

Intimate Partner Cyber Aggression

iCARE: Cyber Behaviours in Intimate Relationships

By:

Alyssa C. Bonneville

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Alyssa C. Bonneville

Abstract

Technology usage is at an all-time high in Canada, resulting in almost all Canadians, under the age of 45, using the internet everyday (Statistics Canada, 2017). Recently, it has been highlighted that intimate partners are exposed to various vulnerabilities online. Individuals can be victimized by their intimate partners by means of cyber acts, called cyber aggression. Cyber aggression is characterized as threatening, insulting or humiliating acts intended to cause distress, such as sending embarrassing photos or videos over the Internet, using an intimate partner's passwords to access their social media and email to spy, or the using technology to exhibit control over one's partner (Borrajo et al., 2015; Buesa & Calvete, 2011; Watkins et al., 2016; Wright, 2017). There are two central types of cyber aggression: direct and control monitoring (Borrajo et al., 2015). Currently, cyber aggression among intimate partners has been scarcely examined in the literature. To address intimate partner cyber aggression, three foundational areas were examined in this dissertation, (1) who might predict intimate partner cyber aggression, (2) why perpetrators employ these behaviours, (3) and what the associations are between intimate partner cyber aggression perpetration and well-being. Both quantitative and qualitative research methods were employed to holistically address this topic. In an attempt to answer the question "who" perpetrates this form of aggression, an association between insecure attachment characteristics and partner directed cyber aggression was discovered. While exploring "why" individuals perpetrate intimate partner cyber aggression, six underlying motives were revealed. Lastly, while answering the question "what" is the relationship between cyber aggression perpetration and well-being, an association between mental health symptoms and relationship investment was discovered. Given technology's continuous advancements, the engagement in online aggressive behaviours also uniformly progress, making this research topic relevant and time sensitive. These

research findings advanced the scientific literature tremendously as the results created a foundational knowledge for future research to build from. Additionally, this dissertation has clinical implications that can be implemented immediately, which is imperative given the recent reliance on technology as a result of the COVID-19 pandemic.

Key Words: Intimate Partner Cyber Aggression, Perpetration, Attachment, Motivations, Well-Being

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iCARE: Cyber Behaviours in Intimate Relationships

Imagine using your intimate partner's laptop one day as you work from home during the COVID-19 pandemic. While using the laptop a notification alerts the screen indicating your intimate partner has a new private message from someone on social media. You briefly notice the author of the message is someone you do not know. What do you do? Do you let your curiosity get the better of you and open the message to find out more about who this person is or what they have to say? Or do you dismiss the notification and continue with your work, unbothered?

This is a surprisingly common experience for young adults given the current technological age. Depending on what you would choose to do in the above noted situation, this could become a situation that leads to cyber aggression exhibited between intimate partners. Cyber aggression is characterized as threatening, insulting or humiliating acts intended to cause distress, such as sending embarrassing photos or videos over the Internet, the use of an intimate partner's passwords for social media and email to spy, or the use of technology to exhibit control over one's partner (Borrajo et al., 2015; Buesa & Calvete, 2011; Grigg, 2010; Watkins, et al., 2016; Wright, 2017). An intimate partner (IP) is an individual's connection with another person consisting of a close personal relationship, which can involve emotional connectedness, physical or sexual contact, identity as a couple, and/or regular contact (Wright, 2017).

Reviews of psychological studies indicate that cyber aggression among young adults is only recently beginning to capture the research eye. Scientific research appears to be playing catch-up with the online world as technological advancements are produced at strikingly high rates. Technology usage is at an all-time high in Canada, resulting in almost all Canadians, under the age of 45, using the internet daily (Statistics Canada, 2017). In 2010, more than 80% of Canadians reported being on the internet (Haight et al., 2014) and research suggests the number

of individuals using technology is rising steadily yearly. A substantial number of individuals are spending large portions of their day using technology of some kind (Lenhart et al., 2010), especially since the commencement of the COVID-19 pandemic. Technology is currently being used in a multitude of settings including professional, personal, and financial capacities, entertainment, and to communicate and interact with others. Given the sophistication of technology, individuals are now privy to intimate details about others due to online exposure (Draucker & Martsof, 2010). In the past, research has demonstrated how increased access to information about others can be maladaptive, more specifically increased access can sometimes result in cyber aggressive activities (Hinduja & Patchin, 2011).

Recently, it has been highlighted that intimate partners are at risk of unique forms of aggression with the advances of the online world. For example, individuals can be victimized online by their close intimate partners by means of direct cyber acts and/or control monitoring behaviours (Borrajo et al., 2015). Direct cyber aggression can be characterized by behaviours such as harassing or insulting a partner, spreading rumors or saying mean things about them, and using their private information in a public manner (Finn, 2004; Watkins et al., 2016). Conversely, control monitoring cyber aggression is characteristic of behaviours such as surveillance of a partner's online activity and invading a partner's privacy in covert ways for the purposes of control (Burke et al., 2011). Both direct and control monitoring are characteristic of a phenomenon called cyber aggression. To be clear, cyber aggression is in contrast to cyberbullying, which is identified by aggressive behaviours carried out repeatedly in an electronic context that involves an imbalance of power (Dempsey et al., 2011; Kowalski et al., 2014). Cyber aggression, however, happens among known individuals and may or may not occur repeatedly (Watkins et al., 2016). The term cyber aggression is therefore a broader definition that

involves any aggressive or hostile act occurring via online means (Grigg, 2010). Cyber aggression is the term that is used in this dissertation.

Research has demonstrated that intimate partner aggression (IPA) is a general term that encompasses various specific types of behaviours such as physical, verbal, social, and cyber. Intimate partner cyber aggression, which is a key focus of this dissertation, has been argued by researchers to be an extension of IPA (Dimond et al., 2011). However, the research exploring IPCA is relatively scant. Therefore, this dissertation will draw on literature from IPA in order to inform this study, given the literature on IPCA is insufficient.

Draucker and Martsof (2010) were among the first researchers to begin to explore the area of IPCA. Within the past 8 years, a small handful of other researchers have also begun to look at cyber aggression among intimate partners (Borrajo et al., 2015; Burke et. al., 2011; Kellerman et. al., 2013; Wright, 2014, 2017; Zweig et al., 2013). Despite these few research articles, there still exists major gaps in our knowledge of cyber aggression perpetration specifically among intimate partners. The bulk of the research in this area has focused on victims (Campbell et al. 2012), however, important information regarding those who perpetrate these behaviours is missing. Primarily, it is important to examine the question of “who” is most likely to engage in IPCA perpetration? In an attempt to answer this question, one of the most important variables to examine is attachment (Bookwala, 2002). Of additional interest is the question “why” would young adults perpetrate these behaviours? In an effort to answer this question it is important to examine the underlying motives to engage in IPCA. Finally, “what” are the relationships between the perpetration of cyber aggressive behaviours, mental health, and relationship investment is needed. These three central questions were addressed in this dissertation. There is preliminary evidence to demonstrate that cyber aggression exists between

intimate partners and can result in quite detrimental effects (Borrajo, et al., 2015; Burke, 2011; Kellerman et. al., 2013; Wright, 2014, 2017; Zweig et al., 2013). It is vital to address these gaps within the research, given that the more technology continues to advance so will the cyber aggressive tactics employed. Understanding more about online aggression between close partners will help parents, teachers, and clinicians effectively educate, work, and relate with individuals who experience this type of aggression. Currently, there are programs implemented in high schools that focus on physical aggression in intimate relationships (PREVNet, 2020), but lacking at this time is a focus on cyber aggressive acts.

When examining cyber aggression, it is important to consider many potential connections and theoretical underpinnings that may help researchers understand the notion of cyber aggression within intimate relationships. Previous research has told us that attachment needs have a large influence on the ways individuals behave and regulate their emotions in close relationships (Wilson et al., 2013). Bookwala (2002) argued that attachment theory can provide a valuable psychological perspective to understanding the phenomenon of relationship aggression. Given these findings, it seems logical to examine attachment theory as a way to understand the use of cyber aggression within close relationships. There are many research articles that have examined general intimate partner aggression and attachment styles (Bonneville et al., 2016; Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998). However, the research exploring online aggression between intimate partners and attachment is relatively scant.

There is some preliminary research by Wright (2014, 2017) that has examined the nature of partner-directed cyber aggression and attachment and found promising results. In her study from 2014 she examined 600 adolescents and young adults regarding their use of direct intimate

partner cyber aggressive behaviors and privacy invasion (control monitoring IPCA), as well as a self-report scale (Fraley et. al., 2000) regarding partner attachment. She found a relationship between intimate partner cyber aggression and attachment characteristics, such that higher levels of anxious attachment were related to higher levels of cyber aggressive acts. It is important to note, that this research included methodological limitations, such as a limited number of items used to assess cyber aggression. Future research should aim to replicate these studies using more methodologically sound measures. Given there is a large body of psychological research that has made linkages between general IPA and attachment characteristics (Bonneville et al., 2016; Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998), there is immense value in exploring the connection between attachment characteristics of perpetrators and cyber aggression directed towards an intimate partner.

Extending our explorations, perpetrator's motivations for their use of cyber aggression directed towards their intimate partner was a logical next step. Understanding the reasons why an individual behaves a certain way is foundational to addressing and reducing the incidences of such behaviour. To date, there is only one study that has examined partner directed cyber aggression motivations, this study was conducted by Kellerman et al., (2013). They examined the motivations individuals may have for engaging in cyber aggression with their friends and dating partners. Their results suggested that the main motivators of IPCA included jealousy, retaliation, anger, and humour. In order to learn more about these motivators, literature from the social aggression and cyberbullying field has been drawn upon. Potential motivators for cyberbullying and social aggression behaviours are jealousy, retaliation, anger, humour, feelings of relationship threat, control, and decreased confrontation (Borrajo et al., 2015; Draucker & Marksolf, 2010; Giordano et al., 2015; Kellerman et al., 2013; Miga, et al., 2010; Varjas et. al,

2010). The IPCA motivations literature is fairly scant and requires further development and exploration. Once this area is further developed, this knowledge can be used to inform curriculum developments, parental responsiveness and care, and clinical interventions and support. Understanding underlying motives for the perpetration of online aggression between partners is an important and worthwhile endeavor.

Finally, a third aspect of this phenomena that is important to consider are the associations between perpetrating IPCA and potential negative impacts. There is a major gap in the literature in the area of understanding the impact for the perpetrators of IPCA. Although there has been some research into cyber aggression in intimate relationships, relatively few research studies have specifically looked at the impact of these acts on the perpetrators, rather the majority of the research has examined the consequences for victims (Campbell et al. 2012). There has been some research, however, on the impact of cyber aggression when perpetrated by strangers, acquaintances, and friends. Cyber aggression, similar to other forms of aggression, is associated with a host of negative consequences affecting both the victim and the perpetrator. There are two main areas that require close attention when exploring the consequences of IPCA perpetration: personal wellbeing and relationship investment. Based on literature on peer-related cyber aggression, personal impacts that have been noted are symptoms of depression and anxiety (Campbell et al. 2012; Hinduja & Patchin, 2010; Kowalski & Limber 2013; Schenk et al. 2013). In addition, based on the literature on IPA more generally, an association between IPA and low levels of relationship satisfaction has been discovered (Carroll et. al., 2010; Gavazzi et al., 2000; Panuzio & DiLilo, 2010). In an attempt to bridge the gap in IPCA, it was vital to understand how perpetrating IPCA may be associated with personal wellbeing and relationship investment outcomes, as this would better inform support groups and prevention measures. Moreover, the

area of intimate partner cyber aggression is underdeveloped in the literature. Given the pervasive and rapid nature of the cyber world, understanding more about the perpetration of aggressive online behaviours directed towards a close partner is essential.

To summarize, this dissertation examined three important issues in the area of intimate partner cyber aggression: 1. Who is most likely to engage in these behaviours, specifically in terms of attachment, 2. Why do individuals perpetrate these behaviours, which was examined by exploring underlying motivations and 3. What is the association between personal wellbeing and relationship investment and the perpetration of these behaviours.

Purpose of this Dissertation

To address these important components of partner directed cyber aggression this dissertation was comprised of three studies. The first study examined the relationship between cyber aggression perpetration among young adult intimate partners and the perpetrator's attachment needs using a large online survey examining young adults' self-reported IPCA and attachment related behaviours. This provided insight into the ways attachment interacts with cyber aggression perpetration, and helped to answer the question "who" may be more likely to perpetrate IPCA.

The second study included in this dissertation explored the potential motivators for perpetrators to engage in cyber aggression with their intimate partners. This study focused on motivations that have been found in preliminary cyber aggression research such as: retaliation, anger, jealousy, and humour (Kellerman et al., 2013). Motivations that were previously discovered to underlie the use of social aggression were also explored, such as: feelings of relationship threat, control, and decreased confrontation (Borrajo et al., 2015, Draucker & Marksolf, 2010; Giordano et al., 2015; Miga et al., 2010; Varjas et. al, 2010). The second study

was qualitative in nature, providing an in-depth look at the motivations at play with IPCA perpetration. This part of the dissertation helped answer the question “why” perpetrate this form of aggression.

The third, and final study included in this dissertation explored the well-being of the perpetrators of online aggressive acts targeting an intimate partner. The associations between cyber aggressive behaviours and personal wellbeing and relationship investment were examined. Additionally, The Motivations for Intimate Partner Cyber Aggression Scale was developed using the motivations established in the second study as a foundation. This measure was then examined for psychometric properties in order to validate and provide support for the first scale, that we know of, targeting intimate partner cyber aggression motives. This final study in the dissertation answered the question “what” is the relationship between personal wellbeing and relationship investment and the perpetration of online aggressive behaviours directed at a partner.

The central purpose of this dissertation was to answer foundational questions about intimate partner cyber aggression in order to provide a platform for future research to launch from. This research focused on the young adult population given they are a sub-group of the population that utilizes technology at an alarming rate (Borrajo et al., 2015). Young adults have been argued to be one of the age groups most reliant on technology in order to function and complete daily tasks. What follows below is a review of the literature, which examines recent research and the relevant theories of intimate partner cyber aggression perpetration with a specific focus on attachment theory, motivations, and personal wellbeing and relationship investment in order to provide a context for this dissertation. This review demonstrated the necessity and usefulness of such a topic by highlighting what is known and what is yet to be understood in this emerging area. In order to set cyber aggression between intimate partners

within a context, it is essential to understand online aggressive behavior and what is known about it more generally.

Cyber Aggression

Given that the focus of this dissertation is on cyber aggression, it is an important first step to consider what is meant by the term and what types of behavior it reflects. What follows is a general review of the literature on cyber aggression and the current prevalence rates. As noted above, the online world has essentially infiltrated the lives of individuals today, often resulting in people's professional and personal lives being maintained through technological means. Along with this rise comes the emergence of online communication. Communicating with others via technology has reached a staggering rate. Research indicates that in 1999 the internet was used mainly for entertainment and information gathering (Valkenburg & Soeters, 2001), whereas today mobile phones and social media usage have become a daily reliance for young adults (Borrajo et al., 2015).

Given the rise in electronic communication, it is of interest to understand the ways that individuals communicate online and specifically for this dissertation, the ways that individuals may use the internet to communicate with others with the intent to cause harm. The internet can be a way for people to express anger and aggression with others, this is sometimes known as cyber aggression (Wright, 2017). Cyber aggression has been identified as behaviours intended to gain control and cause harm such as inappropriate messages, privacy invasion, or using an individual's private information in public ways (Watkins et al., 2016; Wright, 2017). The vast majority of cyber aggressive acts are intended to attain private information and/or cause harm to an individual's social status and relationships by spreading rumours and gossiping, making rude or hurtful comments, and attempting to publicly embarrass others (Burgess-Proctor et al., 2009;

Smith et al., 2008). For example, cyber aggression could consist of an individual creating a fake social media account, adding their intimate partner (under the alias), and engaging in testing behaviours, such as flirting, to determine their intimate partner's ability to be loyal and withstand temptation. Another common example of cyber aggression in today's world is an individual logging into their intimate partner's phone or social media accounts, without their knowledge, and searching through their text messages, phone calls, and other personal information, in order to determine their fidelity or infidelity. In both of these examples, the aggressive behaviours were used to attain information about a close partner in covert, concealed ways, rather than engaging in healthy transparency.

To be clear, cyber aggression is different than cyberbullying. While there are some similarities among the terms, there are clear differences, which are important for the reader to understand. For context, cyberbullying is defined as aggressive behaviours carried out repeatedly in an electronic context that involves an imbalance of power (Dempsey et al., 2011; Kowalski et al., 2014). The term cyberbullying has received much debate in the scientific literature, namely for definitional issues (Corcoran et al., 2015; Grigg, 2010; Slonje et al., 2013). It has been argued that cyberbullying is too specific in nature. The need for repetition of the behaviour and the imbalance of power, two central components of the cyberbullying definition, are ambiguous and leave out several other instances where aggressive acts are exhibited online, that do not meet this narrow criteria (Grigg, 2010; Slonje et al., 2013). It is also argued that the term cyberbullying is sometimes conceptualized within the context of peer directed bullying. This leaves out many other instances where aggressive acts exist beyond a peer group (Corcoran et al., 2015), such as intimate relationships. This misconception can skew data collected using the term cyberbullying. Finally, the term cyberbullying has been criticized for being vague, restrictive, and ambiguous in

nature (Felmlee & Faris, 2016; Grigg, 2010). In light of these controversial issues regarding the term cyberbullying, the term cyber aggression has been suggested in the literature as a more appropriate alternative (Corcoran et al., 2015). In contrast, cyber aggression has been defined more generally as “intentional harm delivered by the use of electronic means to a person or a group of people irrespective of their age, who perceive(s) such acts as offensive, derogatory, harmful, or unwanted” (Grigg, 2010, p.152). An important distinction here is that cyber aggression can happen among known individuals and may or may not occur repeatedly (Watkins et al., 2016). Grigg (2010) explains that cyber aggression encompasses: bullying, harassment, stalking, abuse, assault, or hostility. It is argued that cyberbullying behaviours are considered cyber aggression; however, not all cyber aggressive behaviours are considered cyberbullying, given the narrowness.

Importantly, the behaviours examined in this dissertation do not necessarily require repetition or an imbalance of power. These factors may be present, however it is not required to be considered aggressive online behaviour. For example, if an individual checks their intimate partner’s social media without permission one time, this is still notable and considered aggressive, despite the lack of repetition (Ybarra et al. 2014). The term cyber aggression is more theoretically sound and representative of the behaviours explored in this study. The term cyber aggression is used in the current dissertation given it is inclusive of a wide variety of negative technological behaviors (Grigg, 2010). Related terms include: cyberbullying, electronic abuse, online abuse, and digital aggression. It is important to note that much of the literature uses cyberbullying and cyber aggression interchangeably. Some of the previous literature referred to in this dissertation may use the term cyberbullying. This research is included in the current paper given the many similarities between the two terms. However, for the purposes of this study the

term cyber aggression will be used to explain and make sense of the data collected, given it is inclusive of many online behaviours, including cyberbullying (Grigg, 2010). Cyber aggression is the focus of this study.

It has been argued in previous research that cyberbullying is simply an extension of social aggression given the similar impact and behaviours that are utilized, the only difference being the communication tool employed (Burgess-Proctor et al., 2009; Kowalski et al. 2014; Li, 2007; Smith, et al., 2009). As mentioned above, cyberbullying is one aspect of cyber aggression (Grigg, 2010), therefore, it is argued that cyber aggression is most likely an extension of social aggression as well. It can be argued that cyber aggression is social aggression in the online world (Berger, 2007).

Social aggression is a type of aggression that has been studied since the mid 1990's. The defining characteristics of social aggression are: 1. That is it defined by social or relational behaviours such as eye-rolling, gossiping, spreading mean rumors, peer exclusion, mean/rude comments, and manipulation tactics (Underwood, 2003) rather than physical acts, 2. The intent is to cause harm to an individual's social status or relationships (Berger, 2007) rather than one's physical body, and 3. The underlying motivation for the use of social aggression is to harm someone socially, while appearing not to and simultaneously maintaining one's status within the peer group (Deleveaux & Daniels, 2000).

Social aggression involves the use of aggressive behaviours aimed to damage an individual's self-esteem and popularity status publicly (Underwood, 2003). Cyber aggression can also be intended to hurt others while publicly alienating them (Sourander et al., 2010). Cyber aggression also rarely involves acts of physically aggressive behaviors given the aggression is exhibited online, rather it typically involves socially aggressive acts, as outlined above (Berger,

2007). Given the intentions of the aggressive acts combined with the goals of both cyber aggression and social aggression they essentially only differ in the method of communication (Huang & Chou, 2010). The sole difference between cyber aggression and social aggression is that the aggressive acts are exhibited through online mediums and electronic technologies. All other aspects of the two forms are synonymous, therefore, in this dissertation, cyber aggression is considered an extension of social aggression.

Cyber aggression has been studied for a little under a decade, honing in on the specific characteristics, prevalence, and consequences. There have been significant advances in this area, however, the majority of these studies have focused on cyber aggression among peers (Burgess-Proctor et al., 2009; Li, 2007; Smith et al., 2008). One aspect of cyber aggression that has received little scientific attention is cyber aggression that occurs between intimate partners. Given the harmful and life altering effects that result from being a victim of cyber aggression when the perpetrator is unknown, anonymous, or a mere acquaintance (Underwood, 2004) one can understandably imagine the detrimental consequences that would ensue if cyber aggression was perpetrated by someone you are intimately close with. Research evidence demonstrates that such acts of cyber aggression are being used within close intimate relationships (Wright, 2014, 2017). This was the focus of the current dissertation. Before looking specifically at cyber aggression between intimate partners it is important to place it within the context of intimate partner aggression in general.

Intimate Partner Aggression

Prior to delving into the literature on intimate partner aggression, it is important to briefly discuss intimate partner violence (IPV) (Allen & Anderson, 2017; Dokkedahl, et. al, 2019) in relation to intimate partner aggression (IPA) (Bookwala & Zanduik, 1998; Dimond et al., 2011;

World Health Organization [WHO], 2012). There is a large body of scientific research which has examined IPV (Dokkedahl, et. al, 2019). IPV has been defined as “an extreme form of aggression that has severe physical harm as its goal” (Allen & Anderson, 2017, p. 2). IPV and IPA share some similar characteristics, such as using harmful actions directed towards one’s intimate partner and these actions can result in negative consequences for an individual and their relationship. However, there are many important distinctions between the two terms.

While aggression and violence share many similar characteristics, it is important to clearly articulate the differences between intimate partner aggression and violence. Previous research has argued that violence occurs on a continuum, ranging from minor acts of aggression at the low end of the spectrum to violence at the high end (Allen & Anderson, 2017; Dokkedahl, et. al, 2019). Research typically argues that IPV is an extreme subset of aggression, falling on the “more severe” side of the IPV continuum. While all violent acts are considered instances of aggression, not all aggression can be considered violence. A person who is aggressive by nature, may never commit a violent act, however, a person who commits a violent act is acting with aggression (Perry, n.d.). Sometimes aggressive acts may be defensive or impulsive in nature, and lack harmful intent (Perry, n.d.). Whereas, the more severe forms of violence may be seen as predatory, reactive, and designed to cause severe physical harm. Sometimes the terms aggression and violence are used interchangeably in research and the applied world, however this is fundamentally incorrect, as clear differences have been noted between the two terms (Allen & Anderson, 2017). It has been demonstrated that all forms of aggression are equally maladaptive and can result in harmful consequences regardless of type.

This study examined intimate partner aggression via electronic means. Intimate partner cyber aggression has been argued by researchers to be an extension of IPA (Dimond et al.,

2011). Physical violence between partners, which has been identified as a major component of IPV was not examined (Allen & Anderson, 2017). Rather, the focus of this dissertation was aggression that is exhibited using online mediums.

Intimate partner aggression (IPA) exists across all social, economic, religious, or cultural backgrounds (Bookwala & Zanduijk, 1998; World Health Organization [WHO], 2012). Intimate partner aggression is identified as aggressive acts, of various forms, exhibited between two people who are involved in a dating or a committed relationship (WHO, 2012). An intimate partner is an individual someone is involved with in a close personal relationship, which can involve emotional connectedness, physical or sexual contact, identity as a couple, and/or regular contact (Wright, 2017). There are several forms of IPA including: physical (Wang et al., 2009), verbal (DeMaris, 2000; Stets, 1990; Testa & Leonard, 2001), social (Carroll et al., 2010; Stockdale et al., 2013), and of most interest to this dissertation, cyber (Grigg, 2010; Wright, 2017, 2019). IPA consists of similar behaviours noted in the previous section, the main difference between general aggression and intimate partner aggression is the perpetration is directed towards an intimate partner, rather than a peer or stranger. IPA is characterized by aggressive acts within a close and presumably caring relationship.

To summarize, aggression exhibited between intimate partners is coined intimate partner aggression. This means that aggressive behaviours are perpetrated by someone intimately close to the victim. While there are similarities between IPV and IPA, there are clear differences (Dimond et al., 2011). For the purposes of this dissertation, the term intimate partner aggression will be utilized given the behaviours that are the focus of this dissertation would appear to align more with this definition. While IPA research has been conducted for years, the literature on intimate partner cyber aggression specifically, has been equated to a stage of infancy (Felmlee &

Faris, 2016). The section that follows reviews what is known, to date, about intimate partner cyber aggression.

Intimate Partner Cyber Aggression

Cyber aggression is a form of aggression that is exhibited not only between peers, but also between intimate partners. Intimate partner cyber aggression (IPCA) is characterized as threatening, insulting or humiliating acts intended to cause distress, such as sending embarrassing photos or videos over the Internet, the use of an intimate partner's passwords for social media and email to spy, or the use of technology to exhibit control over one's partner (Felmlee & Faris, 2016; Grigg, 2010; Wright, 2017, 2019). Technology based aggression between intimate partners includes behaviours such as isolation (e.g. blocking or deleting an intimate partner to make them feel bad), inducing jealousy (e.g. engaging with an ex-partner online to make one's current partner feel bad or jealous), and controlling behaviours (e.g. sending excessive messages, monitoring online activities for the purposes of control, controlling who an intimate partner can be friends with on social media) which are also frequently exhibited in offline dating aggression (Borrajo et al., 2015; Buesa & Calvete, 2011; Watkins et al., 2016; Wright, 2017).

Cyber aggression related terms include: electronic abuse, online abuse, digital dating abuse, cyber dating abuse, and digital aggression. Each of these terms appear to be used interchangeably in the literature, with very few theoretical or behavioural differences. For example, cyber dating abuse has been defined as abuse, threats, or harassment which is directed towards an intimate partner using various forms of technology (Zweig et al., 2013). This definition is quite similar to the definition of cyber aggression. For the purposes of this dissertation, the term intimate partner cyber aggression will be used as it is argued to be the most encompassing of all the terms and

clearly connects these behaviours as a distinct form of IPA (Grigg, 2010). Utilizing the term IPCA is most representative of the specific cyber behaviours employed. The behaviours that are the focus of this dissertation would appear to fall on the low end of the violence continuum, as previously mentioned (Allen & Anderson, 2017), given this notion, it would be illogical to utilize the term abuse or violence to explain this phenomenon. The term IPCA will be used throughout this dissertation. However, literature that utilizes other synonymous terms will be drawn on for context and rationale given the overlap. There have only been a small handful of studies that have examined online aggressive behaviours between intimate partners, despite the rise in technology over the last decade (Borrajo et al., 2015; Burke et. al., 2011; Draucker & Martsof, 2010; Kellerman et. al., 2013; Wright, 2014, 2017; Zweig et al., 2013). Each of the above noted studies will be explored in more detail in the following section. What follows below is a breakdown of the two types of IPCA: direct and control monitoring (Borrajo et al., 2015).

Types. In learning more about cyber aggression, it was important to examine the specific behaviours that comprised this construct. Some studies have examined the nature of the behaviours used to perpetrate cyber aggression against an intimate partner. In the recent literature two distinct types of cyber aggression have been identified: Direct Cyber Aggression and Control Monitoring Cyber Aggression (Borrajo et al., 2015b). Each of these will be explored in more detail below.

Direct Cyber Aggression. The first type of cyber aggression is classified as direct. This type gets its name from the nature of the behaviours it is composed of. Direct cyber aggression consists of clear, sometimes obvious, acts of aggression. Some of the main behaviours noted in this type of aggression are harassing or insulting a partner, spreading rumors or saying mean things about them, and using their private information in a public manner (Finn, 2004; Kellerman

et al., 2013; Kolbert et al., 2010; Seiffge-Krenke & Burk, 2015). Each of these will be explored more below.

Similar to cyberbullying between peers, the cyber world can be an avenue for people to engage in harassing and insulting behaviors directed towards their partner. Finn (2004) conducted a study with 339 undergraduate students from the University of New Hampshire and examined their experiences with online harassment from close partners. He found that 1-7% of participants had received repeated threatening, insulting, or harassing emails or Instant Messenger messages from an intimate partner. This result demonstrates the frequency of direct IPCA that can occur between close intimate partners.

A study conducted by Kellerman et. al., (2013) included 226 undergraduate students from an urban university and examined the potential motivators for cyber aggression behaviours in intimate relationships. In their sample, 71.7% reported having experienced at least one act of cyber aggression perpetration and victimization against a dating partner within the last year. Almost half of their sample reported sending mean or hurtful messages to an intimate partner, as well as excessively calling or texting an intimate partner. Another way a perpetrator can publicly harm their partners is by spreading hurtful rumors.

Spreading untrue rumors or exaggerating the nature of something online about one's intimate partner is also characteristic of direct cyber aggression. This may be done to hurt one's intimate partner or isolate them from others in their peer group (Kolbert et al., 2010; Seiffge-Krenke & Burk, 2015; Underwood, 2004). Research targeting social aggression between intimate partners has found that creating rumors about one's partner so that others (i.e. children, mutual friends) will reject them is a commonly used method (Kolbert et al., 2010; Seiffge-Krenke & Burk, 2015). Spreading rumors about one's partner can be particularly harmful given the

vulnerable nature of an intimate relationship. One's partner may know intimate details about you, giving them a wealth of knowledge to use and exploit. Building on the notion of spreading false information, the spreading of true, yet private information is also a function of direct cyber aggression.

The distribution of private information can be particularly harmful. Given the closeness and vulnerability between intimate partners it is natural that personal information will be shared in the couple's relationship. This can include sexual or embarrassing images and videos, along with emotional and psychological fears. These aspects of a person are extremely sensitive and can produce a great deal of harm if misused. A study conducted by Carroll et. al., (2010), was one of the first studies that examined social aggression between intimate partners. The sample consisted of 336 married couples ages 20 and up. They argued that an individual may go behind their partner's back and share private or personal information with others with the intention to hurt their partner. This is explained as a way to immaturely deal with conflict in a relationship, where a partner will use social sabotage as a way to expose and slander their partner. These authors argue that this method of aggression is an extreme tactic. This is one of the more common behaviours associated with cyber aggression, cyberbullying, and social aggression. Sharing private information can be one of the most harmful ways to cyber aggress against an intimate partner. An individual can gather personal information about their partner through open conversation or in extreme cases privacy invasion. Direct cyber aggression consists of behaviours such as harassing or insulting a partner, spreading rumors or saying mean things about them, and using their private information in a public manner. In contrast to these directly aggressive acts there are also a set of more covert behaviours that focus on monitoring various aspects of a partner's activities at all times. Monitoring behaviours are often presented as an act

of caring and concern within relationships, however, can be very threatening. What follows is an examination of these behaviours.

Control Monitoring Cyber Aggression. *The second type of cyber aggression is excessive monitoring for the purposes of control. Social media provides an opportunity for individuals to have constant access to their intimate partners along with the ability to monitor their partner's behaviours closely (Draucker & Martsof, 2010; Patchin & Hinduja, 2006; Tokunaga, 2010) if they wish to do so. This can be compared to stalking behaviours exhibited through online platforms (Borrajo et al., 2015b). Control monitoring cyber aggression is characterized by the excessive use of behaviours such as, surveillance of a partner's online activity and invading a partner's privacy in covert ways such as such as excessively sending emails or text messages, scrutinizing GPS check-ins to monitor a partner's whereabouts, checking a partner's social networking sites to monitor activity, and using spyware to monitor a partner's computer or cell phone (Burke, et al. 2011; Finn, 2004) with the intent to control an intimate partner's behaviour.*

A study conducted by Burke et al., (2011) examined 804 undergraduate students from a university in southern United States regarding their use of technology to control and monitor their partners and what their perceptions of these behaviors were. They discovered that more than 50% of participants reported checking their partner's social networking sites to monitor their partner's activity. They also found that one in five females reported that they excessively sent emails and text messages to their partner, in order to monitor their behaviour. They also found that female perpetrators of email monitoring stated that they believe cyber monitoring was an appropriate behavior. Cyber monitoring with the intent to control can be understood as a covert behaviour, in contrast to harassing or insulting one's partner which is considered more overt in nature.

Privacy invasion is another aspect of excessive monitoring. This entails behaviors such as logging into a partner's social media accounts or emails, knowing and insisting on knowing passwords that belong to your partner, checking a partner's phone or computer without their permission or knowledge etc. (Burke et al., 2011; Finn, 2004; Watkins et al., 2016). These behaviours can be quite detrimental to relationships as often invading a partner's social media accounts is done in covert ways ensuring the victim does not find out. For example, an individual may wait until their partner goes to sleep and then proceed to go through their cell phone in search of incriminating evidence of infidelity or inappropriate behaviours, all without the victim's knowledge. Acts such as these are unhealthy relationship behaviours and often stem from an individual's inability to trust their partner (Wright, 2017).

According to a study conducted by Borrajo et al., (2015), which examined participants involved in an intimate relationship between the ages of 18-30 from Spain, the most common act of cyber aggression was to use a partner's social media without permission. They found that almost one out of ten young adults involved in an intimate relationship reported this had happened to them. Further, in the study performed by Burke et. al., (2011), they found that more than 20% of the female participants in their sample use a partner's password to monitor their online communications compared to only 6% of males. This suggests that privacy invasion may be more common for females than males, although further research is needed to substantiate this hypothesis. Further, they found that 10% of young adults reported having perpetrated direct cyber aggression and 82% reported perpetrating control monitoring cyber aggression behaviours towards an intimate partner. It is important to note the magnitude of the discrepancy between direct cyber aggression and control monitoring (10% vs. 82%). Control monitoring cyber aggression appears to be more commonly used compared to direct cyber aggression. This may be

because this type of excessive monitoring behaviour is less overt and obviously detected by an intimate partner (Picard, 2007), whereas, direct cyber aggressive behaviours are more easily identified by intimate partners and peers, given the overt nature of these aggressive acts. Control Monitoring in the cyber realm has been found to be more likely to be normalized by young adults who often described it as a way to display their love or “check-in” on their intimate partner to make sure they are okay (Muisse et al., 2009). In summary, cyber aggression between intimate partners consists of two distinct types: direct and control monitoring, both of which are examined in this dissertation.

It is important to note two critiques of the IPCA literature. First, much of the literature on online aggressive behaviours between partners does not specify the type of cyber aggression, their methodologies simply speak to cyber aggression generally. However, there are clear, drastic, differences in prevalence rates when IPCA is examined by type, rather than as a whole. In order to accurately understand IPCA, research needs to examine IPCA by type. Secondly, there are multiple different measures to assess IPCA, which creates a disparity in the literature. Some measures ask participants about their engagement on a specific social media platform (Muisse et al., 2009). Whereas, other measures ask about social media platforms, in general. This inevitably creates disparity in the IPCA literature. Given the rapidly changing online world, researchers must ensure their measures are up-to-date and able to address the current social media platforms. For example, young adults may not utilize certain social media platforms (i.e. Facebook) anymore given they are considered “out of style.” Thus, if a question on a particular measure asks participants about their cyber behaviours on Facebook, participants may report low/no engagement. However, this may not be an accurate representation of their cyber aggressive behaviours, but rather a function of an outdated measure. It is clear that IPCA is a

new and evolving form of intimate partner aggression that requires more research focus and attention.

As articulated above, IPCA is a type of aggression that is exhibited by intimate partners using online mediums. IPCA is characterized as threatening, insulting or humiliating acts intended to cause distress, such as sending embarrassing photos or videos over the Internet, the use of an intimate partner's passwords to access their social networks and email to spy, or the use of technology to exhibit control over one's partner (Almendros et al., 2009; Buesa & Calvete, 2011; Follingstad, 2007 ; Follingstad & Edmundson, 2010). Based on a relatively scant body of literature in this area, it is clear that IPCA occurs between young adults in two main forms: direct and control monitoring (Borrajo et al., 2015b).

Given the knowledge of IPCA is quite novel, there are fundamental questions that remain unanswered. In order to understand IPCA more holistically it is essential to understand first, who is most likely to perpetrate these behaviours? To answer this question, one of the most important variables to examine is attachment. Secondly, why do young adults perpetrate these behaviours? To answer this question it was important to examine the underlying motives to engage in IPCA. Finally, what is the connection between well-being and the use of these behaviours? To understand the connection between well-being and IPCA perpetration more deeply it was vital to examine mental health and relationship investment. These three central questions were the focus of this dissertation. I begin by exploring the role attachment plays in this phenomenon.

In the pursuit to build knowledge about a particularly underdeveloped area (i.e. cyber aggression), it was useful to explore previous well-established developmental theories and ideas in order to give context and build insight into this new area. Attachment has been an established psychological theory for just over 50 years (Bowlby, 1969) and has a strong theoretical basis.

The attachment literature has contributed to the explanation of general intimate partner aggression (Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998).

Attachment Theory

One of the primary goals of this dissertation was to determine who is more likely to perpetrate cyber aggression directed towards their partner and an examination of the literature indicated that an individual's attachment history is significantly related to IPA and other forms of aggression (Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998). Given that the importance of attachment has already been established (Bookwala, 2002) it was selected as a primary area of focus for this dissertation. In order to establish a context for the relationship between attachment and cyber aggression what follows is a review of this literature.

Attachment characteristics can be defined as tendencies individuals have to relate to close people in their lives, in relatively consistent ways (Hazan & Shaver, 1987). The two main founders of attachment theory are Bowlby (1969, 1973, 1979, 1980) and Ainsworth (1978). This research was ground-breaking at the time and provided valuable insight into the ways children attach and relate to others, in particular their primary caregivers. This early research also laid the groundwork for understanding that these early attachment relationships impact how adults connect with close people in their lives.

Research extending attachment theory from parent-child relationships to intimate partner relationships demonstrated a continuation from childhood attachment to adulthood attachment. Hazan and Shaver (1987) argue that within the dynamics of intimate relationships lies a connection or repetition with one's childhood attachment relationships. In childhood, the primary caregiver (i.e. mother or father) is most often the source of attachment (Ainsworth, 1973; Bowlby, 1982). In adulthood, romantic partners can assume the role of an attachment

figure. They also argue that adult attachment is comprised of different beliefs about how love, availability, trustworthiness, and one's own worthiness can be understood. What is important to highlight, regarding attachment is that it is established in infancy, based on a secure or insecure connection with a primary caregiver (Ainsworth, 1978). This established belief system and conceptualization about relationships typically continues into adulthood and is transferred to an intimate partner (Hazan & Shaver, 1987).

