problem.	1	2	3	4	5
DC14.	When I am too busy, my partner helps me out.	1	2	3	4	5
DC15.	When I'm stressed, my partner tends to withdraw.	1	2	3	4	5
This section is about how your partner communicates when he/she is feeling stressed.						
DC16.	My partner lets me know that he/she appreciates my practical support, advice, or help.	1	2	3	4	5

Very Rarely 1	Rarely 2	Sometimes 3	Often 4	Very Often 5

DC17.	My partner asks me to do things for him/her when he/she has too much to do.	1	2	3	4	5
DC18.	My partner shows me through his/her behaviour that he/she is not doing well or when he/she has problems.	1	2	3	4	5
DC19.	My partner tells me openly how he/she feels and that he/she would appreciate my support.	1	2	3	4	5
This section is about what you do when your partner makes known his/her stress.						
DC20.	I show empathy and understanding to my partner.	1	2	3	4	5
DC21.	I express to my partner that I am on his/her side.	1	2	3	4	5
DC22.	I blame my partner for not coping well with stress.	1	2	3	4	5
DC23.	I tell my partner that his/her stress is not that bad and help him/her to see the situation in a different light.	1	2	3	4	5
DC24.	I listen to my partner and give him/her space and time to communicate what really bothers him/her.	1	2	3	4	5
DC25.	I do not take my partner's stress seriously.	1	2	3	4	5
DC26.	When my partner is stressed, I tend to withdraw.	1	2	3	4	5
DC27.	I provide support, but do so unwillingly and am unmotivated because I think that he/she should cope with his/her problems on his/her own.	1	2	3	4	5
DC28.	I take on things that my partner would normally do in order to help him/her out.	1	2	3	4	5
DC29.	I try to analyze the situation together with my partner in an objective manner and help him/her to understand and change the problem.	1	2	3	4	5
DC30.	When my partner feels he/she has too much to do, I help him/her out.	1	2	3	4	5
This section is about what you and your partner do when you are BOTH feeling stressed.						
DC31.	We try to cope with the problem together and search for ascertained solutions.	1	2	3	4	5
DC32.	We engage in a serious discussion about the problem and think through what has to be done.	1	2	3	4	5
DC33.	We help one another to put the problem in perspective and see it in a new light.	1	2	3	4	5
DC34.	We help each other relax with such things like massage, taking a bath together, or listening to music together.	1	2	3	4	5
DC35.	We are affectionate to each other, make love and try that way to cope with stress.	1	2	3	4	5

Very Rarely	Rarely	Sometimes	Often	Very Often
1	2	3	4	5

This section is about how you evaluate your coping as a couple.						
DC36.	I am satisfied with the support I receive from my partner and the way we deal with stress together.	1	2	3	4	5
DC37.	I am satisfied with the support I receive from my partner and I find as a couple, the way we deal with stress together is effective.	1	2	3	4	5

Used with the permission of G. Bodenmann (2008).
Bodenmann (2008).

Appendix E

Measure Used in Study I & III

DYADIC ADJUSTMENT SCALE (DAS-4)

Most people face problems in their relationships. This questionnaire deals with your own perception of you and your partner's life together. Your responses will therefore reflect your personal opinion. Don't be concerned with what your partner's responses may or might be. For each question, please indicate your response by circling the appropriate number.

All the time	Most of the time	More often than not	Occasionally	Rarely	Never
0	1	2	3	4	5

DAS4_1.	How often do you discuss or have you considered divorce, separation, or terminating your relationship?	0	1	2	3	4	5
DAS4_2.	In general, how often do you think that things between you and your partner are going well?	0	1	2	3	4	5
DAS4_3.	Do you confide in your mate?	0	1	2	3	4	5

DAS4_4. The descriptions on the following line represent different degrees of happiness in your relationship. The middle point, "happy" represents the degree of happiness of most relationships. Please circle the number, which best describes the degree of happiness, all things considered, of your relationship.

Extremely unhappy	Fairly unhappy	A little unhappy	Happy	Very happy	Extremely happy	Perfectly happy
0	1	2	3	4	5	6

Used with the permission of Y. Lussier.
Sabourin, Valois, & Lussier (2005).