Building on the childhood literature, Hazan and Shaver (1987) conducted an empirical study which identified four main adult attachment styles: secure, preoccupied/anxious, dismissive/avoidant and fearful. They identified securely attached individuals as those who perceive intimate relationships to be friendly, happy, and trusting. Those who were securely attached identified as being able to accept and support their partner regardless of the situation. Conversely, anxious attachment was characterized by increased self-doubts in a relationship, fears of intimacy, jealousy, and having emotional highs and lows (Hazan & Shaver, 1987). Anxiously attached individuals were also characterized by a lack of confidence and trust in their partner and their responsiveness. In contrast, those with an avoidant attachment style tend to avoid situations that cause them relational stress and are marked by consistently seeking distance in their relationships. Avoidant individuals tend to need distance, space, and minimal intimacy. Those who have an avoidant attachment struggle with emotional closeness, confrontation, and longevity in relationships. They argue that individuals with an avoidant attachment style have more pessimistic views on relationships and frequently end relationships. Finally, fearfully attached individuals were found to have an intense need for love and connection, comparable to individuals with an anxious attachment style. However, they also had a huge fear of emotional closeness and intimacy, similar to avoidant attachment. Bartholomew (1990) defined fearful

attachment as being uncomfortable getting too close to others, however wanting to be close to others, difficulty trusting others, and a fear of getting hurt. In summary, primary adult attachment research identified four main styles that explain how adults behave in intimate relationships. The four adulthood styles are theorized to be predicted off of attachment developed with a primary caregiver, typically in the first four years of life (Ainsworth, 1978; Bookwala, 2002; Hazan & Shaver, 1987).

It is important for the reader to be clear on the rationale for examining attachment characteristics in relation to partner directed cyber aggression, before moving forward. Bookwala (2002) argues that adult attachment represents a broad theory of human behavior in close relationships and this offers a valuable psychological perspective to understanding the phenomenon of relationship aggression. Bowlby (1969, 1973) and Ainsworth (1978) noted that when attachment needs were not met for an extended period of time, angry behaviour was regularly observed. Attachment theory researchers understand aggression as a natural response to threats of separation and abandonment, which may develop in intimate relationships (Bartholomew & Allison, 2006). When individuals feel distressed in response to a threat they often seek out comfort and reassurance from an attachment figure or someone emotionally close to them (Fournier et al., 2011). These concepts are essential to attachment theory and highlight the notion that one's attachment system works to regulate negative affect during threat (Bowlby, 1969, 1973, 1980). If an individual's childhood attachment relationship with their primary caregiver was not secure this may pose as a risk factor for intimate partner aggression, as they may be unable to effectively regulate their distress (Bookwala, 2002). Attachment theory is a valuable theory to consider in understanding intimate partner aggression, given it has origins in human behaviour, emotions, and love styles.

Although in the past, attachment relationships have been characterized as categorical styles (4 types including secure, anxious, avoidant, and disorganized), the use of two continuous orthogonal dimensions (anxious and avoidant) has more recently been recommended as a better way to conceptualize attachment (Alexandrov et al., 2005; Feeney et al., 1994; Mikulincer & Shaver, 2005; Wei et al., 2007). Examining attachment through the lens of styles is limited in that individuals do not always fit clearly into one of these four separate styles (Alexandrov et al., 2005). Rather, it is more representative and typical that individuals have some level of characteristics or tendencies from each of the noted attachment styles.

The more favored and superior way to look at attachment is reflecting beliefs that fall along two continuums: anxiety and avoidance, both of which can be measured on a spectrum from high to low (Alexandrov et al., 2005; Feeney et al., 1994; Mikulincer & Shaver, 2005; Wei et al., 2007). People who score low both on the avoidant and anxious dimensions are considered to have more secure attachment characteristics (Wei et al., 2007). Individuals who score high on the anxious attachment dimension are characterized as having a high need to be emotionally intimate with others and an intense fear of being alone. Those high on the anxious dimension insistently seek proximity, support, and love from others (Mikulincer & Shaver, 2005). Individuals who score high on the avoidance attachment dimension are characterized by independence and a sense of comfort with little emotional connection in relationships (Bartholomew, 1990). They tend to need distance, space, and minimal intimacy in their intimate relationships. An individual can be high on one or both of the attachment dimensions. The higher an individual falls on either of the dimensions the more insecure attachment characteristics they have. Some researchers have argued that fearful/disorganized attachment can be quite difficult to

effectively measure given the chaotic nature of the individual's attachment systems (Feeney et al., 1994) and for this reason, was not be examined in this study.

Studying attachment using continuous scales is far superior to the old method of examining separate styles of attachment (Feeney et al., 1994; Mikulincer & Shaver, 2005; Wei et al., 2007) given that most individuals fall on a spectrum regarding their attachment needs, rather than clearly fitting in one category (Alexandrov et al., 2005). One of the major limitations of a categorical approach is that individuals may have some anxious attachment tendencies and have many avoidant attachment tendencies. In this example, it would be misguided to classify this individual as having an avoidant attachment style. Rather it would be more informative to provide this individual with a level of anxious and avoidant characteristics. Utilizing the two continuous dimensions approach has been demonstrated to be one of the most reliable ways to examine and determine individual attachment characteristics (Alexandrov et al., 2005). Alexandrov et. al, (2005) reported that utilizing a dimensional approach, centering on anxious and avoidant tendencies, provided more sensitive and detailed information about an individual compared to categorizing them. Using continuous dimensions are widely used in the study of adult attachment given it maximizes precision in data analysis (Mikulincer et al., 2003; Mikulincer & Shaver, 2007b). This was supported by Fraley and Waller (1998), as they argued that attachment should be examined based on degree rather than kind, as this will generate more useful, revealing information about an individual. Given the above noted evidence, this dissertation examined attachment characteristics on two continuous dimensions: anxious and avoidant relationship beliefs, rather that attachment styles.

Finally, attachment is best understood and studied through a dimensional perception of characteristics and tendencies rather than styles (Alexandrov et al., 2005; Fraley & Waller, 1998;

Mikulincer et. al., 2003; Mikulincer & Shaver, 2007b). The dimensional method was employed in this dissertation. In order to set the stage for attachment theory in the understanding of cyber aggression, it is essential to highlight the associations between attachment theory and other forms of IPA. The relationship between attachment characteristics and IPA has been examined in several studies to date (Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998). These will be inspected further below.

Attachment and Intimate Partner Aggression

In recent years, the connections between attachment theory and intimate partner aggression have been examined (Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998). A few studies have made connections between attachment insecurity (i.e. anxious and avoidance) and the perpetration of general aggression. Theoretically this connection would make sense, given attachment insecurity can be associated with poor emotion regulation, increased levels of distrust, and increased uncertainty in relationships (Bookwala, 2002; Hazan & Shaver, 1987). These qualities create an ideal situation for IPA to fester. It is important to note that several of the studies referenced below examined attachment using the old categorization approach, which has several flaws, noted above. This literature is included below as it helps to highlight the historical connections between IPA and attachment. While these studies are dated in their methodology, they nonetheless contributed to the knowledge that has been generated to date.

Mikulincer (1998) conducted a series of three studies in this area that examined university students' relationships. The first study examined attachment styles and differences in self-reports of anger-proneness, anger expression, anger goals, and responses to anger. The second study examined attachment style, physiological signs of anger, and attribution of hostile intent. Finally,

study three analyzed attachment style differences in expected anger outcomes. He utilized a variety of different methodologies and measurement techniques, which aided in the validity of his results. In all three-studies, attachment style was analyzed by asking participants to read a paragraph describing each of the four attachment styles and rate which one they believed described them most. He found that securely attached individuals scored lower in anger proneness, reported more adaptive responses in anger episodes, and had less hostile intent towards others; suggesting that securely attached individuals have more functional and constructive anger. He found that anxiously attached individuals experienced a lack of anger control. Finally, avoidant attached individuals experienced high hostility and lack of awareness of psychological responses to anger, given they attempted to downplay their anger and distance themselves from conflictual situations. He concluded his research by saying that attachment style is related to anger-proneness, anger expression, anger-related goals, actions, and emotions, attributions of hostile intent, and expectations of anger-related outcomes such that those who have high anxious tendencies have difficulties regulating their anger and those who have high avoidant tendencies experience high levels of hostility and low levels of emotional awareness.

There have also been a handful of studies that have examined the relationships between attachment and face-to-face intimate partner aggression (Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010). Feiring et al., (2002) conducted a quantitative study examining the use of aggressive behaviours in adolescent intimate relationships and the extent to which attachment styles are related. They examined 245 high school students using self-report measures of aggression, attachment, attitudes, and emotional styles. They found that girls were more likely to report being the perpetrators of physical aggression in their intimate relationships. They also found that girls who had an insecure attachment style with their friends also had high

levels of physical aggression in their intimate relationships. This research suggests that an insecure attachment style may be related to physical aggression in intimate relationships, in the adolescent years. This association may be caused by increased feelings of uncertainty and distrust in their relationships and a need for an outlet to release these concerns and fears.

Bookwala (2002) performed a quantitative study wherein she analyzed the attachment style of 161 male and female undergraduate students who were involved in an intimate relationship and their use of physical aggression. Their attachment style along with their perception of their partner's attachment style and how each related to expressed and received physical aggression within the relationship were examined. Attachment was assessed by asking participants to read a paragraph describing each of the four attachment styles and rate which one they believed described them most. She found that aggression perpetration was reported more frequently by those who had an anxious attachment style. This is important given it highlights a connection between attachment anxiousness and the perpetration of IPA. The researcher demonstrated a relationship between self-reported attachment styles and general intimate partner aggression. She found a relationship between those who are anxiously attached and the perpetration of intimate partner aggression. An important limitation to note within this study is the method of examining attachment styles. This method used only a single-item prototypical description of each attachment style. This way of measuring attachment limits the reliability of the attachment style analysis given that it does not utilize a multi-item scaling measure.

In another study, Grych and Kinsfogel (2010) investigated attachment characteristics, family aggression, and dating aggression. They examined 391 adolescents ages 14 to 18 years old using the Experiences in Close Relationships (Fraley et. al., 2000) self-report questionnaire which produced two continuous scores for attachment: anxious and avoidant. A strength of this

study was that the researchers employed a dimensional approach to assessing attachment, consistent with the methods employed in this dissertation. They found that attachment anxiousness, which was characterized as having a high need to be emotionally intimate with others and an intense fear of being alone, was a consistent predictor of aggression for boys and girls. They found that girls who were anxious about the status of their intimate relationships engaged in high levels of verbal, emotional, and physical aggression. Their results suggest that attachment characteristics can have an influence on aggressive behaviours in relationships. It is therefore clear that research has made connections between insecure attachment characteristics, specifically anxiousness and avoidance, and general intimate partner aggression. The above noted research has focused mainly on physical aggression or general aggression. Given the focus of this dissertation was cyber aggression, it was important to examine the research, however limited, in this specific area.

Attachment and Intimate Partner Cyber Aggression. Based on the research demonstrating the relationships between insecure attachment characteristics and forms of face-to-face IPA (Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998) there is a theoretical argument to be made that attachment characteristics and intimate partner cyber aggression may be related, however, empirical research examining these variables together is relatively scant. There are only two studies that have been conducted which directly target this gap.

In 2014, Wright, conducted a quantitative study which examined intimate partner attachment, both scores on continuum for anxiousness and avoidance, in relation to perpetrators of cyber aggression directed towards intimate partners. She conducted a longitudinal study over one year examining students in grade 11 (time one) and grade 12 (time two). Participants were

asked three questions related to their cyber relationally aggressive behaviors and two questions regarding privacy invasion. Anxious attachment was positively related to both the perpetration of partner-directed cyber relational aggression and privacy invasion over a one year period. A significant relationship with avoidant attachment was not found. An important limitation to note in this study is the limited number of items used to assess cyber aggression and privacy invasion (N=5). This puts into question the validity of the results generated. Nevertheless, this study is one of the very few to examine attachment characteristics of perpetrators of cyber aggression directed towards a partner. A similar study using a more valid, better established, more extensive measure of cyber aggression, such as proposed in this dissertation, was advantageous in clarifying the nature of the relationship between attachment characteristics in early adulthood and the perpetration of cyber aggression directed towards an intimate partner.

Wright (2017) also went on to conduct another study in this area. She was interested in the mediating effects of jealousy and anger on attachment and the perpetration of intimate partner cyber aggression. In this study of 600 undergraduate students she examined intimate partner attachment and several forms of intimate partner aggression including relational acts, cyber acts, privacy invasion, and cyber privacy invasion. Jealousy was found to mediate the relationship between anxious partner attachment and the perpetration of intimate partner aggression, specifically for privacy invasion. Jealousy helped to explain why someone with anxious attachment characteristics might engage in cyber privacy invasion towards their intimate partner. If an individual has anxious attachment characteristics, they may be more likely to distrust their partner and thus engage in more acts of privacy invasions when they experience high levels of jealousy within their relationship. She proposed that anxious attachment might increase the likelihood of distrust in one's partner, leading the individual to engage in more privacy invasion.

Similar to Wright's first study (2014) in this area, only a few items were used to measure cyber aggression and cyber monitoring (N=5) total. Future research should aim to replicate and extend this study using a more valid measure of cyber aggression. Given these findings, Wright (2014, 2017) opens the gateway to examining the relationship between partner attachment and IPCA. These promising findings support an argument for the value of continued research in this area.

To date there have been only two research studies, both conducted by the same researcher, that have examined "who" is likely to perpetrate intimate partner cyber aggression as a function of adult attachment characteristics and both of these studies found promising results illustrating relationships between insecure attachment characteristics and IPCA (Wright 2014, 2017). Research is just beginning to examine cyber aggression in this context. Future attempts should aim to replicate and extend this area by focusing on "who" perpetrates IPCA using more methodologically sound measures and research procedures, as proposed in this dissertation.

Given that the overarching goal of this research was to fully understand the perpetration of cyber aggressive acts targeting a close partner, it was also important to attempt to understand "why" someone would use these behaviours. Examining the underlying motives that might drive an individual to engage in these harmful acts towards their intimate partner was of interest. What follows is a literature review of what is known regarding the underlying potential motivations for the perpetration of IPCA.

Motivations for Intimate Partner Cyber Aggression

There has been minimal research that has examined potential motivations for the perpetration of aggressive cyber behaviours, specifically targeting a partner. Motivations are a necessary component of any new phenomenon, as it helps researchers better understand what causes people to engage in specific acts. Exploring motives can provide insight into the personal

shortcomings or subconscious desires of individuals that might not have otherwise been understood. Without this knowledge there will be a vacancy in the rehabilitation and prevention process, specifically for cyber aggression. For this reason, motivations were a central focus of this dissertation, as they provided insight into the question “why” individuals perpetrate such harmful online acts, especially in a presumably caring and loving relationship.

To provide some context, motivations for IPA have been explored for several years in the literature. One comprehensive review of 74 empirical studies was conducted by Langhinrichsen-Rohling et al., (2012). They noted several central motivations for face-to-face aggression between intimate partners such as power/control, self defense, anger, communication difficulties, retaliation, and jealousy. This review summarized multiple studies in the area of general intimate partner aggression, which has been heavily covered in the literature. Consistent with other aspects of cyber aggression, motives for this type of aggression have scarcely been explored. There have, however, been a small handful of studies that have examined cyber aggression between peers and/or cyberbullying. This literature was reviewed next to set the context for cyber aggression perpetration between partners.

A study conducted by Kellerman et al., (2013) examined the motivations individuals may have for engaging in cyber aggression with their friends and dating partners. When they examined motivations, they utilized a qualitative approach to collecting their data, wherein they asked participants open ended questions, in an online forum, in order to learn more about their motivations for cyber aggression. Two hundred and twenty-six undergraduate students between the ages of 18 and 23 participated in this study. Based on previous literature (Hinduja & Patchin, 2009; Pronk & Zimmer-Gembeck, 2010) the researchers, created a list of possible motivations for cyber aggression between intimate partners. The motivators with the highest number of

people identified included: jealousy, retaliation, anger, and humour. Previous literature that has examined social aggression and cyberbullying between peers have determined that feelings of relationship insecurity, control, and decreased confrontation are motivators as well (Borrajo et al., 2015; Draucker & Marksolf, 2010; Giordano et al., 2015; Miga, Hare, Allen, & Manning, 2010; Varjas et. al, 2010). Therefore, there was empirical evidence for at least seven motivators for the use of cyber aggression within intimate relationships. These included jealousy, retaliation, anger, humour, control, relationship insecurity, and non-confrontation. These motivations are presented in Table 1 below, along with their associated references.

As demonstrated the main potential motivators identified in the literature to utilize cyber aggressive means against one's intimate partner were: jealousy, retaliation, anger, humour, feelings of relationship insecurity, control, and decreased confrontation (Borrajo et al., 2015; Draucker & Marksolf, 2010; Giordano et al., 2015; Kellerman et al., 2013; Miga et al., 2010; Varjas et. al, 2010). These motivators were generated from preliminary cyber aggression motivation research, along with the social aggression and cyberbullying literature.

As noted in Table 1, there were seven possible motivations identified based on the literature, that may extend to cyber aggression perpetration when targeting an intimate partner. Noted in the table above are fictitious examples for each of the noted motives. These examples were intended to illustrate the potential ways these motive might be applied in the context of intimate relationships. What follows below is a brief discussion surrounding the optimal ways to examine motives of this type.

Table 1*Possible Motivations for the Use of Intimate Partner Cyber Aggression*

Motivation	Description	Example	Authors
Jealousy	Engaging in behaviors due to mistrust, suspicion, and insecurity about self or relationship.	“I went out of my way to monitor my partner’s social media activity to see if he is liking or commenting inappropriately on other’s posts”	1, 2, 3, 4
Retaliation	Revenge or reacting in response to a perceived aggressive act; a form of payback for a previous act.	“My partner went through my phone while I was sleeping, so that gives me the right to check their laptop when they are in the shower”	1, 3, 5, 6,
Anger	Frustration, conflict, hurt, or hatred generated in relationships.	“My partner frustrated me when they didn’t do the dishes so I decided to post subliminal song quotes on my social media to make them feel bad”	1, 3, 7,
Humour	Behaviors that are thought to be entertaining, funny, joking, or fun. Behaviours not done with the intent to harm, but rather intended as “just joking around.”	“I thought it would be funny if I posted an embarrassing photo of my partner on Instagram”	1, 8, 9,
Control	Establishing control over an intimate partner’s online behaviors to manage how others perceive them. A means of exhibiting power.	“I told my partner she needs to post photos of us together on her social media feed, so that other guys know she is taken”	10
Relationship Insecurity	A concern for the sustainability in one’s intimate relationship. Having trouble trusting their partner, or fearing their partner will leave them for someone else.	“I checked my partner’s GPS location to see if she was at the gym when she said she was. I was afraid she might have been lying to me”	3, 4,

Non- Confrontation	Not wanting to have a face-to-face encounter. Express frustrations and anger in a covert way, ensuring safety from conflict or confrontation.	“I was afraid to have a face-to-face discussion with my partner about my frustrations so I decided to ignore their text messages, social media connections, and phone calls for a few days”	11, 12, 13,
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Note. 1 = Kellerman et al., 2013; 2 = Pfeiffer & Wong, 1989; 3 = Pronk & Zimmer-Gembeck, 2010; 4 = Muise et al., 2009; 5 = Reynolds & Repetti, 2010; 6 = Shute et al., 2002; 7 = Giordano et al., 2015; 8 = Ponari & Wood, 2010; 9 = Runions, 2013; 10 = Borrajo et al., 2015; 11 = Varjas et. al, 2010; 12 = Mikulincer & Shaver, 2005; 13 = Underwood, 2004 (these are theoretically proposed).

Measuring Motivations

Examining motivations can be difficult to effectively accomplish given the countless potential variables at play. Given this, it is argued that a qualitative research strategy is the best approach to use to explore the motivations associated with cyber aggression directed towards a partner. Qualitative research is a method that collects non-numerical data for the purposes of gathering in depth information (Creswell, 2014). This research focuses on developing definitions, concepts, descriptions, and characteristics of things (Creswell, 2014). Important to note, there are positives and negatives to the use of qualitative research. The potential negatives with this type of research may be the difficulty to attain participants and the lengthy research process (Creswell, 2014). However, despite these potential limitations, there are many positive aspects of qualitative research that specifically aid in aggression motivations and cyber related research. These will be explored in detail below.

A beneficial aspect of qualitative research is that it allows the researcher to collect in-depth information about the notion of a topic (i.e. motivations) by asking clarifying questions in the moment (Creswell, 2014). Also, qualitative research has been argued to be ideal for research surrounding social media (Branthwaite & Patterson, 2011). Some of the main strengths of qualitative research, in the context of social media use, according to Branthwaite and Patterson (2011) is that it fosters conversations with participants in real time. This cultivates an ability to develop an alliance with participants, allow the witnessing of non-verbal reactions, clarifying information in the moment, and maintaining participant interest (Carr & Worth, 2001; Hiller & DiLuzio, 2004; Musselwhite et. al, 2006; Polkinghorne, 1994). This may generate new insights or knowledge that wouldn't otherwise be collected. This has been supported in a number of recent research articles whereby qualitative methods have been utilized when examining

motivations for aggressive behaviour (Frisen et al., 2008; Kellerman et al., 2013; Owens et al., 2000; Prink & Zimmer-Gembeck, 2010; Vajas et. al., 2010). For all the reasons noted above, in-person interviews are the most effective method for collecting data surrounding aggression motives.

On a more specific note, different types of qualitative analyses yield different outcomes from the data. One of the most used types of analysis, when working with qualitative data, is called thematic analysis (Charmaz, 2006). Generally speaking, thematic analysis is a method for organizing and identifying data into meaningful insights and patterns of behaviour (Braun and Clarke, 2012). Thematic analysis is relatively flexible in its approach to analysis (Braun & Clarke, 2006). It is ideal for this particular study given its exploratory nature and the limited literature available regarding the motivations for cyber aggression. Thematic analysis is also used by other researchers in psychology, who study similar topics. For example, Kellerman et al., (2013) used thematic analysis to examine their data on cyber aggression motivations, which is similar to the goals of this study.

In order to meet the goals of this study, a combination of the two main processes in thematic analysis were employed: inductive and deductive (Swain, 2018). The inductive process includes a data-driven approach where the themes are generated in a posteriori fashion (i.e. after the examination of the data collected) (Charmaz, 2006). Meaning that new motives were discovered after conducting in-person interviews on the basis of participants' responses. A deductive process, on the other hand, includes a "top down" approach where themes come from previous research or the current research aims and questions (i.e. generated before data collection, a priori) (Crabtree & Miller, 1999). This really means that the researcher began the in-

person interviews with some ideas about what they could find, based on the literature. This method of analyses produced a set of a priori and posteriori themes (Swain, 2018).

This approach is the most effective way to meet the research goals in this study. Particularly, it has been argued to be very effective in working with sample sizes with fewer than 30 interviews (Swain, 2018). In addition, since there is some theoretical background and preliminary research in this area it would be impossible to do a completely inductive approach. However, given there has not been research that has looked at these specific areas, it would serve as a major limitation to solely use a deductive process because the researcher may close themselves off to new themes or emerging ideas. Given this specific area has never been examined before there is a high likelihood that new themes will emerge that have not been found previously. This dissertation employed a version of qualitative thematic analysis to answer the question “why” perpetrate IPCA.

What is important for the reader to take away from this section is that aggression motivations are best examined using qualitative methods of research (Frisen, et al., 2008; Kellerman et al., 2013; Owens et al., 2000; Prink & Zimmer-Gembeck, 2010; Vajas et. al., 2010). A version of thematic analysis was the most optimal method of evaluation for this topic given it’s flexible nature, integration of past theories and ideas, and openness to new insights (Charmaz, 2006; Swain 2018). In an effort to discover the underlying motives of “why” an individual would perpetrate cyber aggressive acts towards their partner, literature from peers and cyberbullying were drawn on. This facilitated the generation of ideas for the potential underlying motivations for intimate partners, such as jealousy, retaliation, anger, humour, feelings of relationship insecurity, control, and decreased confrontation (Borrajo et al., 2015; Draucker & Marksolf, 2010; Giordano et al., 2015; Kellerman et al., 2013; Miga et al., 2010; Varjas et. al,

2010). The above noted research demonstrates the potential motives individuals may have to aggress against their partner using online means.

After considering “who” might be most likely to perpetrate cyber aggressive acts towards a partner and “why” they might engage in these behaviours, it was also of interest in this dissertation to consider “what” the association was between well-being and IPCA perpetration. It was of interest to examine the connections between mental health and relationship investment and perpetrators of partner directed cyber aggression.

Intimate Partner Cyber Aggression, Well-Being, and Relationship Investment

Although there has been some research into cyber aggression in intimate relationships, minimal research has specifically looked at the consequences of these acts on perpetrators, rather the majority of the research has examined the consequences for victims (Campbell et al. 2012). The lack of research attention to the effects of cyber aggression perpetration is a major gap in the aggression literature. It is a gross oversight to assume that perpetrators will not experience adverse effects from their actions. It should be noted that there has been some research focusing on the consequences of cyber aggression when perpetrated by strangers, acquaintances, and friends (Campbell et al. 2012; Kowalski and Limber 2013; Schenk et al. 2013). Cyber aggression, similar to other forms of aggression, is associated with a multitude of negative consequences affecting both the victim and the perpetrator. It is important to understand the effects of perpetrating IPCA and how that can influence one’s personal well-being and mental health. Focusing on personal wellbeing and relationship investment are central to understanding the consequences of any form of relationship aggression (Kowalski & Limber 2013; Carroll et. al., 2010) as personal well-being tells us more about how the individual is affected internally and relationship investment tells us how the relationship and connection between partners is

influenced by these behaviours. These pieces also emphasize to researchers and clinicians the severity of aggressive cyber acts.

Personal Well-Being

To date, there is no research that has examined the consequences on partner directed cyber aggression for perpetrators. There is, however, minimal research on cyberbullying perpetration among peers and the associated effects. A study conducted by Hinduja & Patchin, (2010) examined 1963 middle school students regarding their involvement in cyberbullying among their peers and suicidal thoughts. They examined suicidal thoughts and behaviours on a measure from the National Student Healthy Survey. They found that perpetrators of cyberbullying had more suicidal thoughts and attempts compared to their peers, who did not engage in cyber aggression. Suggesting that perpetrators of cyber aggression may experience symptoms of depression and suicidal ideation. This is supported by other research that has found that those who perpetrate cyberbullying directed at peers are more at risk of experiencing substance abuse issues, interpersonal victimization, delinquency, school problems, and depressive symptoms (Ybarra & Mitchell, 2004). Consistently, cyberbullying involvement has been found to be associated with suicidal ideation, depressive symptoms, anxiety symptoms, and loneliness, in various other studies as well (Campbell et al. 2012; Kowalski and Limber 2013; Schenk et al. 2013).

Another study that examined cyberbullying among peers, conducted by Schenk et al., (2013), found that perpetrators experienced high levels of distress. They found that compared, to a control group, perpetrators of cyberbullying among peer groups experienced higher levels of interpersonal sensitivity, paranoia, suicidality, phobic anxiety, and depression. This provided

evidence that perpetrators can experience personal turmoil as a consequence of their cyberbullying involvement.

In harmony with the above noted research, a study conducted in Australia assessed 11-19 year old participants who were engaging in cyberbullying with their peers (Campbell et al., 2013). They found that those who perpetrated cyber acts scored higher on symptoms of stress, depression, and anxiety. This points to the potential of anxious and stress related symptoms associated with the perpetration of IPCA. This may potentially be expanded to also be a consequence of IPCA, however research would need to examine this directly to be sure.

As mentioned earlier, research examining the consequences to perpetrators of partner directed online aggression is non-existent, to date. There is, however, minimal research on cyber aggression perpetration among peers and the associated effects. What is known, is that there is an association between cyber aggression perpetration directed at peers and mental health challenges, such as depressive and anxious symptomology (Campbell et al. 2012; Hinduja & Patchin, 2010; Kowalski & Limber 2013; Schenk et al. 2013). Knowing this, it is plausible to hypothesize an association between depression and anxious symptoms and IPCA perpetration. In addition to personal well-being consequences, it is also important to examine potential relationship investment effects.

Relationship Investment

In addition to personal well-being consequences, there is also the potential for relationship issues as a result of IPCA perpetration. Consistent with what was noted above, the research in this area is grossly underdeveloped. However, there are some researchers that examined the effects on perpetrators of other forms of intimate partner aggression, such as Linder et al., (2002), Carroll and colleagues (2010), Panuzio and DiLilo (2010), and Gavazzi et al., (2000).

According to Linder et al., (2002) intimate partner social aggression, identified as covert acts of partner-directed aggression aimed at harming social connections and status, was found to be associated with a decrease in relationship quality. The perpetrators reported feeling frustrated and jealous, and having difficulty trusting their partner. These findings can potentially extend to cyber aggression consequences, given the similarities between the two forms of aggression. It was hypothesized that perpetrators of intimate partner cyber aggression would experience decreased relationship quality and reduced trust. The research suggests that intimate partner aggression, in any form, will result in decreased relationship satisfaction (Carroll et. al., 2010; Gavazzi et al., 2000).

A longitudinal study conducted by Panuzio & DiLilo (2010) examined 202 intimate partners during their first year of marriage regarding their use of intimate partner aggression and the effects. Their main finding, that emerged across multiple timepoints, was that intimate partner aggression predicted lower marital satisfaction. The above noted findings highlight the harm any form of aggression directed towards an intimate partner can cause and may be used to stimulate hypotheses as to the impact of IPCA perpetration. Given previous research, it can be hypothesized that partner specific cyber aggression is associated with reduced relationship satisfaction and quality, however research is needed to substantiate this argument.

As noted, cyberbullying and aggression between peers and intimate partner aggression in varying forms have been shown to have a serious impact on personal wellbeing and relationship investment for perpetrators. Given these effects, it is vital to address the gap in the literature, namely a lack of research targeting intimate partner online aggression with a specific focus on perpetrators. Exploring personal wellbeing and relationship investment relative to partner

directed cyber aggression generated answers to the question “what” are the associations between well-being and the perpetration of technology based partner aggression.

The Current Dissertation

The literature has scarcely examined the new and rapidly growing phenomenon of cyber aggression perpetration between intimate partners. In particular, this dissertation was developed to address three important aspects of the perpetration of IPCA; “who” is mostly likely to engage in this type of behaviour as a function of adult attachment characteristics, “why” are they likely to engage in these behaviours, and “what” is the relationship between well-being and perpetrating such behaviours, with a specific focus on anxious and depressive symptomology and relationship investment. These three questions were addressed in three separate studies. The first was a quantitative study exploring the relationship between attachment characteristics and two types of partner directed cyber aggression (i.e. direct and control monitoring). The second study was qualitative in nature, consisting of in-person interviews exploring the underlying motivations for the perpetration of cyber aggressive acts directed towards an intimate partner. The third and final study was a quantitative examination of the relationship between mental health and relationship investment in connection with the perpetration of intimate partner cyber aggressive behaviours. What follows is a description of each of the three studies that comprised this dissertation.

Study 1: Attachment Characteristics of IPCA Perpetrators

This study examined the associations between cyber aggression perpetration among young adult intimate partners and the perpetrator’s attachment needs. Adults’ internal working models play a role in their relationships with intimate partners (McClellan & Killeen, 2000). It was of interest to examine this relationship, in order to learn more about the characteristics of

people who might perpetrate partner directed cyber aggression. There is a body of research that provides support for the hypothesis that insecure attachment needs are linked to intimate partner aggression of varying forms (Bonneville et al., 2016, Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998; Wright, 2014, 2017). Due to the interpersonal components of attachment theory, it appears to be a worthwhile framework to use to understand and contextualize online aggressive behaviours exhibited between partners (Velotti, et al., 2018). Examining attachment in the context of IPCA provided clarity about the underlying relationship needs and fears of perpetrators. This knowledge would allow for more detailed interventions and preventative measures moving forward. Given the ongoing rise in technology individuals are beginning to use electronics as a primary means of communication in their intimate relationships. This opens the gateway to use aggression via online means. Using a regression model, the relationship between attachment characteristics and cyber aggression perpetration between intimate partners was examined. This helped to answer one aspect of the question “who” may be more likely to perpetrate these online behaviours.

Research Questions and Hypotheses

There were two main research questions for this study: 1. What are the associations between anxious and avoidant attachment characteristics and control monitoring cyber aggression perpetration (i.e. excessively watching and monitoring online behavior) between intimate partners? And 2. What are the associations between anxious and avoidant attachment characteristics and direct cyber aggression perpetration (i.e. harassing online) between intimate partners? Based on the literature in similar areas, it was hypothesized that there would be a significant positive relation between anxious and avoidant attachment characteristics and control monitoring cyber aggression perpetration directed towards an intimate partner (Bonneville et al.,

2016; Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998; Wright, 2014, 2017). Regarding the second research question, it was hypothesized that there would be a significant positive relation between anxious attachment characteristics and direct cyber aggression perpetration between intimate partners. It was also hypothesized that there would be no relation between avoidant attachment characteristics and direct cyber aggression (Bonneville, et al., 2017; Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998; Wright, 2014, 2017).

Methods

Participants

The original data set consisted of 590 participants who were involved in an intimate relationship. Upon data cleaning, 5 participants were removed from the sample as a result of over 40% of their survey being incomplete. Missing data was handled using an Expectation Maximization algorithm (EM; Dempster et al., 1977) in SPSS 26. Expectation Maximization is a Maximum Likelihood Estimation that was employed in this study given it is traditionally used for data that includes latent variables (Brownlee, 2019). This algorithm is also known for being able to ensure consistency in the relationship among variables, which is an essential component for any data analyses (Grace-Martin, n.d.). EM was completed in two steps (1) an estimation for the missing value was generated using the appropriate model parameters and (2) the above noted estimation was included into the model in order to reassess the probability distribution, generating a new value. Next, a check for careless responding/outliers was conducted using Mahalanobis Distance. The Mahalanobis Distance numbers were then compared to a chi-squared distribution table. Based on this analysis there were no participants who met the criteria for removal (i.e. their responses had a probability score lower than .001, demonstrating an outlier). The resulting sample size was 585 participants. Based on previous research, a large sample was

required to ensure power to detect a moderate effect at an alpha of .05 (Cohen, 1992) and confidence in the results as the analyses included the validation of modified instruments. A large sample size was also more representative of the population and limited the influence of outliers or extreme observations. A power analysis was conducted in order to determine the appropriate sample size. The statistical program G*Power was used to conduct the power analysis, as this is a widely used and validated power analysis tool (Faul et. al., 2007, 2009). Power was estimated using a medium effect size, 6 predictor variables, and a desired power of .80. Results demonstrated that a minimum sample size of 98 was required. Based on the power analysis, this study utilized a sample size that was more than adequate for the proposed purposes. Prior to completing various questionnaires, participants were provided with a definition of an *Intimate Partner* in order to ensure that all participants were referring to the same type of relationship. The following definition was provided: “Intimate Partner is defined as someone who you are dating, seeing, or are in a relationship with. The duration of the relationship is irrelevant.” Participants were required to either currently be involved in an intimate relationship or have been involved with someone intimately within the last year.

The final sample consisted of 438 females and 141 males, with 3 participants choosing not to identify and 3 participants identifying as both male and female. Further, 75% of participants were between the ages of 17-20 years old, 17% of participants were between ages 21-24, and 6% of participants were 25 years old or older. Sixty-two percent of the sample identified as white, 9.5% as black, 9% as Asian, and 20% as “other”. Sixty percent of participants reported seriously dating one partner, 16% reported casually dating a person, and 24% said they were not currently dating someone, although they had been in an intimate relationship in the past. In regards to the length of involvement of those in a relationship, 36%

reported being in their relationship for 1 year or more, 39% reported being in a relationship under one year, and 25% reported not currently being in a relationship, however had been in one within the last year. Most participants in the sample reported engaging in cyber aggression with their romantic partners to some degree with 77.4% reported engaging in at least 1 act of cyber aggression directed at their partner at some point in their lives. When the type of cyber aggression was examined 61.5% were found to report engaging in at least 1 act of direct cyber aggression, while 65.6% reported engaging in at least 1 act of control monitoring cyber aggression directed at their partner at some point in their lives. These statistics suggest that the majority of this sample engaged in the perpetration of cyber aggressive behaviours against an intimate partner to some degree.

For their participation, participants were granted a .50 credit towards their introductory psychology course grade; with the option to withdraw at any point during the study without penalty. Participants who did not complete the survey in full were still given their course credit. Students who did not wish to participate in psychological research were offered an alternative option that included reading and answering questions about research articles, in order to attain their course credit. The surveys took approximately 60 minutes to complete. Participants were asked questions regarding their perpetration of cyber aggressive acts (both direct and control monitoring) directed towards their intimate partner. Adult attachment characteristics and demographic information were also measured.

Measures

The self-report questionnaire was comprised of three sections: demographic information, cyber aggression, and attachment scores.

Demographics

Basic demographic data such as gender, age, ethnicity, and current relationship duration was collected to generate as much information about the sample as possible. This information helped to contextualize the results and draw further conclusions about the findings (see Appendix E).

Cyber Aggression

The Cyber Dating Abuse Questionnaire (CDAQ; Borrajo et al., 2015) was used to assess cyber aggression between intimate partners (see Appendix E). The original CDAQ consisted of 20 items about the perpetration of various types of cyber dating aggression, such threats, identity theft, control, and humiliation. Items were rated on a 6-point Likert scale regarding how many times the behavior had occurred during the last year of the relationship (1 = never; 6 = always: more than 20 times). Higher scores were indicative of more cyber aggressive behaviours.

In previous research, exploratory and confirmatory factor analyses revealed a structure composed of 2 factors: direct aggression and control monitoring. Internal consistency for the Direct Aggression Perpetration scale has been found to be $\alpha = .73$, and $\alpha = .81$ for the Control Monitoring Perpetration scale (Borrajo et al., 2015). This scale also has good convergent validity as both the direct aggression subscale and the control monitoring subscale have been found to be significantly correlated with offline psychological and physical aggression, along with cyberbullying. Examples of direct cyber aggression items included “Threatened to spread secrets or embarrassing information about her/him by using social media” and “Wrote a comment on the wall of a social networking site with the intent to insult or humiliate her/him.” Examples of the control cyber aggression items included “Attempted to control who she/he is friends with on social media” and “Attempted to use social media to control where she/he was, and with whom.”

For this study, three items were added to the CDAQ from the Interpersonal Electronic Surveillance Scale (Tokunaga, 2011) to examine control monitoring cyber behaviors (i.e. “Went out of my way to see who my partner has added or started following on social media,” “Went out of my way to see what photos/videos my partner has liked or commented on,” and “Monitored her/his whereabouts using social media”), given the original measure did not ask questions that clearly addressed control monitoring cyber behaviours in the depth desired for this study. Finally, 3 items were added from the Self-Reported Partner Directed Cyber Aggression Questionnaire (Linder et. al, 2002; Wright, 2015) that asked about social aggression occurring between romantic partners in relation to cyber aggression. These items were added to address cyber aggressive behaviours that resemble social aggression more clearly (i.e. inducing jealousy, ignoring, and retaliation) as this was perceived to be missing from the original scale (i.e. “When I’m mad at my partner, I post content on social media to make them jealous or to hurt their feelings,” “Ignored my partner’s text messages or direct messages when they have hurt my feelings,” “Publicly flirted with some else on social media when my partner made me mad”). The final scale consisted of 26 items.

Attachment

The Attachment Style Questionnaire, developed by Feeney et al., (1994), is a 40 item Likert-type scale designed to measure adult attachment to various people in their life (i.e. peers, parents, intimate partners, etc.). This scale was chosen given it assesses attachment using two continuous scales (anxious and avoidant), rather than categorical styles. The 40 items measure the following five scales: 1. confidence, 2. discomfort with closeness, 3. need for approval, 4. preoccupation in relationships, and 5. relationships as secondary. The items were rated on a six-point scale, from 1 (totally disagree) to 6 (totally agree). Higher scores are indicative of stronger

beliefs about self for the respective scale category (i.e. a high score for confidence indicates the participant perceives themselves to be a highly confident individual). Some examples of statements to rate on this scale include: “I feel confident that other people will be there for me when I need them”, “I find it relatively easy to get close to other people”, and “I worry that I won’t measure up to other people”. The internal validity for this scale ranges from .76 to .84 (Feeney et al., 1994). A ten-week retest reliability test for this scale demonstrated reliability coefficients from .67 to .78.

While developing the questionnaire the authors, hypothesized based on attachment theory that each of the five subscales would be associated with specific attachment styles (i.e. anxious, avoidant, and secure). They later confirmed these hypotheses with statistical analyses comparing their results with Hazan and Shaver’s (1987) attachment measure. They suggested that “the need for approval” subscale and “preoccupation with relationships” subscale together represented the degree of anxious attachment experienced by the individual. As recommended by the creators of this measure, these two subscales were added together and a mean score was generated resulting in one score for the participant’s level of anxious attachment. The “confidence” subscale generated a score for an individual’s level of secure attachment. The mean score for this subscale was the participant’s score for secure attachment. Finally, the “discomfort with closeness” and “relationships as secondary” subscales together represent the degree of avoidant attachment experienced by an individual (Feeney et al., 1994). For this study, these two subscales were added together and a mean score was generated resulting in one score for the participant’s level of avoidant attachment, as recommended by the authors. The above noted subscales were used to generate three continuous scores for each participant, one for each attachment dimension:

anxious, avoidant and secure. The scores used in the subsequent analyses were the avoidant and anxious mean scores, each ranging on a scale from 0-6 (see Appendix E).

Procedure

Ethics approval was obtained from the University's Research Ethics Board (CUREB-B) before the collection of data began (Ethics approval code: #109151, Appendix D). Data collection occurred over the course of 4 months, from September to December 2018. Participants were required to login into the University's online research system for psychological studies (SONA) using their personal username and password for the site. The SONA system is an online platform where undergraduate students enrolled in first or second year psychology courses can sign up and complete psychological studies in order to earn extra credit in their respective courses. Upon clicking on the link from the recruitment page (Appendix A) they were redirected to Qualtrics, a high security external site for online surveys. Qualtrics is an encrypted website which uses password protected software to collect and store data. Prior to participation, students were provided with an informed consent form, where they were required to accept the terms of as part of the electronic survey. The consent form (Appendix A) provided participants with the purpose of the study, participation requirements, any potential risks/discomfort, confidentiality/anonymity and their right to withdraw at any given time for any reason with no penalty. This study was deemed low risk by CUREB-B. There was a slight possibility that reflecting on intimate relationships and on one's past behaviour could cause some mild psychological discomfort. Although this potential was no more of a risk than what could be encountered on a daily basis when discussing conflicts with romantic partners. In order to mediate any risk a list of local support services was provided (see Appendix C for the debriefing form). Those who agreed to the consent form were then directed to the questionnaire. It was

anticipated that participants would take 60 minutes to complete the questionnaires, however, they were given as much time as they needed. Participants were required to complete the survey in one sitting and were not given an opportunity to go back and complete it once they had signed off.

Participants could decide to skip questions, or to withdraw from their survey at any time without penalty by pressing the withdrawal button found at the bottom of each page. The withdrawal button when clicked directed participants to the debriefing page (see Appendix C for the debriefing form). All of the data was collected and coded in such a way that the identity of the respondent was not associated with any information that they provided.

Results

Assumptions

An assumption check was conducted based on linear regression assumptions. The data demonstrated no multicollinearity, based on VIF scores well below 10 and tolerance values above 0.2 (statistics = 1.539 and .650 respectively). There were no significant outliers identified according to Cook's distance, as all values were under 1. The independence assumption was met based on the Durban Watson value close to 2 (Durbin-Watson = 1.273). The data was not normally distributed according to a P-P plot, which was to be expected. The data was heteroscedastic, however, regression analyses are fairly robust to this assumption (Kutner et al., 2005). The assumption of linearity appeared sufficient based on a visual analysis of a scatterplot, however, to be certain a log transformation was conducted, and the results were compared for both the log transformed data and the untransformed data. There was no difference in the results, therefore, the data was not log transformed for the resulting analyses reported below.

Confirmatory Factor Analysis

A confirmatory Factor Analysis (CFA) was conducted on the cyber aggression scale in order to confirm factors previously found in the literature. The CFA was conducted using MPlus. Based on common goodness of fit measures, which have been established in previous literature, such as Root Mean Square Error of Approximation value (RMSEA), the Standardized Root Mean Square Residual value (SRMR), the Comparative Fit Index (CFI), and a Chi-Squared test (χ^2) the cyber aggression scale appeared to load well on two factors (Byrne, 1998; Hu & Bentler, 1998; Hu & Bentler, 1999; Marsh Hau & Wen, 2004). The results identified two factors, similar to the previous literature. Factor loadings ranged from .441 to .968. Factor one was consistent with the construct “direct cyber aggressive behaviours”, while factor two was consistent with what would be expected for “control monitoring behaviours.” All items loaded onto one of the two factors: Direct Cyber Aggression (15 items, $\alpha = .918$) and Control Monitoring Cyber Aggression (11 items, $\alpha = .881$). Scores from these two scales were used in all subsequent analyses. Details regarding the goodness of fit indices and the factor items can be found in Tables 2 and 3.

Measures of Central Tendency

Noted in Table 4, are the measures of central tendency for the cyber aggression scale, including subscales, along with the attachment scores. The cyber aggression scale, control monitoring cyber aggression scale, and the direct cyber aggression scale were all positively skewed, with the bulk of participants reporting low levels of cyber aggression. Interesting to note, control monitoring cyber aggression appeared to be more frequently reported compared to direct cyber aggression. Regarding attachment, the anxious and avoidant attachment scores were normally distributed. Anxious mean scores were slightly higher than avoidance.

Table 2*Confirmatory Factor Analysis Cyber Scale Goodness of Fit Indices*

Goodness of Fit	Two Factors
χ^2	199.10
CFI	.961
TLI	.958
RMSEA	.070
SRMR	.087

Note. CFI = comparative fit index (values higher than 0.95 are desirable for good fit); df = degrees of freedom; TLI = Tucker–Lewis index (values higher than 0.95 are desirable for good fit); RMSEA = root mean square error of approximation (values lower than 0.06 are desirable for good fit); SRMR = Standardized Root Mean Square Residual value (values 0.08 or higher are desirable).

Table 3*Confirmatory Factor Analysis Loadings for Cyber Aggression Scale*

Item	Factor 1: Direct Cyber Aggression	Factor 2: Control Monitoring Cyber Aggression
1. Spread rumors, gossip and/or jokes through social media with the intention of ridiculing her/him.	.690	
2. Made threats through social media to physically harm her/him.	.937	
3. Created a fake profile on social media to cause problems with her/him.	.975	
4. Spread secrets about her/him by using social media.	.954	
5. Threatened to spread secrets or embarrassing information about her/him by using social media.	.968	
6. Wrote a comment on the wall of a social networking site with intent to insult or humiliate her/him.	.931	
7. Used social media to pretend to be her/him in order to create a problem.	.963	
8. Sent or uploaded embarrassing photos, images and or videos without her/his permission	.915	
9. Pretended to be another person using social media to test her/him.	.885	
10. Posted music, poems, phrases etc... on my social media with the intent to insult or humiliate her/him.	.833	
11. Sent humiliating and/or demeaning messages to her/him by using social media.	.867	
12. Attempted to control who she/he is friends with on social media.		.441
13. Attempted to use social media to control where she/he was, and with whom.		.877
14. Checked her/his mobile phone without permission.		.817
15. Checked her/his social networks or email without permission.		.844
16. Excessively called her/him to attempt to control where they were and with whom.		.786
17. Controlled her/his status updates on social network sites.		.964
18. Checked the last connection in her/his mobile applications (i.e. checks for the last person she/he texted or called).		.750

19. Used her/his passwords (phone, social networking, email) to browse messages and/or contacts without permission.	.823
20. Threatens to answer her/his calls, messages or texts.	.891
21. Sent humiliating/insulting messages to her/him by using social media.	.885
22. Went out of my way to read comments on her/his posts which are on other friends profiles.	.681
23. Monitored her/his whereabouts using social media.	.689
24. Tried to make me jealous when they are mad at me online or through text messages	.794
25. Ignored me when I have hurt their feelings in some way online or through text messages	.578
26. Flirted with someone else online or through text messages when I made them mad.	.730

Table 4*Measures of Central Tendency for Cyber Aggression and Attachment*

Scale Name	N	Min.	Max.	Range	M	SD
Cyber Aggression Scale	585	1	4.62	1- 6	1.36	.53
Control Monitoring Cyber Aggression	585	1	4.64	1- 6	1.48	.67
Direct Cyber Aggression	585	1	4.60	1- 6	1.27	.51
Anxious Attachment	585	1	6	1- 6	3.73	.80
Avoidant Attachment	585	1	5.94	1- 6	3.34	.63

Note. Missing data was handled using a missing values analysis, as noted above. Higher scores were indicative of stronger beliefs about self for the respective scale category.

Correlations between Demographics, Attachment, and IPCA

First, a simple correlational analysis was conducted to determine any relations between the demographics, adult attachment, and cyber aggression (both direct and control monitoring). The correlation analyses were completed as a preliminary look at the data, to help justify and make sense of the subsequent regression analyses. It was found that direct cyber aggression was positively correlated to both attachment anxiousness and avoidance. It is important to note that direct cyber aggression had a stronger correlation with avoidant attachment characteristics than with anxious characteristics. Control monitoring cyber aggression was found to be positively correlated to both attachment anxiousness and avoidance. A slightly stronger correlation was found between cyber aggression and anxious attachment characteristics compared to avoidant attachment characteristics. Finally, anxious and avoidant attachment characteristics were highly correlated with each other. Results are provided in Table 5.

Direct Cyber Aggression Hierarchical Regression

To examine the unique contribution of attachment in the explanation of cyber aggression, two hierarchical multiple regression analyses were performed. Variables were entered in four steps. In Step 1, cyber aggression was the criterion variable and (a) gender, (b) relationship length, and (c) relationship status as the predictor variables. In Step 2, the anxious attachment subscale was entered into the equation. In Step 3, the avoidant attachment subscale was added to the model, and finally in Step 4 the interaction effect was examined, by centering the anxious and avoidant mean scores and multiplying them together, as recommended in the literature (Jaccardi et al., 2003). Results from Step 1 indicated that the demographic variables did not significantly predict variance in direct cyber aggression. In Step 2, results indicated that anxious attachment significantly predicted direct cyber aggression, accounting for 1.5 % of the variance.

Step 3 results illustrated that avoidant attachment accounted for 2.6% of the variance in direct cyber aggression, and anxious attachment was no longer identified as a significant predictor.

When direct cyber aggression was predicted from all six predictors in Step 3, it was found that avoidant attachment (Beta = .128, $p = .016$) was a significant predictor accounting for a small portion of the variance (2.6%), however, anxious attachment (Beta = .03, $p = .565$, age (Beta = -.018, $p = .679$), gender (Beta = -.029, $p = .499$), relationship length (Beta = -.047, $p = .444$), and relationship status (Beta = .028, $p = .650$) were not found to be significant predictors. These results can also be viewed in Table 6.

When examining direct cyber aggression, it was found that avoidant attachment characteristics was the stronger predictor, as anxious attachment does not add anything to the model over and above avoidant attachment (i.e. any effect anxious attachment characteristics had was non-unique and shared with avoidance). For direct cyber aggression, the strongest predictor was avoidant attachment. Anxious attachment was related to direct cyber aggression on its own, however this effect was most likely a result of the variance that it shares with avoidant attachment, given that the two attachment dimensions are highly correlated. When both of the attachment dimensions were entered together in the model it was clear which dimension held the most predictive value.

Control Monitoring Cyber Aggression Hierarchical Regression

In the second analysis, control monitoring cyber aggression was the criterion variable. In Step 1, control monitoring cyber aggression was the criterion variable and (a) gender, (b) relationship length, and (c) relationship status were the predictor variables. In Step 2, the avoidant attachment subscale was entered into the equation. In Step 3, the anxious attachment subscale was added to the model.

Table 5*Correlations between Demographics, Attachment, and IPCA*

Scale Name	1	2	3	4	5	6
1. Relationship Length	-					
2. Relationship Status	.724**	-				
3. Anxious Attachment	-.127**	-.082*	-			
4. Avoidant Attachment	-.127**	-.133**	.592**	-		
5. Direct Cyber Aggression	-.056	-.024	.104*	.153**	-	
6. Control Monitoring Cyber Aggression	.057	.073	.158**	.130**	.700**	-

Note. ** Correlation is significant at the 0.01 level

* Correlation is significant at the 0.05 level

Table 6

Summary Table for Hierarchical Regression Analyses Predicting Direct Cyber Aggression from Attachment Characteristics

Variable	R ²	ΔR ²	B (SE)	β	sr ²	F	p	95% CI
Model 1	.004	.000				.939	.441	[1.213, 1.78]
Gender			-.029 (.039)	-.031	.000		.459	[-.106, .048]
Age			-.024 (.038)	-.027	.003		.187	[-.018, .004]
Rel. Length			-.020 (.021)	-.057	.001		.445	[-.059, .026]
Rel. Status			.010 (.037)	.017	.000		.845	[-.065, .079]
Model 2	.015	.008				1.957	.083	[.876, 1.590]
Gender			-.044 (.040)	-.048	.002		.264	[-.121, .033]
Age			-.013 (.038)	-.015	.002		.320	[-.017, .005]
Rel. Length			-.016 (.021)	-.045	.000		.553	[-.055, .029]
Rel. Status			.009 (.037)	.015	.000		.855	[-.065, .079]
Anxious Attachment			.069 (.027)	.109	.010		.015*	[.0130, .120]
Model 3	.026*	.017				2.640	.016	[.641, 1.419]
Gender			-.027 (.040)	-.029	.000		.507	[-.105, .052]
Age			.039 (.061)	-.018	.000		.304	[-.017, .005]
Rel. Length			.024 (.028)	.053	.000		.524	[-.056, .028]
Rel. Status			.017 (.037)	.028	.000		.699	[-.058, .086]
Anxious Attachment			.019 (.034)	.030	.000		.623	[-.050, .083]
Avoidant Attachment			.103 (.042)	.128	.010		.015*	[.020, .186]

Note. * $p < .05$. ** $p < .01$. CI = confidence interval; Rel = relationship

Table 7

Summary Table for Hierarchical Regression Analyses Predicting Control Monitoring Cyber Aggression from Attachment Characteristics

Variable	R ²	ΔR ²	B (SE)	β	sr ²	F	p	95% CI
Model 1	.012	.006				1.832	.121	[1.107, 1.856]
Gender			.049 (.05)	.040	.002		.290	[-.046, .1550]
Age			-.079 (.05)	-.068	.005		.092	[-.027, .0020]
Rel. Length			.017 (.28)	.036	.001		.522	[-.083, .0740]
Rel. Status			.042 (.05)	.052	.001		.413	[-.055, .1350]
Model 2	.031	.023				3.700	.003	[.406, 1.411]
Gender			.059 (.05)	.048	.003		.214	[-.037, .1630]
Age			-.071 (.05)	-.062	.004		.144	[-.025, .0040]
Rel. Length			.020 (.03)	.043	.001		.458	[-.034, .0760]
Rel. Status			.051 (.05)	.065	.002		.301	[-.045, .1440]
Avoidant Attachment			.149 (.04)	.141	.019		.001**	[.060, .2340]
Model 3	.04	.030				3.947	.001	[.291, 1.310]
Gender			.032 (.05)	.026	.001		.226	[-.066, .139]
Age			-.060 (.05)	-.052	.003		.489	[-.023, .005]
Rel. Length			.024 (.03)	.053	.001		.372	[-.030, .080]
Rel. Status			.045 (.05)	.057	.001		.361	[-.050, .138]
Avoidant Attachment			.073 (.06)	.069	.003		.191	[-.036, .181]
Anxious Attachment			.100 (.04)	.120*	.009		.025*	[.013, .1870]

Note. * $p < .05$. ** $p < .001$. CI = confidence interval; Rel = relationship.

Results from Step 1 indicated that the demographic variables did not significantly contribute to control monitoring cyber aggression. In Step 2, results indicated that the proportion of variance accounted for in control monitoring cyber aggression by avoidant attachment was 3.1% of the variance. In Step 3, results illustrated that anxious attachment accounted for 4% of the variance, and avoidant attachment was no longer identified as a significant predictor. When control monitoring cyber aggression was predicted from all six predictor variables, it was found that anxious attachment ($Beta = .120, p = .024$) was a significant predictor accounting for a small proportion of the variance (4%), however, avoidant attachment ($Beta = .069, p = .185$), age ($Beta = -.052, p = .221$), gender ($Beta = .026, p = .543$), relationship length ($Beta = .053, p = .384$), and relationship status ($Beta = .057, p = .347$) were not found to be significant predictors. It was found that anxious attachment characteristics was the stronger predictor, as avoidant attachment does not add to the model over and above anxious attachment (i.e. any effect avoidant attachment characteristics had was non-unique and shared with anxious attachment). Avoidant attachment was related to control monitoring cyber aggression on its own, however this effect was most likely a result of the variance that it shared with anxious attachment, given that the two attachment dimensions were highly correlated. When both of the attachment dimensions are entered together in the model it was clear which dimension held the most predictive value. These results can be viewed in Table 7.

Discussion

The relations between cyber aggression perpetration directed to young adult intimate partners and attachment characteristics was examined in this study. There is a body of research that has argued that insecure attachment characteristics are linked to intimate partner aggression of varying forms (Bonneville et al., 2016, Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998; Wright, 2014, 2017). Due to the interpersonal components of

attachment theory, it appeared to be a worthwhile framework to understand and contextualize online aggressive behaviours exhibited between partners (Velotti, Zobel, Rogier, & Tambelli, 2018). Examining attachment in the context of IPCA provided clarity about the underlying relationship needs and fears of perpetrators. This knowledge allows for the possibility of developing detailed interventions and preventative measures moving forward. Given the recent rise in technology individuals are beginning to use electronics as a primary means of communication in their relationships. This opens the gateway to use aggression via online means. This study focused on young adults, given they represent a large portion of the population that uses and excels in cyber technology (Kellerman et al., 2013).

A Confirmatory Factor Analysis was conducted to examine the cyber aggression scale. Two factors were confirmed. The two factors supported a direct cyber aggression subscale and a control monitoring cyber aggression subscale, consistent with the work of Borrajo et. al (2015). The direct cyber aggression subscale measured deliberate acts of aggression such as threats, insults, identity theft, and sharing private information to hurt an intimate partner. The control monitoring subscale measured aggressive behaviours that are more covert in nature, such as privacy invasion, surveillance or monitoring of online activities, or use of personal passwords to gain information. The results support Borrajo et. al's (2015) exploratory factor analysis.

Upon analysis, it was discovered that three quarters of the current sample reported perpetrating at least 1 act of cyber aggression directed at their partner at some point in their lives. When the type of cyber aggression was examined, 61.5% of participants reported engaging in at least 1 act of direct cyber aggression, while 65.6% reported engaging in at least 1 act of control monitoring cyber aggression directed at their partner at some point in their lives. This is relatively consistent with what has been reported in the literature (Borrajo et al., 2015; Burke et

al, 2011; Kellerman et al, 2013). Interestingly, these two forms of cyber aggression were highly related with each other. This relationship is stronger than what was reported by Borrajo et al., (2015) who found a medium size correlation between the two types. The difference between the current results and Borrajo et al., (2015) findings may be a function of time. It has been approximately 5 years since their study was conducted. In that time perpetrators of cyber aggression may have become more engaged in these behaviours and may be more likely to employ several different types of acts in order to meet their needs.

It is also important to note that the anxious and avoidant attachment characteristics were found to be highly related to each other as well. This relationship is slightly stronger than what has been discovered in previous literature (Gormley & Lopez, 2010; Wright, 2014). Similar to what was noted above, this indicates that to some degree individuals who had high levels of attachment anxiousness also had high levels of attachment avoidance, suggesting high levels of insecure attachment characteristics in general. This relationship theoretically makes sense in many ways. Attachment insecurity, both avoidance and anxiousness, share many similar underlying relationship fears such as general feelings of distrust, lack of safety, trouble connecting with an intimate partner, etc. (Hazan & Shaver, 1987). Perhaps it is simply the execution of such fears that is the true difference between anxious and avoidant characteristics, where those with high anxious attachment needs seek closeness to ease their fears, high avoidant individuals seek distance. Given the subtle overlap in various fears and vulnerabilities, it would make sense that these two dimensions would be related. Next, an examination of each type of cyber aggression was conducted in relation to attachment characteristics. The first result that will be discussed was direct cyber aggression and attachment characteristics.

Direct Cyber Aggression

The results from this study illustrated that direct cyber aggression had a small, but significant, relationship with avoidant attachment characteristics, surprisingly. While this result was small, it is still noteworthy. This association was counter to the proposed hypothesis. It was hypothesized that there would be no relation between avoidant attachment characteristics and direct cyber aggression such that anxious attachment would uniquely predict direct cyber aggression perpetration. However, upon analyses, anxious attachment scores were associated with direct cyber aggression perpetration between partners, however the strength of this association was reduced when avoidant attachment was added to the model. This means that any association anxious attachment characteristics had was shared with avoidance. This may be explained given the strong relation between anxious and avoidant characteristics, noted above. Perhaps the association between anxious characteristics and direct cyber aggression was largely a result of generally feeling unsafe and uncomfortable in intimate relationships, which is a function of general attachment insecurity, consistent with both anxiousness and avoidance (Hazan & Shaver, 1987). Perhaps the aspects of general attachment insecurity, that is shared by both avoidance and anxiousness (i.e. untrusting in relationships, feeling unsafe, etc.) is the cause for the initial connection with anxious attachment characteristics and direct IPCA. However, when looking deeper into the specifics of attachment insecurity it was clear that those with high avoidant attachment needs were more closely connected to direct IPCA perpetration.

These results contradict some of the literature in the area. It has been previously suggested that an individual with avoidant attachment characteristics is less likely to engage in direct forms of aggression with their intimate partner (Bonneville et al., 2016; Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998; Wright, 2014, 2017). Previous researchers have made the claim that those with high avoidant attachment characteristics may be

less inclined to use direct forms of aggression, as it may place them at greater risk of confrontation (Bookwala, 2002; Feiring et al., 2002). The results of this study, contradict the hypotheses proposed, as high levels of avoidant attachment characteristics were found to be the strongest predictor of direct cyber aggression.

It can be argued that cyber aggression in intimate relationships may not be so easily compared to face-to-face aggression as direct cyber aggression may, in fact, still be an indirect form of aggression given the cyber aspect of this behaviour. Given the covert nature of the cyber world, it can be argued that any version of cyber aggression is indirect or covert. This is supported given the similarities between cyber aggression and social aggression. Cyber aggression and social aggression are comprised of similar behaviours, such as rumor spreading, gossiping, social exclusion, manipulation etc. It has been argued in previous research that cyber aggression is simply an extension of social aggression given the similar impact and behaviours that are utilized, the only difference being the communication tool employed (Li, 2007; Smith, et al., 2009). Tokunaga (2010) argued that cyber aggression consists of behaviors that are an extension of social aggression. It can be argued that cyber aggression is the act of using socially aggressive behaviors in the online world (Berger, 2007). It is well-known that social aggression is marked by covert, hidden, acts of aggression (Archer & Coyne, 2005). Given cyber aggression is naturally covert this may help to understand the results found in this study, as any indirect form of aggression, can understandably be employed by those high on avoidant attachment.

The claim can also be made that those with high avoidant attachment characteristics may feel uncomfortable in intimate relationships and be more inclined to look for reasons to end those relationships. This is supported by Hazan and Shaver (1987) who claimed that those who have an avoidant attachment struggle with emotional closeness, confrontation, and longevity in

relationships. Hazan and Shaver (1987) have argued that individuals with avoidant attachment characteristics have more pessimistic views of relationships and frequently end relationships. Engaging in direct cyber aggression may be a way for those with high avoidant attachment needs to terminate their relationship, while avoiding in person confrontation. Individuals high on avoidant attachment may purposefully engage in relationship harming behaviours so as to return to a place of safety, outside of a relationship. Those with high avoidant attachment characteristics would benefit most from direct forms of cyber aggression, as it clearly demonstrates to their partner that they perpetrated the relationship harming behaviour, thus maximizing the likelihood of their relationship dissolving, or at a minimum, creating distance and disconnection. This could be seen as a form of purposefully engaging in relationship sabotaging behaviours, with the goal of returning to safety. To individuals with high avoidant characteristics safety is identified as little emotional connection, minimal intimacy, and increased independence (Bartholomew, 1990).

It is also important to note that those with high levels of avoidant characteristics may experience more angry emotions given their intimate partners may seek a level of closeness that does not resonate with them, increasing feelings of frustration and anger. This theory is supported by recent literature in this area which found that individuals with high levels of attachment avoidance were at risk of behaving aggressively online (Lui et al., 2018). Therefore, those who preferred independence and autonomy in relationships may experience more frustration and anger in intimate relationships if their partner seeks out more closeness. Those high in avoidance may use direct cyber aggression tactics as an outlet for their angry emotions. This theory may help to explain the current findings.

Finally, it was surprising to see that high anxious attachment did not strongly predict direct cyber aggression. Given anxiously attached individuals thrive on relationships, and desperately need connection, intimacy, and closeness (Hazan & Shaver, 1987) they may perhaps refrain from engaging in direct forms of cyber aggression as this may make it clear to their partner they are the perpetrator, putting their relationship in jeopardy. Those who are high on anxious attachment characteristics feel most safe in an intimate relationship (Bartholomew, 1990), therefore, engaging in behaviors that would put that safety at risk may be a deterrent for those individuals. Engaging in direct forms of cyber aggression such as public threats online, sharing inappropriate information etc. may actually increase their stress given they are publicly targeting their intimate partner, which could result in disconnection and distance. With this notion in mind, it would make more sense for anxiously attached individuals to prefer less direct forms of aggression, such as monitoring.

Control Monitoring Cyber Aggression

Given the open nature of social media people are given access to information they would not have previously had (i.e. someone's physical location, plans for the weekend, etc.). This open access creates a perfect opportunity for excessive monitoring and surveillance behaviours, which can induce jealousy (Muisse et al., 2009). Results from this study determined that control monitoring cyber aggression was uniquely predicted by anxious attachment characteristics, as was hypothesized. Consistent with the results reported above, the proportion of variance accounted for by anxious attachment characteristics was small. This result is still noteworthy nonetheless, as it helps us understand more about the relations between anxious attachment characteristics and control monitoring IPCA. The result found here supports the bulk of the literature in this area (Bui & Pasalich, 2018; Marshall et al., 2013; Reed et al., 2015, 2016;

Toplu-Demirtas et al., 2020; Wright, 2017). Wright (2014) found that youth who were anxiously attached to their partner were more likely over time to perpetrate cyber privacy invasion directed towards their partner. Generally speaking, consistent with the finding of this study, there is a consensus in the literature that high levels of attachment anxiousness are related to more frequent cyber aggression control monitoring behaviours in intimate relationships (Bui & Pasalich, 2018; Marshall et al., 2013; Reed et al., 2015, 2016; Toplu-Demirtas et al., 2020).

Given individuals high on anxious attachment have difficulties trusting their partner (Wright, 2017), it is understandable that they may engage in behaviors that will seek to provide evidence of trust. This notion is supported by the research of Fox and Warber (2014) and Wright (2017) who have both argued that anxious attachment may increase the likelihood of distrust in one's partner, which may lead to more privacy invasion behaviours. For example, an individual high on attachment anxiousness may invade their partner's privacy online to seek proof of their trust and fidelity. They may be searching for evidence that their partner is being faithful and honest with them, rather than engaging in healthy trust within the relationship. These individuals may be acting out of fear that their partner will leave them for someone else. Given their anxious nature, this fear can become so invasive that they become compelled to monitor their partner's behaviours online.

Individuals high on anxious attachment characteristics may also monitor their intimate partner's online activities to see what images or content they are liking or following. These types of behaviours may be illustrative of relationship insecurity, which is a characteristic of anxious attachment (Hazan & Shaver, 1987). For example, if an anxiously attached individual notices their intimate partner "likes" a picture of another person, this may illicit jealousy and automatically cause that person to feel insecure in their relationship (Wright, 2017). This is

supported by a study conducted by Muise et al., (2009) on Facebook engagement. They found that jealousy was induced when participants used Facebook to monitor their partner's profile. They explained this phenomenon as a cyclical pattern, whereby when an individual observes their partner's activities online, they then attribute ambiguous scenes online to be negative in nature and experience jealousy, which can lead to increased surveillance behaviour. This cycle is particularly problematic, according to Muise et al., (2009). Intimate partners may see a post on social media and perceive it negatively. This may bring up potential concerns that their intimate partner is being unfaithful or is seeking out alternative relationships (Muise et al., 2009). It is for these reasons that anxious attachment characteristics was found to be the strongest predictor of control monitoring cyber aggression with one's partner in this study.

To summarize, this study generated three central findings (1) there are two main types of cyber aggression (direct and control monitoring), (2) the strongest predictor of direct cyber aggression was avoidant attachment characteristics, (3) the strongest predictor of control monitoring cyber aggression was anxious attachment characteristics. While the results of this study are noteworthy and suggest several areas for future research to develop, there are important limitations to consider as well.

Limitations and Future Directions

A first limitation to note is the use of self-report data. Using self-report data can be problematic for a few reasons. First, there is no way to guarantee honesty in the participants' responses. Previous literature has demonstrated that studying sensitive topics such as aggression can sometimes complicate results when using self-report data. A study conducted by Perez-Martin et al., (2014) found that when studying aggression participants tend to respond to questions in ways that emphasize social desirability by scoring highly on items that society

would approve of. They also found that often participants refrained from admitting any aggressive behaviors or would underrepresent the frequency of their aggressive behaviors. This phenomenon is known as social desirability bias. Therefore, given this study utilized self-report data, this may explain some of the low reported frequencies for cyber aggression.

Another notable limitation is that the sample consisted of solely undergraduate students at one Canadian university, therefore, limiting the diversity in the sample. This means that a large proportion of the young adult population was not examined. Additionally, an undergraduate sample is typically skewed as it is drawing from a small section of the population that is well educated, relatively motivated, and driven (Hanel & Vione, 2016). This may explain some of the results found, namely low reported frequencies of cyber aggression. This limitation makes it difficult to confidently generalize the results found in this study to the general population.

In addition to utilizing self-report data, this study also made use of online questionnaires. Online questionnaires pose some difficulties with collecting and analyzing the data, as there is no way to guarantee participants' honesty regarding their responses to various demographic questions. Also, online questionnaires typically lack depth in their analysis as they are limited to preconceived questions (Creswell, 2014).

Future research would benefit from conducting in person interviews to provide a more in depth analyses of cyber aggression between intimate partners. One of the main advantages to interviews is that researchers have the ability to ask follow up questions and can determine more about this phenomenon, addressing one of the limitations of this study. By interviewing participants there would be information exhibited nonverbally in an interview setting, which might help the researcher determine the genuineness of the participants' responses. The researcher might be able to discern honest information from the nonverbal and verbal

information relayed by participants. Based on the findings from Study 1 and the recommendations in the literature, the second study included in this dissertation was an interview based study, which was designed to address these issues and limitations.

Future research may also benefit from utilizing an attachment measure that focuses solely on participant's attachment to their current intimate partner. This study utilized an attachment measure that assessed general adult attachment which may have produced attachment information that was too broad in nature. Perhaps with a more specific focus on partner related attachment stronger associations would have been found. While attachment characteristics are relatively consistent in a person's life (Ainsworth, 1978; Bookwala, 2002; Hazan & Shaver, 1987) it would nonetheless be valuable to explore partner specific attachment and cyber behaviours. For example, if an individual's partner has been unfaithful to them in the past, perhaps they would experience more insecure attachment characteristics in this particular relationship, compared to their general attachment to others in their life. This would be an interesting area to examine further.

Conclusion

Given these findings, the next step in this dissertation was to answer the question "why" perpetrate such acts directed towards an individual one seemingly has a close, intimate, caring relationship with? This led to the development of a second study focused specifically on perpetrators to determine the underlying motivations that they report for engaging in such acts of aggression. It was determined, based on the literature (Carr & Worth, 2001; Creswell, 2014; Hiller & DiLuzio, 2004; Musselwhite et. al, 2006; Polkinghorne, 1994), that a qualitative analysis composed of in-person interviews with perpetrators was the most optimal approach to address this question.

Study 2: An Interview Examination of IPCA Motives

One important question in the field of intimate partner aggression is “why” individuals would choose to use these undesirable and hurtful behaviours in their intimate relationships (Langhinrichsen-Rohling et al. 2012). In the field of cyber aggression this is a question that has received much less attention but remains an equally important consideration. This study was designed to examine the underlying motivations that lead to the perpetration of cyber aggression in intimate relationships. This research was qualitative in nature given the need for in-depth understandings of participants’ lived experiences and internal processes (Lennon & Watson, 2011). Further, this type of research has been found to be the most effective method to examine motivations (Frisen et al., 2008; Kellerman et al., 2013; Owens et al., 2000; Prink & Zimmer-Gembeck, 2010; Vajas et. al., 2010).

Motivations found in preliminary cyber aggression research were used as a guide to develop the interview questions (Borrajo et al., 2015; Draucker & Marksolf, 2010; Giordano et al., 2015; Miga et al., 2010; Varjas et. al, 2010). Although there has been little research on the motivations reported for cyber aggression directed towards intimate partners there has been research that has examined motivations for cyber aggression between peers including retaliation, anger, jealousy, and humour (Kellerman et al., 2013) that were used as a starting point. Additionally, motivations that have been previously reported for the use of social aggression and cyberbullying were also explored, such as feelings of relationship threat, desire for control, and desire for lack of confrontation (Borrajo et al., 2015; Draucker & Marksolf, 2010; Giordano et al., 2015; Miga et al., 2010; Varjas et. al, 2010). Given the exploratory nature of this research, open-ended interviews were conducted with perpetrators in order to allow those who have lived

experience to not be restricted by the findings of related contexts. In this way, additional motivations were allowed to emerge as the interviews progressed.

The individuals interviewed were identified through preliminary screening to be perpetrating higher than average levels of cyber aggression directed towards their intimate partner. Once identified, these individuals were interviewed and asked about their reasons for engaging in these behaviours.

Methods

Participants

Participants were identified using an online screening measure that was included in a “Mass Testing” screening implemented at a large Canadian University in September 2019 to assess levels of cyber aggression perpetration directed towards an intimate partner. Mass Testing is a program used to screen and identify potential participants for future research studies who are registered in first and second year Psychology courses. Participants were required to have been involved in an intimate relationship at some point in their lives. They were asked to report on their experiences with an intimate partner, either current or past.

Data collection using the Mass Testing system generated a total of N=730 possible participants who reported having been in an intimate relationship at some point in their life. They each completed the Cyber Dating Abuse Questionnaire (Borrajo et al., 2015). Six items from the CDAQ were selected and used to set the criteria for those invited for an interview. These six items were selected based on a Confirmatory Factor Analysis which identified two factors (1) Direct Cyber Aggression behaviours and (2) Control Monitoring Cyber Aggression behaviours, consistent with Study 1. The six chosen items loaded strongly on the factors identified (i.e. 3 items per factor). These six items were then examined for each participant. Anyone who reported a score at or above 4 (“*about once a week*”) on the likert scale for any of

the selected six items was deemed to be “highly cyber aggressive” as this indicated these participants were regularly engaged in cyber aggressive behaviours.

Using the above criteria a total of 34 participants were identified as meeting the criteria for “high” levels of perpetration and were contacted and asked to participate in the interview portion of this study. Despite efforts to have an equal distribution of high direct and high control monitoring perpetrators along with an equal number of male and female participants, there was not an equal response rate. Originally, the researcher emailed an equal number of high direct perpetrators (N=17) and high control monitoring perpetrators (N=17), however, more control monitoring perpetrators agreed to participate making the sample more representative of individuals who engaged in high levels of control monitoring cyber behaviours such as Further, more female participants responded to the researcher’s invitation and agreed to participate in the in-person interviews. Of the 34 participants invited for an interview, 14 had participated when theoretical sufficiency was reached. Previous research has argued that a sample size of this magnitude is consistent with the recommended number of participants needed for studies using in-depth interviews (Creswell, 1998; Strauss & Corbin, 1999). Of the 34 contacted, 20 chose not to participate in the interview, 5 of which were male and 15 were female.

The criteria of *theoretical sufficiency* (Dey, 1999) was used in this study to determine when a suitable number of participants had been interviewed. Theoretical sufficiency suggests a level of conceptual depth, such that the researcher has not reached a final limit, but rather a sufficient level of depth has been reached to build a theory (Dey, 1999). This is in contrast to the previously preferred approach of *theoretical saturation*, which is described as the stage in research development where no new dimensions, relationships, or properties are emerging (Strauss & Corbin, 1999). The approach that based decisions on when to stop interviewing,

theoretical sufficiency, was preferred to theoretical saturation given saturation inherently implies that no new insights can possibly be generated (Charmaz, 2014). This is almost impossible for a researcher to state this with complete certainty. Thus, data was collected until the researcher believed she had reached theoretical sufficiency, which was after 14 interviews. At approximately interview 7, the interviews began to generate similar, consistent, results demonstrating sufficient evidence to build a theory. The researcher proceeded to complete 14 interviews in order to verify results and increase support for the theory that was being proposed.