Appendix F

Measure Used in Study II & III

EXPERIENCES IN CLOSE RELATIONSHIPS (ECR-12)

The following statements concern how you feel in romantic relationships. We are interested in how you generally experience romantic relationships, not just in what is happening in a current relationship. You can answer this questionnaire even if you're not currently in a romantic relationship. Respond to each statement by indicating how much you agree or disagree with it. Circle the number appropriate to your answer, using the following rating scale:

Strongly Disagree			Neutral/ mixed			Strongly Agree
1	2	3	4	5	6	7

ECR2.	I worry about being abandoned.	1	2	3	4	5	6	7
ECR6.	I worry that romantic partners won't care about me as much as I care about them.	1	2	3	4	5	6	7
ECR8.	I worry a fair amount about losing my partner.	1	2	3	4	5	6	7
ECR9.	I don't feel comfortable opening up to romantic partners.	1	2	3	4	5	6	7
ECR14.	I worry about being alone.	1	2	3	4	5	6	7
ECR15.	I feel comfortable sharing my private thoughts and feelings with my partner.	1	2	3	4	5	6	7
ECR18.	I need a lot of reassurance that I am loved by my partner.	1	2	3	4	5	6	7
ECR24.	If I can't get my partner to show interest in me, I get upset or angry.	1	2	3	4	5	6	7
ECR25.	I tell my partner just about everything.	1	2	3	4	5	6	7
ECR27.	I usually discuss my problems and concerns with my partner.	1	2	3	4	5	6	7
ECR29.	I feel comfortable depending on romantic partners.	1	2	3	4	5	6	7
ECR31.	I don't mind asking romantic partners comfort, advice, or help.	1	2	3	4	5	6	7

Used with the permission of M.-F. Lafontaine.
Lafontaine, Brassard, Lussier, Valois, Shaver, & Johnson (2015).

Appendix G

Measure Used in Study II

DIFFICULTIES IN EMOTION REGULATION SCALE (DERS)

Please indicate how often each statement applies to you, based on the following scale:

Almost never	Sometimes	About half of the time	Most of the time	Almost always
1	2	3	4	5

DERS1.	I am clear about my feelings.	1	2	3	4	5
DERS2.	I pay attention to how I feel.	1	2	3	4	5
DERS3.	I experience my emotions as overwhelming and out of control.	1	2	3	4	5
DERS4.	I have no idea how I am feeling.	1	2	3	4	5
DERS5.	I have difficulty making sense out of my feelings.	1	2	3	4	5
DERS6.	I am attentive to my feelings.	1	2	3	4	5
DERS7.	I know exactly how I am feeling.	1	2	3	4	5
DERS8.	I care about what I am feeling.	1	2	3	4	5
DERS9.	I am confused about how I feel.	1	2	3	4	5
DERS10.	When I'm upset, I acknowledge my emotions.	1	2	3	4	5
DERS11.	When I'm upset, I become angry with myself for feeling that way.	1	2	3	4	5
DERS12.	When I'm upset, I become embarrassed for feeling that way.	1	2	3	4	5
DERS13.	When I'm upset, I have difficulty getting work done.	1	2	3	4	5
DERS14.	When I'm upset, I become out of control.	1	2	3	4	5
DERS15.	When I'm upset, I believe that I will remain that way for a long time.	1	2	3	4	5
DERS16.	When I'm upset, I believe that I'll end up feeling very depressed.	1	2	3	4	5
DERS17.	When I'm upset, I believe that my feelings are valid and important.	1	2	3	4	5
DERS18.	When I'm upset, I have difficulty focusing on other things.	1	2	3	4	5
DERS19.	When I'm upset, I feel out of control.	1	2	3	4	5
DERS20.	When I'm upset, I can still get things done.	1	2	3	4	5
DERS21.	When I'm upset, I feel ashamed with myself for feeling that way.	1	2	3	4	5

Almost never	Sometimes	About half of the time	Most of the time	Almost always
1	2	3	4	5

DERS22.	When I'm upset, I know that I can find a way to eventually feel better.	1	2	3	4	5
DERS23.	When I'm upset, I feel like I am weak.	1	2	3	4	5
DERS24.	When I'm upset, I feel like I can remain in control of my behaviours.	1	2	3	4	5
DERS25.	When I'm upset, I feel guilty for feeling that way.	1	2	3	4	5
DERS26.	When I'm upset, I have difficulty concentrating.	1	2	3	4	5
DERS27.	When I'm upset, I have difficulty controlling my behaviours.	1	2	3	4	5
DERS28.	When I'm upset, I believe that there is nothing I can do to make myself feel better.	1	2	3	4	5
DERS29.	When I'm upset, I become irritated with myself for feeling that way.	1	2	3	4	5
DERS30.	When I'm upset, I start to feel very bad about myself.	1	2	3	4	5
DERS31.	When I'm upset, I believe that wallowing in it is all I can do.	1	2	3	4	5
DERS32.	When I'm upset, I lose control over my behaviours.	1	2	3	4	5
DERS33.	When I'm upset, I have difficulty thinking about anything else.	1	2	3	4	5
DERS34.	When I'm upset, I take time to figure out what I'm really feeling.	1	2	3	4	5
DERS35.	When I'm upset, it takes me a long time to feel better.	1	2	3	4	5
DERS36.	When I'm upset, my emotions feel overwhelming.	1	2	3	4	5

Gratz & Roemer (2004).

Appendix H

Measure Used in Study II & III

OTTAWA SELF-INJURY INVENTORY (OSI)

Please answer the following questions according to the provided scale if requested.

How often in the past ***month*** have you :

Not at all	At least once	Weekly	Daily
0	1	2	3

OSI1.	**Thought** about injuring yourself without the intention to kill yourself?	0	1	2	3
OSI2.	**Actually injured** yourself without the intention to kill yourself?	0	1	2	3

How often in the ***past 6 months*** have you :

Not at all	1 – 5 times	Monthly	Weekly	Daily
0	1	2	3	4

OSI3.	**Thought** about injuring yourself without the intention to kill yourself?	0	1	2	3	4
OSI4.	**Actually injured** yourself without the intention to kill yourself?	0	1	2	3	4

How often in the ***past year*** have you :

Not at all	1 – 5 times	Monthly	Weekly	Daily
0	1	2	3	4

OSI5.	**Thought** about taking your life (Killing yourself)?	0	1	2	3	4
OSI6.	Have you ever made an attempt on to take your life? 1 = Yes 2 = No (**Skip to question OSI8**)					
OSI7.	If yes, please indicate the number of times : In the past month: _____ In the past year:_____ In the past 6 months: _____ Prior to the past year:_____					
OSI8.	Have you been treated by a doctor after injuring yourself on purpose? (E.g. stitches, wound dressings, etc.) 1 = Yes 2 = No (**Skip to question OSI10**)					
OSI9.	If yes, how often did a doctor treat you in the past year for hurting yourself on purpose? _____ time(s)					

OSI10. Have you been kept in hospital because of hurting yourself on purpose?

1 = Yes 2 = No (**Skip to question OSI13**)

OSI11. If yes, how many times in the past year did you stay overnight in emergency?
_____ time(s)

OSI12. If yes, how many times in the past year did you get admitted to a hospital unit?
_____ time(s)

If you have <u>never thought about nor actually</u> hurt yourself without the intent of killing yourself at any time, please skip to the next questionnaire.

If you have <u>ever at any time thought about, but not actually</u> hurt yourself without the intent of killing yourself please complete the following questions in this survey: OSI 15 to OSI 17, OSI 102, OSI 112, OSI 116 to OSI 120.

If you have <u>ever at any time actually</u> hurt yourself without the intent of killing yourself, please complete this entire questionnaire.