Both women and men were interviewed, however significantly more women than men were available in the original pool, which is consistent with the population from which they were drawn. This discrepancy is reflected in the proportion of women vs men interviewed (14% male, 84% female). During the Mass Testing screening participant's data regarding their engagement in each type of cyber aggression was recorded. This information is reflected in Table 8. It should be noted that during the interviews participants spoke about various different cyber aggressive behaviours when exploring their underlying motives, consisting of both direct and control monitoring acts. For the purposes of this study motivations were not explored based on type (i.e. direct and control monitoring) but rather as a whole. Demographic variables for the 14 participants are noted in Table 8.

Research Question and Hypothesis

There was one main overarching research question for this study: What were the motivations that young adults who reported engaging in high levels of partner directed cyber aggression (both direct and control monitoring) said was leading to their actions? Based on previous literature, it was hypothesized that a minimum of seven motivations would be generated: jealousy, retaliation, anger, humor, relationship threat/insecurity, control, and non-

confrontation (Borrajo et al., 2015; Draucker & Marksof, 2010; Giordano et al., 2015; Miga et al., 2010; Varjas et. al, 2010). Other possible motivations were also expected and encouraged. This study extended research in the field by examining cyber aggression between intimate partners rather than peers, examining emerging adults, and by seeking out high frequency perpetrators.

Interview Questions

Semi-structured interviews were conducted with individuals who met the inclusion criteria for cyber aggression with their close intimate partner. The in-person interviews took place on a large University Campus, in a secure location. Interview questions were structured based on a qualitative study conducted by Kellerman et. al., (2013). In their study they provided participants with a list of items which described various cyber aggressive behaviours. They proceeded to ask participants “if you have ever done any of the above behaviours and if so, describe what motivated you.” This was used as a guide for this study. These questions were intended to be open-ended and semi-structured which allowed the researcher to investigate topics further as needed (Schensul et. al., 1999). The interview was anticipated to take approximately 30 minutes. The shortest interview lasted 17 minutes and the longest was 35 minutes. Interviews started with demographic information and general questions focusing on the way participants related with their intimate partners online, the time spent using online mediums, and their general views of their relationship. Examples of these interview questions included: “What is the nature of your relationship?” “In what ways do you relate with your partner online?” These types of questions have been recommended in previous literature to build rapport, get participants talking, open the dialogue, and provide an overview of their online behaviors and their relationship dynamics (Van Ouytsel et al., 2016).

Table 8*Interview Participant Demographic Information*

	Pseudo-Name	Age	Gender	Ethnicity	Relationship Status	Type of High Cyber Aggression
1.	Katrina	19	Female	Asian	Committed	Direct and Control Monitoring
2.	Melissa	18	Female	Caucasian	Causal	Direct and Control Monitoring
3.	Nancy	23	Female	Filipino	Single	Direct and Control Monitoring
4.	Sarah	20	Female	Did not specify	Single	Direct and Control Monitoring
5.	Stephanie	18	Female	Caucasian	Committed	Direct
6.	Ashley	18	Female	Asian	Single	Direct
7.	Cassidy	19	Female	Black	Committed	Control Monitoring
8.	Penelope	18	Female	Filipino	Committed	Control Monitoring
9.	Megan	23	Female	Caucasian	Committed	Control Monitoring
10.	Jessica	20	Female	Caucasian	Single	Control Monitoring
11.	Emily	17	Female	Indian	Single	Control Monitoring
12.	Aime	21	Female	Black	Single	Control Monitoring
13.	Chad	25	Male	Caucasian	Single	Control Monitoring
14.	Rob	18	Male	Caucasian	Single	Control Monitoring

Next, questions which explored specific details surrounding cyber aggression motivators were asked, such as “You indicated this behaviour is something you do frequently, can you tell me more about what this looks like in your relationship?” “Please describe what was leading you to engage in these behaviours?” “What was motivating you at that time?” Intermediate questions were utilized throughout the interview to gain a deeper understanding of participants’ experiences with cyber aggression perpetration. See Appendix K for more details.

Procedure

Ethics approval was obtained before all collection of data (ID # 111298, Appendix H). Data collection happened over the course of four months starting in the fall of 2019. Participants were required to login into their University’s online research system for psychological studies (SONA) using their personal username and password for the site. The SONA system is an online platform where undergraduate students enrolled in first or second year psychology courses to sign up and complete psychological studies in order to earn extra credit in their respective courses. Upon clicking on the link from the SONA system main page, participants were redirected to the Mass Testing website hosted on Qualtrics, a high security external site for online surveys. Prior to participation, students were provided with an informed consent form, where they were required to accept the terms of as part of the electronic survey. The consent form (Appendix F) provided participants with the purpose of the study, participation requirements, any potential risks/discomfort, confidentiality/anonymity and their right to withdraw at any given time for any reason with no penalty. Those who agreed to participate were then directed to the electronic site where the questionnaires were located. Participants were initially invited to complete a screening measure which assessed the frequency with which they directed cyber aggression towards their partner (CDAQ; Borrajo et al., 2015). The Mass Testing

screeners took participants approximately 5-10 minutes to complete. Selected participants were then invited to a secure location on the University campus to participate in a one-on-one interview with the lead researcher.

Prior to beginning the in-person interview participants were provided with another consent form indicating the purpose of the study, their task requirements, any potential risks/discomfort, confidentiality/anonymity and their right to withdraw at any given time for any reason with no penalty. Upon completion of the interview participants received both a verbal and written debriefing (see Appendix G).

All the participants who agreed to participate in the interviews were assured that their information would be kept strictly confidential. Identifiable information was only shared with the primary researcher in order to coordinate interview times and location. Once data collection was complete each participant was given a unique ID and pseudo-name for each participant and any identifying information was destroyed. While participants had the right to withdraw at any time, no participants who came in for an interview chose to withdraw. See Appendix F for more details.

The interviews were conducted one-on-one with the primary researcher. The primary researcher has advanced training and expertise in interviewing and clinical settings, holding a Master of Arts degree in Counselling and Psychotherapy. It is believed that this expertise was beneficial as the interviewer was able to provide empathy, safety, and validation, to the participants where needed. Participants' interviews were audio recorded using a digital voice recorder and then transcribed using Trint. This is a service that uses a computer software tool to transcribe audio recordings. Trint uses advanced security features to keep data secure. Data is temporarily stored in virtual databases within the United States, which is owned and operated by

Amazon Web Services (Trint, 2020). The data was permanently deleted from Trint after the transcription was complete. After the initial transcription of an interview was received from Trint, four undergraduate and graduate level research assistants reviewed the audio recordings and the transcriptions for accuracy (see Appendix L for Confidentiality Agreement). After the transcript were verified by the research assistants, they were transferred to NVivo. NVivo is an online software program that assists in qualitative and mixed methods research by providing a space to store, organize, code, and analyze data (Swain, 2018). NVivo allowed the lead researcher to store the interview transcripts and code the interviews into appropriate themes by creating virtual folders which categorized the motives that emerged from the interviews.

Researcher as Instrument Statement

Throughout the course of this study the researcher employed a social constructivist lens. The social constructivist lens, in qualitative research, is a paradigm that believes there is no single reality, rather, it is a position that assumes there are multiple potential realities in the world (Ponterrotto, 2005). From a social constructivist lens reality is constructed in the mind of an individual, developed largely from reflection as a means to generate understanding. Constructivists develop theories and ideas based on dialogue and mutual reflectivity between themselves, as the researcher, and their participants. The researcher was aware and mindful of her social constructivist lens, meaning that all interview questions, nonverbal assessments, and analyses were composed and understood through her lens and may vary based on the researcher.

Method of Analysis

A version of qualitative thematic analysis was selected as the most useful approach to employ in order to effectively meet the goals of the study. This method is a combination of two main processes in thematic analysis: inductive and deductive analysis (Swain, 2018). Prior to

data collection, 7 a priori themes based on previous literature in this area were identified: 1. jealousy, 2. retaliation, 3. anger, 4. humor, 5. relationship threat/insecurity, 6. control, and 7. non-confrontation (Borrajo et al., 2015; Draucker & Marksolf, 2010; Giordano et al., 2015; Miga et al., 2010; Varjas et. al, 2010). The researcher prepared a table of these priori themes that was used to record themes participants' mentioned and to summarize their responses relative to other participants (Swain, 2018).

Following each interview, the researcher wrote post-interview notes, highlighting various aspects of the interview. These notes were used as reflective content when analyzing the various themes (Creswell, 2007). Post interview notes were succinct, noting: the tone of the interview, strengths and weaknesses, non-verbal behaviours of the participant, and any additional notable features of the interview. These notes were used in conjunction with the transcripts for primary analyses of the data collected (Patton, 2002). See Appendix J for more details.

Results and Discussion

The researcher employed Braun and Clarke's (2006) six recommended phases of thematic analysis to establish the major motivations generated during the interviews. They were as follows:

Phase One: Familiarize yourself with the data

This first phase involved having the interviews transcribed. The transcripts were then reviewed noting the initial tone of the interviews and possible motives, at a general glance. Transcripts were then downloaded into NVivo's software system and participants were given pseudo-names for ease of analysis. Using NVivo, a priori motives were created and labelled in separate virtual folders, called "Nodes".

Phase Two: Generating initial codes

The second phase involved beginning to code the data, into the a priori themes, as well as generating new themes that emerged. This was done by searching for meanings or patterns in the conversations with participants (Swain, 2018). Themes from the participants' open-ended responses to the interview questions were identified and recorded (Boyatzis, 1998). Analysis began at the beginning of data collection and continued to be reflective throughout the duration of the data collection. As recommended by Lennon and Watson (2011), interviews were analyzed early in the process and this analysis continued with on-going interviews.

As each interview was completed the audio recording was sent to Trint for transcription. The initial transcription process took approximately 1 hour. Once the transcription was completed it was emailed individually to the researcher in a secure online document, which was then reviewed for accuracy by a trained research assistant. Finally, the transcripts were reviewed by the lead researcher and common themes that emerged were recorded in NVivo. This process occurred within 2 weeks of the original interview. This allowed for the development of a sense of common themes as they emerged. This process is recommended as it allowed the researcher to explore in later interviews any posteriori themes that were identified in the earlier interviews. This ensured the interview questions continued to answer the overall research question, coding was accurate, and to monitor levels of theoretical sufficiency (Braun & Clarke, 2006). Ongoing reflexivity in qualitative research is vital to the research process and was diligently employed in this study (Braun & Clarke, 2006).

It was at this stage that inter-rater reliability was established. This is defined as the level of consensus between coders on identifying codes within the interviews (Varjas et al., 2010). Research dictates that an inter-rater reliability of 80% agreement for 95% of the codes is sufficient to establish consensus (Miles & Hubberman, 1994). Miles and Hubberman (1994)

developed a formula for inter-rater coding which establishes a reliability percentage by calculating the number of agreements between coders over the total number of codes. The resulting number should be at least 80% or higher to establish inter-rater reliability.

For this study, inter-rater reliability was established when both the lead researcher and the research assistant labelled what was said by a participant with an analogous motivation name. A second researcher with expertise in cyber aggression, assisted in the coding of the first six interviews until there was 80% consensus. The first six interviews were coded by two researchers in order to develop a reliable coding manual. Six was deemed an appropriate number of interviews given that after the first six interviews there appeared to be a level of theoretical sufficiency such that themes began to re-emerge and no new themes appeared to be developing, as noted above.

Generally, the two researchers developed similar codes for each of the six interviews, resulting in a majority agreement. After deliberations, both coders narrowed the definitions of the codes and added new codes as appropriate. There was only one minor wording disagreement between coders, specifically whether to title a code Relationship Insecurity or Relationship Threat. This was discussed until it was agreed that Relationship Insecurity was a more representative title. Using the equation proposed by Miles and Hubberman (1994), the two coders in this study achieved approximately 90% consensus, which met the requirements to move forward with the coding. Finally, the coding manual was reviewed and consolidated. The coding manual that was generated was used to code the remaining interviews.

Phase Three: Searching for themes

This phase involved searching through the interview transcripts, in NVivo, noting motivation codes. Once all the interviews were coded, they were thoroughly reviewed to

determine which codes could be collated into themes. The relevant a priori and a posteriori codes were then collapsed and combined (Swain, 2018) to produce a list of family themes (Fereday & Muir-Cochrane, 2006).

The initial coding resulted in 10 different motivations. This included the original 7 that were hypothesized a priori (i.e. jealousy, retaliation, anger, humor, relationship insecurity, control, and non-confrontation) as well as 3 new motives: boredom, distrust, and gauging feelings. However, upon searching for themes and organizing the codes into potential family themes, this number was reduced to 6 central themes which included 4 of the original a priori themes suggested in the literature (anger, jealousy, relationship insecurity, and non-confrontation) and 2 novel a posteriori themes that were generated by the interviewees (boredom and distrust). Also, 3 sub-themes were reported (Control, Retaliation, and Humour), each of which were originally hypothesized to be central themes, however upon analyses of the interviews they appeared to be sub-themes.

Phase Four: Reviewing themes

In this phase a “thematic map” was developed. This involved reviewing the themes that were generated a priori and a posteriori, and the themes generated in phase three. Generally, the motivations that were collated in phase three appeared to resonate with the researcher based on what was expected from a review of previous literature along with general impressions from conducting the interviews.

Phase Five: Defining and naming themes

Phase five included an ongoing analysis of the motivations identified, the specific codes that were organized into themes, and reviewing previous literature. It was in this phase that the researcher created appropriate names and definitions to help highlight and explain each

motivation that was reported. Six main motivations were identified and noted in this study: relationship insecurity, jealousy, distrust, anger, boredom, and non-confrontation. These are outlined with the noted frequencies in Table 9.

In general, most participants were comfortable talking about their experiences during the interviews. They all reported at least one motivation that they believed best explained their cyber aggressive acts. At most, some participants reported up to five motivations that they believed explained their actions. Overall the most frequently reported motive to perpetrate cyber aggressive acts directed at one's partner was relationship insecurity. The frequencies of the central and sub-motives reported can be seen in Table 9.

Phase Six: Producing the report

Finally, the last step in Braun and Clarke's (2006) six phases of thematic analysis, involved creating a final report. This included picking important quotes to illustrate each motivation and relating the results back to previous literature. As previously mentioned, six main motivations were identified and noted in this study: relationship insecurity, jealousy, distrust, anger, boredom, and non-confrontation. Consistent with the hypotheses, 4 motivations were found that have been previously reported in the literature (i.e. relationship insecurity, jealousy, anger/control/retaliation, and non-confrontation) and 3 novel motivations were generated (i.e. distrust, boredom/humour, and non-confrontation). Surprisingly, the underlying motivation of distrust that was not initially hypothesized, was frequently reported throughout the interview process and was discovered to be important. What follows below is a detailed review of each of the six main motives identified.

Table 9*Main IPCA Motivations Identified*

Motivation	Sub-Motivation	# of Participants Reported	% of Respondents that Reported
Relationship Insecurity		11*	79%
Jealousy		10*	71%
Distrust		8	57%
Anger		5	36%
	Control	4	29%
	Retaliation	5	36%
Boredom		8	57%
	Humour	2	14%
Non-Confrontation		3	21%

Note. Percentage of responses do not equal 100% as some participants reported more than one motive.

N = 14

* = most frequently reported

Relationship Insecurity

Relationship insecurity was described as feeling uncertain about one's partner or one's self. Further, participants reported fearing that they did not measure up to others online, their partner might not reciprocate their feelings, or a fear their partner might leave them. This was the most frequently reported motivation to perpetrate intimate partner cyber aggression and was described by 11 individuals (79% of the interviews). Below is a conversation held with Emily, a 17 year old undergraduate student, as she discussed her reasoning for creating a fake social media account and testing her partner:

Researcher: You said that there was a concern they might leave. I wonder if you can tell me a bit more about that?

Emily: Well, I dated this guy once and everything seemed to be going fine and then it just randomly ended. So maybe that is why I do it? Because I was really confused when it happened. So now if I'm in another relationship, it's like, will it happen again? Because I don't want that happening - it's very painful.

Researcher: So if you were to say what was motivating you to create that fake account, would you say it might be jealousy?

Emily: I don't think that it would be jealousy. I think it'd be more a fear of them not reciprocating how I'm feeling towards them, you know. And I just want to be sure that they feel the same way because I don't want to get my hopes up kind of thing.

Researcher: So reciprocation? I get that. Almost like I want to make sure that they are into me as much as I'm into them?

Emily: Yeah, for sure. I think because of certain relationships, when I had been left, I just don't want that to happen again.

Researcher: I wonder if it's kind of the same sort of thing when you check to see where they are physically and the things they like online?

Emily: Yeah. Honestly it's just I always fear that I'm going to be more into them than they'll be into me because that's heartbreaking. Because whenever I'm dating someone I'll always need reassurance, like a lot of reassurance, it's just because I have anxiety. So I overthink a lot and just like having the reassurance helps me to know that they're still in it with me.

Noted below is another example of relationship insecurity, described in an interview with Rob, an 18 year old undergraduate student. Rob is responding to a question about why he monitored his partner's likes and follows on social media:

Researcher: Can you give me an example of something that would have made you feel insecure?

Rob: Yeah. The one thing that always comes to mind with that, is this girl, she was taller than me so when she was talking to somebody else who was taller than me, who is a guy that's taller than her. You're like hmm I don't know?

Researcher: Would that make you feel like "what if she wants to leave me for this person?"

Rob: Yeah, that was kind of the first thought that I had every time. But again, that's just my own insecurity.

This is consistent with research conducted by Muise et al., (2009) who reported that online surveillance of one's romantic partner is associated with relationship uncertainty and doubt about a partner's involvement in a relationship. This is consistent with the reasons provided by individuals during their interviews. Participant's reported a concern that their

partner might not reciprocate their feelings and therefore, they would frequently monitor their partner's behaviours online to seek validation and reassurance.

Relationship insecurity has also been identified as an underlying motivation for the perpetration of relational aggression between peers. Pronk and Zimmer-Gembek (2010) found that feelings of insecurity in friendships were a main motivator for perpetrators to express aggression towards a peer. Those who perpetrated relational aggression were described as lacking depth and connection in their friendships, resulting in them acting out feelings of insecurity. Similar explanations were found in this study of cyber aggression directed towards an intimate partner. Participants reported fearing they might not be good enough for their partner, feeling that their relationship lacked depth and might not be strong enough to withstand temptations and pressures found in the online world. For example, several participants in this study reported a concern that their intimate partner would be tempted by another person's photos or videos online and become less engaged in their relationship. Following from relationship insecurity, the next most commonly reported motivation for the use of partner-directed cyber aggressive behaviour was jealousy.

Jealousy

Jealousy was described as feelings of discomfort when one's partner would like another person's photo on social media, or comment on a video or picture. This appears to be related to the participants' levels of internal self-esteem. Participants reported feeling jealous when their partner would talk to other people online, despite having no clear reason to doubt their commitment to the relationship. This was the second most common motivation reported. A total of 10 individuals (71%) reported that jealousy was a motivator for them. For example, noted

below is a conversation with Emily as she explored her need to monitor her partner's actions with his friends online because she felt jealous:

Emily: And it's just like honestly, social media would like make you overthink. It seems so harmless, but it just gets inside your head if one specific person is one of their 'best friends' then I just think, why do you need to be talking to them when you're with me?

Researcher: Almost as if they're in your 'best friend' list, obviously you're talking to them regularly?

Emily: Yeah. Obviously there's an interest, you know.

Researcher: So that might be when feelings of jealousy come in?

Emily: Yeah. And it's weird because if I were to see them talking to a girl in person it's like whatever. But just having that much interaction online, it's different. I don't know how to put that.

Like Emily, jealousy was noted by many participants as a reason why they engaged in various forms of cyber aggression directed at their partner. Many participants reported that they were motivated by the belief or concern that their intimate partner might be interested in or displaying interest in other people online. For example, some participants reported feeling jealous when their partner would start following a girl they didn't know. They reported that these feelings would prompt them to engage in more control monitoring behaviours both of their partner's online activity and of any new people they were connected with. It was clear from the interviews that feelings of jealousy were an underlying reason why many participants engaged in more rigorous cyber aggressive acts.

It has been argued by Muise et al., (2009) that self-esteem is closely related to a person's levels of jealousy experienced in a relationship. They further reported that lower levels of self-

esteem may increase a person's perceived jealousy in relation to socially ambiguous situations involving their partner. A good example of this may be seeing one's partner like another person's photo on social media. Someone with relatively high self-esteem may notice this and not question their relationship, whereas a person with lower self-esteem may immediately question the strength, and connection of their relationship.

These results are also supported by White (1981) who defined jealousy as "a complex of thoughts, feelings, and actions which follow threats to self-esteem and/or threats to the existence or quality of the relationship, when those threats are generated by the perception of a real or potential attraction between one's partner and a (perhaps imaginary) rival" (p. 24). The notion that self-esteem is related to jealousy in an intimate relationship is not novel, however, it was found to be consistent with individual's experiences in cyber aggression. Participants reported jealousy as a reason to monitor their partner's online activities. They reported feeling driven by jealous feelings to engage in monitoring behaviours, despite feeling that this may be morally wrong. This is supported by new research findings that high levels of jealousy were related to greater involvement in psychological aggression (Munoz-Fernandez & Sanchez-Jimenez, 2020). Given the public and accessible nature of social media this facilitates the perfect hub-spot for jealous behaviours to fester in relationships given socially ambiguous cues are constantly available to partners and temptations to validate their jealous feelings are sometimes easily attained (i.e. with the click of a button they can see who their partner is following and what they are liking). This result is consistent with recent literature which found strong relationships between control monitoring IPCA and romantic jealousy (Baker & Carreño, 2016; Van Ouytsel et al., 2016). In addition to relationship insecurity and jealousy, distrust was also reported as a common motive for IPCA perpetration.

Distrust

Distrust was described as a lack of confidence in one's partner to be honest and faithful in their relationship. Distrust was described as a belief that one's partner was lying to them about their whereabouts, behaviours, or feelings. Therefore, participants reported feeling the need to verify their partner's reported actions by logging into their online accounts and monitoring their behaviours, for example. This was noted by 8 individuals (57%). Below is a conversation between the lead researcher and Cassidy, a 19 year old undergraduate student that exemplifies the motivation of distrust:

Researcher: I wonder what you think might be motivating you to check in or to check where his location is?

Cassidy: It's just I don't know, kind of has to do with trust to see if the trust is fully there. So I'm just making sure that he's telling me where he says he is. That's kind of the main aspect of it. Just the verification, for me to have the peace of mind to know that he is where he said he is.

Some participants reported that their partner had been unfaithful in the past and they now believed they needed to monitor their partner's activity given they no longer trusted them. This is described below by Jessica, a 20 year old student:

Researcher: What do you think might have been motivating that, to create the fake account? Did you think, again, there was that concern that he's going to be behaving inappropriately with this fake account?

Jessica: For sure. The whole thing that triggered it was him cheating. So, I stopped trusting him, but I still stayed in a relationship with him because I figured we can probably work through it. And then he's like, "oh, yeah, I've changed". Didn't change.

And I'm like, "OK, I'm going to see if you actually changed this time". So that kind of goes into it. I'm going to see if he changed. And then that's when I started being like, OK, I'm going to make a fake account. I'm going to ask for his location. I'm going to do this. I'm going to do that.

Distrust was not originally hypothesized. Initially, distrust was thought to fall under the category of jealousy. However, it was evident from the in-person interviews that distrust was actually a separate motivator from jealousy, given they result in slightly different behaviours and emotions. Jealousy is an uncomfortable feeling which brings up doubts in one's relationship, tying strongly to internal levels of low self-esteem. Based on the interviews, jealousy appears to rely on a triggering event. For example, an individual's partner may post a picture of himself with another girl, this would induce a feeling of jealousy in the perpetrator, causing them to engage in heightened levels of monitoring and investigative work as a result of their jealous feelings. Distrust however, is an inability to believe an intimate partner's actions or words. This does not require a triggering event, distrust can simply be a general suspicion that one's partner is being dishonest with them, as can be deduced from the interviews.

This idea is supported by Muise et al., (2009) that intimate partners may see a post on social media and perceive it negatively. This may bring up potential concerns that their intimate partner is being unfaithful or is seeking out alternative relationships. They may then become concerned that their relationship is not secure and feel a lack of trust in their partner. This motivation may cause individuals to engage in control monitoring or privacy invasion behaviours in order to test their theory of relationship infidelity. Distrust, in this study, was recorded as a fear that one's partner is deliberately lying to them and an inability to blindly trust their partner's word. Previous research has found similar results, specifically, an association between high

levels of distrust and IPCA control monitoring behaviours as a method to investigate an intimate partner's fidelity to the relationship (Marshall et. al., 2013; Toplu-Demirtas et. el., 2020).

Some participants reported engaging in cyber aggressive behaviours as a result of their partner's previous, untrustworthy, behaviour. For example, in some cases it was reported that their partner had been unfaithful in the past and this was the reason they needed to monitor their partner's online activity to ensure they did not cheat again. In research by Cravens et al., (2013), they argue that given the rise in technology over the last decade, internet infidelity is becoming more common. They argue this is as a result of the internet being accessible, affordable, and anonymous. Cravens et al., (2013) found that married couples would conduct investigations into their partners when they perceived them to be unfaithful. Finally, they also noted that people who found out about their partner's infidelity often chose to stay together, but excessively monitored their online activity until they were able to prove their loyalty again. In their study, some participants even began using a tracking system on their partners after their infidelity became public. This is largely consistent with the interview results from this study. Participants reported that if their partner had a history of being unfaithful either in previous relationships or with them they were more motivated to perpetrate cyber aggressive behaviours to make sure they are being loyal. Distrust was noted as a central motivator to perpetrate cyber aggression. Another underlying motivation to perpetrate IPCA that was reported by participants in their interviews was feelings of anger.

Anger

Some participants reported that anger was a motivation for their cyber aggressive behaviour. This was defined as feelings of annoyance or frustration with their partner and behaving in ways that released that frustration through acts of cyber aggression. This was

reported in 5 interviews (36%). An example of anger, as a motivation for cyber aggression, is outlined below in a conversation with Melissa, an 18 year old student, as she describes posting subliminal messages on her social media with the main goal of releasing feelings of frustration:

Melissa: Yeah, I was referring to quotes, for example, I used a lot of hinting at specific songs, like screenshots of songs, when we were in fights or something. And I would find a way to make him jealous by posting my guy friends, for example and that would really trigger him so I took advantage of that. But yeah posting things to hurt him.

Researcher: What do you think motivated that for you? What do you think was driving that for you?

Melissa: I think mostly anger and I wanted attention specifically from him. So if I posted and he'd realize it's about him, he'd text me or, say something about it and we'd eventually start talking again, that kind of thing.

In addition, the conversation below is another example of the motivation anger. This was described by Stephanie, an 18 year old female student:

Researcher: So, let's say you text him. He doesn't answer. You might send him another text. Call him or something, "What's going on? You could have responded to me." What do you think might be motivating the second and the third call or the third text? What do you think is happening for you there?

Stephanie: I'm getting impatient or annoyed because sometimes I feel like him not responding to me is just him not thinking about me.

These findings are consistent with results from Kellerman et al., (2013) who found that negative emotion was one of the most common motivators in their study for cyber aggression. They described negative emotion as, behaviours due to anger, hurt, or frustration that can drive

behaviour. This is consistent with the results from the current study. For example, one participant reported that she would often post pictures of herself with members of the opposite sex because she was frustrated with her partner for something unrelated he had done. In the study conducted by Kellerman et. al., (2013) negative emotion was found to be a motivator for electronic aggression in 21.4% of females and 25% of males. This was considered to be one of the highest motivators, in their study. This study found slightly higher frequencies for feelings of anger, as more than one third of the sample described anger as a motivation which drove them to regularly exhibit online aggressive behaviours. This may be as a result of the narrow criterion selected for participants, as each participant in this study self-reported high levels of aggressive online behaviours, which differs from most studies in the literature.

A longitudinal study conducted by Giordano et al., (2015) also found that high levels of anger increased the odds of aggression perpetration between intimate partners. Anger can be a motivator to engage in cyber aggression within one's relationship given the ease with which online communication takes place. For example, if one partner upsets another, however the couple is uncomfortable with expressing their concerns openly, they may resort to online mediums to aggress against their partner and to release their anger or frustrations. This may be advantageous given the covert nature of online behaviours, along with the decrease in potential confrontational in-person situations. For young adults it may be easier and safer to release their frustrations and anger online than having an in-person discussion. Cyber mediums provide an outlet to express frustrations and anger in a covert way, thus, ensuring safety from conflict or confrontation (Mikulincer & Shaver, 2005).

In this study, participants identified two other motives that fall under the anger category. These include control and retaliation. This categorization is supported in the literature as well. In

a comprehensive review of perpetrator motivations for face-to-face aggression between intimate partners, Langhinrichsen-Rohling et al., (2012) reported that multiple studies collapsed anger with retaliation and other emotional dysregulation problems. Similarly in this study, anger was reported in the interviews as the main motivator and when participants were probed further, they were able to articulate a desire for control or to retaliate against their partner in some way. For example, one participant reported that he felt angry with the material his partner posted online so he decided to give her the silent treatment, for several days, until she removed the photos. This is a great example of a participant initially feeling angry, which lead to acts of cyber aggression, with the underlying goal of controlling behaviour.

Control. Control is a motivation that is categorized under the anger motive. When participants spoke about control they implied that anger was perhaps their primary motive and control was the secondary motive. Participants reported control was a big motive to engage in ignoring their partner. This was reported as a means to teach their partner a lesson regarding “appropriate ways to behave.” This was noted in 4 interviews (29%). For example, Jessica explained that she would ignore her partner on social media for days, in an attempt to control or manipulate his future actions online:

Researcher: Yeah. A lot of people say that at least for the ignoring, it's almost in a roundabout way, a way to train or control, like you did something wrong and you need to know that that was wrong.

Jessica: Kind of like time out.

Researcher: Yeah. Do you think that's relevant or that's applicable to you?

Jessica: Yeah, it is. Because I knew how bad it would just annoy him. He'd call me and I wouldn't answer. And then I'd sometimes block him or mute his calls or his texts or his

snaps, whatever. Even his Instagram sending me memes I wouldn't answer. Or I'd just leave him on read and that would drive him crazy. He'd show up with flowers and everything like "oh my God, I'm so sorry I ever did this to you. I miss you. Come back."

The above noted example demonstrates that Jessica engaged ignoring behaviours with her intimate partner in order to get him to apologize to her and be regretful. This illustrates her motive of wanting to control her intimate partner. Another participant described control as putting her partner in a "time out" in order to let him know that what he did was wrong (i.e. not answer her phone calls right away) and that he should not do it again. This is essentially an act of control.

Control as a motivation for cyber aggression is supported by research conducted by Borrajo et al., (2015), who argued that control is a big factor in cyber dating aggression. They reported that the desire to control or micromanage one's partner is a fundamental aspect of cyber aggression. They explained that this is particularly relevant to cyber aggression given the multiple ways it is possible to monitor and access other's personal information online. Given the many ways of monitoring someone's whereabouts, personal information, and day-to-day activities it is understandable that intimate partners may use cyber mediums as a means to control how their partner is perceived by others online (i.e. controlling who they are friends with on social media or the content they upload, etc.). Intimate partners can also constantly monitor their partner via online means. This hovering/monitoring behaviour may be done as a means to enforce control and power, as a way to micromanage them.

A qualitative study conducted by Giordano et al., (2015) examined 928 adolescents and young adults, ages 22-29, in intimate relationships. They asked participants to self-report their levels of intimate partner aggression perpetration. Researchers conducted interviews with

participants over a ten-year period. They found that the attempt to control one's intimate partner was related to greater odds of intimate partner aggression. They reported that control as a motivator for aggression in relationships is often overlooked. Their study illustrated that aggression is often employed as a means of controlling one's partner into behaving in a particular way. Based on this, the motive of anger appears to be operating for both general IPA and IPCA. In this study, participants described control as a function of their angry feelings towards their partner. For this reason, control was perceived as a sub-category of anger. Control was not the only sub-category of anger that was discovered in this study, another aspect that was discovered during the interviews was angry feelings which lead to revenge driven behaviours.

Retaliation. Retaliation was also categorized under anger. Retaliation, when discussed in the interviews, appeared to be a desire that was followed by feelings of anger. Participants described retaliation as wanting to get back at their partner for something they did to them, or a way to get even. Five individuals described this motivation (36%). For example, Ashley, an 18 year old female, reported posting images of her with other males as a means of retaliation towards her partner:

Ashley: That's because sometimes if he is very close to other girls and I'm a bit jealous, so I like to post something like I'm with other guys, like to study or to eat, essentially to make him jealous. I do care. Kind of like retaliation. He did something to me, so I like to do something the same way he did to me.

Further, below is another example of retaliation as a motivator for engaging in cyber aggressive behaviours described by Melissa:

Researcher: You had mentioned in the mass testing that you do spend time checking to see what they liked or who they started following?

Melissa: That's mostly because it's unfair, I felt like they were doing the exact same thing. So I would go out of my way to try and find things on social media like specifically just to balance it out kind of.

Researcher: Like a retaliation?

Melissa: Yeah, kind of the way he acted about my location and how he would always ask about where I was. It made me think well, if he's acting like that, then I kind of have to act like that. And then it made me always question him, like, where are you going, who are you with? Why are you going there?

Retaliation is consistent with the bulk of the literature on relational aggression motives (Reynolds & Repetti, 2010; Shute et al., 2002) as well as motives to aggress against an intimate partner (Kellerman, et. al., 2013; Pronk & Zimmer-Gembeck, 2010). Retaliation has often been reported in the literature as a person's desire for payback or to stick up for themselves (Pronk & Zimmer-Gembeck, 2010). In previous research, retaliation has been a strong motivator of aggressive acts. Retaliation has been described as "revenge or reacting in response to a perceived aggressive act" (Kellerman et. al., 2013, p. 296). Previous research on social aggression has found that when individuals are victimized they sometimes get angry and aggress back as a way of defending themselves or getting revenge (Pronk & Zimmer-Gembeck, 2010). Many participants in this study described retaliation as a desire to keep things even in their relationship. For example, their partner would log into their account without permission, which motivated them to log into their partner's accounts driven by a "if he can do it so can I" mentality. Therefore, a central motivation for the use of cyber aggressive tactics that was discovered in this study was feelings of anger. Upon further analysis, anger appeared to have two sub-motives, control and retaliation, which played a role in perpetrators' engagement in cyber aggressive

behaviours. Two further motivations that were reported focused on a desire to entertain oneself by employing aggressive behaviours on social media and through technology.

Boredom

Boredom was noted by a little over half of participants (57%). Boredom was used by participants to explain their cyber aggressive behaviours. Many participants explained that they were motivated by feeling bored, and sought to elevate their boredom by monitoring or checking-up on their partner. Highlighted below, Penelope, an 18-year-old undergraduate student indicated that she used monitoring behaviours with her partner to relieve her feelings of boredom:

Penelope: At the start, I think we mentioned my curiosity, boredom. I'm a journalist, major. I just like digging for information. I think every girl does that.

Boredom was also described as a motivator by Rob, age 18, highlighted in the text below:

Researcher: What do you think motivated you or still motivates you to monitor what they're doing?

Rob: On Instagram, I would say it's mostly boredom. I might be on my phone. This is something that I know how to do and something that interests me. And then it's always a conversation topic to later ask about, like "hey, I saw you liked this picture about, say, cooking or something. Yeah, that looks like a good recipe."

Boredom was noted by many participants and was used by participants to explain their cyber aggressive behaviours. Participants often reported that their cyber aggressive behaviours were not done with the intention to cause harm to their partner, but rather to reduce their own feelings of boredom. Participants reported that their curiosity would peak when at home feeling bored and they would get the urge to check in on their partner. For example, some participants

explained that they would be bored at home watching a movie in the evenings and would mindlessly scroll through their phone. This sometimes resulted in surveillance of their partner's online presence for recent activity changes, status updates, or updated personal content. This finding is consistent with previous literature which has found that often perpetrators do not see their behaviour as aggressive and thus they argue that they are not behaving with the intent to harm another person (Reynolds & Repetti, 2010). Within the category of boredom, humour was noted. Humour falls under this category, given many participants reported engaging in cyber aggression as a result of feeling bored, however when probed further, they reported that their boredom lead to a desire to have fun and generate entertainment.

Humour. Humour was organized under the boredom theme, given humour is assumed to be a function of feeling bored and seeking to alleviate their boredom. Participants reported engaging in cyber aggression towards their partner in order to have some fun, or because they thought it would be funny (i.e. creating a fake social media account and testing their partner because it would be funny). This was noted by 2 individuals (14%). An example is provided below by Jessica, as she explains the reasons why she generated a fake social media profile to test her partner:

Jessica: Yes. So actually, my friend and I both...well, it's her account and she's like, "you know, I feel like making a fake account to try to catch guys." We actually thought of making it a business, creating a fake account and just catfishing guys that are cheating or that are possibly cheating or doing something behind their girls' backs. Just because we were both going through the same thing at the same time. So, let's just expose people. So, I made an account with her and we started, actually it's funny because like two days ago

we were using it to talk to her guy...And I'm like, "oh my God, this is so much fun". So, it became more of something funny than something to actually hurt people.

Jessica: The whole thing was a game pretty much for us. We were actually entertained by it, seeing how he's acting with other girls. Even if I knew it was just my friends. And then she'd be like "I'm [PARTICIPANT NAME]'s friend, actually." Or like, we caught you haha. And it was so much fun. To be like don't mess with me, who do you think you are? Like you're not cute, you're not as cute as me, so why are you talking with other girls?

In the brief quote below, humour is demonstrated as a motivation by Penelope as well:

Penelope: But it wasn't really, it was maybe really mildly retaliation. But just like for my enjoyment. To see how hard, I could annoy him.

As noted in the above two quotes, for both participants humour was reportedly a motive to engage in direct forms of cyber aggression. Participants reported wanting to be funny or find humour in testing their intimate partners online. This is also consistent with previous research which has argued that for relational aggression between peers and intimate partner aggression, humour is often a motive (Kellerman et. al., 2013; Ponari & Wood, 2010; Runions, 2013). Ponari and Wood (2010) argue that young adults sometimes do not realize the severity of their online behaviours. Shapka (2011) also theorized that most online messaging that is aggressive is not done with the intent to harm, but rather is intended as "just joking around." This joking, however, is not always perceived this way by the receiver. Given the distinct nature of online communications, those who perpetrate cyber aggression may do so with the intent to be funny or to joke around, however they may be harming their partner without realizing it (Runions, 2013).