OSI13. How old were you when you started to self-injure?
_____ years and _____ months

OSI14. The *<u>first time</u>* you hurt yourself, where did you get the idea? *<u>(please choose only one)</u>*

1 = I <u>read</u> about it in a book or magazine
2 = I <u>read</u> about it on an Internet website
3 = I <u>saw</u> other people do it in a <u>non-hospital</u> setting
4 = I <u>heard</u> about it from other people in a <u>hospital</u> setting
5 = It was my own idea
6 = I <u>read</u> about it on a Web blog
7 = I <u>saw</u> it happen in a movie or on TV
8 = I <u>heard</u> about it from other people in a <u>non-hospital</u> setting
9 = I <u>saw</u> other people do it in a <u>hospital</u> setting
10 = Other : (please list) _____

When you get the urge to hurt yourself :

Not at all 0	Very little 1	Somewhat 2	Quite a bit 3	Extremely 4

OSI15.	The urge is distressing/upsetting	0	1	2	3	4
OSI16.	The urge is comforting	0	1	2	3	4
OSI17.	The urge is intrusive/invasive	0	1	2	3	4

OSI18. Do you only harm yourself taking drugs or alcohol?

1 = Yes 2 = No

OSI19. Do you let other people know that you harm yourself?

1 = No one (**Skip to OSI21)** 2 = Some people 3 = Most people

OSI20. Who do you tell?

1 = Friends __
2 = Psychologist/psychiatrist __
3 = School counselor __
4 = Other Mental Health Professional __
5 = Telephone helpline __
6 = Family member __
7 = Family doctor __
8 = Other : (please specify) _____

What areas of your body *did/do* you injure?

*Please indicate **all areas** that apply and the area **most commonly injured**.*

OSI21. When you **first started**

	OSI21a. All that apply	**OSI21b.** Most frequent
1 = scalp	__	__
2 = eye(s)	__	__
3 = ear(s)	__	__
4 = face	__	__
5 = nose	__	__
6 = lips	__	__
7 = inside mouth	__	__
8 = neck/throat	__	__
9 = chest	__	__
10 = breast(s)	__	__
11 = back	__	__
12 = shoulder(s)	__	__
13 = abdomen	__	__
14 = hips/buttocks	__	__
15 = genitals	__	__
16 = rectum	__	__
17 = upper arm/elbow	__	__
18 = lower arm/wrist	__	__
19 = hand/finger(s)	__	__
20 = lower leg/ankle	__	__
21 = thigh/knee	__	__
22 = foot/toe(s)	__	__
23 = Other : _____	__	__

OSI22. **Currently** (past month if still self-injuring)

	OSI22a. All that apply	**OSI22b.** Most frequent
1 = scalp	__	__
2 = eye(s)	__	__
3 = ear(s)	__	__
4 = face	__	__
5 = nose	__	__
6 = lips	__	__
7 = inside mouth	__	__
8 = neck/throat	__	__
9 = chest	__	__
10 = breast(s)	__	__

11 = back	__	__
12 = shoulder(s)	__	__
13 = abdomen	__	__
14 = hips/buttocks	__	__
15 = genitals	__	__
16 = rectum	__	__
17 = upper arm/elbow	__	__
18 = lower arm/wrist	__	__
19 = hand/finger(s)	__	__
20 = lower leg/ankle	__	__
21 = thigh/knee	__	__
22 = foot/toe(s)	__	__
23 = Other : _____	__	__

How did/do you injure yourself (without the intention to kill yourself)?

Please indicate all areas that apply and the method most frequently used.

OSI23. When you **first started**

	OSI23a. All that apply	**OSI23b.** Most frequent
1 = cutting	__	__
2 = scratching	__	__
3 = interfering with wound healing	__	__
4 = burning	__	__
5 = biting	__	__
6 = hitting	__	__
7 = hair pulling	__	__
8 = severe nail biting and/or nail injuries	__	__
9 = piercing skin with sharp pointy objects	__	__
10 = piercing of body parts	__	__
11 = excessive use of street drugs	__	__
12 = excessive use of alcohol	__	__
13 = Trying to break bones	__	__
14 = headbanging	__	__
15 = taking too much medication		
16 = taking too little medication	__	__
17 = eating or drinking things that are not food	__	__
18 = Other : (please list) _____		

OSI24. **Currently** (past month if still self-injuring)

	OSI24a. All that apply	**OSI24b.** Most frequent
1 = cutting		
2 = scratching	—	—
3 = interfering with wound healing	—	—
4 = burning	—	—
5 = biting	—	—
6 = hitting	—	—
7 = hair pulling	—	—
8 = severe nail biting and/or nail injuries	—	—
9 = piercing skin with sharp pointy objects	—	—
10 = piercing of body parts	—	—
11 = excessive use of street drugs	—	—
12 = excessive use of alcohol	—	—
13 = Trying to break bones	—	—
14 = headbanging	—	—
15 = taking too much medication	—	—
16 = taking too little medication		
17 = eating or drinking things that are not food	—	—
18 = Other : (please list)	—	—
_____		

Why do you think you started and if you continue, why do you still self-injure (without the intention to kill yourself)?

Please indicate the number that best represents how much your self-injury is due to that reason according to the scale provided.

Why did you start?

Never a reason		Sometimes a reason		Always a reason
0	1	2	3	4

OSI25.	To release unbearable tension	0	1	2	3	4
OSI26.	To experience a “high” like a drug high	0	1	2	3	4
OSI27.	To stop my parents from being angry at me	0	1	2	3	4
OSI28.	To stop feeling alone and empty	0	1	2	3	4
OSI29.	To get care and attention from other people	0	1	2	3	4
OSI30.	To punish myself	0	1	2	3	4
OSI31.	To provide a sense of excitement that feels exhilarating	0	1	2	3	4

OSI32.	To relieve nervousness/fearfulness	0	1	2	3	4
OSI33.	To avoid getting in trouble for something I did	0	1	2	3	4
OSI34.	To distract me from unpleasant memories	0	1	2	3	4
OSI35.	To change my body image and/or appearance	0	1	2	3	4
OSI36.	To belong to a group	0	1	2	3	4
OSI37.	To release anger	0	1	2	3	4
OSI38.	To stop my friends/boyfriend/girlfriend from being angry with me	0	1	2	3	4
OSI39.	To show others how hurt or damaged I am	0	1	2	3	4
OSI40.	To show others how strong or tough I am	0	1	2	3	4
OSI41.	To help me escape from uncomfortable feelings or moods	0	1	2	3	4
OSI42.	To satisfy voices inside or outside me telling me to do it	0	1	2	3	4
OSI43.	To experience physical pain in one area, when the other pain I feel is unbearable	0	1	2	3	4
OSI44.	To stop people from expecting so much from me	0	1	2	3	4
OSI45.	To relieve feelings of sadness or feeling “down”	0	1	2	3	4
OSI46.	To have control in a situation where no one can influence me	0	1	2	3	4
OSI47.	To stop me from thinking about ideas of killing myself	0	1	2	3	4
OSI48.	To stop me from acting out ideas of killing myself	0	1	2	3	4
OSI49.	To produce a sense of being real when I feel numb and “unreal”	0	1	2	3	4
OSI50.	To release frustration	0	1	2	3	4
OSI51.	To get out of doing something that I don’t want to do	0	1	2	3	4
OSI52.	For no reason that I know about – it just happens sometimes	0	1	2	3	4
OSI53.	To prove to myself how much I can take	0	1	2	3	4
OSI54.	For sexual excitement	0	1	2	3	4
OSI55.	To diminish feelings of sexual arousal	0	1	2	3	4
OSI57.	Other : (please list) _____ _____	0	1	2	3	4

If you're currently doing it, why are you still self-injuring yourself?