It can be speculated that boredom and humour are simply ways to justify aggressive behaviour in a socially acceptable way. Perhaps boredom and humour are driven by deeper, less

socially acceptable motives such as jealousy, relationship insecurity, or anger. Given this information was revealed from in-person interviews, perhaps there was a social desirability component, causing participants to explain their behaviour using more socially accepted motivations such as boredom or humour. Rather than the less socially accepted drivers such as relationship insecurity, anger, or jealousy. Another motivation that has frequently been reported in the research on social aggression and cyber bullying is the desire to use behaviours that are more covert and will not result in confrontation and high levels of emotion. This was also found in partner-directed cyber aggression.

Non-Confrontation

Finally, non-confrontation was not reported frequently, only 3 participants (21%) gave it as a reason for their cyber acts however, it was deemed worth considering given that it has been identified as an important motivation by researchers studying other types of aggression. Non-confrontation was described by participants as wanting to avoid directly talking to their partner about problems in the relationship or concerns, but rather engaging in cyber aggressive behaviours as a way to express their emotions from a distance. For example, Aime indicated that she used cyber aggression with her partner in order to avoid having to confront them in person about her concerns. This is illustrated below:

Researcher: And that was part of the monitoring behaviour? You wanted to find out if he's doing something so that you can end the relationship.

Aime: Pretty much, yeah. It was almost like an 'out' I suppose. Yeah, it sounds weird when you say it like that, but I guess yeah. With my mindset going into it and the things I was hearing, I was like, well, I'm moving away for school anyway, so I might as well dig for proof just to end it you know. But to avoid the confrontation of actually ending it.

Researcher: Do you think avoiding the confrontation was a piece that was important in all this?

Aime: Maybe, just in that circumstance with the type of person that he was. Yeah. I think saying, OK, I'm moving away for school. We have to break up because I did not want to do long distance. It sounds weird, but it was definitely a way to avoid actually having to break up and be hurt about leaving someone that I genuinely really liked.

A desire to avoid confrontation has been supported in previous literature by Varjas et. al, (2010), Mikulincer and Shaver (2005), and Underwood (2004). Non-confrontational motivations have been described as not wanting to have a face-to-face encounter with the victim (Varjas et. al, 2010). Previous research examining cyber bullying motivations between peers, ages 15-19, found that one main motivator for cyber bullying acts was that it was non-confrontational in nature (Varjas et. al, 2010). Part of what motivated these participants to use cyber bullying mediums was the fact that they had a decreased likelihood of engaging in a face-to-face confrontation, which can often be very intimidating.

Non-confrontational advantages may be particularly relevant between intimate partners. For example, if one partner is upset about something they may utilize cyber means because they are afraid to bring it up in person or they do not exactly know how to bring it up in a transparent manner. Using cyber aggressive tactics may allow individuals an outlet to express their frustrations and anger in a covert way (Mikulincer & Shaver, 2005). Also, given the potential anonymity of social media, cyber aggressive behaviours can be done largely undetected by the victim, ensuring minimal confrontation, while still having an ability to gather valuable, desired, information. For example, participants reported logging into their partner's social media accounts from their own home. This illustrates ways participants could attain desired information

about their partner, while minimizing the risk of their partner finding out (i.e. reduced risk of confrontation). If these aggressors do not find any incriminating evidence on their partner's social media accounts, they can simply delete their browsing history and pretend their aggressive act never took place. This anonymity and accessibility is part of what makes cyber aggression targeting an intimate partner so damaging.

In conclusion, this study found six main motivations for the perpetration of cyber aggression targeting an intimate partner. Consistent with what was hypothesized based on the literature, the following central motivations were confirmed by interviews with perpetrators: Relationship Insecurity, Jealousy, Anger, and Non-Confrontation. Two additional central motivations were discovered that were not anticipated, Distrust and Boredom. There were also three sub-motives reported: Control, Retaliation, and Humour. These were originally hypothesized to be central motives, although that was not reflected in the interviews. Most of these motivations are consistent with the motives reported by either perpetrators of peer-directed cyber aggression, such as retaliation, anger, jealousy, and humour or by motives noted in the social aggression literature, such as feelings of relationship threat, desire for control, and desire for lack of confrontation (Kellerman et al., 2013; Musie et al, 2009; Munoz-Fernandez & Sanchez-Jimenez, 2020; Pronk & Zimmerbeck, 2010). Despite these interesting findings, caution should be exercised in generalizing these findings as there are some important limitations to outline along with areas for future research to grow.

Limitations and Future Directions

This study was unique and provided a valuable lens to examine the phenomenon of IPCA using in-person interviews. One of the major strengths of this study was the identification of high frequency perpetrators as participants provided a gateway into enriching and insightful

reflections of first-hand use of IPCA tactics. Given their first-hand experience interviewees were able to speak to their authentic motives, rather than having participants imagine what could motivate IPCA. This study was designed to meet and address some of the limitations and future directions noted in Study 1, however, despite the strengths of this study, there are some limitations to note.

One of the central limitations of this study was the sample. The majority of the sample was female and the majority were high in control monitoring. Perhaps if the sample was more evenly distributed by gender different underlying motivations might have been found. The sample also consisted of high frequency aggressors who reported utilizing cyber aggressive tactics at least once a week. The participants that were interviewed in this study represent an extreme subset of the population, given that the majority of individuals do not engage in weekly use of cyber aggressive behaviours. There is a possibility that the motives that were reported by this sample, may not generalize to other individuals who engage in moderate or low levels of cyber aggression (i.e. once or twice a year).

Social desirability may have also been a limitation in this study given aggressive behaviour is sometimes considered to be socially inappropriate. Given participants were gauging the researcher's responses in real-time, they may have felt pressured to respond in ways that downplayed or normalized their IPCA behaviours. While the majority of participants were forthcoming with their experiences, there were a few participants who appeared to be more socially conscious. For example, one interviewee reported that he would excessively monitor his partner's online activities, however only to learn more about her passions. This interviewee cushioned his response by saying things such as "it's not anything creepy or bad, I'm just curious." Social desirability is hard to avoid in research of this type, given the sensitive nature of

intimate relationships and aggression. In order to attempt to remove this factor, it would be beneficial for future research to conduct quantitative research to validate what has been found, essentially removing the variable of being face-to-face with the researcher.

This study also taps into the larger theoretical question of whether people can truly report on their own internal motivations. It is believed that some individuals do have this capacity and are able to be insightful and accurately reflect on their actions, motives, and desires. However, it is also believed that some individuals may struggle to adequately engage in this form of reflective practice, given it requires a level of emotional awareness and introspective processes, which may be more challenging for some individuals to attain (Murphy et al., 2020). Given the sample consisted of young adults, there is a potential that not every participant had the ability to be emotionally aware and accurately report on their own motives. If the sample was older in age they might have had more capacity to engage in deeper reflective processes. Future research should work to replicate these findings using various assessment methods and varying sample characteristics.

Another important limitation to note was the fact that the researcher was female. This may have influenced the male participant's level of comfortability disclosing information as well as their agreement to participate. This was noted in the researcher's reflections and insights after the interviews that male interviewees appeared more withdrawn and less transparent about their actions, feelings, and thoughts compared to the women who were interviewed. This may be a function of the researcher being female or it may be that males, in general, are less comfortable reporting on their feelings and emotions. Alternatively, this reflection could simply be that those two male participants were less comfortable with vulnerability and openness in general. In the

future, it would be ideal to have same sex interviewers, as this might allow participants to feel more comfortable in their levels of openness and engagement.

Finally, future research would benefit from taking these new learnings about IPCA motivations and examining them in a more standardized, quantitative way to determine generalizability. It would be valuable to create a standardized way to analyze the motives discovered in this study to determine if they can be generalized to a larger population, which would naturally be composed of various levels of IPCA perpetration engagement. In the composition of Study 3, these limitations were considered and efforts were made to address them.

Conclusion

To summarize, this study discovered novel insights about the motives of IPCA perpetration, specifically discovering 6 central motivators: relationship insecurity, jealousy, distrust, anger, boredom, and non-confrontation. Relationship insecurity, jealousy, and distrust all shared similar qualities based on the interviews. All three centered around the perpetrator's own self-esteem, faith in their partner, and concern about the stability and genuineness of their relationship. Similarly, the anger motive appears to be centered around the notion of releasing intense upset emotions through acts of control or revenge. Boredom and humour are focused on the perpetrator's own feelings and are largely argued to be innocent and socially acceptable. Finally, a desire to avoid confrontation appears to be a defensive way for the perpetrator to gather desired information in a disguised or hidden fashion. This provided a foundational piece in the understanding of IPCA perpetration, as there is now more insight into the reasons that might drive individuals to use cyber aggressive tactics direct at their close partners. As a reminder to the reader, the earlier studies included in this dissertation focused on examining

“who” is most likely to perpetrate IPCA and “why” someone would perpetrate IPCA. The sequential next step in this endeavour was to examine some of the relationships between IPCA perpetration and well-being which was the purpose of the third study in this dissertation.

Study 3: The Associations between IPCA Perpetration, Well-Being, and Relationship Investment

There is a major gap in the literature in the area of understanding the relationships between the perpetration of IPCA and personal wellbeing and relationship investment. Although there has been some research into cyber aggression in intimate relationships relatively few research studies have specifically looked at the associations between IPCA perpetration and emotional well-being (Campbell et al. 2012; Kowalski and Limber 2013; Schenk et al. 2013), rather the majority of the research has examined victims (Borrajo et al., 2015; Burke, 2011; Wright, 2014, 2017; Zweig et al., 2013). The lack of research attention to the relations between cyber aggression perpetration and personal wellbeing and relationship investment requires more attention in the aggression literature. This study sought to address this gap in the literature, while advancing the knowledge of IPCA.

The goal of this study was to answer the question “what” is the relation between IPCA perpetration and well-being? This study examined the relations between the perpetration of cyber aggressive behaviours and personal and relational well-being, specifically depressive and anxious symptoms, and relationship investment. A cyber aggression motivations measure was created using the results generated from Study 2 as a foundation. This measure was then examined for psychometric properties in order to validate and provide support for the first scale, that I know of, that assesses intimate partner cyber aggression motives.

Research Questions and Hypotheses

Three main research questions were addressed by this study: What is the association between intimate partner cyber aggression and a person's well-being, specifically focusing on depression and anxiety symptoms? What is the association between intimate partner cyber aggression and a person's investment in their intimate relationship? What are the main motivations reported by perpetrators of intimate partner cyber aggression? The hypotheses are outlined below:

- 1) It was hypothesized that those who perpetrated cyber aggression directed at their intimate partner would also report high levels of depression and anxiety symptoms (Campbell et al. 2012; Hinduja & Patchin, 2010; Kowalski & Limber 2013; Schenk et al. 2013).
- 2) It was hypothesized that those who perpetrated cyber aggression directed at their intimate partner would report lower levels of relationship investment (Carroll et. al., 2010; Gavazzi et al., 2000).
- 3) It was hypothesized that the most commonly reported motivations would be consistent with study two: relationship insecurity, jealousy, and distrust.
- 4) It was also hypothesized that the newly developed cyber aggression motivations scale would yield a 6-factor solution as determined by an Exploratory Factor Analysis.

Methods

Participants

A total of 667 undergraduate students, sampled from a Canadian University initially agreed to participate and logged into the SONA system to complete the surveys, however, 144 participants were removed from the final sample because they had not completed 40% or more of their survey, they withdrew at some point during the survey, or they completed the entire survey in under 2 minutes (suggesting careless responding). The final sample consisted of 513

undergraduate students, 373 females and 137 males, with 3 participants choosing to identify as “other” between the ages of 17-25, who were enrolled in first and second year psychology courses. This is consistent with the gender distribution in Psychology undergraduate courses. The sample consisted of 55% of participants who were between the ages of 17-19 years old, 28% of participants who were between ages 20-21, and 16% of participants who were between the ages 22-25. Fifty-six percent of the sample identified as white, 11% as black, 13% as Asian, and 20% as “other”.

Based on previous research, a large sample was required to ensure there would be enough power to detect an effect, to ensure confidence in the results as the analyses included the validation of modified instruments, and to be more representative of the population and limits the influence of outliers or extreme observations (Cohen, 1992). The statistical program G*Power was used to conduct the power analyses to determine the required sample size, as this is a widely used and validated power analysis tool (Faul et. al., 2007, 2009). Power was estimated using a medium effect size, 7 predictor variables, and a desired power of .80. Results indicated that a minimum sample size of 104 would be required. Therefore, this study used a sample size that was more than adequate for the purposes of this study.

Prior to completing the questionnaires, participants were provided with a definition of an *Intimate Partner* in order to ensure that all participants were referring to the same type of relationship. The following definition was provided: “Someone you are casually dating or are in a committed relationship with. The duration of the relationship is not considered of importance in identifying who this person is.” Participants were required to either currently be involved in an intimate relationship, or to have been involved with someone intimately at some point in their life. Participants were screened for this prior to completing the survey. Of the sample, 62% of

participants reported being currently involved in an intimate relationship, while 38% reported having previously been involved in an intimate relationship at some point in their lives. Of those who were currently in a relationship, 32% reported having been involved in a long-term relationship lasting 1 year or more, and 43% of participants reported having been in a relationship for less than a year. Participants were also asked to answer all questions throughout the survey in reference to the same intimate partner.

For their participation, participants were granted a .50 credit towards their introductory psychology course grade; with the option to withdraw at any point during the study without penalty. Students who did not wish to participate in psychological research were offered an alternative option that included reading and answering questions about research articles, in order to attain their course credit. This is the same procedure used in Study 1. Participants were asked questions regarding their cyber aggression experiences perpetrated towards an intimate partner, their motivations, and their psychological well-being.

Measures

The self-report questionnaire, which consisted of seven different instruments included demographic information, a cyber aggression measure, an attachment measure, a cyber aggression motivations measure, a relationship investment measure, a measure of depression symptoms, and a measure of anxious symptoms are described below. The questionnaires took approximately 60 minutes to complete.

Demographics

Basic demographic data such as gender, age, ethnicity, and current relationship status and duration was collected to generate as much information about the sample as possible. This information helped to contextualize the results (Appendix Q).

Cyber Aggression Scale

The Cyber Dating Abuse Questionnaire (CDAQ; Borrajo et al., 2015) was used to assess the type and frequency of cyber aggression directed towards an intimate partner. The original CDAQ consists of 20 items about the perpetration of various types of cyber dating aggression, such as threats, identity theft, control, and humiliation. As in the earlier study, two items were added to the CDAQ from the Interpersonal Electronic Surveillance Scale to examine cyber monitoring behaviors (i.e. “Went out of my way to read comments on her/his posts which are on other friends profiles,” “Monitored her/his whereabouts using social media”) (Tokunaga, 2011), given the original measure did not ask questions that clearly addressed control monitoring cyber behaviours in the depth required for this study. Finally, 3 items were added from the Self-Reported Partner Directed Cyber Aggression Questionnaire (Linder et. al, 2002; Wright, 2015) that asks about social aggression occurring between intimate partners in relation to cyber aggression. The Cyber Aggression Scale consists of 2 subscales: direct cyber aggression ($\alpha = .84$) and control monitoring cyber aggression ($\alpha = .85$). The cyber aggression scale used in this study differed slightly in wording from the cyber aggression scale employed in Study 1. Items were rated on a 6-point Likert scale regarding how many times the behavior had occurred during the last year of the relationship (1 = never; 6 = always: more than 20 times). Higher scores were indicative of more cyber aggressive behaviours. The final scale consisted of 21 items. See Appendix Q for more details.

Motivations for Intimate Partner Cyber Aggression Scale

The Motivations for Intimate Partner Cyber Aggression Scale was developed for this study (Appendix Q), based on the results from Study 2 which identified 6 main motivations for cyber aggression in intimate relationships. The most frequently reported motivations from the

qualitative interviews were used as a basis for the development of items. These motivations included: distrust, anger, jealousy, relationship insecurity, and boredom. Non-confrontation, a motive identified in Study 2, was not included in the current composition of this measure given that only 2 participants reported it as a motive to perpetrate IPCA. A previously validated motivations scale developed by Quigley and Daniels (2013) targeting relationally aggressive behaviours was used as a guide for the development of the items for the Intimate Partner Cyber Aggression Motivations scale.

The final Intimate Partner Cyber Aggression Motivations Scale consisted of 29 items; five items for each of the central motives: distrust, anger, boredom, jealousy, and relationship insecurity. Four additional items were included that assessed prosocial motives (i.e. It is something everyone does to show they care about their partner). These items were intended to assess the normalization of IPCA behaviours, which was noticed in Study 2 interviews, and to ensure the scale did not consist of entirely negative items. Participants were asked to rate each of the items on a Likert scale ranging from 0 (completely disagree) to 4 (totally agree). Higher scores indicated that the participant agrees that the item reflects an underlying motive that they believe would result in their own use of the aggressive behaviour.

Before completing the scale, participants were prompted with a definition of IP cyber aggression and asked to “think of a time when you might have engaged in a behaviour similar to this with your intimate partner? Can you briefly describe this situation in 1-2 sentences in the box provided below” Finally, participants were asked to use the example they provided as a context when answering the subsequent questions and to ensure all participants were referring to the same behaviours (Appendix Q). After being provided with the definition, participants were given the option to skip this specific questionnaire if they felt they have never used IPCA

behaviours (i.e. If you truly feel like you have never used cyber behaviours in an intimate relationship before then please click on the button below to move onto the next part of the survey). This decision was made to prevent participants from guessing what they think someone might feel regarding cyber aggression motives. Rather it was the hope of the researcher that the results generated from this measure would be genuine responses from participant's regarding their lived experiences. However, in total 279 participants chose to skip this survey, resulting in more than half of the total participants choosing to skip this section.

Investment Model Scale

To measure relationship investment the revised version of the original scale (Rusbult et al., 1998) was used (Appendix Q). The original scale consisted of 37 items. The revised version consisted of 14 items representing 4 main sub-scales: satisfaction ($\alpha = .89$), alternatives ($\alpha = .75$), investments ($\alpha = .82$), and commitment ($\alpha = .96$). The specific items for the revised version were chosen as a result of research conducted by Rusbult et. al (1998). Based on item– total correlations averaged across three studies for each item in the satisfaction, alternatives, investments, and commitment scales items with the highest item–total averages included in the revised version of the scale (Lehmiller & Agnew, 2008) plus one item that was added by Lehmiller and Agnew (2008) to address participants' intention to remain in a relationship. The final scale, used in this study was comprised of 3 items for the satisfaction, investment, and alternatives subscales and 5 items for the commitment subscale, resulting in a total of 14 items. A total score representing relationship investment was utilized for the analyses in this study, as all the subscales were highly correlated with the total score. A higher total score indicated a strong level of investment in one's current relationship.

Beck Depression Inventory

The Beck Depression Inventory (BDI; Beck et. al, 1961) was designed to measure the behavioral manifestations of depression. Twenty-one self-report items were clinically derived from systematic observations and records of the characteristic attitudes and symptoms of depressed patients. Psychiatric patients completed the BDI using multiple choice response formats with possible answer choices ranging in intensity (i.e. 0 = I do not feel sad, 1 = I feel sad, 2 = I am sad all the time and I can't snap out of it, 3 = I am so sad or unhappy that I can't stand it). A high correlation coefficient on a split-half item analysis and a significant relationship between the individual category scores and the total scores indicated high reliability. A highly significant relationship between BDI scores and clinical ratings of depth of depression as well as the power to reflect clinical changes in depth of depression supported the inventory's validity. The BDI was found to discriminate effectively between groups of patients with varying degrees of depression. This instrument is a useful tool for researching depression as well as arriving at a psychiatric diagnosis on a quantitative basis (PsycTESTS Database Record (c) 2016 APA). The measure used in this study included 20-items from the validated measure (Appendix Q). One item was removed, given it asked about suicidal thoughts, which was of concern given the online, anonymous, nature of the data collected. Depressed affect was used in this study as a proxy measure of negative well-being and not suicidal ideation.

Beck Anxiety Inventory

The Beck Anxiety Inventory (BAI; Beck et al, 1988) is a self-report inventory for measuring the severity of anxiety in psychiatric populations. An initial item pool of 86 items was drawn from three pre-existing scales: the Anxiety Checklist, the Physician's Desk Reference Checklist, and the Situational Anxiety Checklist. A series of analyses were used to reduce the item pool. The final scale consists of 21 items, each describing a common symptom of anxiety

(Appendix Q). The respondent is asked to rate how much he or she has been bothered by each symptom over the past week on a 4-point scale. The BAI has been shown to have high internal consistency ($\alpha = .92$) and good test-retest reliability over 1 week, $r(81) = .75$. The BAI was also found to discriminate anxious diagnostic groups (panic disorder, generalized anxiety disorder, etc.) from non-anxious (major depression, dysthymic disorder, etc). In addition, the BAI has been found to be moderately correlated with the revised Hamilton Anxiety Rating Scale, $r(150) = .51$, and only mildly correlated with the revised Hamilton Depression Rating Scale, $r(153) = .25$. (PsycTESTS Database Record, 2015).

Procedure

The procedure for this study was very similar to that used in the first study. Ethics approval was obtained from the University's Research Ethical Board (CUREB-B) before the collection of data began (Ethics approval code: #112240, Appendix P). Data collection happened over the course of five months, from March 2020 to July 2020. Further details regarding the process of data collection and the procedures employed can be reviewed in the Study 1 Procedures section, and details regarding the recruitment, consent, and debriefing information can be reviewed in Appendices M, N, and O respectively.

Results

Preliminary Analyses and Assumptions Check

Missing data was handled using an Expectation Maximization algorithm (EM; Dempster et al., 1977) in SPSS 26. Expectation Maximization is a Maximum Likelihood Estimation that was employed in this study given it is traditionally used for data that includes latent variables (Brownlee, 2019). This algorithm is also known for being able to ensure consistency in the relationship among variables, which is an essential component for any data analyses (Grace-

Martin, n.d.). EM was completed in two steps (1) an estimation for the missing value was generated using the appropriate model parameters and (2) the above noted estimation was included into the model in order to reassess the probability distribution, generating a new value. Next, a check for careless responding/outliers was conducted using Mahalanobis Distance. The Mahalanobis Distance numbers were then compared to a chi-squared distribution table. Based on this analysis there were 10 participants who met the criteria for removal (i.e. their responses had a probability score lower than .001, demonstrating careless responding). They were removed from the sample resulting sample size of 513 participants. An assumption check was conducted based on linear regression assumptions. The data illustrated no multicollinearity, based on VIF scores well below 10 and tolerance values above 0.2 (statistics = 2.084 and .480 respectively). There were no significant outliers identified according to Cook's distance, as all values were under 1. The independence assumption was met based on the Durbin Watson value which was close to 2 (Durbin-Watson = 1.609). The data was not normally distributed according to a P-P plot, which was to be expected. The data was heteroscedastic, however, regression analyses are fairly robust to this assumption (Kutner et al., 2005). The assumption of linearity appeared sufficient based on a visual analysis of a scatterplot. Therefore, all linear regression assumptions were checked, and the data was deemed acceptable to move forward to subsequent analyses.

Exploratory Factor Analysis

An Exploratory Factor Analysis (EFA) was conducted on The Motivations for Intimate Partner Cyber Aggression Scale, as the scale was developed for this study. The EFA was conducted on 234 participants who indicated they had used IPCA and completed this survey. While having a large sample size is generally preferred, according to Sakaluk and Short (2017) a sample size between 200-250 is adequate for an EFA. The EFA was conducted using SPSS. To

determine factorability of the items a Kaiser-Meyer-Olkin measure and Barley's Test of Sphericity was conducted. Both tests demonstrated that the data was factorable with a KMO value of .888 and Barley's Test of Sphericity having a significance level of $p < .001$ (Worthington & Wittaker, 2006). A "promax rotation" was used given this method generates the lowest possible kappa, which makes the factors more distinguishable. The extraction method utilized was the principle axis-analysis, as this is the recommended best practice for the development of new scales and is the most likely result to translate to a Confirmatory Factor Analysis (Matsunaga, 2010; Worthington & Wittaker, 2006). There were specifications made to only show loadings higher than .35, as recommended by most researchers (Matsunaga, 2010). SPSS suggested a 4-factor solution for the motivations measure, based on the Eigen values, scree plot (Figure 1), and the factor loadings (Table 10). The scree plot illustrated four strong factors with eigenvalues above 1 and two other factors with low eigenvalues around one. A pattern matrix was also generated to illustrate which items loaded on which factors along with any double loading items. The original scale with the factor loadings can be viewed in Table 10.

Four strong factors were generated plus 2 others from the EFA. Upon further analysis, 8 items were deleted from the original scale. Items 22, 27, 28, and 29 were deleted as a result of high cross loadings. The rule of thumb that was used to determine the cut-off for this was to only retain items if the primary to secondary discrepancy was larger than .3 (Matsunaga, 2010). Also, 3 items (23, 25, and 26) were deleted as they loaded on the 5th factor, which did not theoretically make sense. Finally, item 24 was deleted as it did not significantly load on any factor. This resulted in a strong 4- factor solution with 21 items ($\alpha = .874$). The four factors found were: Insecure (10 items, $\alpha = .944$), Anger (4 items, $\alpha = .844$), Boredom (4 items, $\alpha = .788$), and Prosocial (3 items, $\alpha = .707$) (see Table 11 for the finalized scale).

Figure 1

EFA Scree Plot

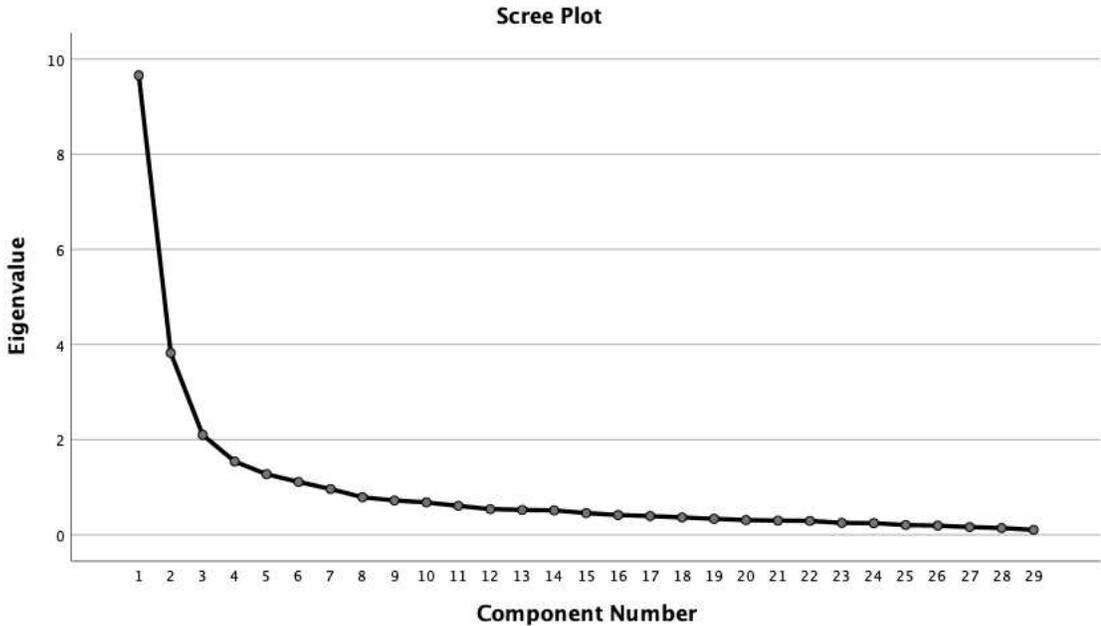


Table 10*EFA Primary Structure for the Motivations for Intimate Partner Cyber Aggression Scale*

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
1. I didn't feel like I could fully trust them.	.791					
2. I was jealous about the possibility of another relationship developing between my partner and another person.	.615					
3. I did not feel like they were being honest with me.	.911					
4. I was afraid that my partner was relating inappropriately with others.	.779					
5. I wanted to make sure what they were telling me was the truth.	.741					
6. My partner started acting differently and I was concerned that they did not feel the same way about me.	.621					
7. I was afraid my partner might have been cheating on me.	.983					
8. I felt insecure about my relationship.	.770					
9. I felt like my partner was getting too close to another person.	.663					
10. I was concerned that my partner was lying to me.	.972					
11. I was angry about something and wanted to make my partner feel bad				.705		
12. I wanted my partner to pay for something they did to me.				.757		
13. I figured it was a socially acceptable way of getting out my anger.				.592		
14. I was trying to get back at my partner for something they did that made me mad.				.760		

15. I thought it would be fun.		.729	
16. I was bored.		.834	
17. It seemed like a funny thing to do at the time.		.465	
18. I had nothing else to do.		.630	
19. I wanted to show them how much I cared about them.			.741
20. It is something everyone does to show they care about their partner.			.642
21. It is just something people do when they are in open and honest relationships.			.469
22. I was concerned that my partner might find someone better than me to be with.	.566		.391
23. I wanted to monitor who my partner interacted with online and what they were saying.			.684
24. It is something my partner does to me so I think it is only fair that I do it back.			
25. I was jealous that my partner was communicating with others.			.470
26. I was curious of what I could find.			.498
27. I wanted to know for myself where my partner was or what they were doing.			.469
28. I was worried that my partner was going to leave me.	.559		.373
29. I wanted to make sure they were okay.			.440
			.707

Note. Originally, items 1, 3, 5, 10, and 27 were created to reflect the Distrust motive, however each of these loaded on the Relationship Insecurity factor, aside from item 27 which did not clearly load on any of the main 4 factors. Items 2, 4, 7, 9, and 25 were originally designed to reflect jealousy, however they also loaded on the Relationship Insecurity motive, except item 25 which did not load well on any factor. Two of the items designed to reflect Relationship Insecurity loaded appropriately 6, 8, (items which did not load as expected: 22, 23, 28). Therefore, items initially designed to address Relationship Insecurity, Distrust, and Jealousy loaded primarily on one factor. Items originally created to reflect the Anger motive (11, 12, 13, and 14) all loaded as expected, except item 24 which did not load on any factor. Regarding the Boredom motive: items 15, 16, 17, and 18 loaded as expected (item 26 did not load on the Boredom motive). Three items originally designed to be prosocial in nature (19, 20, 21) loaded as expected, while the fourth item, 29, did not load on the prosocial factor.

Table 11*EFA Four- Factor Solution for the Motivation for Intimate Partner Cyber Aggression Scale*

Item	Relationship Insecurity	Anger	Boredom	Prosocial
1. I didn't feel like I could fully trust them.	.791			
2. I was jealous about the possibility of another relationship developing between my partner and another person.	.615			
3. I did not feel like they were being honest with me.	.911			
4. I was afraid that my partner was relating inappropriately with others.	.779			
5. I wanted to make sure what they were telling me was the truth.	.741			
6. My partner started acting differently and I was concerned that they did not feel the same way about me.	.621			
7. I was afraid my partner might have been cheating on me.	.983			
8. I felt insecure about my relationship.	.770			
9. I felt like my partner was getting too close to another person.	.663			
10. I was concerned that my partner was lying to me.	.972			
11. I was angry about something and wanted to make my partner feel bad		.705		
12. I wanted my partner to pay for something they did to me.		.757		
13. I figured it was a socially acceptable way of getting out my anger.		.592		
14. I was trying to get back at my partner for something they did that made me mad.		.760		
15. I thought it would be fun.			.729	
16. I was bored.			.834	

17. It seemed like a funny thing to do at the time.	.465	
18. I had nothing else to do.	.630	
19. I wanted to show them how much I cared about them.		.741
20. It is something everyone does to show they care about their partner.		.642
21. It is just something people do when they are in open and honest relationships.		.469

Measures of Central Tendency

The Motivations for Intimate Partner Cyber Aggression Scale, including both the control monitoring and the direct cyber aggression scale, was positively skewed, with the bulk of participants reporting low levels of cyber aggression ($M= 1.43$ on a scale from 0-6 such that 1.43 reflects a level of cyber aggression between “*never*” and “*once or twice a year*”). Anxiety and depression scores were also positively skewed, with many participants reporting low levels of anxiety and depressive symptoms. Finally, the relationship investment scores were normally distributed. See Table 12 for more details.

Cyber Aggression Perpetration Motivations

Utilizing the 4-factor solution, identified in the EFA described above, analyses were conducted in order to determine which motives are related to the various types of cyber aggression. The Anger, Boredom, and Prosocial motives were all positively skewed, such that the bulk of participants reported low identification with the noted motive. The Relationship Insecurity motive appeared to be normally distributed, and the most frequently reported (see Table 13).

Correlational Analyses for Perpetration Motivations and Cyber Aggression

First, a simple correlational analysis was conducted to determine the associations between the four subscales and control monitoring and direct cyber aggression. The correlation analyses were completed to provide a preliminary examination of the data. It was found that the anger, insecure, and prosocial motives were all significantly correlated with both types of cyber aggression. Additionally, the boredom motive was correlated with direct cyber aggression, but not control monitoring. As expected and similar to Study 1 direct cyber aggression and control monitoring were significantly and highly correlated (see Table 14).

Table 12*Descriptive Information for Cyber Aggression, Mental Health, and Relationship Investment*

Scale name	N	Min.	Max.	Range	M	SD
Cyber Aggression Scale	513	1	4.43	1 - 6	1.43	.66
Control Monitoring Cyber Aggression	513	1	5.09	1 - 6	1.60	.76
Direct Cyber Aggression	513	1	4.60	1 - 6	1.25	.65
Anxiety Symptoms	513	21	71	21 - 84	32.67	10.99
Depression Symptoms	513	20	66	20 - 80	31.78	9.92
Relationship Investment Scale	513	1	9	1 - 9	6.38	1.44

Note. Multiple imputations were used to manage the missing data within the sample. Responses were determined using different Likert scales. Higher scores were indicative of more symptoms, engagement, and beliefs.

Table 13*Descriptive Table of Cyber Aggression Motivations Subscales*

Sub-Scale name	N	Min.	Max.	Range	M	SD
Relationship Insecurity Motive	234	1	5	0 - 6	2.41	1.14
Anger Motive	234	1	4.25	0 - 6	1.45	.73
Boredom Motive	234	1	4.75	0 - 6	1.97	.95
Prosocial Motive	234	1	4.67	0 - 6	1.90	.86

Note. Responses were determined on a Likert scale ranging from “*completely disagree*” (0) – “*totally agree*” (6) with higher scores indicating more agreement with the noted motives.

Table 14*Correlations between Motives for IPCA and type of Cyber Aggression*

Variable	1	2	3	4	5	6
1. Insecure subscale	-					
2. Anger subscale	.388**	-				
3. Boredom subscale	-.126	.217**	-			
4. Prosocial subscale	.114	.389**	.369**	-		
5. Direct Cyber Aggression	.184**	.526**	.192**	.323**	-	
6. Control Monitoring Cyber Aggression	.400**	.361**	.071	.202**	.721**	-

Note. ** Correlation is significant at the 0.01 level

Hierarchical Regressions Predicting Cyber Aggression from Perpetration Motives

To examine the unique contribution of cyber aggression motives, two hierarchical multiple regression analyses were conducted. In the first analysis, direct cyber aggression was examined. In Step 1, direct cyber aggression was the predictor variable and gender was the criterion variable. In Step 2, Insecure, Anger, Boredom, and Prosocial motives were entered into the equation. Results from Step 1 indicated that gender did not significantly contribute to direct cyber aggression. In Step 2, results indicated that the Anger motive significantly predicted direct cyber aggression (Beta = .384, $p < .001$), accounting for 19% of the variance (see Table 15).

Next, control monitoring cyber aggression was examined as the predictor variable. In Step 1, control monitoring cyber aggression was the predictor variable and gender was the criterion variable. In Step 2, the Insecure, Anger, Boredom, and Prosocial motives were entered into the equation. Results from Step 1 indicated that gender did not significantly contribute to control monitoring cyber aggression. In Step 2, results indicated that the Relationship Insecurity and Anger motives significantly predicted control monitoring cyber aggression. Relationship Insecurity accounted for 10.2 % of the variance and Anger accounted for 4.6% of the variance. When control monitoring IPCA was predicted, it was found that anger (Beta = .166, $p = .042$) and relationship insecurity (Beta = .329, $p < .001$) were significant predictors (see Table 16).

Correlational Analyses for Cyber Aggression, Mental Health, and Relationship Investment

A simple correlational analysis was conducted to determine the nature of the relationships between the demographics, depressive symptoms, anxious symptoms, relationship investment, and both types of intimate partner cyber aggression. It was found that both types of cyber aggression were positively correlated with depressive and anxious symptomology. Relationship investment was also found to be negatively correlated with both types of IPCA (see Table 17).

Table 15

Summary Table for Hierarchical Regression Analyses Predicting Direct Cyber Aggression from Perpetration Motives

Variable	R ²	ΔR ²	B (SE)	β	sr ²	F	p	95% CI
Model 1	.031	.031				.004	.951	[.910, 1.522]
Gender			.005 (.084)	.004	.000		.951	[-.160, .170]
Model 2	.209	.179				19.147	.001**	[.2390, .863]
Gender			-.011(.071)	-.009	.000		.879	[-.150, .129]
Insecure Motives			.023 (.027)	.029	.001		.635	[-.040, .066]
Anger Motives			.320 (.045)	.457	.182		.000**	[.2310, .409]
Boredom Motives			.031 (.033)	.058	.004		.347	[-.034, .097]
Prosocial Motives			.072 (.038)	.121	.016		.059	[-.003, .146]

Note. ** Significant at the 0.01 level. CI = confidence interval

Table 16

Summary Table for Hierarchical Regression Analyses Predicting Control Monitoring Cyber Aggression from Perpetration Motives

Variable	R ²	ΔR ²	B (SE)	β	sr ²	F	p	95% CI
Model 1	.024	.024				1.393	.239	[1.081, 1.980]
Gender			.145 (.123)	.077	.006		.239	[-.097, .3870]
Model 2	.204	.180				13.478	.000**	[.1110, 1.075]
Gender			.109 (.109)	.058	.004		.322	[-.107, .3240]
Relationship Insecurity Motives			.211 (.041)	.322	.102		.000**	[.1290, .2920]
Anger Motives			.230 (.069)	.223	.046		.001**	[.0930, .3670]
Boredom Motives			.030 (.051)	.037	.001		.564	[-.072, .1310]
Prosocial Motives			.055 (.058)	.063	.004		.349	[-.060, .1700]

Note. ** Significant at the 0.01 level. CI = confidence interval

Table 17*Correlations between IPCA, Mental Health, Relationship Investment, and Age*

Scale Name	1	2	3	4	5	6	7
1. Age	-						
2. Relationship Length	.293*	-					
3. Anxious Symptoms	-.066	-.050	-				
4. Depression Symptoms	-.069	-.085	.685**	-			
5. Relationship Investment	-.008	.184**	-.084	-.173**	-		
6. Direct Cyber Aggression	.039	.084	.237**	.204**	-.209**	-	
7. Control Monitoring Cyber Aggression	-.012	.052	.268**	.232**	-.099*	.721**	-

Note. ** Correlation is significant at the 0.01 level

* Correlation is significant at the 0.05 level

Hierarchical Regressions Predicting Mental Health from IPCA

To examine the unique contribution of direct cyber aggression on mental health symptoms, two hierarchical multiple regression analyses were performed. In order to examine this relationship, mental health was used as the predictor variables, given previous longitudinal research in the peer aggression literature has found evidence to suggest that victims of aggression experience negative outcomes, such as depression and anxiety (Takizawa et al., 2014). Based on this knowledge it was theoretically sound to attempt to predict mental health variables from IPCA perpetration.