Never a reason		Sometimes a reason		Always a reason
0	1	2	3	4

OSI58.	To release unbearable tension	0	1	2	3	4
OSI59.	To experience a "high" like a drug high	0	1	2	3	4
OSI60.	To stop my parents from being angry at me	0	1	2	3	4
OSI61.	To stop feeling alone and empty	0	1	2	3	4
OSI62.	To get care and attention from other people	0	1	2	3	4
OSI63.	To punish myself	0	1	2	3	4
OSI64.	To provide a sense of excitement that feels exhilarating	0	1	2	3	4
OSI65.	To relieve nervousness/fearfulness	0	1	2	3	4
OSI66.	To avoid getting in trouble for something I did	0	1	2	3	4
OSI67.	To distract me from unpleasant memories	0	1	2	3	4
OSI68.	To change my body image and/or appearance	0	1	2	3	4
OSI69.	To belong to a group	0	1	2	3	4
OSI70.	To release anger	0	1	2	3	4
OSI71.	To stop my friends/boyfriend/girlfriend from being angry with me	0	1	2	3	4
OSI72.	To show others how hurt or damaged I am	0	1	2	3	4
OSI73.	To show others how strong or tough I am	0	1	2	3	4
OSI74.	To help me escape from uncomfortable feelings or moods	0	1	2	3	4
OSI75.	To satisfy voices inside or outside of me telling me to do it	0	1	2	3	4
OSI76.	To experience physical pain in one area, when the other pain I feel is unbearable	0	1	2	3	4
OSI77.	To stop people from expecting so much from me	0	1	2	3	4
OSI78.	To relieve feelings of sadness or feeling "down"	0	1	2	3	4
OSI79.	To have control in a situation where no one can influence me	0	1	2	3	4
OSI80.	To stop me from thinking about ideas of killing myself	0	1	2	3	4
OSI81.	To stop me from acting out ideas of killing myself	0	1	2	3	4
OSI82.	To produce a sense of being real when I feel numb and "unreal"	0	1	2	3	4
OSI83.	To release frustration	0	1	2	3	4
OSI84.	To get out of doing something that I don't want to do	0	1	2	3	4
OSI85.	For no reason that I know about – it just happens sometimes	0	1	2	3	4

OSI86.	To prove to myself how much I can take	0	1	2	3	4
OSI87.	For sexual excitement	0	1	2	3	4
OSI88.	To diminish feelings of sexual arousal	0	1	2	3	4
OSI89.	I'm "addicted" to doing it.	0	1	2	3	4
OSI90.	Other : (please list) _____ _____	0	1	2	3	4

Please answer question OSI91 according to the scale provided.

Never		Sometimes		Always
0	1	2	3	4

OSI91.	Do you feel relief after harming yourself?	0	1	2	3	4

OSI92. If you do feel relief, how long does the relief last? (only choose one please)

1 = Less than 1 minute
2 = 1 to 5 minutes
3 = 6 to 30 minutes
4 = 31 to 60 minutes
5 = Hours
6 = Days

Self-injury is extremely helpful at :
Please answer question according to the scale provided.

Not at all helpful		Somewhat helpful		Extremely helpful
0	1	2	3	4

OSI93.	Releasing unbearable tension	0	1	2	3	4
OSI94.	Releasing anger	0	1	2	3	4
OSI95.	Releasing frustration	0	1	2	3	4
OSI96.	Releasing nervousness	0	1	2	3	4
OSI97.	Releasing feelings of sadness or feeling down	0	1	2	3	4
OSI98.	Other : (please list the reasons other than the ones provided and rate their helpfulness to you) _____ _____	0	1	2	3	4
OSI99.	Other : _____	0	1	2	3	4

OSI100. Once you think about harming yourself, do you <u>*always*</u> do it?

1 = Yes 2 = No

OSI101. When you hurt yourself on purpose, *on average*, how much time goes by between thinking about it and doing it? *(Please check 1 item only)*

_____ less than 1 minute
_____ 1 minute to 5 minutes
_____ 6 minutes to 30 minutes
_____ over 30 minutes but less than 1 hour
_____ hours
_____ days

Please answer question OSI102 according to the scale provided.

Never		Sometimes		Always
0	1	2	3	4

OSI102.	Do you hurt or think about hurting yourself after stressful things happen?	0	1	2	3	4

OSI103. What kinds of stressful situation(s) typically lead to self-injury?

	OSI103a. All that apply	**OSI103b.** Specify what type
Abandonment	—	_____
Loss	—	_____
Other	—	_____

Please answer question OSI104 according to the scale provided.