In the first analyses, depressive symptomology was the predictor variable. In Step 1, depression symptomology was the predictor variable and gender was the criterion variable. Age was not included as a predictor variable in the regression model, given the limited age range of this sample – it was not expected to be a likely predictor. In Step 2, direct cyber aggression was entered into the equation. Results from Step 1 indicated that gender did significantly contribute to depression symptoms, accounting for 1.6 % of the variance. In Step 2, results indicated that direct cyber aggression (Beta = .224, $p < .001$) and gender (Beta = .154, $p < .001$) significantly predicted depression symptoms, accounting for 5% of the variance and 2.5% of the variance respectively. These results can be viewed in Table 18.

Anxious symptomology was also predicted from direct IPCA. In Step 1, anxious symptomology was the predictor variable and gender was the criterion variable. In Step 2, direct cyber aggression was entered into the equation. Results from Step 1 indicated that gender did significantly contribute to anxious symptoms, accounting for 2.9% of the variance. In Step 2, results indicated that direct cyber aggression (Beta = .263, $p < .001$) and gender (Beta = .205, $p <$

.001) significantly predicted anxious symptoms, accounting for 7% and 4.4% of variance respectively. These results can be viewed in Table 19.

To examine the unique contribution of control monitoring cyber aggression in the explanation of mental health symptoms, two hierarchical multiple regression analyses were performed. In the first analyses, depressive symptomology was the predictor variable. In Step 1, depressive symptomology was the predictor variable and gender was the criterion variable. In Step 2, control monitoring cyber aggression was entered into the equation. Results from Step 1 indicated that gender significantly contributed to depressive symptoms, accounting for 1.6% of the variance. In Step 2, results indicated that control monitoring cyber aggression (Beta = .230, $p < .001$) and gender (Beta = .121, $p = .005$) significantly predicted depression symptoms, accounting for a total of 6.8 % of the variance. Gender accounted for 1.6% of the variance and control monitoring cyber aggression accounted for 5.4% of the variance. These results can be viewed in Table 20.

Variables that explain anxious symptomology were also examined. In Step 1, anxious symptomology was the predictor variable and gender was the criterion variable. In Step 2, control monitoring cyber aggression was entered into the equation. Results from Step 1 indicated that gender did significantly contribute to anxious symptoms, accounting for 2.9 % of the variance. In Step 2, results indicated that control monitoring cyber aggression and gender significantly predicted anxious symptoms, accounting for 10 % of the total variance. Gender accounted for 2.9% of the variance and control monitoring cyber aggression accounted for approximately 7% of the variance. When anxious symptoms were predicted, it was found that control monitoring cyber aggression (Beta = .265, $p < .001$) and gender (Beta = .167, $p < .001$) were significant predictors. These results can be viewed in Table 21.

Table 18

Summary Table for Hierarchical Regression Analyses Predicting Depression Symptoms from Direct Cyber Aggression

Variable	R ²	ΔR ²	B (SE)	β	sr ²	F	p	95% CI
Model 1	.021	.021				8.109	.005**	[23,62, 30.41]
Gender			2.739 (.962)	.125	.016		.005**	[.8490, 4.628]
Model 2	.072	.051				17.665	.000**	[17.77, 25.54]
Gender			3.367 (.949)	.154	.024		.000**	[1.509, 5.226]
Direct Cyber Aggression			3.414 (.659)	.224	.050		.000**	[2.119, 4.709]

Note. ** Significant at the 0.01 level. CI = confidence interval

Table 19

Summary Table for Hierarchical Regression Analyses Predicting Anxious Symptomology from Direct Cyber Aggression

Variable	R ²	ΔR ²	B (SE)	β	sr ²	F	p	95% CI
Model 1	.038	.038				15.386	.000**	[21.714, 29.183]
Gender			4.150 (1.058)	.171	.029		.000**	[2.0710, 6.2290]
Model 2	.100	.063				27.485	.000**	[14.228, 22.689]
Gender			4.970 (1.030)	.205	.044		.000**	[2.9470, 6.9930]
Direct Cyber Aggression			4.450 (.7180)	.263	.070		.000**	[3.0140, 5.8600]

Note. ** Significant at the 0.01 level. CI = confidence interval

Table 20

Summary Table for Hierarchical Regression Analyses Predicting Depressive Symptoms from Control Monitoring Cyber Aggression

Variable	R ²	ΔR ²	B (SE)	β	sr ²	F	p	95% CI
Model 1	.021	.021				8.109	.005**	[23.624, 30.413]
Gender			2.739 (.962)	.125	.016		.005**	[.84900, 4.6280]
Model 2	.063	.042				18.716	.000**	[18.621, 26.064]
Gender			2.658 (.937)	.121	.016		.005**	[.81800, 4.4980]
Control Monitoring Cyber Aggression			3.015(.561)	.230	.054		.000**	[1.9130, 4.1170]

Note. ** Significant at the 0.01 level. CI = confidence interval

Table 21

Summary Table for Hierarchical Regression Analyses Predicting Anxious Symptoms from Control Monitoring Cyber Aggression

Variable	R ²	ΔR ²	B (SE)	β	sr ²	F	p	95% CI
Model 1	.038	.038				15.386	.000**	[21.714, 29.183]
Gender			4.150(1.058)	.171	.029		.000**	[2.0710, 6.2290]
Model 2	.107	.069				28.236	.000**	[15.409, 23.515]
Gender			4.047(1.020)	.167	.030		.000**	[2.0430, 6.0510]
Control Monitoring Cyber Aggression			3.869(.6110)	.265	.072		.000**	[2.6590, 5.0600]

Note. ** Significant at the 0.01 level. CI = confidence interval

Hierarchical Regressions Predicting Relationship Investment from IPCA

To examine the unique contribution of direct cyber aggression in the explanation of relationship investment, two hierarchical multiple regression analyses were performed. As articulated above, in order to examine this dynamic, relationship investment was used as the predictor variable, given previous longitudinal research in the IPA literature has found evidence to suggest that victims of IPA experience negative relationship outcomes (Panuzio & DiLilo, 2010; Watkins et al., 2014). Based on this knowledge it was theoretically sound to attempt to predict relationship investment from IPCA perpetration.

In the first analysis, direct cyber aggression was examined. In Step 1, relationship investment was the predictor variable and gender was the criterion variable. In Step 2, direct cyber aggression was entered into the equation. Results from Step 1 indicated that gender did not significantly contribute to relationship investment. In Step 2, results indicated that direct cyber aggression significantly predicted relationship investment (Beta = $-.207$, $p < .001$), accounting for 4.2 % of the variance. Gender (Beta = $.011$, $p = .807$) was not a significant predictor. As direct IPCA behaviours increase, relationship investment appears to decrease. These results can be viewed in Table 22.

In the second analysis, control monitoring cyber aggression was examined. In Step 1, relationship investment was the predictor variable and gender was the criterion variable. In Step 2, control monitoring cyber aggression was entered into the equation. Results from Step 1 indicated that gender did not significantly contribute to relationship investment. In Step 2, results indicated that control monitoring cyber aggression significantly predicted relationship investment (Beta = $-.099$, $p = .025$), accounting for a small percentage (1.1%) of the variance. Gender (Beta = $.039$, $p = .378$) was not significant. These results can be viewed in Table 23.

Table 22

Summary Table for Hierarchical Regression Analyses for Predicting Relationship Investment from Direct Cyber Aggression

Variable	R ²	ΔR ²	B (SE)	β	sr ²	F	p	95% CI
Model 1	.056	.056				.712	.399	[5.683, 6.671]
Gender			.118 (.140)	.037	.001		.399	[-.157, .3930]
Model 2	.126	.070				11.653	.000**	[6.328, 7.465]
Gender			.340 (.138)	.011	.000		.807	[-.238, .3060]
Direct Cyber Aggression			-.458 (.096)	-.207	.042		.000**	[-.647, -.268]

Note. ** Significant at the 0.01 level. CI = confidence interval

Table 23

Summary Table for Hierarchical Regression Analyses for Predicting Relationship Investment from Control Monitoring Cyber Aggression

Variable	R ²	ΔR ²	B (SE)	β	sr ²	F	p	95% CI
Model 1	.056	.056				.712	.399	[5.683, 6.67]
Gender			.118(.140)	.037	.001		.399	[-.157, .393]
Model 2	.079	.023				2.894	.025*	[5.915, 7.02]
Gender			.123 (.390)	.039	.002		.378	[-.151, .397]
Control Monitoring Cyber Aggression			-.188(.084)	-.099	.010		.025*	[-.352, -.024]

Note. * Significant at the 0.05 level. CI = confidence interval

Discussion

The third part of this dissertation was driven by the question “What are the associations between IPCA perpetration and relationship investment and mental health?” In addition, a new measure of IPCA motivations was developed, was examined for psychometric properties and was used to determine the relations between the motives generated from Study 2 interviews and IPCA perpetration.

The sample, as in the two previous studies, was predominately female (73%) which reflects the gender distribution in the population the sample was drawn from (first and second year psychology undergraduate students). The bulk of the sample (62%) was currently involved in an intimate relationship, at the time of completing the survey, however, of this, 43% were in a relationship lasting under 1 year in length, suggesting that for many these relationships were relatively new and still in the developing phases, which may have influenced the results in some capacity. The frequency of cyber aggressive behaviours reported was comparable to Study 1. Consistent with Studies 1 and 2 most participants reported no to low engagement in cyber aggressive behaviours. This may be a function of social desirability bias as self-reporting aggressive behaviours is a sensitive topic. Anxiety and depression symptomology was reported to be relatively low in the current sample, which is comparable to other research examining these topics (Zweig et al., 2014). Finally, relationship investment scores also appeared to be normative, with a mean score of 6.38, with a range of 1-9. This means that most participants reported being relatively well invested in their intimate relationships. Thus, this sample reported low levels of mental health concerns regarding anxiety and depression and relatively high relationship investment. What follows is a discussion of the measure of IPCA Motives and their predictive ability followed by a discussion of the relationship between IPCA perpetration and well-being.

The Motivations for Intimate Partner Cyber Aggression Scale

Prior to this study, there has been no measure that examines IPCA motivations. To address this gap, a measure was generated employing the findings from the in-person interviews reported in the previous study. Six main motivators for perpetrating IPCA were reported by individuals who reported high levels of IPCA: Relationship Insecurity, Jealousy, Distrust, Anger, Boredom, and Non-Confrontation. These motives were used to develop a measure of IPCA motives that consisted of 29 items. It was hypothesized that the items developed for this study would load on six factors that matched the six motives reported by perpetrators of IPCA in Study 2. However, the results of an EFA indicated a four-factor solution was the best fit for the data. Rather than separating Relationship Insecurity, Jealousy, and Distrust into separate factors the EFA indicated that the items reflecting all three motivations loaded together on a single factor labeled Relationship Insecurity. As expected, Anger and Boredom were substantiated by the EFA as separate factors. The items for the prosocial subscale were developed to address concerns that all the items of the scale not be negative and reflected motivations such as concern and caring as a justification for the perpetration of IPCA. This was not a theme that had come up during interviews with perpetrators in Study 2, but the items were found to load together and to represent a separate factor. This factor represents items that attempt to conceal the aggression, presenting the behaviours as caring or loving acts (i.e. "I monitor my partner's GPS location activity because I care about where they are"). This may reflect a strategy reported by Bandura (1991) as part of moral disengagement whereby the perpetrator minimizes the harm they have caused by disregarding or misrepresenting the injurious consequences. Results illustrated an association between Relationship Insecurity and Anger motivations in predicting IPCA behaviours, however Boredom and Prosocial motives were not found to be significantly related to the perpetration of IPCA acts. This will be discussed in more detail below.

Motivations for the Use of Intimate Partner Cyber Aggression

This study examined cyber aggression motivations in relation to two forms of intimate partner cyber aggression; direct and control monitoring. It was of interest to determine the unique motives that were that related to each form of IPCA. The next section will explore these findings.

Direct

Anger was found to be one of the main motivators for IPCA perpetration. This consisted of participants feeling driven by angry thoughts or feelings directed at their intimate partner and wanting to hurt them, or a desire to retaliate against one's partner for something they had done to them previously. This was the least frequently reported motive out of the main four identified. These motives may have been reported less because it is not socially acceptable to admit to angry feelings that result in the use of purposeful acts intended to harm one's intimate partner. The research would generally support this notion, specifically, anger is a less socially desirable trait (Wang et al., 2009). This may particularly be the case for females, as anger has been found to be expressed more in males than females (Cascardi et al., 1992; DeMaris, 2000; Testa & Leonard, 2001). It is important to note that the population from which the sample was drawn consisted of mostly female participants (73% female). Perhaps one of the reasons that anger was the least frequently reported was because the sample is predominately young women and they may have been more reticent to report feelings of anger as a motive for IPCA directed towards their partner.

Anger was the motive found to account for the largest amount of variance in IPCA perpetration (19%). This is supported by much of the literature, specifically, Kellerman et. al., (2013) found that anger and frustration were of the most common motivators of cyber aggression

directed towards peers and intimate partners. Angry feelings towards an intimate partner can understandably result in reactive and unhelpful behaviours, technology being a modern avenue to release this anger. Given the ease with which technology is accessible, it is understandable that if an individual is angry with their intimate partner they can easily and immediately engage in direct IPCA behaviours as a means to hurt their partner or get back at them. This is in contrast to face-to-face forms of IPA which require close physical contact (i.e. physical, verbal). Given the need for close physical contact with other forms of IPA it allows perpetrators a “cooling-off period” which may be beneficial as it invites individuals to think about situations in a rational, calm manner. With cyber access individuals may be more likely to be reactive and inflamed when they feel angry, rather than being forced to take space and think logically before facing their intimate partner. It is important to note that this study was correlational in nature and causation cannot be deduced from these results. As mentioned previously, direct IPCA can be a way for individuals to express their anger, without having to physically confront their partner. Furthermore, direct IPCA involves clear, overt online behaviours, which may take a strong emotion to elicit, such as anger. When examining monitoring acts of cyber aggression directed towards a partner, similar underlying motives appeared to be present.

Control Monitoring

In an attempt to understand more about the motivations specific to control monitoring acts of cyber aggression interesting results were generated. Two main underlying motives were discovered to be related to control monitoring IPCA: Relationship Insecurity and Anger.

Relationship Insecurity accounted for the largest amount of the variance in predicting control monitoring IPCA perpetration (10%). This motive can be described as an underlying desire or feeling of insecurity and feelings of jealousy and distrust which motivate the use of

IPCA behaviours. Relationship Insecurity is an amalgamation of the Relationship Insecurity, Jealousy, and Distrust motives reported by perpetrators during interviews in Study 2. This motive is associated with feelings such as a lack of trust, concerns of cheating, and/or fears their partner may leave them for someone else. These fears are associated with being motivated to engage in control monitoring IPCA behaviours. Theoretically, this is consistent with what would be expected, given the perpetration of control monitoring IPCA is, by nature, comprised of behaviours that would demonstrate uncertainty in one's intimate relationship. The pillars of relationship insecurity, based on the result in this study, are distrust, being uncertain of the relationship, and jealousy. Each of these three pillars would understandably be related to an individual's likelihood of being tempted to monitor their intimate partner's online behaviours, given they may have countless fears about their partner's online activities. A study conducted by Munoz-Fernandez and Sanchez-Jimenez (2020) found similar results. They examined IPCA in a Spanish sample of 632 adolescents in intimate relationships and discovered that anger regulation and jealousy were strong predictors of intimate partner cyber aggression. They also noted that future research should examine the associations between jealousy and different forms of cyber aggression. This study did exactly that and found that jealousy, relationship insecurity, and distrust appear to be strongly related to control monitoring IPCA. Therefore, these results support several research studies in this area (Burke, et al. 2011; Deans & Bhogal, 2017; Finn, 2004; Munoz-Fernandez & Sanchez-Jimenez, 2020; Watkins, 2016).

As previously mentioned, control monitoring cyber aggression is characteristic of behaviours such as, surveillance of a partner's online activity and invading a partner's privacy in covert ways such as excessively sending emails or text messages, scrutinizing GPS check-ins to monitor a partner's whereabouts, checking a partner's social networking sites to monitor activity, and

using spyware to monitor a partner's computer or cell phone (Burke, et al. 2011; Finn, 2004) with the intent to control your partner's behaviour. An individual who trusts their intimate partner, feels confident in their relationship, and does not experience strong feelings of jealousy would most likely not engage in high levels of control monitoring behaviours as they would trust them. Furthermore, privacy invasion, a main behaviour used in control monitoring IPCA, fundamentally illustrates that an individual does not trust their partner to be honest with them and remain faithful to the relationship (Burke et. al., 2011; Munoz-Fernandez & Sanchez-Jimenez, 2020; Watkins, 2016). Privacy invasion is the search for information using private passwords or devices, without permission (Burke et al., 2011). Therefore, it is understandable that control monitoring IPCA would be motivated by relationship insecurity.

Relationship Insecurity interestingly has several similarities to attachment related insecurity (Ainsworth, 1970; 1978), which was examined in the first study. When examining insecure attachment characteristics and the Relationship Insecurity motive that was discovered in Study 2 and 3 there are multiple overlaps in their definitions, behaviours, and underlying fears and beliefs. The main similarity is the belief that relationships cannot be trusted (Hazan & Shaver, 1987). This is clearly a big factor underlying the Relationship Insecurity motive, given many of the items assessing this factor target a fear of their partner being untrustworthy, and a desire to find validating information to essentially discredit their own fears. It can be argued that there are several similarities between insecure attachment characteristics and relationship insecurity related motivations probing the engagement in IPCA behaviours. This will be discussed and examined in more detail in the general discussion section of this dissertation. This notion should also be examined more in future research.

Anger is an emotion that has a direct relationship with aggression of any form (Archer & Coyne, 2005). Therefore, it makes sense that anger would be an important motivator predicting both direct and control monitoring forms of IPCA. Additionally, retaliation, which from study 2 was proven to be a function of anger, may be influencing the likelihood of monitoring an intimate partner through IPCA. Perhaps, an individual may be more motivated to monitor their intimate partner online or log into their social media accounts because they believe it is “fair.” During the composition of the Motivations for Cyber Aggression Scale, developed for this study, there were two items that specifically targeted retaliation driven behaviours, which loaded on the Anger factor, as expected. This suggests that retaliation is a function of anger-based motives. During the interviews in Study 2, many participants described retaliation as a desire to keep things even in their relationship. For example, their partner would log into their social media account without permission, which motivated them to log into their partner’s accounts. Consequently, a “tit for tat” mentality ensued. Together angry feelings and feeling justified in retaliating for past hurt together predict monitoring an intimate partner online.

In summary, the measure that was developed for the purposes of this study, confirmed the results in Study 2 and the literature in this area. Four subscales were identified that help to answer the question “why” do people use IPCA tactics: Relationship Insecurity (including jealousy and distrust), Anger, Boredom, and Prosocial motives. In addition to examining the underlying motivations that may predict IPCA in young adults, this dissertation was one of the first studies that endeavoured to examine the relationship between the perpetration of IPCA and well-being. The bulk of the literature in cyber aggression has examined peer victimization (Campbell, et al., 2012). Mental health outcomes, such as depression and anxiety symptoms,

were examined in relation to cyber aggression in order to determine if there were any potential relationships.

Intimate Partner Cyber Aggression and Mental Health

The relationship between intimate partner cyber aggression and personal well-being was explored in this study, specifically in the context of depressive and anxious symptomatology. It was of interest to determine if there was a relationship between perpetrating partner targeted cyber aggression and mental health. Each type of IPCA was explored to answer this question. Results revealed a significant positive relationship between direct and control monitoring IPCA and depressive and anxious symptoms. This means that direct and control monitoring IPCA were found to be associated with higher levels of depressive and anxious symptoms, as hypothesized.

These results are consistent with the bulk of the peer cyber aggression literature (Campbell et al., 2012; Kowalski & Limber 2013; Muise et al., 2009; Reed et al., 2015; Schenk et al. 2013), which found cyber aggression involvement within peer groups to be associated with suicidal ideation, depressive and anxious symptoms, and loneliness. For example, Schenk et al., (2013), found that perpetrators of peer directed cyber aggression experienced high levels of distress. They found that compared, to a control group, perpetrators experienced higher levels of anxiety.

Given the nature of this study, we are unable to determine causality. It is unclear whether an individual may experience depressive or anxious symptoms and thus aggress against their intimate partner, vice versa, or some third variable is accounting for both. This is an important area for future research to examine. However, theoretically, it is understandable that depressive and anxious symptoms would be related to IPCA perpetration.

Anxious symptoms may be heightened when an individual perpetrates direct or control monitoring IPCA behaviours given the perpetrator may feel fearful of the backlash of their aggressive acts, similar to depressive symptoms. The repercussion of these behaviours may result in their relationship experiencing further challenges or heightened conflict. The anticipation of what the backlash will be may increase feelings of anxiety and stress for the perpetrator. Similarly, the perpetrator may already be experiencing anxious symptoms prior to perpetrating IPCA, resulting in a stronger urge to express their discomfort and fear in the relationship using IPCA tactics. The urge to monitor or invade an intimate partner's privacy suggests concerns or perceived stress about the relationship and a desire to validate or invalidate such concerns. It is possible that the goals of IPCA control monitoring behaviours are to reduce one's anxiety about their relationship, however, this may have a negative reinforcing effect, generating increased levels of anxiety (Reed et al., 2015). Given the nature of this study design, causation could not be determined, however it can be hypothesized that this relationship is most likely cyclical such that individuals who feel more anxiousness may be more likely to feel the need to excessively monitor their partner, as a means of protecting themselves – “knowledge is power” mentality.

It is equally plausible to assume that high levels of control monitoring behaviours may lead to the discovery of information that creates heightened concern, stress, and anxiousness, similar to the feedback loop described by Muise et al., (2009). In their study they found that given the public nature of social media, individuals have access to very personal information about their partners, which is often ambiguous. Therefore, an individual may perceive ambiguous online activity as threatening and jealousy-inducing. Using this theory, it is understandable that the more an individual monitors their partner online the more likely they are to feel depressive symptoms. For example, imagine an individual logs into their intimate

partner's phone without permission and they notice he has been talking to an unknown female, the automatic assumption may be that he is being unfaithful, according to Muise et al., (2009) theory. This may then result in feelings of sadness, loneliness, and depressive symptoms. However, as Muise et al., (2009) demonstrated this may simply be an innocent encounter, which is taken out of context. This means that excessively monitoring an intimate partner for the purposes of control may increase feelings of depressive or anxious symptoms as a result of information being discovered and misjudged. Thus, this study found evidence to support the notion that high levels of control monitoring IPCA perpetration predicts high levels of anxiousness and depressive symptoms, and in turn, challenges with their mental health.

Moreover, an individual may feel they need to monitor their intimate partner to make sure they are behaving accordingly, which was noted in some of the interviews from Study 2. This logic alone may stem from feelings of depression. If an individual believes they need to monitor their partner online because they cannot be trusted, it is reasonable to imagine this fear would be related to their own mental health. These individuals may feel like their partner is being unfaithful and cannot be trusted, which may understandably generate feelings of sadness, as their emotional connection may not be perceived to be reciprocated. Therefore, those individuals who excessively monitor their intimate partner online, or check their phone activity without permission may then experience feelings of depression as a result of their catastrophic thinking. Therefore, it is evident, based on the results of this study, that perpetrating IPCA accounts for a significant proportion of the variance in predicting both depressive and anxious symptoms. This highlights the need for further research in the area of perpetration outcomes, specifically longitudinal studies would be helpful to explore causation.

In summary, this study found an association between mental health symptoms and direct and control monitoring IPCA perpetration. This demonstrates that engaging in either type of IPCA perpetration is associated with mental health symptoms and wellbeing experienced by the perpetrator. This study also examined the relationship between IPCA perpetration and relationship investment.

Intimate Partner Cyber Aggression and Relationship Investment

Although there has been some research into cyber aggression in intimate relationships, minimal research has specifically looked at the consequences of these acts on perpetrators, rather the majority of the research has examined the consequences for victims (Campbell et al., 2012). It should be noted that there has been some research focusing on the consequences of cyber aggression when perpetrated by strangers, acquaintances, and friends (Campbell et al. 2012; Kowalski and Limber 2013; Schenk et al. 2013). This study explored the association between relationship investment and both forms of IPCA. As hypothesized, direct IPCA perpetration was associated with low levels of relationship investment, including relationship satisfaction, commitment, and a desire to seek out relationship alternatives. Control monitoring cyber aggression perpetration was found to account for a very small amount of variance in relationship investment.

These findings are consistent with other research in the area (Deans & Bhogal, 2019; Linder et al., 2002; Panuzio & DiLilo, 2010; Rueda et al., 2015; Watkins et al., 2016). A study performed by Linder et al., (2002) found that intimate partner social aggression was found to be associated with a decrease in relationship quality. The perpetrators reported feeling frustrated and jealous, and having difficulty trusting their partner. Additionally, in a longitudinal study, conducted by Panuzio & DiLilo (2010) they found that general IPA predicted lower marital

satisfaction. These results are also parallel with the literature examining cyber aggression outcomes for victims, indicating a strong association with decreased relationship investment (Deans & Bhogal, 2019; Rueda et al., 2015; Watkins et al., 2016). The results from this study suggest that both forms of IPCA perpetration can result in harmful, negative relational outcomes. Therefore, it can be argued that the relationship between direct and control monitoring IPCA perpetration and relationship investment are similar to other forms of IPA.

It should be noted that direct IPCA perpetration was found to be more strongly associated with relationship investment, compared to control monitoring IPCA. This may be as a result of direct behaviours being more overt. Perhaps direct acts have a larger connection to the relationship and a perpetrator's willingness to stay committed to their intimate partner. It could also be possible that the engagement in direct IPCA behaviours generate more destruction in intimate relationships than control monitoring behaviours. This may be the case given direct IPCA behaviours may have a social pressure component, that excessive monitoring with the intent to control does not have. Given that direct IPCA is more public than control monitoring, a wider audience will notice direct IPCA behaviours, such as gossiping about an intimate partner or spreading rumours. As a result of this, to preserve one's social status online, perpetrators may aggress, then feel embarrassed and remorseful, increasing the likelihood of ending that particular relationship.

Given the relationship between anger and direct IPCA, perhaps individuals may experience strong feelings of anger, perpetrate direct acts of IPCA, then feel less invested in the relationship as a result. Anger is a powerful emotion which was found, in this study, to be strongly related to direct IPCA. Feelings of anger may alone be enough to reduce relationship

investment, especially if this is a reoccurring feeling in the relationship. Perhaps perpetrating direct IPCA behaviours is simply a fast track way to dissolve the relationship in these cases.

The relationship between control monitoring IPCA and relationship investment was small. This result may have transpired given individuals may normalize control monitoring IPCA behaviours more than direct IPCA. Perpetrators may view behaviours such as privacy invasion, excessive social media monitoring, and GPS tracking as a function of a healthy, caring relationship, as noted in Study 2. Recall in Study 2, participants reported that monitoring an intimate partner was a way to demonstrate you care about your partner. They also reported that checking to see what their partner was doing online is something “everyone does in relationships.” Whereas, in study 2, this view was not as endorsed for direct IPCA. Participants perceived direct IPCA acts as inappropriate relationship behaviour. Based on these results, it can be theorized that those who perpetrated monitoring IPCA behaviours may not be as dissatisfied in their relationship given they perceive these acts to be largely normative. This theory may explain why direct IPCA perpetration was more strongly related to lower levels of relationship investment, compared to control monitoring IPCA.

It is important to remind the reader of the strong association between Relationship Insecurity and control monitoring IPCA, discovered earlier. Perhaps individuals are relatively invested in their intimate relationship yet use control monitoring acts to ease their fears about their relationship not being secure. For example, someone may invade their partner’s social media accounts in order to reassure themselves of their partner’s commitment to their relationship, essentially to find evidence to discredit their fears. Alternatively, perpetrators of control monitoring IPCA may engage in these acts as a way to sustain and maintain their relationship quality and strength, by attempting to know everything about their partner. In both

of these cases, these individuals may be invested in their relationship and simply employ cyber aggressive acts as a way to maintain and preserve the relationship they cherish.

This research clearly demonstrates that direct and control monitoring IPCA perpetration is associated with serious mental health and relational concerns. While often overlooked in the literature, the perpetration of IPCA is related to high levels of depression and anxiety symptoms, illustrating that those who perpetrate IPCA are hurting and struggling to maintain their mental health. Similarly, IPCA perpetration was found to be related to lower levels of relationship investment, satisfaction, and commitment. This relationship was stronger for direct acts of cyber aggression than control monitoring. This study achieved the goal of discovering “what” the relationship is between well-being and IPCA perpetration. However, it is not without limitations. The next section will explore the limitations of Study 3 along with areas for future research to explore.

Limitations and Future Directions

While this study made insightful discoveries, there are a few limitations to note. First, the sample is comprised of an over-representation of female participants. This is not surprising, given the bulk of the literature that examines undergraduate populations has more female than male participants (Reis & Judd, 2000). However, this may have influenced the motives that were noted. As mentioned above, perhaps one of the reasons that anger was the least frequently reported motive may be a function of the over-representation of women in this sample. Future researchers would benefit from attempting to equalize the genders in their sample.

Also, given the sample was limited in age range (17-25 years old) the researchers were unable to include and make meaningful conclusions about how age and relationship length may have influenced the variables studied. Given the majority of the sample had not been involved in

a long-term relationship, this researcher was unable to determine if the perpetration of IPCA acts differed in any way when relationships surpassed the 5 or 10 year mark. The sample had 164 participants who reported being involved in a long-term relationship lasting 1 year or more, and 221 participants reported being in a relationship under one year. Given the limited age range, and limited length of relationships, the possibilities for exploration were also limited. It would be interesting for future research to widening the age range of the sample to explore this area further.

Another important limitation is the inability to determine causality in this study. This study cannot predict or speak to causality, given the cross-sectional nature of the study design. While it is speculated that mental health and relationship investment may be an outcome as a result of IPCA perpetration, this directional argument cannot be confirmed. As noted above, there may be instances of a bidirectional relation between each of the above noted variables. This would be an important area to examine further, using longitudinal designs.

Finally, another important area for future research would be to continue to utilize the Intimate Partner Cyber Aggression Motivations measure generated in this study. Conducting further psychometric analyses, such as a Confirmatory Factor Analysis, reliability and validity analyses, and item response theory analyses would be beneficial. This is an important step in creating a measure that is relevant and addresses an important area in the aggression literature.

Conclusion

Moreover, the goals of Study 3 were to develop a cyber aggression motivation measure and answer the question “what” is the association between well-being and IPCA perpetration. A motivations measure was successfully completed and generated insightful, generalizable results. Noting that relationship insecurity and anger were the strongest motives to predict IPCA

perpetration of both forms. Additionally, this study addressed the gap in the literature regarding the associations between well-being and IPCA perpetration. Noteworthy findings were an association between IPCA perpetration of both forms and increased mental health symptomology and decreased relationship investment. This means that young adults who are angry and insecure in their relationships are participating in high levels of direct and control monitoring IPCA perpetration. These individuals are also experiencing more depressive and anxious symptoms, which is undoubtedly influencing their functioning. Finally, those who are using cyber aggressive acts directed towards their partner were also experiencing less relationship investment, commitment, and satisfaction. Although many might think that IPCA is not as important or serious as physical violence directed towards one's partner, engaging in these behaviours online is a risk factor and indicates that both the individual and the relationship are under stress. The final section included in this paper is a general discussion of the 3 studies conducted in this dissertation and a summary of the important and foundational discoveries.

General Discussion

Intimate partner cyber aggression may be a surprising phenomenon to many. It may seem incongruent, given intimate relationships are assumed to be comprised of love and kindness; however, cyber aggression is a frightening reality in the current dating world. To the general public online aggressive behaviours are often thought to only exist amongst peers. Given that IPCA has scarcely been explored in the scientific literature a thorough examination of this phenomenon, with a key focus on perpetrators, was essential. In order to provide a holistic understanding of IPCA three main questions were examined: "What might predict IPCA perpetration?", "Why might perpetrators employ these behaviours?", and "What are the associations between IPCA perpetration and well-being?"

What is Intimate Partner Cyber Aggression?

Intimate partner cyber aggression consists of behaviours such as nasty messages, privacy invasion, or black mailing a person using textual, audio, pictorial, or video content stored on mobile devices or computers (Hinduja & Patchin, 2011). Intimate partner cyber aggression is comprised of two main types: Direct and Control Monitoring. Examples of direct acts of cyber aggression, reported by some participants in this research as a weekly occurrence, were posting content on social media to insult and humiliate a partner and sharing private information about them. Examples of control monitoring cyber aggressive acts, reported by some participants in this research as a daily occurrence, consisted of intentionally monitoring a partner's likes and followers on social media, monitoring their whereabouts using social media, and checking their devices and using their passwords without permission.

Whether excessive control monitoring cyber aggression should be classified as aggression is an important and interesting question. The results of this research provide evidence that it is a form of IPA. Excessive control monitoring shares common behavioural characteristics with other forms of IPA, in particular stalking (i.e. unwanted and/or repeated surveillance by an individual directed toward another person). Monitoring a partner's online activity was also found to be associated with attachment insecurity, similar to other forms of IPA (Muise et al., 2009; Wright 2014, 2017) and with motives that are similar to those of other forms of aggression, such as relationship insecurity (Burke et al., 2011) and anger (Kellerman et al., 2013). Finally, excessive monitoring is associated with several dire mental health (Campbell et al. 2012; Kowalski and Limber 2013; Schenk et al. 2013) and relational consequences (Linder et al., 2002; Panuzio & DiLilo, 2010), which has also been found for the perpetrators of other forms of IPA. Considering these similarities, there is extensive evidence to support the argument that control

monitoring cyber aggression is a form of IPA (Allen & Anderson, 2017; Dokkedahl, et. al, 2019).

Prevalence of Intimate Partner Cyber Aggression

Cyber aggression is an increasingly common form of communication and connection among intimate partners, given the ease with which technology is accessible. In this dissertation cyber aggression between intimate partners was found to be a common occurrence for many. In the first study three quarters of the sample reported perpetrating at least one cyber aggressive tactic against their intimate partner, at some point in their life. Control monitoring cyber aggression was found to be slightly more common and more frequently engaged in than direct cyber aggression. This is consistent with the literature in this area conducted by Burke et. al., (2011) and Muise et al., (2009), and suggests that control monitoring behaviours may soon become a normative behaviour in new-age intimate relationships. IPCA was found to be occurring, among young adults, to some degree creating an argument for the necessity of developing education and intervention programmes. From a public health standpoint, it is troubling that cyber aggressive behaviours were reported to be a regular occurrence for some individuals. This is particularly concerning given this research examined a small subset of the population, which is considered to be well-educated, relatively motivated, and driven (Hanel & Vione, 2016). It is worrying to theorize what these frequencies might look like for other subsets of the population that are less privileged, educated, and informed. With clear evidence that IPCA is becoming commonplace in young adult lives, it was also of interest to consider who would be most likely to engage in these behaviours.

Who Perpetrates Intimate Partner Cyber Aggression?

In a first attempt to provide evidence addressing the question “Who engages in IPCA?” the attachment characteristics of individuals who perpetrate IPCA were examined. Results from Study 1 indicated that direct cyber aggression was uniquely predicted by high avoidant attachment characteristics while control monitoring cyber aggression was uniquely predicted by high anxious attachment characteristics. This is important given that we know, from previous literature (Ainsworth, 1973; Bowlby, 1982) that attachment characteristics develop within the first 4 years of an individual’s life and remain relatively consistent throughout adulthood (Hazan & Shaver, 1987). This means that prevention measures for this form of aggression could begin as early as infancy, in the development of a secure attachment bond with a primary caregiver.

Consistent with what was predicted, different attachment characteristics were found to have a strong association with different types of IPCA. The idea that attachment insecurity is related to IPA of various forms is not novel (Bookwala, 2002; Feiring et al., 2002; Grych & Kinsfogel, 2010; Mikulincer, 1998), however, finding this association with cyber aggression is. Understanding what some of the fundamental underlying beliefs may be, such as a general distrust in relationships, fear of deep connection, and one’s own diminished self-worth, according to the attachment insecurity literature (Hazan & Shaver, 1987) is important in order to design effective intervention based programs and more tailored therapeutic support. These findings suggest that perpetrators of cyber aggression may have deep-rooted internal beliefs which challenge their ability to be in trusting and transparent relationships. Discovering the internal beliefs that perpetrators have about themselves and their relationships in general may help to reduce the frequency of these behaviours and create an opportunity to confront these core beliefs, through therapy. The logical next step in learning about IPCA was understanding why some people would perpetrate IPCA.

Why do People use Intimate Partner Cyber Aggression?

In an interview examination of IPCA motives the goal was to answer the question “Why do people engage in IPCA perpetration?” This study was qualitative in nature given the need for in-depth understandings of participants’ lived experiences and internal processes (Lennon & Watson, 2011). The individuals interviewed in this study were identified through preliminary screening (self-report) to be perpetrating cyber aggressive acts directed at their partner on a weekly basis. The resultant sample also consisted of significantly more women than men and significantly more individuals who perpetrated high levels of control monitoring behaviours, rather than direct. This was most likely a result of three things. First, women are more highly represented in first and second year psychology courses. Secondly, more women signed up to participate in the interviews as they were likely more comfortable talking about their relationships. Finally, young adults appear to consider control monitoring cyber aggression as a socially acceptable way to behave in intimate relationships and thus, they were more willing to report and talk about their engagement with these acts.

Consistent with what was expected, the following motivations were found: Relationship Insecurity, Jealousy, Anger, Retaliation, Control, Boredom, and Non-Confrontation. These motives were initially hypothesized given they have been reported for the use of social aggression and cyber bullying in the past (Borrajo et al., 2015; Draucker & Marksolf, 2010; Giordano et al., 2015; Miga et al., 2010; Varjas et. al, 2010). Surprisingly, an additional underlying motivation was discovered, which was not initially expected, Distrust. Initially, Distrust was hypothesized to fall under the category of Jealousy, however that did not turn out to be the case. The most frequently reported motives from the interviewees were Relationship Insecurity and Jealousy, as expected. In general most interviewees were comfortable to speak to

their perpetration of control monitoring behaviours, as many participants indicated this was a normative experience in relationships and justifiable behaviour. However, participants appeared more reserved when speaking about their direct cyber aggressive acts, as these behaviours are perceived as less socially acceptable. Upon answering the initial interview question, “What do you think motivated you” many participants instinctively reported simply feeling bored. However, as the interviewees got more comfortable with the interviewer, they often expanded their initial answer by expressing fears about the relationship, themselves, or their partner’s trustworthiness. This suggests that the rapport developed between the interviewer and interviewee is foundational to attaining useful and reliable interview responses. This also illustrates a pitfall in quantitative research methods, where the ability to build rapport and safety is not typically possible. Therefore, individuals may self-report their reactive answer (i.e. Boredom) rather than allowing a more authentic response (i.e. Relationship Insecurity).

In the development of the Motivations for Intimate Partner Cyber Aggression Scale what was originally thought to be three distinct separate motivations: Relationship Insecurity, Jealousy, and Distrust were found to load together as a single factor. This suggests that while the three motives may be unique, they share many similar properties, making their pattern of responses similar (Matsunaga, 2010). Essentially, participants who report high or low levels of Jealousy also reported similar levels of Distrust, and Relationship Insecurity. The factor name was labeled “Relationship Insecurity” as this term best encompassed all three motives and is consistent with what would be expected as related to attachment characteristics.

Connection Between Attachment Insecurity and Motives

Interestingly, when examining the attachment characteristics and motives of IPCA perpetration there are some interesting connections. Attachment insecurity was found to be very

similar to some of the underlying motives reported in the interviews. Relationship insecurity, one of the main motives reported, has many parallels to attachment related insecurity. Anxious and avoidant attachment characteristics, are reflected in an individual's concerns for their relationship, their lack of confidence and trust in their partner, as well as concerns regarding the stability of the relationship (Mikulincer & Shaver, 2005). This largely overlaps with the ways in which participants described the motivation of "relationship insecurity" as a reason for the use of IPCA during the in-person interviews. For example, in one interview a participant reported that she created a fake social media account to test her partner's loyalty. She reported that she was motivated to do this by her lack of trust in her partner and feeling uncertain about the strength of their relationship. Given these similarities, it is not surprising that this motivation was the most commonly reported and provides support for the argument that attachment characteristics are central to IPCA, given the underlying beliefs and subsequent motives appear to be connected.

It can be argued that an individual may develop heightened levels of attachment anxiousness in childhood, which places them at an increased risk of adult aggression including perpetrating IPCA (Wright, 2014). Then, as a function of these childhood-based attachment insecurities, the individual may be more likely to be motivated by relationship insecurity in their intimate relationships and may perpetrate IPCA in order to ease their discomfort. This connection between attachment characteristics and perpetration motives is a transformative piece in understanding the puzzle of IPCA.

There was also evidence to suggest a relationship between anxious attachment and an increased likelihood of experiencing jealousy and mistrust which has been supported by recent literature (Marshall et al., 2013; Rodriguez et al., 2015; Toplu-Demirtas et al., 2020; Watkins et al., 2016; Wright, 2017). The connections between attachment insecurity and IPCA motives that

were discovered in this dissertation are consistent with previous literature. The connections proposed here, based on study one and two, are consistent with new findings in this area.

Researchers in this area have argued that the connection is the result of a cascading impact from attachment characteristics (thoughts), to specific underlying relational concerns (feelings), to the perpetration of IPCA (behaviours) (Toplu-Demirtas et al., 2020) such that attachment characteristics may increase an individual's proneness to certain potential motivators in reference to their intimate partners. Given these relationships another piece of the picture that required consideration was the relationship between IPCA perpetration and relationship investment and emotional well-being.

What are the Associations between Intimate Partner Cyber Aggression Perpetration and Well-Being?

Based on previous research that has examined the well-being of perpetrators of aggression (Campbell et al. 2012; Kowalski and Limber 2013; Schenk et al. 2013) it was of interest to better understand the relations between IPCA perpetration and well-being, as assessed by depressive and anxious symptoms, and relationship investment.

A significant positive relationship was found between both types of IPCA and depressive and anxious symptoms. This demonstrates that direct and control monitoring IPCA perpetration is associated with high levels of depressive and anxious related symptoms. The findings provided evidence that perpetrators of cyber aggression may also experience more mental health difficulties. It is unclear whether an individual may experience depressive or anxious symptoms and thus aggress against their intimate partner, vice versa, or some third variable is accounting for both. However, there are several reasons that can explain why mental health challenges are related to perpetration. It is possible that perpetrators may feel fearful of the backlash of their

aggressive behaviours and may question the strength and connection in their relationships, resulting in heightened anxious and depressive symptoms. Perpetrators may also experience increase depressive or anxious symptoms as a result of information being discovered on their partner's devices and potentially misinterpreting an ambiguous online activity as threatening and jealousy-inducing. This would undoubtedly cause distress in an individual.

Direct and control monitoring IPCA perpetration were also found to be associated with relationship investment. A possible explanation for this is that an individual may excessively monitor their intimate partner in an effort to ensure their relationship stays strong and to validate their relationship because they desperately want their relationship to work; however these behaviours, while seemingly well-intentioned, may evoke the opposite effect, whereby reducing the perpetrators desire to stay involved and committed to the relationship. The direction of this association is not yet known, which means that decreased relationship investment may also increase an individual's likelihood to perpetrate IPCA. For example, it is possible that feeling unhappy and disconnected in an intimate relationship may decrease an individual's level of relationship investment, making them more willing to risk the loss of their relationship by using cyber aggressive acts. The results from study are supported by new research in the area (Duran-Segura & Martinez-Pecino, 2015; Munoz- Fernandez & Sanchez-Jimenez, 2020; Watkins et. al., 2016) illustrating that IPCA is associated with reduced couple quality and investment. While often overlooked in the literature, the perpetration of IPCA has been found to be related to high levels of depression and anxiety, illustrating that those who perpetrate IPCA are hurting, and struggling to maintain their mental health. Similarly, IPCA perpetration has been found to be related to lower levels of relationship investment.

The results from examining the relations between well-being and IPCA perpetration clearly demonstrate that direct and control monitoring IPCA perpetration is associated with serious mental health and relational concerns. This means that perpetrators of cyber aggression experience internal struggles and relationship doubts just like victims, illustrating a need for more equalled focus in the aggression literature on perpetrators' experiences. This dissertation was designed to learn more about IPCA perpetration by answering three central questions. The results that were discovered from all three studies can be united to illustrate a potential IPCA process.

Intimate Partner Cyber Aggression Proposed Trajectory

Given the findings of the three studies that comprise this dissertation, it is possible to propose several models that may represent the relationships between the variables under study. This argument supports and builds on the connections made by Toplu-Demirtas et al., (2020), who argued for a cascading impact from attachment characteristics (thoughts), to specific underlying relational concerns (feelings), to the perpetration of IPCA (behaviours). This theory was used to make sense of the variables that were explored in this dissertation and generate a cascading process of IPCA. Two examples are presented below to illustrate this effect further, one for each type of cyber aggression.

Figure 2 demonstrates a 4 step model of IPCA. The first block addresses the question of "who" perpetrates IPCA acts. Anxious attachment characteristics were found to be related to control monitoring IPCA perpetration in the early stages of this dissertation. The connection between aggression and anxious attachment characteristics have been found several times in the literature (Bui & Pasalich, 2018; Marshall et al., 2013; Reed et al., 2015, 2016; Toplu-Demirtas et al., 2020; Wright, 2017). Individuals with high anxious attachment tendencies may be acting

out of fear that their partner will leave them for someone else. Given their anxious nature, this fear can become so invasive that they become compelled to monitor their partner's behaviours online.

Next, Relationship Insecurity was proposed as a potential motivation for the perpetration of control monitoring cyber acts. In Figure 1, the arrow connecting anxious attachment characteristics and Relationship Insecurity is dotted given this was not explicitly examined in this dissertation, rather it is hypothesized that attachment may underpin Relationship Insecurity. This association was proposed given the shared underlying fears between anxious attachment characteristics and Relationship Insecurity (i.e. concerns for the relationship, lack of confidence and trust in a partner, as well as concerns regarding the stability of the relationship) (Mikulincer & Shaver, 2005).

Next, engagement in control monitoring acts of cyber aggression was proposed as a development from Relationship Insecurity. This association was discovered during the interview examination of the underlying motives. Feeling a lack of security in one's intimate relationship may look like a fear they might not be good enough for their partner, feeling like a relationship lacks depth and might not be strong enough to withstand temptations and pressures found in the online world. These fears may drive an individual to investigate their partner's online actions in order to ease their own discomfort in the relationship.

Finally, increased mental health symptoms are proposed as the final stage in the IPCA trajectory, as the association between these variables was discovered in the final stages of this dissertation. This connection is consistent with previous literature (Campbell et al., 2012; Kowalski & Limber 2013; Muise et al., 2009; Reed et al., 2015; Schenk et al. 2013). It is possible that control monitoring an intimate partner online may lead to feelings of stress about

being caught, or distress about what was discovered. A visual representation of this potential cascading process is illustrated in Figure 2.

Furthermore, a similar process can be hypothesized for direct IPCA perpetration. The first block, in Figure 3, addresses the question of “who” perpetrates IPCA acts. Avoidant attachment characteristics were found to be related to direct IPCA perpetration in this dissertation. This may be the case given those with avoidant attachment needs prefer independence (Hazan and Shaver, 1987) and may purposefully engage in relationship sabotaging behaviours (i.e. direct cyber aggression), with the goal of returning to safety. To individuals with high avoidant characteristics, safety is identified as little emotional connection, minimal intimacy, and increased independence (Bartholomew, 1990).

Next, Anger was proposed as a potential motivation for the perpetration of these direct acts of cyber aggression. Again, the arrow connecting the attachment characteristics and the motive is dotted, given this was not explicitly examined in this dissertation, but rather it is hypothesized that avoidant attachment needs predict more anger driven motives. This connection was proposed given the unique needs of those high on avoidant attachment, notably requiring space and minimal intimacy. Generally, intimate relationships consist of connection and some level of intimacy (Hazan & Shaver, 1987), therefore, a high likelihood that those who have more avoidant attachment needs will have an intimate partner who requires more closeness than they do. These differing needs may spark feelings of annoyance and frustration for the high avoidant attachment individuals. This annoyance and frustration may result in increases in anger and expressing these emotions using direct cyber aggressive acts. From the interview examinations, participants reported that they were often driven by feelings of anger to engage in direct forms of cyber aggression, such as posting a photo to make their partner feel bad.

Finally, relationship investment was proposed as the final stage in the direct IPCA trajectory, as the association between direct acts of IPCA perpetration and relationship investment was illustrated in the final stages of this dissertation. This association is consistent with multiple other research articles that examined general IPA and relationship investment (Deans & Bhogal, 2019; Linder et al., 2002; Panuzio & DiLilo, 2010; Rueda et al., 2015; Watkins et al., 2016). It is argued that the perpetration of direct cyber acts has obvious direct effects on relationship quality and connection, resulting more generally in a decrease in investment within the relationship. See Figure 3 for an illustration of the proposed 4 step model of direct IPCA.

While these variables were all examined in this dissertation, they were examined in separate studies. In order to examine the relationship among all of these variables together future research would need to examine all four of the main variables in the same study. It should also be noted that given this dissertation did not conduct a longitudinal examination of these variables, the order of this trajectory cannot be argued with certainty. There is the potential for a bidirectional relationship among the variables, or a third variable explanation. However, this process is proposed and hypothesized based on the results generated from this dissertation and previous literature in the area (Barthmelow, 1990; Campbell et al., 2012; Deans & Bhogal, 2019; Hazan & Shaver, 1987; Kowalski & Limber 2013; Linder et al., 2002; Muise et al., 2009; Panuzio & DiLilo, 2010; Reed et al., 2015; Rueda et al., 2015; Schenk et al. 2013; Watkins et al., 2016). It is also important to note that the above figures are simply two proposed processes, however, there are likely a number of other possible combinations, substituting various motivations in the second stage of this proposed trajectory. To conclude, key take-away messages from this dissertation are outlined below.

Figure 2

Potential Control Monitoring IPCA Trajectory

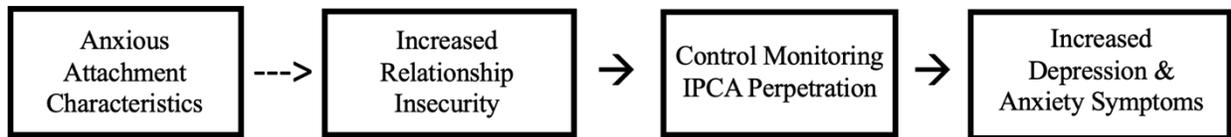
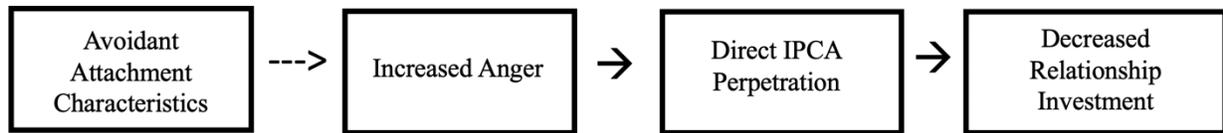


Figure 3

Potential Direct IPCA Trajectory



Key Take-Away Messages

The findings from this dissertation provide the following conclusions. IPCA occurs frequently between many young adult intimate partners and is often perpetrated by individuals who are experiencing high levels of attachment insecurity, high levels of relationship insecurity, distrust, jealousy, anger, boredom, have low relationship investment and high levels of depression and anxiety who desire a non-confrontational way to deal with their fears.

While all three studies were informative and necessary, some of the most interesting learnings took place during the interviews. This study allowed the researcher an opportunity to explore IPCA with high frequency perpetrators in-person. This generated a richness which deepened the researcher's understanding of the results of this dissertation as a whole and molded the unique and relevant design of The Motivations for Intimate Partner Cyber Aggression Scale. The interviews that took place in this study were semi-structured which allowed an opportunity to ask follow-up questions, deepening narratives, and assess non-verbal behaviour. Additionally, this examination was the only study of the three conducted that could almost guarantee participant attention, as the researcher could see the participant thinking about each question, in the moment. Each participant created and expressed a story of their unique experiences with IPCA, which provided information that extended far beyond the actual interviews. Information learned in this study provided fascinating first-hand insights into the use of partner directed cyber aggression. Despite the interviews being interesting, it is this researcher's belief that the last study in this dissertation provided the most formative and significant insights, bringing the exploration of IPCA to a summative close. The final study, which examined the relationship between IPCA perpetration and well-being, used a large sample to validate the interview data, generated a new measure, and provided insight into the associations between perpetration and

well-being. Through this study we were able to tie together the entire dissertation and make sense of the data in a more generalizable manner. For these reasons, it is believed that the final study had the most profound contribution to our knowledge in this area.

This dissertation makes a significant contribution to IPCA perpetration awareness. The 3 studies exploring IPCA perpetration generated fascinating and ground-breaking insight. This dissertation provided a holistic look at the “who, why, and what” of IPCA and provided a framework for research in this area to jump from. Given the continuing rise of social media, online dating, and technological communications, it is plausible to assume that IPCA will become the most common form of IPA within the next few years. IPCA has several advantages to perpetrators: anonymity (if desired), physical distance from one’s partner, ease of access, etc. For these reasons it is essential for research to continue to examine this topic.

General Limitations

While this dissertation made significant leaps in the area of IPCA, there remains several limitations that are important to note. First, given the fast-moving technological world, research always seems to be a few steps behind. The development, execution, and finalization of research can sometimes take several years to complete. Unfortunately, technology advances so rapidly that research is inevitably always playing catch-up. This becomes an issue regarding the creation of measures. While the measures employed in this dissertation were carefully chosen and designed, they are only relevant and considered “current” at the time of this study. That being said, the measures used may have missed some new and pertinent social media platforms or activities. This may have influenced the way participants reported their behaviours and resulted in lower frequencies of the behaviours asked about. In previous research, some measures employed asked participants about their engagement on a specific social media platform, which

may have been outdated by the time of data collection (Muisse et al., 2009). For example, young adults may not utilize certain social media platforms (i.e. Facebook) anymore given they are considered “out of style.” If a question on a particular measure asks them about their cyber behaviours on Facebook, participants may report low-no engagement. However, this may not be an accurate representation of their cyber aggressive behaviours, rather a function of an outdated measure. There are multiple new social media outlets and platforms being created every day. Another example of a research method being outdated may be a change in specific behaviours online from “posting things on someone’s wall” changing to “direct messaging someone” for example. These slight nuances in social media platform usages and specific online behaviours inevitably affect the results that researchers attain. This idea was supported by multiple other researchers, arguing that there are added challenges to researchers to establish clear classifications for the ways cyber aggression manifests, given the use of technology continues to evolve rapidly (Rodríguez-Domínguez, 2015; Torres et al., 2013). The measures employed during this dissertation attempted to be mindful of this, however, may have still been slightly out-dated with the young adult population.

Another important limitation to note is the characteristics of the samples used in this dissertation. While it was advantageous to have different research strategies and techniques employed, the sample was drawn from the same population throughout all three studies. All three samples were drawn from a larger pool of undergraduate students enrolled in first and second year psychology courses, between the ages of 17-25. This is a convenience sample, making it hard to generalize the findings to a broader population. This can also be a limitation when examining intimate relationships given that most participants did not have experience with long-term relationships lasting 5 or more years. Relationship length may play an important factor in

the use of IPCA, however, as a result of the characteristics for the sample, relationship length was not examined adequately.

Another limitation regarding these samples was the over-representation of females. This is typical for psychological research studies (Hanel & Vione, 2016), however this does bias the data resulting in the bulk of the findings reflecting primarily female participants' experiences. Also, generally speaking, undergraduate students represent a small subset of the population who are educated, tech-savvy, and most likely have several electronic devices to access the internet (i.e. phone, tablet, laptop) (Hanel & Vione, 2016). This may give these students added accessibility to the online world, perhaps making it easier for them to excessively monitor an intimate partner wherever they are. Therefore, the sample characteristics in all three studies are considered a limitation of this dissertation. Given these noted limitations, there are many potential next steps that can be improved and developed.

General Future Directions

This dissertation was a great start, but there are still many unanswered questions. First, furthering the use of The Motivations for Intimate Partner Cyber Aggression Scale would be beneficial to further evaluate the psychometric properties (i.e. Confirmatory Factor Analysis) and help establish the validity of this measure. The Motivations for Intimate Partner Cyber Aggression Scale was developed during the final study in this dissertation, using the results generated from the interviews. There were some psychometric analyses that were conducted in the final study, which all demonstrated promising, theoretically sound results. It would be advantageous to continue to develop this measure, given this is the only measure exploring perpetrators motivations of IPCA at this time.

It would also be valuable to explore these variables from a dyadic perspective. Examining both partners in a relationship regarding their experience of IPCA, the types, motives, and consequences may generate interesting findings. Previous literature in the bullying field has found strong evidence to suggest that those who bully others can also be victims (Fanti & Kimonis, 2013). It would be interesting to determine if this is also present for IPCA. It would also be interesting to examine relationships involving high levels of IPCA perpetration by both partners in the dyad. What are the motives and implications of high frequency IPCA perpetration exhibited by both partners in the dyad? This type of research has been examined in the IPA literature (Hines et al., 2020) and would be valuable to explore regarding IPCA.

In addition, it would be interesting to explore a potential IPCA trajectory by means of longitudinal research methods. Examining the ways in which attachment characteristics, motivations of IPCA, mental health, and relational well-being are related to IPCA in one single study would allow researchers to attain a deeper understanding of these relations. For example, we can speculate that attachment tendencies most likely come first in the trajectory, given attachment characteristics develop in infancy, although the exact ordering of this process is speculative at this point. Utilizing longitudinal research tactics, would allow for this trajectory to be examined more directly. It would also be advantageous to explore any potential moderation or mediation effects for attachment tendencies, motivations, and IPCA.

Finally, it is also recommended to replicate these findings in a more diverse sample. A sample with larger, more dispersed age ranges, would be beneficial. It would be interesting to examine adults (30 years old +), young adults, and adolescents in the same study to compare the use of technology and social media with intimate partners and the use of IPCA at various life stages. It is believed that this research would provide fascinating insights. In addition, it would

be advantageous to ensure future samples consist of equal numbers of male and female participants to provide a more holistic image of IPCA. This study made significant leaps in the IPCA literature and created a foundation for future IPCA research to extend from but there is still much to learn. There is still lots to learn about this fascinating and rapidly changing area. This dissertation not only advanced scientific knowledge and created a path for future researchers to follow, but there are also clear hands-on take-aways for the practical world.

Practical Implications

In addition to the development of new research ideas, these findings also have practical implications. In this dissertation cyber aggression between intimate partners was found to be a common occurrence for many. This makes it clear that IPCA is occurring for most young adults, to some degree. This means that practical initiatives need to be employed as soon as possible to mitigate the harmful consequences of this type of aggression. Given the results of this dissertation, it can be argued that cyber bullying and aggression initiatives should also be targeting intimate partners, in addition to peers. Youth must be educated about social media and safe intimate relationships online from an early age in order to instil healthy online habits. Since the rise of cyber bullying, much of the practical initiatives focus their directives on cyber aggression between peers (Underwood, 2004). However, results from these studies illustrate that practical initiatives need to also target intimate partners, as they are frequently engaging in cyber aggression. There needs to be more youth workshops and initiatives about the use of technology in intimate relationships and clear explanations about healthy and unhealthy online relationship behaviours. This is important given that in the interviews, many participants normalized their IPCA behaviours, indicating “everyone does it in relationships.” This may mean that that youth are being misguided early in their development. Therefore, initiatives and workshops need to be

developed as early as elementary school to mitigate the normalization of these harmful behaviours.

Additionally, parents and teachers should be mindful of cyber aggressive behaviours being exhibited between intimate partners and should be educating youth about this early in their development. Given the results found regarding attachment characteristics, it is plausible to assume that IPCA prevention efforts could begin as early as infancy, given the development of secure attachment tendencies will likely result in lowered susceptibility of IPCA perpetration. Therefore, while it is well-known that having securely attached characteristics will be beneficial in many areas of one's life (Hazan & Shaver, 1987), we can now add technology related health to this wealth of evidence. Furthermore, the necessity for primary caregivers to be responsive and consistent with their infants needs to be highlighted more than ever. These two components are fundamental to attachment security (Ainsworth, 1973; Bowlby 1982), and may be one way to address IPCA perpetration.

In addition, while parents are doing a good job educating their children about online predators and cyberbullying from peers (Espelage et al., 2000), this effort needs to be extended to discussing healthy online relationship behaviours. A decade ago, communities were just beginning to learn about the dangers of online activity for children and the importance of parental efforts were stressed by researchers and the media. This same effort needs to be made to stress the importance of IPCA awareness for parents and teachers. This is vital to help youth identify unhealthy behaviours earlier in relationships so they can set clear, reasonable boundaries in their intimate relationship regarding technology use. This points to a systemic shift in awareness and education about online relationship behaviours for youth.

Information generated from this study can also benefit practitioners working with adolescents and young adults. Given the results obtained in this dissertation illustrated an association between attachment characteristics and intimate partner cyber aggression, this suggests the influential impact of attachment. This means practitioners would benefit from assessing attachment needs in individuals at the start of a therapeutic relationship. Doing this could help prepare an appropriate treatment plan for their client. Additionally, finding ways to build a client's relationship security characteristics could generate meaningful changes. Helping clients develop and strengthen skills that are foundational to secure attachment tendencies such as trust, self-image, and a balance between autonomy and connectedness (Hazan & Shaver, 1987) could be important. This will inevitably affect their likelihood of engaging in IPCA with a current or future intimate partner. This notion was proposed in a recent research article and would be relevant to these findings as well (Toplu-Demirtas et al., 2020). In particular, they reported that building trust in insecurely attached individuals is vital to improve relationship health, specifically, building trust in oneself and in others.

Mental health practitioners should also be helping clients develop emotion regulation skills. As was discovered when examining the underlying motivations for IPCA, increased feelings of anger is a strong motive. Participants reported that they would use IPCA tactics to release their angry feelings and to hurt their partner. Helping youth and young adults learn more about emotions and how to manage them are vital life skills for several contexts. If an individual is able to manage unpleasant emotions as they arise, it will reduce the likelihood of reactive and harmful online behaviours, such as cyber aggression (Lafrance et al., 2019). Another strong emotion that was found to be a motive for cyber aggression was jealousy. The same notion would apply here, if youth and young adults are able to identify and manage their unpleasant

emotions earlier, they stand a better chance at processing their discomfort and making smart, logical, and reasonable decisions about their relationship. Therefore, emotion regulation is a foundational skill that should be a bigger focus for parents, teachers, schoolboards, and mental health practitioners.

Additionally, given the connection with mental health and relationship challenges, discovered in the final study, health practitioners should ensure they are screening for IPCA in the primary stages of a therapeutic relationship. This awareness may help to determine a treatment plan which is relevant to the client's lifestyle habits.

Also, there should be more developed supports for perpetrators of aggression in university and high school settings. As noted, several times in this dissertation, perpetrators of aggression are often overlooked in the research. The same issue occurs in the real world. There are several awareness and support groups for those who have been victimized by an intimate partner, however, there are rarely support groups for self-identified perpetrators (Toplu-Demirtas et al., 2020). Given the detrimental associations with anxiety and depression symptoms, it is important that perpetrators have access to support resources as well. Support resources can be educational and help individuals connect with professionals to develop emotion regulation skills and more helpful ways to manage conflict in their intimate relationships. While supporting victims is important, supporting perpetrators is equally so. University and high school settings need to adopt for extensive resources for perpetrators of various forms of IPA.

Finally, this dissertation separated the two types of IPCA throughout the entirety of this research for a very important reason: they are different. While both control monitoring and direct IPCA fall under the same umbrella, they consist of different behaviours, motives, attachment tendencies, and associations with well-being, as discovered in this dissertation. Therefore, both

types need to be treated in their own unique fashion. This means that mental health intervention programs, support groups, and therapeutic support needs to address each type of IPCA in unique ways to best support the perpetrator. While there is still much to learn about IPCA, there are changes we can begin making to day-to-day life now in order to prevent, manage, and mitigate IPCA.

Conclusion

This dissertation set out to explore IPCA perpetration. Given there was not much known about this phenomenon, the goals were to explore the fundamentals: “who, why, and what” in order to holistically understand IPCA. When examining the attachment characteristics, an association between insecure attachment tendencies and IPCA perpetration was discovered. During the interview examination with individuals using high levels of IPCA 6 main motives were identified: Relationship Insecurity, Jealousy, Distrust, Anger, Boredom, and Non-Confrontation. Finally, during the exploration of the relations between IPCA perpetration and well-being, an association between mental health symptoms, relationship investment, and IPCA perpetration was found. These three research studies create a foundation for future research to grow from. While this research covered a lot of ground, there is still so much about the online world we don’t know. Further, with the rapidly changing nature of social media and online relationship communications, it is reasonable to predict that new research questions will develop rapidly, especially given the last 8 months of isolation and quarantine due to the COVID-19 pandemic that has resulted in an even heavier reliance on online interactions. There are also practical implications that can be drawn from this research and implemented into parenting practices, school settings, and systemic changes regarding the way we perceive intimate relationships and the online world. Intimate relationships inevitably involve some level of online

communications in today's era. It is expected that technology will continue to be a central component in intimate relationships for the foreseeable future. The more we learn and stay abreast of technological advances, the better the odds are we will use technology's benefits for positive, healthy development.

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Appendix A
Study 1: Announcements for Recruitment

Basic Information

Experiment Title: An examination of childhood bullying experiences, current cyberbullying experiences with peers and romantic partners and well-being.

Experimenter's Name: Dr. Tina Daniels, Alyssa Bonneville, and Ghadir Kawar

Experimenter's Phone Number: 520-2600 ext. 2686

Location of Experiment: Online

Faculty Advisor: Dr. Tina Daniels

Duration of Experimental Session: approximately 60 minutes

Experimental Credits Received: .5 credits

Inclusion Criteria: All SONA eligible students ages 17-25

Exclusions: N/A

Brief Description: Participants will be asked questions regarding their bullying/victimization experiences in childhood, their current experiences with cyberbullying both with peers and romantic partners and their current state of well-being as assessed by behavior, empathy, anxiety, and depression. Adult attachment style and parental bonding will also be measured.

Description: The present study examines past childhood experiences with bullying, current parental, peer, and romantic relationships, cyberbullying and monitoring in adulthood and well-being. Participants will complete an Aggression Questionnaire, the Retrospective Bullying Experience Questionnaire, the Cyber Monitoring and Cyber Aggression questionnaire, and the Revised Cyber Bullying Inventory. Measures of adult attachment, parental bonding, jealousy, empathy and impulsiveness as well as the Beck Depression Scale, and the Beck Anxiety Scale will also be completed. Participants will be asked basic demographic information such as relationship status, age, ethnicity and gender.

Appendix B



Canada's Capital University

Study 1: Informed Consent Form

Title: An examination of the relationships between childhood bullying experiences, current cyberbullying experiences with peers and intimate partners and current well-being.

Date of ethics clearance: July 26, 2018

Ethics Clearance for the Collection of Data Expires: 109151

I _____, choose to participate in a study on bullying experiences, relationships and well-being. This study aims to better understand how early bullying experiences in childhood affect peer and romantic relationships in early adulthood and your sense of well-being. The lead researchers for this study is Tina Daniels in the Department of Psychology at Carleton University.

Description of Study

In this experiment, you will be asked to answer some questionnaires about your experiences. This will focus on what you can remember from your childhood, experiences you may have had with bullying, your relationship with your parents and your more recent romantic relationships. You will also be asked to fill out questionnaires about behaviours you might engage in including cyber aggression and relational aggression and monitoring in relationships. You will be asked to indicate your age, sex and ethnicity.

Duration of Study

The experiment will take approximately 60 minutes to complete an on line survey. Compensation for this study will be .5 credit.

Risks and Discomfort

There are minimal risks associated with participation in this study, no more so that recounting a situation with a friend. It is possible that thinking about your relationships with your friends in the past and reflecting on your current relationships when you have been in conflict may cause some mild temporary psychological discomfort or concern when responding to some of the questionnaire items. It is expected that this would be no more than that experienced in everyday life when talking with friends about such things. You may choose not to respond to any item or to withdraw from the study at any time, without penalty.

Anonymity

All of the information provided by participants will be anonymous and confidential. Participant identifiers will be used only for compensation purposes. After downloading the data from Qualtrics, the surveys will not be connected to your identifier in any way. The responses you provide will be used for research purposes only and you will not be identifiable in any reports

produced from this study. All of the data will be collected and coded in such a way that the identity of the respondent cannot be associated with any information that they provide. We collect data through the software Qualtrics, which uses servers with multiple layers of security to protect the privacy of the data (e.g., encrypted websites and password protected storage). Please note that Qualtrics is hosted by a server located in Toronto, ON.

Data Storage

Your data will be stored and protected by Qualtrics on Toronto-based servers but may be disclosed via a court order or data breach. The data collected will remain on the Qualtrics account until the end of the study and will then be deleted. No backups will be kept on the Qualtrics server after the deletion has been processed. In addition, the data will be downloaded upon completion of the study and stored on password protected lab computers. Data may be shared with trusted colleagues and with requests from competent professionals (APA guidelines 8.14).

Right to Withdraw

You have the right to withdraw from this experiment at any time without academic penalty. Your participation is completely voluntary. At any point while filling out this questionnaire, you have the right to decline to respond to any question or to stop responding to the questionnaire entirely and will still receive full participation credit. You have the right to end your participation in the survey at any time, for any reason, up until you hit the “submit” button at the end of the survey. If you would like to withdraw, please hit the “withdraw” button located on the bottom of the page in order to receive remuneration (.5% course credit for research participation). You can only withdraw from the study while you are completing the questionnaire. If you withdraw from the study, all information you provided will be immediately destroyed and you will not be penalized.

Study Results

If you would like a copy of the completed research study, you are invited to contact the lead researcher (tina_daniels@carleton.ca) after January 2019 to request an electronic copy which will be provided to you.

The ethics protocol for this project was reviewed by the Carleton University Research Ethics Board (109151), which provided clearance to carry out this research. Should you have questions or concerns related to your involvement in this research, please contact:

CUREB contact information:

Should you have any ethical concerns with the study, please contact Dr. Bernadette Campbell, Chair, Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085 or by email: ethics@carleton.ca). For all other questions about the study, please contact the researcher.

Contact information:

Tina Daniels
Department of Psychology, Carleton University
Tel: 613-520-2600 ext.2686
Email: tina.daniels@carleton.ca

Consent: By clicking “Agree”, you acknowledge that you have read and understand the description of this study and are allowing any information you provide to be used by the researchers for the purposes of the study. Your participation in this study is completely voluntary and you may choose to leave the study at any point by clicking the “withdraw” button found at the bottom of each page of the survey. Any information you provide will be kept confidential.

Appendix C
Study 1: Debriefing Form

 <p>Carleton UNIVERSITY Canada's Capital University</p>	<p>DEPARTMENT OF PSYCHOLOGY DEBRIEFING FORM</p>
<p>The relationships between social background factors and aggression in peer and romantic relationships.</p>	
<p>What are we trying to learn from this research? There are many negative impacts that can come from being the victim of aggression and cyber aggression. The experiment that you completed was to allow psychologists to study this relationship.</p>	
<p>What are our hypotheses and predictions? -Anxious and avoidant attachment styles will have higher rates of perpetration and victimization of cyber aggression and cyber monitoring through the use of social media in romantic relationships and will have lower relationship satisfaction compared to those who are securely attached. -Victims and perpetrators of cyber aggression and cyber monitoring who have an anxious and avoidant attachment style will have higher rates of depression and anxiety compared to those who are securely attached.</p>	
<p>Why is this important to scientists or the general public? Having a better idea of how aggression factors into our lives can allow for resources to correct or prevent aggression. Much of anti-bullying, focuses on reducing physical bullying, when research has shown relational aggression to be more detrimental. Understanding the relationships between aggression, and cyber aggression in peer and romantic relationships, would improve strategies for reducing and reversing its negative effects.</p>	
<p>Where can I learn more? Buss A. H. (1961). <i>The psychology of aggression</i>. Wiley.</p>	

What if I have questions later?

For questions concerning this research, please contact **Alyssa Bonneville** (alysabonneville@mail.carleton.ca) or Tina Daniels (tinadaniels@carleton.ca).

For questions concerning the ethical aspects of this research, please contact **Dr. Shelley Brown**, Chair for the Carleton University Research Ethics Board-B (CUREB-B) (shelley_brown@carleton.ca 613-520-2600, ext. 1505).

Thank you for your participation in this research. Your time and effort are greatly appreciated!

Appendix D
Study 1- Certificate of Institutional Ethics Clearance



Office of Research Ethics
5110 Human Computer Interaction Bldg | 1125 Colonel By Drive
| Ottawa, Ontario K1S 5B6 613-520-
2600 Ext: 4085 ethics@carleton.ca

CERTIFICATION OF INSTITUTIONAL ETHICS CLEARANCE

The Carleton University Research Ethics Board-B (CUREB-B) has granted ethics clearance for the research project described below and research may now proceed. CUREB-B is constituted and operates in compliance with the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (TCPS2).

Ethics Protocol Clearance ID: Project # 109151

Research Team: Dr. Tina M. Daniels (Primary Investigator)

Crystal Ferk (Student Researcher: Undergraduate)
Adrian Biletoff (Student Researcher: Undergraduate)
Ghadir Kawar (Student Research: Master's Student)
Alyssa Bonneville (Student Research: Ph.D. Student)

Project Title: An examination of the relationships between childhood bullying experiences, cyberbullying experiences with peers and intimate partners and current well-being.

Funding Source (If applicable):

Effective: **July 26, 2018**

Expires: **July 31, 2019.**

Please ensure the study clearance number is prominently placed in all recruitment and consent materials: CUREB-B Clearance # 109151.

Restrictions:

This certification is subject to the following conditions:

1. Clearance is granted only for the research and purposes described in the application.
2. Any modification to the approved research must be submitted to CUREB-B via a Change to Protocol Form. All changes must be cleared prior to the continuance of the research.
3. An Annual Status Report for the renewal of ethics clearance must be submitted and cleared by the renewal date listed above. Failure to submit the Annual Status Report will result in the closure of the file. If funding is associated, funds will be frozen.

4. A closure request must be sent to CUREB-B when the research is complete or terminated.
5. Should any participant suffer adversely from their participation in the project you are required to report the matter to CUREB-B.

Failure to conduct the research in accordance with the principles of the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans 2nd edition* and the *Carleton University Policies and Procedures for the Ethical Conduct of Research* may result in the suspension or termination of the research project.

Upon reasonable request, it is the policy of CUREB, for cleared protocols, to release the name of the PI, the title of the project, and the date of clearance and any renewal(s). Please contact the Research Compliance Coordinators, at ethics@carleton.ca, if you have any questions.

CLEARED BY:

Date: July 26, 2018



Bernadette Campbell, PhD, Chair, CUREB-B



Andy Adler, PhD, Vice-Chair, CUREB-B

Appendix E Study 1: Questionnaire

Demographic Questions

Please complete the following questions:

Please select the gender you identify with:

- 1) Male
- 2) Female
- 3) Other
- 4) I wish not to identify

Age (in years)

- a) 16-17
- b) 18-19
- c) 20-21
- d) 22-23
- e) 24-25

What is your ethnicity?

- a) Indigenous/Aboriginal
- b) Black (African/Caribbean etc.)
- c) Asian (Chinese, Japanese, Korean, Vietnamese, etc.)
- d) White (Caucasian, European etc.)
- e) Other
- f) I do not know
- g) I wish not to identify

Relationship Status

Please check the **one** statement below that best describes your current relationship status:

I am seriously dating one person _____

I am casually dating one or more partners _____

I am in an open relationship _____

I am living with a partner but not married _____

I am married _____

I am divorced or separated _____

I am not currently dating anyone _____

Intimate Partner

An intimate Partner is often defined as someone who you are dating, seeing, or are in a relationship with. The duration of the relationship is not considered of importance in identifying who this person is.

Based on this definition would you describe yourself as being in an intimate relationship with a partner at this time?

- a) YES
- b) NO

If you are currently in an intimate relationship how long have you been involved in that relationship?

- a) 0 - 6 months
- b) 6 months - 1 year
- c) 1 - 2 years
- d) More than 2 years
- e) Not currently in an intimate relationship

Thinking back to your most recent past intimate relationship how long were you involved in that relationship?