Never		Sometimes		Always
0	1	2	3	4

OSI104.	Do you feel physical pain when you harm yourself?	0	1	2	3	4

Since you started to self-injure, have you found that:

Never		Sometimes		Always
0	1	2	3	4

OSI105.	The self-injurious behaviour occurs more often than intended?	0	1	2	3	4
OSI106.	The severity in which the self-injurious behaviour occurs has increased (e.g., deeper cuts, more extensive parts of your body)?	0	1	2	3	4
OSI107.	If the self-injurious behaviour produced an effect when started, you now need to self-injure more frequently or with greater intensity to produce the same effect?	0	1	2	3	4
OSI108.	This behaviour or thinking about it consumes a significant amount of your time (e.g., planning and thinking about it, collecting and hiding sharp objects, doing it and recovering from it)?	0	1	2	3	4

OSI109.	Despite a desire to cut down or control this behaviour, you are unable to do so?	0	1	2	3	4
OSI110.	You continue this behaviour despite recognizing that it is harmful to you physically and/or emotionally?	0	1	2	3	4
OSI111.	Important social, family, academic or recreational activities are given up or reduced because of this behaviour?	0	1	2	3	4

If you are trying to resist hurting yourself, what do you do instead?

*Please indicate all areas that apply and the **most helpful** thing you do to resist hurting yourself.*

OSI112.		**OSI112a.** All that apply	**OSI112b.** Most helpful
	1. Never try to resist	__	__
	2. Talk with someone	__	__
	3. Exercise / sports	__	__
	4. Reading writing, music, dance	__	__
	5. Watch television, play video or computer games	__	__
	6. Do things to relax (e.g., hot bath, yoga deep breathing)	__	__
	7. Use alcohol and or street drugs	__	__
	8. Do anything to keep hands busy	__	__
	9. Other : (please list)		
	_____	__	__

Please answer the question OSI113 according to the scale provided.

Not at all		Somewhat		Extremely
0	1	2	3	4

OSI113.	How motivated are you at this time to stop self-injuring?	0	1	2	3	4

OSI114. What treatment(s) if any, have you received with the goal of reducing and/or eliminating your self-harm? (*choose all that apply*)

1 = I have not had a treatment
2 = I declined treatment
3 = Self help (e.g. self help books, Internet)
4 = Individual therapy
5 = School counselling
6 = Group therapy
7 = Family therapy
8 = Medication (please specify) : _____
9 = Other (please specify) : _____

OSI115. What treatment(s) if any, have you found the most helpful in reducing and/or eliminating
Your self-harm? (*choose all that apply*)

1 = I have not had a treatment	6 = Group therapy
2 = I declined treatment	7 = Family therapy
3 = Self help (e.g. self help books, Internet)	8 = Medication (please specify) :_____
4 = Individual therapy	
5 = School counselling	9 = Other (please specify) :_____

Please answer question OSI117 according to the scale provided

Strongly disagree		Somewhat		Strongly agree
0	1	2	3	4

OSI116. I feel that this questionnaire has fully described my experience of self injury. 0 1 2 3 4

OSI117. What information about self injury would be helpful to young people? for example: How to help a friend who self injures?, Where to get help? Information about self-injury from other young people?

OSI118. The best way to get information about self-injury to young people is through... (e.g., internet, school, doctors, friends, movies... etc

OSI119. Where do <u>you</u> get information about self-injury from?

OSI120.	Is there anything else you would like to share with us regarding your self-injury behaviour?

Used with the permission of P. Cloutier.
Cloutier & Nixon (2003).

Appendix I

Measure Used in Study III

DYADIC TRUST SCALE (DTS)

Please circle one answer for each statement. Please answer all statements.

Very strongly agree	Strongly agree	Mildly agree	Neutral	Mildly disagree	Strongly disagree	Very strongly disagree
1	2	3	4	5	6	7

DTS1.	My partner is primarily interested in his (her) own welfare.	1	2	3	4	5	6	7
DTS2.	There are times when my partner cannot be trusted.	1	2	3	4	5	6	7
DTS3.	My partner is perfectly honest and truthful with me.	1	2	3	4	5	6	7
DTS4.	I feel that I can trust my partner completely.	1	2	3	4	5	6	7
DTS5.	My partner is truly sincere in his (her) promises.	1	2	3	4	5	6	7
DTS6.	I feel that my partner does not show me enough consideration.	1	2	3	4	5	6	7
DTS7.	My partner treats me fairly and justly.	1	2	3	4	5	6	7
DTS8.	I feel that my partner can be counted on to help me.	1	2	3	4	5	6	7

Larzelere & Huston (1980).

Appendix J

Measure Used in Study III

CAREGIVING (CG)

For each statement, circle the number that indicates how descriptive the statement is of you.

Not at all descriptive of me											Very descriptive of me
1	2	3	4	5							6
CG1.	I sometimes push my partner away when he/she reaches out for a needed hug or kiss.	1	2	3	4	5	6				
CG2.	I can always tell when my partner needs comforting, even when he/she doesn't ask for it.	1	2	3	4	5	6				
CG3.	I always respect my partner's ability to make his/her own decisions and solve his/her own problems.	1	2	3	4	5	6				
CG4.	When my partner cries or is distressed, my first impulse is to hold or touch him/her.	1	2	3	4	5	6				
CG5.	I help my partner without becoming overinvolved in his/her problems.	1	2	3	4	5	6				
CG6.	Too often, I don't realize when my partner is upset or worried about something.	1	2	3	4	5	6				
CG7.	When my partner is troubled or upset, I move closer to provide support and comfort.	1	2	3	4	5	6				
CG8.	I'm good at knowing when my partner needs my help or support and when he/she would rather handle things alone.	1	2	3	4	5	6				
CG9.	I feel comfortable holding my partner when he/she needs physical signs of support and reassurance.	1	2	3	4	5	6				
CG10.	I'm not very good at 'tuning in' to my partner's needs and feelings.	1	2	3	4	5	6				
CG11.	I tend to get overinvolved in my partner's problems and difficulties.	1	2	3	4	5	6				
CG12.	I don't like it when my partner is needy and clings to me.	1	2	3	4	5	6				
CG13.	I often end up telling my partner what to do when he/she is trying to make a decision.	1	2	3	4	5	6				
CG14.	I sometimes miss the subtle signs that show how my partner is feeling.	1	2	3	4	5	6				
CG15.	When necessary I can say 'no' to my partner's requests for help without feeling guilty.	1	2	3	4	5	6				
CG16.	I tend to be too domineering when trying to help my partner.	1	2	3	4	5	6				
CG17.	When it's important, I take care of my own needs before I try to take care of my partner's.	1	2	3	4	5	6				
CG18.	I am very attentive to my partner's nonverbal signals for help and support.	1	2	3	4	5	6				

Not at all descriptive of me 1	2	3	4	5	Very descriptive of me 6

CG19.	I can easily keep myself from becoming overly concerned about or overly protective of my partner.	1	2	3	4	5	6
CG20.	I'm very good about recognizing my partner's needs and feelings, even when they're different from my own.	1	2	3	4	5	6
CG21.	I can help my partner work out his/her problems without 'taking control'.	1	2	3	4	5	6
CG22.	I sometimes draw away from my partner's attempts to get a reassuring hug from me.	1	2	3	4	5	6
CG23.	I am always supportive of my partner's *own efforts* to solve his/her problems.	1	2	3	4	5	6
CG24.	I tend to take on my partner's problems – and then feel burdened by them.	1	2	3	4	5	6
CG25.	When my partner seems to want or need a hug, I'm glad to provide it.	1	2	3	4	5	6
CG26.	When I help my partner with something, I tend to want to do things 'my way'.	1	2	3	4	5	6
CG27.	I frequently get too 'wrapped up' in my partner's problems and needs.	1	2	3	4	5	6
CG28.	I sometimes 'miss' or 'misread' my partner's signals for help and understanding.	1	2	3	4	5	6
CG29.	When my partner is crying or emotionally upset, I sometimes feel like withdrawing.	1	2	3	4	5	6
CG30.	When my partner tells me about a problem, I sometimes go too far in criticizing his/her own attempts to deal with it.	1	2	3	4	5	6
CG31.	I create problems by taking on my partner's troubles as if they were my own.	1	2	3	4	5	6
CG32.	When helping my partner solve a problem, I am much more 'cooperative' than 'controlling'.	1	2	3	4	5	6

Used with the permission of P. R. Shaver.
Kunce & Shaver (1994).