- a) 0 - 6 months
- b) 6 months - 1 year
- c) 1 - 2 years
- d) More than 2 years
- e) Have never been in an intimate relationship

Cyber Aggression

The following questions ask about your relationship with your current partner. For the purposes of this study “partner” is defined as:

someone who you are dating, seeing, or are in a relationship with. The duration of the relationship is not considered of importance in identifying who this person is.

If you do not currently have a partner then please go to the next section.

In the **past year**, how many times have you engaged in the following behaviours **directed towards your partner**?

	Never	Never in the last year, but it occurred before	Rarely 1 or 2 times	Sometimes 3 and 10 times	Often 10 and 20 times	Always More than 20 times
	1	2	3	4	5	6

1	Spread rumors, gossip and/or jokes through social media with the intention of ridiculing her/him.						
2	Made threats through social media to physically harm her/him.						
3	Created a fake profile on social media to cause problems with her/him.						
4	Spread secrets about her/him by using social media.						
5	Threatened to spread secrets or embarrassing information about her/him by using social media.						
6	Wrote a comment on the wall of a social networking site with intent to insult or humiliate her/him.						
7	Used social media to pretend to be her/him in order to create a problem.						
8	Sent or uploaded embarrassing photos, images and or videos without her/his permission						
9	Pretended to be another person using social media to test her/him.						
10	Posted music, poems, phrases etc... on my social media with the intent to insult or humiliate her/him.						
11	Sent humiliating/insulting messages to her/him by using social media.						
12	Went out of my way to read comments on her/his posts which are on other friends profiles.						

13	Monitored her/his whereabouts using social media.						
14	Attempted to control who she/he is friends with on social media.						
15	Attempted to use social media to control where she/he was, and with whom.						
16	Checked her/his mobile phone without permission.						
17	Checked her/his social networks or email without permission.						
18	Excessively called her/him to attempt to control where they were and with whom.						
19	Controlled her/his status updates on social network sites.						
20	Checked the last connection in her/his mobile applications (i.e. checks for the last person she/he texted or called).						
21	Used her/his passwords (phone, social networking, email) to browse messages and/or contacts without permission.						
22	Threatens to answer her/his calls, messages or texts.						
23	Tried to make me jealous when they are mad at me online or through text messages						
24	Ignored me when I have hurt their feelings in some way online or through text messages						
25	Flirted with someone else online or through text messages when I made them mad.						

Attachment Style

How much you agree with each of the following statements?

		Totally Disagree	Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree	Totally Agree
		1	2	3	4	5	6
1.	Overall I am a worthwhile person						
2	I am easier to get to know than most people						
3	I feel confident that other people will be there for me when I need them						
4	I prefer to depend on myself rather than other people						
5	I prefer to keep to myself						
6	To ask for help is to admit that you're a failure						
7	People's worth should be judged by what they achieve						
8	Achieving things is more important than building relationships						

9	Doing your best is more important than getting along with others						
		Totally Disagree	Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree	Totally Agree
		1	2	3	4	5	6
10	If you've got a job to do, you should do it no matter who gets hurt						
11	It's important to me that others like me						
12	It's important to me to avoid doing things that others won't like						
13	I find it hard to make a decision unless I know what other people think						
14	My relationships with others are generally superficial						
15	Sometimes I think I am no good at all						
16	I find it hard to trust other people						
17	I find it difficult to depend on others						
18	I find that others are reluctant to get as close as I would like						

19	I find it relatively easy to get close to other people						
20	I find it easy to trust others						
		Totally Disagree	Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree	Totally Agree
		1	2	3	4	5	6
23	I worry about people getting too close						
24	I worry that I won't measure up to other people						
25	I have mixed feelings about being close to others						
26	While I want to get close to others, I feel uneasy about it						
27	I wonder why people would want to be involved with me						
28	It's very important to me to have a close relationship						

29	I worry a lot about my relationships						
30	I wonder how I would cope without someone to love me						
		Totally Disagree	Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree	Totally Agree
		1	2	3	4	5	6
33	I often worry that I do not really fit in with other people						
34	Other people have their own problems, so I don't bother them with mine						
35	When I talk over my problems with others, I generally feel ashamed or foolish						
36	I am too busy with other activities to put much time into relationships						
37	If something is bothering me, others are generally aware and concerned						

38	I am confident that other people will like and respect me						
39	I get frustrated when others are not available when I need them						
40	Other people often disappoint me						

Appendix F**Canada's Capital University****Study 2 - Informed Consent Form**

Name and Contact Information of Researchers: Alyssa Bonneville, Carleton University,
Department of Psychology

Email: alyssabonneville@email.carleton.ca

Supervisor and Contact Information: Dr. Tina Daniels, Tina.Daniels@carleton.ca

Project Title: iCARE: Online Behaviors in Intimate Relationships

Carleton University Project Clearance

Clearance #: 111298

Date of Clearance: October 16th, 2020

Invitation

You are invited to take part in a research project because you are an undergraduate student at Carleton University. You have been selected to participate in this study because you previously indicated on the survey you completed during mass testing that you do use technology in relation to your romantic partner.

The information in this form is intended to help you understand what we are asking of you so that you can decide whether you agree to participate in this study. Your participation in this study is voluntary, and a decision not to participate will not be used against you in any way. As you read this form, and decide whether to participate, please ask all the questions you might have, take whatever time you need, and consult with others as you wish.

What is the purpose of the study?

Relationships have both positive and negative aspects to them. We are interested in the use of technology with close intimate relationships. In particular, we are interested in how technology is used both positively and negatively in relationships and the reasons for this. The results from this research may be used in future research, publications, presentations, and teaching.

What will I be asked to do?

If you agree to take part in the study, we will ask you to:

Take part in a 30 minute audio-recorded interview in which you will be asked to describe a recent romantic relationship you have been in, some of the in-person and online behaviours you may have engaged in, and your motivations for doing so.

You may be contacted by the lead researcher to follow-up on something said in your interview up to 7 days following the interview. This may be asked of you for the purposes of clarifying something you said in your interview.

Risks and Inconveniences

There are minimal risks associated with participation in this study. It is possible that thinking about and reflecting on your current relationships when you have been in conflict may cause

some mild temporary psychological discomfort or concern when responding to some of the interview questions. You may choose not to respond to any question or to withdraw from the study at any time, without penalty.

Possible Benefits

You may not receive any direct benefit from your participation in this study. However, your participation may allow researchers to better understand how technology is used both positively and negatively in relationships and the reasons for this.

Compensation/Incentives

Compensation for this study will be .5 credit towards your introductory Psychology course (PSYC 1001, 1002, 2001, 2002).

No waiver of your rights

By signing this form, you are not waiving any rights or releasing the researchers from any liability.

Withdrawing from the study

If you withdraw your consent during the course of the study, all information collected from you before your withdrawal will still be used, unless you request that it be removed from the study data.

After the study, you may request that your data be removed from the study and deleted by notice given to the Principal Investigator (named above) within *7 days* after your completion.

Confidentiality

We will treat your personal information as confidential, although absolute privacy cannot be guaranteed. No information that discloses your identity will be released or published without your specific consent. Research records may be accessed by the Carleton University Research Ethics Board in order to ensure continuing ethics compliance.

All data will be kept confidential, unless release is required by law (e.g. child abuse, harm to self or others).

The results of this study may be published or presented at an academic conference or meeting, but the data will be presented so that it will not be possible to identify any participants unless you give your express consent.

You will be assigned a code [or pseudonym] so that your identity will not be directly associated with the data you have provided. All data, including coded information, will be kept in a password-protected file on a secure computer.

Because you will be granted course credit for taking part in the study, identifying information will be retained using a code until the course credit is granted.

In addition, the audio-recording of the interview will be destroyed once it has been typed up.

Further, the typed interview and other research materials will not have your name on it.

Anything linking your name to the information collected will be stored in a locked filing cabinet accessible to only those associated with the project and will be destroyed upon completion of the project (i.e., within the next year).

Data Storage

In addition, the data will be downloaded upon completion of the study and stored on password protected lab computers. Your identifying information (e.g., pseudonym, phone number, email address) will be saved on a password protected USB key, which will be stored in a locked cabinet in my office. You will be given a code name, and the transcripts will be labeled with this

code name. Interview transcripts will be altered to remove all names and identifying information (e.g., name of their partner). Once interviews are transcribed, verified and de-identified, the audio data will be destroyed. Data may be shared with trusted colleagues and with requests from competent professionals (APA guidelines 8.14). After the study is completed, your de-identified data will be retained for future research use.

New information during the study

In the event that any changes could affect your decision to continue participating in this study, you will be promptly informed.

Ethics review

This project was reviewed and cleared by the Carleton University Research Ethics Board B. Should you have any ethical concerns with the study, please contact the REB Chair, Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085 or by email: ethics@carleton.ca). For all other questions about the study, please contact the researcher.

Statement of consent – print and sign name

I voluntarily agree to participate in this study.

Yes No

I agree to be audio recorded

Yes No

(Note: Audio recordings are required to participate in this study)

I agree to be contacted for follow up questions

Yes No

Signature of participant

Date

Research team member who interacted with the subject

I have explained the study to the participant and answered any and all of their questions. The participant appeared to understand and agree. I provided a copy of the consent form to the participant for their reference.

Signature of researcher

Date

Appendix G

Study 2 - Debriefing Form

 <p>Carleton UNIVERSITY Canada's Capital University</p>	<p>DEBRIEFING FORM</p>
<p>Name and Contact Information of Researchers: Alyssa Bonneville, Carleton University, Department of Psychology Email: alyssabonneville@cmail.carleton.ca Supervisor and Contact Information: Dr. Tina Daniels, Tina.Daniels@carleton.ca Project Title: iCARE: Online Behaviors in Intimate Relationships</p> <p>Carleton University Project Clearance Clearance #: 111298 Date of Clearance: TBA</p>	
<p>What are we trying to learn from this research? Relationships have both positive and negative aspects to them. We are interested in the use of technology with close intimate relationships. In particular, we are interested in how technology is used both positively and negatively in relationships and the reasons for this.</p>	
<p>Why is this important to scientists or the general public? Having a better idea of how online behaviour factors into our lives can allow for resources to improve the quality of our relationships. Understanding the relationships between aggression, and cyber aggression in romantic relationships, would improve strategies for reducing and reversing potential negative effects.</p>	
<p>What are our hypotheses and predictions? How people feel and relate towards those closest to them (friends, family, partners) will have an association with the ways they manage conflict with their intimate partner's electronically.</p>	
<p>Where can I learn more? Books: Bradbury, T. N., & Karney, B. R. (2019). <i>Intimate Relationships</i> (3rd ed.). New York: W.W. Norton & Co. Miller-Perrin, Perrin, Renzetti (2017) <i>Violence and Maltreatment in Intimate Relationships</i>. Sage.</p> <p>Online Resources and Information: www.prevnet.ca/resources/healthy-relationships-tool www.redcross.ca/how-we-help/violence-bullying-and-abuse-prevention www.cdc.gov/gov/violenceprevention/intimatepartnweviolence/fastfact.html</p>	

Where can I go for help and support?

If you feel like you are in a relationship that is distressing to you or if you feel any distress or anxiety after participating in this study please contact the resources below:

Carleton University Health and Counseling Services at: 613-520-6674

The Distress Centre of Ottawa and Region at: 613-238-3311

Mental Health Crisis Line at: 613-722-6914

Empower Me Counselling Services at: 1-844-741-6389 (toll free)

What if I have questions later?

For questions concerning this research, please contact **Alyssa Bonneville** (alyssabonneville@cmail.carleton.ca) or Tina Daniels (tinadaniels@carleton.ca).

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

Thank you for your participation in this research. Your time and effort are greatly appreciated!

Appendix H
Study 2- Certificate of Institutional Ethics Clearance



Office of Research Ethics
503 Robertson Hall | 1125 Colonel By Drive
Ottawa, Ontario K1S 5B6 613-520-
2600 Ext: 4085 ethics@carleton.ca

CERTIFICATION OF INSTITUTIONAL ETHICS CLEARANCE

The Carleton University Research Ethics Board-B (CUREB-B) has granted ethics clearance for the changes to protocol to research project described below and research may now proceed. CUREB-B is constituted and operates in compliance with the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (TCPS2).

Ethics Clearance ID: Project # 111298

Principal Investigator: Ms. Alyssa Bonneville

Co-Investigator(s) (If applicable): **Ms. Alyssa Bonneville (Primary Investigator)** Dr. Tina M. Daniels (Research Supervisor)

Project Title: iCARE: Cyber Behaviours in Intimate Relationships

Funding Source:

Effective: **October 28, 2019**
2020.

Expires: **October 31,**

Upon reasonable request, it is the policy of CUREB, for cleared protocols, to release the name of the PI, the title of the project, and the date of clearance and any renewal(s).

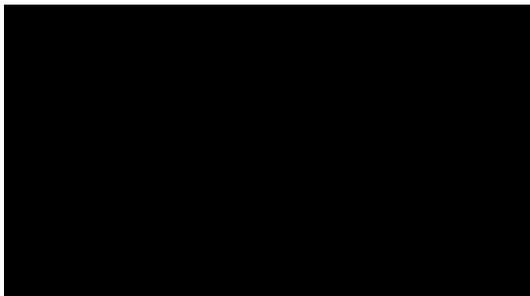
During the course of the study, if you encounter an adverse event, material incidental finding, protocol deviation or other unanticipated problem, you must complete and submit a Report of Adverse Events and Unanticipated Problems Form, found here:

<https://carleton.ca/researchethics/forms-and-templates/>

Please email the Research Compliance Coordinators at ethics@carleton.ca if you have any questions.

CLEARED BY:

Date: October 28, 2019



Natasha Artemeva, PhD, Chair, CUREB-B



Janet Mantler, PhD, Vice Chair, CUREB-B

Appendix I
Study 2 Interview Face-Sheet

Participant Pseudonym:

Interviewer's Name:

Date of Interview:

Length of interview:

Location of Interview:

Participant's Demographic Characteristics:

Age: Gender:

Relationship Status: Ethnicity:

Would like a summary of final results? Yes / No

If yes, was the summary sent? Yes / No

Appendix J
Study 2 - Post-Interview Comment Sheet

Mood/Tone of the Interview

Strengths of the Interview

Weaknesses of the Interview

Additional Comments/Notable Features of the Interview

Appendix K

Study 2 - Semi-Structured Interview

Introduction, Consent & Face Sheet

Introduction: “Thanks so much for meeting with me. My name is Alyssa Bonneville and I am a graduate student at Carleton University. I am doing this research to learn more about intimate partners and how they relate with each other online and through social media. So, during this interview I’d like to ask you some questions about your relationship or a relationship you have been in recently, some questions about the ways you connected with each other online, and some motivators to certain behaviours. When you completed the questionnaires online with Mass Testing you were envisioning a specific relationship in your mind, today I will be asking you about that relationship in particular. To protect your privacy, I will ask you to use a fake name to describe yourself and your intimate partner throughout the duration of this interview. Please do not use real names.”

Consent procedure: Go through & answer any questions (see Appendix ____).

Face sheet: Go through Face Sheet questions (see Appendix ____).

Warming up Questions

How long have you and your partner been together for?

What was the nature of your relationship (i.e. casually dating, committed, living together, etc.)

How do/did you feel about the relationship overall?

Did/do you trust them?

Was it easy/hard for you to trust them?

Did/do you feel comfortable being open and vulnerable with _____?

Were/Are you ever worried or concerned _____ would leave you or end the relationship?

Did/do you want to be around _____ often or did you prefer to keep your space and be mostly independent?

In what ways do you relate with your partner online?

Text

Email

Snapchat, Facebook, Instagram, other?

How often do you spend looking at:

Their posted pictures

Their posted stories

Their posted videos

What they have liked

What they have commented on

Who they are following/ who is following them

Cyber Aggression Questions

Ask to explain one cyber aggression item from mass testing scale and explain:

You indicated this is something you do frequently, can you tell me more about what this looks like in your relationship.

Can you give me an example of a time where this has occurred?

What was this experience like for you?

Please describe what was leading you to engage in these behaviours?

What was motivating you at that time? Was there anything else?

Looking back, do you think that what you did was justified?

Do you think that what you did was important for the maintenance of the relationship?

Do you see it as an invasion of _____'s privacy?

If you could do it all over again, would you?

Wrapping Up Questions

Is there anything you'd like to ask me about?

Go through debriefing, drawing attention to how they can contact me, advisor, and ethics.

Appendix L



Study 2 - Confidentiality Agreement

Name:

Contact (email and phone number):

I, have been hired as a Research Assistant / Transcriber / Interpreter (circle one) to take part in a study conducted by _____ of the Department of _____, Carleton University. In this role, I will have access to confidential data relating to a research study. Confidential information refers to all information obtained about the participants in the research study that is personal in nature.

I hereby agree to:

Keep all the data shared with me confidential by not divulging information or making it accessible in any form or format with anyone other than the members of the research team. I will exercise caution in ensuring that information is not inadvertently disclosed.

Keep all information in any form secure while it is in my possession.

Return all information in any form to the Principle Investigator upon the completion of my involvement in the research study.

To erase or destroy all research information in any form or format regarding the research study that is not returnable to the Principle Investigator (e.g. information stored on my computer hard drive or in emails) after consulting with the research team.

Research Personnel Name _____

Research Personnel Signature _____

Principal Investigator Name _____

Principal Investigator Signature _____

Date _____

Appendix M
Study 3 - Recruitment Poster

Study Name: iCARE: Cyber Behaviours in Intimate Relationships

Description: Technology is a common method of communicating with people in our lives. Technology can be used with friends, family, and romantic partners as a way to communicate and stay connected. It can be used in both positive and negative ways. We are interested in the negative ways people use technology to engage with their romantic partner, specifically, behaviours such as monitoring a partner's online behaviour, posting hurtful things about a partner, logging into a partner's online account, etc. We are interested in why some people might engage in these behaviours and how this might be related to their feelings of relationship trust and security as well as their personal sense of well-being.

Eligibility Requirements: We are looking for both female and male students between the ages of 17-25 years in their first and second year of undergraduate studies. Students must read English fluently and will self-identify.

Risks: There will be no more physical risk than is consistent with sitting in front of a computer for a 60 minute period. Participants may take breaks if they wish.

Duration and Locale: 60 minutes completed online.

Compensation: You will receive 0.5% course credit towards your course (PSYC 1001, 1002, 2001, 2002).

Researchers: Alyssa Bonneville (Principal Investigator); Tina Daniels (Faculty Sponsor)
Email: alyssabonneville@cmail.carleton.ca

This study has received clearance by the Carleton University Research Ethics Board (B) (CUREB-B Clearance #112240).

CUREB-B:

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

Appendix N



Canada's Capital University

Study 3 - Informed Consent Form

Name and Contact Information of Researchers: Alyssa Bonneville, Carleton University,
Department of Psychology

Email: alyssabonneville@cmail.carleton.ca

Supervisor and Contact Information: Dr. Tina Daniels, Tina.Daniels@carleton.ca

Project Title: iCARE: Online Behaviors in Intimate Relationships

Carleton University Project Clearance
CUREB-B Clearance #112240

Date of Clearance: March 10th, 2020

Invitation

You are invited to take part in a research project because you are an undergraduate student at Carleton University. The information in this form is intended to help you understand what we are asking of you so that you can decide whether you agree to participate in this study. Your participation in this study is voluntary, and a decision not to participate will not be used against you in any way. Both female and male students between the ages of 17-25 are eligible to participate. Participants must read English fluently. Participants do not need to currently be in a romantic relationship to participate. You simply need to have had a romantic relationship at some point in your life. As you read this form, and decide whether to participate, please ask all the questions you might have, take whatever time you need, and consult with others as you wish. What is the purpose of the study?

Relationships have both positive and negative aspects to them. This study focuses on a term used in psychology as “cyber aggression.” Cyber aggression is the term used to describe negative, hurtful online behaviours such as monitoring a partner’s online activity, posting hurtful things about a partner, logging into a partner’s online account, etc. In particular, we are interested in how cyber aggression is used within close intimate relationships and the underlying reasons for this. We are also interested in how cyber aggression in intimate relationships is related to feelings of well-being including low affect, sadness, worry and concern.

Specifically, the goals of the present study are to:

Understand the underlying reasons why people may engage in cyber aggression in romantic relationships.

Understand how individuals’ psychological health and well-being are affected when they are involved in cyber aggression.

Understand how individuals’ feelings of trust and security in their relationships are related to their use of cyber aggression in their romantic relationships?

What will I be asked to do?

If you agree to take part in the study, we will ask you to:

Take part in a 60 online questionnaire in which you will be asked to describe a recent romantic relationship you have been in, some of the in-person and online behaviours you may have engaged in, and your underlying reasons for doing so.

You will also be asked to fill out questionnaires about cyber aggression in intimate relationships, potential underlying reasons for cyber aggressive behaviours, your levels of trust and security in relationships, and your levels of well-being.

You will be asked to indicate your age, sex and ethnicity.

Risks and Inconveniences

There are minimal risks associated with participation in this study. It is possible that thinking about and reflecting on your current relationships when you have been in conflict may cause some mild temporary psychological discomfort or concern when responding to some of the questions. You may choose not to respond to any item or withdraw from the study at any time, without penalty. If you do feel distress from answering any of these questions, we invite you to contact **Carleton University Health and Counselling Services** by clicking on the following link <https://carleton.ca/health/>, by calling 613-520-6674, or by going directly to **Carleton University Health and Counselling Services** in person. Alternatively, you can also reach out to the **Ottawa Crisis Line** by clicking on the following link <http://www.crisisline.ca/> or calling 613.722.6914 (within Ottawa) or toll-free 1-866-996-0991 (outside of Ottawa).

Possible Benefits

You may not receive any direct benefit from your participation in this study. However, your participation may allow researchers to better understand how technology is used both positively and negatively in relationships and the reasons for this.

Compensation/Incentives

Compensation for this study will be .5 credit towards your Psychology course (PSYC 1001, 1002, 2001, 2002).

No waiver of your rights

By signing this form, you are not waiving any rights or releasing the researchers from any liability.

Withdrawing from the study

You have the right to withdraw from this experiment at any time without academic penalty. Your participation is completely voluntary. At any point while filling out this questionnaire, you have the right to decline to respond to any question or to stop responding to the questionnaire entirely and will still receive full participation credit. You have the right to end your participation in the survey at any time, for any reason, up until you hit the “submit” button at the end of the survey. If you would like to withdraw, please hit the “withdraw” button located on the bottom of the page in order to receive remuneration (.5% course credit for research participation). You can only withdraw from the study while you are completing the questionnaire. If you withdraw from the study, all information you provided will be immediately destroyed and you will not be penalized. It is not possible for you to have your data withdrawn or destroyed after you have submitted your survey.

Confidentiality

We will treat your personal information as confidential, although absolute privacy cannot be guaranteed. No information that discloses your identity will be released or published without your specific consent. Research records may be accessed by the Carleton University Research Ethics Board in order to ensure continuing ethics compliance.

All data will be kept confidential, unless release is required by law (e.g. child abuse, harm to self or others).

The results of this study may be published or presented at an academic conference or meeting, but the data will be presented so that it will not be possible to identify any participants unless you give your express consent.

All data will be kept in a password-protected file on a secure computer.

Because you will be granted course credit for taking part in the study, identifying information will be retained using a code until the course credit is granted. After, course credit is granted, your data will be anonymized so that your identity will not be directly associated with the data you have provided.

Data Storage

In addition, the data will be downloaded upon completion of the study and stored on password protected lab computers. No identifying information will be saved. Data may be shared with trusted colleagues and with requests from competent professionals (APA guidelines 8.14). After the study is completed, your anonymized data will be retained for future research use.

New information during the study

In the event that any changes could affect your decision to continue participating in this study, you will be promptly informed.

Ethics review

This project was reviewed and cleared by the Carleton University Research Ethics Board B. Should you have any ethical concerns with the study, please contact the REB Chair, Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085 or by email: ethics@carleton.ca). For all other questions about the study, please contact the researcher.

Implied consent:

By completing the online survey, you are agreeing to participate in the study.

Appendix O
Study 3 - Debriefing Form

 <p>Carleton UNIVERSITY Canada's Capital University</p>	<p>DEBRIEFING FORM</p>
<p>Name and Contact Information of Researchers: Alyssa Bonneville, Carleton University, Department of Psychology Email: alyssabonneville@cmail.carleton.ca Supervisor and Contact Information: Dr. Tina Daniels, Tina.Daniels@carleton.ca Project Title: iCARE: Online Behaviors in Intimate Relationships</p> <p>Carleton University Project Clearance CUREB-B Clearance #112240 Date of Clearance: TBA</p>	
<p>What are we trying to learn from this research? Relationships have both positive and negative aspects to them. This study focuses on negative, hurtful on-line behaviours referred to in psychology as “cyber aggression.” Cyber aggression includes behaviours such as monitoring a partner’s online activity, posting hurtful things about a partner, logging into a partner’s online account, etc. In particular, we are interested in how cyber aggression is used within close intimate relationships and the underlying reasons for this. We are also interested in how cyber aggression in intimate relationships is related to feelings of security and trust and feelings of well-being, sadness, and worry.</p>	
<p>Why is this important to scientists or the general public? As cyber technology is very prevalent in the lives of young adults, it is important to gain a better understanding of the underlying reasons why individuals engage in these behaviours and the effect this has on their sense of well-being. Determining the factors affecting cyber aggression, specifically the underlying reasons for engaging in these behaviours will help to determine how to educate youth regarding healthy online behaviours.</p>	
<p>What are our hypotheses and predictions? How people feel and relate towards those closest to them (friends, family, partners) will have an association with the ways they manage conflict with their intimate partner’s electronically.</p>	
<p>Where can I learn more? Books: Bradbury, T. N., & Karney, B. R. (2019). <i>Intimate Relationships</i> (3rd ed.). New York: W.W. Norton & Co. Miller-Perrin, Perrin, Renzetti (2017) <i>Violence and Maltreatment in Intimate Relationships</i>. Sage.</p> <p>Online Resources and Information: www.prevnet.ca/resources/healthy-relationships-tool www.redcross.ca/how-we-help/violence-bullying-and-abuse-prevention</p>	

www.cdc.gov/gov/violenceprevention/intimatepartnweviolence/fastfact.html

Online Research Articles:

Wright, M. F. (2015). Cyber aggression within adolescents' romantic relationships: Linkages to parental and partner attachment. *Journal of Youth and Adolescence*, 44(1), 37-47. doi:

<https://doi.org/10.1007/s10964-014-0147-2>

Wright, M. F. (2017). Intimate partner aggression and adult attachment insecurity: The mediation of jealousy and anger. *Evolutionary Behavioral Sciences*, 11(2), 187. <http://dx.doi.org/10.1037/ebs0000097>

Where can I go for help and support?

If you feel like you are in a relationship that is distressing to you or if you feel any distress after participating in this study we invite you to contact the resources below:

Carleton University Health and Counseling Services at: 613-520-6674 or by clicking on the following link <https://carleton.ca/health/>

The Distress Centre of Ottawa and Region at: 613-238-3311

Ottawa Crisis Line at: 613.722.6914 (within Ottawa) or toll-free 1-866-996-0991 (outside of Ottawa) or by clicking on the following link <http://www.crisisline.ca/>

Empower Me Counselling Services at: 1-844-741-6389 (toll free)

What if I have questions later?

For questions concerning this research, please contact **Alyssa Bonneville** (alyssabonneville@cmail.carleton.ca) or Tina Daniels (tinadaniels@carleton.ca).

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

Thank you for your participation in this research. Your time and effort are greatly appreciated!

Appendix P
Study 3- Certificate of Institutional Ethics Clearance



Office of Research Ethics
4500 ARISE Building | 1125 Colonel By Drive
Ottawa, Ontario K1S 5B6 613-520-2600
Ext: 4085 ethics@carleton.ca

CERTIFICATION OF INSTITUTIONAL ETHICS CLEARANCE

The Carleton University Research Ethics Board-B (CUREB-B) has granted ethics clearance for the research project described below and research may now proceed. CUREB-B is constituted and operates in compliance with the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (TCPS2).

Ethics Protocol Clearance ID: Project # 112240

Research Team: Ms. Alyssa Bonneville (Primary Investigator) Dr. Tina M. Daniels (Research Supervisor)

Project Title: iCARE: Cyber Behaviours in Intimate Relationships

Funding Source (If applicable):

Effective: **March 10, 2020**

Expires: **March 31, 2021.**

Please ensure the study clearance number is prominently placed in all recruitment and consent materials: CUREB-B Clearance # 112240.

Restrictions:

This certification is subject to the following conditions:

1. Clearance is granted only for the research and purposes described in the application.
2. Any modification to the approved research must be submitted to CUREB-B via a Change to Protocol Form. All changes must be cleared prior to the continuance of the research.
3. An Annual Status Report for the renewal of ethics clearance must be submitted and cleared by the renewal date listed above. Failure to submit the Annual Status Report will result in the closure of the file. If funding is associated, funds will be frozen.
4. A closure request must be sent to CUREB-B when the research is complete or terminated.
5. During the course of the study, if you encounter an adverse event, material incidental finding, protocol deviation or other unanticipated problem, you must complete and

submit a Report of Adverse Events and Unanticipated Problems Form, found here:
<https://carleton.ca/researchethics/forms-and-templates/>

Failure to conduct the research in accordance with the principles of the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans 2nd Edition* and the *Carleton University Policies and Procedures for the Ethical Conduct of Research* may result in the suspension or termination of the research project.

Upon reasonable request, it is the policy of CUREB, for cleared protocols, to release the name of the PI, the title of the project, and the date of clearance and any renewal(s).

Please contact the Research Compliance Coordinators, at ethics@carleton.ca, if you have any questions.

CLEARED BY:

Date: March 10, 2020



Natasha Artemeva, PhD, Chair, CUREB-B



Janet Mantler, PhD, Vice-Chair, CUREB-B

Appendix Q Study 3 – Questionnaires

The following questions might ask you about your relationship with your current partner or a partner you have had in the past. For the purposes of this study “partner” is defined as:

“Someone you are casually dating or are in a committed relationship with. The duration of the relationship is not considered of importance in identifying who this person is”

Please try and identify one relationship you are either currently involved in or one from your past and refer to this relationship throughout the rest of this survey, when answering questions pertaining to a “partner”.

Demographic Information

Please list the following demographic information:

Please select the gender you identify with:

- 1) Male
- 2) Female
- 3) Other
- 4) I wish not to identify

Age (in years)

- a) 16-17
- b) 18-19
- c) 20-21
- d) 22-23
- e) 24-25

What is your ethnicity?

- a) Indigenous/Aboriginal
- b) Black (African/Caribbean etc.)
- c) Asian (Chinese, Japanese, Korean, Vietnamese, etc.)
- d) White (Caucasian, European etc.)
- e) Other
- f) I do not know
- g) I wish not to identify

Are you Currently in an Intimate Relationship?

Yes
No

If so, how long have you been involved in that relationship

- 0 - 6 months
- 6 months - 1 year
- 1 - 2 years
- More than 2 years

Cyber Aggression Scale - Perpetrator

How often do you engage in the following behaviours **directed towards your partner?**

		Never	About once or twice a year	A few times a month	About once a week	A few times a week	Daily
		1	2	3	4	5	6
1	Use social media to spread rumors or gossip with the intention of hurting my partner.						
2	Pretend to be another person using social media to test my partner’s loyalty.						
3	Post something on social media with the obvious intention of insulting or humiliating my partner.						
4	Threaten to spread secrets or embarrassing information about my partner through social media.						
5	Share private information about my partner using social media.						

6	Post subliminal or discrete messages on social media with the intention of hurting my partner (i.e. sub-tweeting).						
7	Control who my partner is friends with or follows on social media.						
8	Use social media to monitor where my partner was, and with whom.						
9	Look through my partner's mobile phone without permission.						
10	Look through my partner's social media accounts or emails without permission.						
11	Repeatedly call or text my partner to monitor where they were and with whom.						
12	Control what my partner posts on social media.						
13	Check the last connection in my partner's mobile phone (i.e. checks for the last person they texted or called).						
14	Use my partner's passwords (phone, social media, email) to browse messages and/or contacts without permission.						
15	Send demeaning, humiliating, or insulting messages to my partner on social media or through text.						
16	Go out of my way to see what photos/videos my partner has liked or commented on.						
17	Go out of my way to see who my partner has added or started following on social media.						

18	Monitor my partner's whereabouts using social media (i.e. snap-maps, check-in spots, friend's posts).						
19	When I'm mad at my partner, I post content on social media to make them jealous or to hurt their feelings.						
20	Ignore my partner's text messages or direct messages when they have hurt my feelings in some way (i.e. "ghosting").						
21	Publicly flirt with someone else on social media when my partner made me mad.						

Motivations for Cyber Aggression Scale

Cyber behaviours in intimate relationships can involve very different actions ranging from using social media to check where your partner is, to posting something hurtful or private about your partner, to using a fake social media account to communicate with your partner, to monitoring their online activity to see what your partner has liked or commented on, to going through their phone or social media accounts. Many people do these things in intimate relationships, to varying degrees. Can you think of a time where you might have engaged in a behaviour similar to this with your intimate partner? Can you briefly describe this situation in 1-2 sentences in the box provided below.

Next, thinking about the situation you just described, please identify potential motivations that were relevant for you in that situation. Please rate how much you agree with each of the following statements as a way to explain why you might have engaged in the behaviour noted above.

If you truly feel like you have never used cyber behaviours in an intimate relationship before then please click on the button below to move onto the next part of the survey.

"I have never used intimate partner cyber behaviours in a relationship "

		Completely disagree	Slightly disagree	Somewhat agree	Moderately agree	Totally agree
		0	1	2	3	4
1	I didn't feel like I could fully trust them.					
2	I thought it would be fun.					
3	I was jealous about the possibility of another relationship developing between my partner and another person.					
4	I was concerned that my partner might find someone better than me to be with.					
5	I wanted to show them how much I cared about them.					
6	I was bored.					
7	I wanted to monitor who my partner interacted with online and what they were saying.					
8	It is something my partner does to me so I think it is only fair that I do it back.					

9	I was jealous that my partner was communicating with others.					
10	It is something everyone does to show they care about their partner.					
11	I did not feel like they were being honest with me.					
12	I was curious of what I could find.					
13	I was angry about something and wanted to make my partner feel bad					
14	It is just something people do when they are in open and honest relationships.					
15	It seemed like a funny thing to do at the time.					
16	I was afraid that my partner was relating inappropriately with others.					
17	I wanted to make sure what they were telling me was the truth.					
18	My partner started acting differently and I was concerned that they did not feel the same way about me.					
19	I wanted my partner to pay for something they did to me.					
20	I was afraid my partner might have been cheating on me.					

21	I felt insecure about my relationship.					
22	I wanted to know for myself where my partner was or what they were doing.					
23	I felt like my partner was getting too close to another person.					
24	I figured it was a socially acceptable way of getting out my anger.					
25	I was worried that my partner was going to leave me.					
26	I wanted to make sure they were okay.					
27	I was concerned that my partner was lying to me.					
28	I had nothing else to do.					
29	I was trying to get back at my partner for something they did that made me mad.					

Investment Model Scale

Please indicate the degree to which you agree with each of the following statements regarding an intimate relationship you are either currently involved in or one from your past.

8	I feel very involved in our relationship—like I have put a great deal into it									
9	Compared to other people I know, I have invested a great deal in my relationship with my partner									
10	I am committed to maintaining my relationship with my partner									
11	I feel very attached to our relationship—very strongly linked to my partner									
12	I want our relationship to last forever									
13	I am oriented toward the long-term future of my relationship (for example, I imagine being with my partner several years from now)									
14	I intend to stay in this relationship									

Beck Depression Inventory

For each of the following questions please choose the statement that best describes how you have felt within the last 30 days.

1.	a) I do not feel sad. b) I feel sad. c) I am sad all the time and I can't snap out of it. d) I am so sad and unhappy that I can't stand it.
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2.	<ul style="list-style-type: none"> a) I am not particularly discouraged about the future. b) I feel discouraged about the future. c) I feel I have nothing to look forward to. d) I feel the future is hopeless and that things cannot improve.
3.	<ul style="list-style-type: none"> a) I do not feel like a failure. b) I feel I have failed more than the average person. c) As I look back on my life, all I can see is a lot of failures. d) I feel I am a complete failure as a person.
4.	<ul style="list-style-type: none"> a) I get as much satisfaction out of things as I used to. b) I don't enjoy things the way I used to. c) I don't get real satisfaction out of anything anymore. d) I am dissatisfied or bored with everything.
5.	<ul style="list-style-type: none"> a) I don't feel particularly guilty b) I feel guilty a good part of the time. c) I feel quite guilty most of the time. d) I feel guilty all of the time.
6.	<ul style="list-style-type: none"> a) I don't feel I am being punished. b) I feel I may be punished. c) I expect to be punished. d) I feel I am being punished.
7.	<ul style="list-style-type: none"> a) I don't feel disappointed in myself. b) I am disappointed in myself. c) I am disgusted with myself. d) I hate myself.
8.	<ul style="list-style-type: none"> a) I don't feel I am any worse than anybody else. b) I am critical of myself for my weaknesses or mistakes. c) I blame myself all the time for my faults. d) I blame myself for everything bad that happens.

9.	<ul style="list-style-type: none"> a) I don't cry any more than usual. b) I cry more now than I used to. c) I cry all the time now. d) I used to be able to cry, but now I can't cry even though I want to.
10.	<ul style="list-style-type: none"> a) I am no more irritated by things than I ever was. b) I am slightly more irritated now than usual. c) I am quite annoyed or irritated a good deal of the time. d) I feel irritated all the time.
11.	<ul style="list-style-type: none"> a) I have not lost interest in other people. b) I am less interested in other people than I used to be. c) I have lost most of my interest in other people. d) I have lost all of my interest in other people.
12.	<ul style="list-style-type: none"> a) I make decisions about as well as I ever could. b) I put off making decisions more than I used to. c) I have greater difficulty in making decisions more than I used to. d) I can't make decisions at all anymore.
13.	<ul style="list-style-type: none"> a) I don't feel that I look any worse than I used to. b) I am worried that I am looking old or unattractive. c) I feel there are permanent changes in my appearance that make me look unattractive. d) I believe that I look ugly.
14.	<ul style="list-style-type: none"> a) I can work about as well as before. b) It takes an extra effort to get started at doing something. c) I have to push myself very hard to do anything. d) I can't do any work at all.
15.	<ul style="list-style-type: none"> a) I can sleep as well as usual. b) I don't sleep as well as I used to. c) I wake up 1-2 hours earlier than usual and find it hard to get back to sleep. d) I wake up several hours earlier than I used to and cannot get back to sleep.

16.	a) I don't get more tired than usual. b) I get tired more easily than I used to. c) I get tired from doing almost anything. d) I am too tired to do anything.
17.	a) My appetite is no worse than usual. b) My appetite is not as good as it used to be. c) My appetite is much worse now. d) I have no appetite at all anymore.
18.	a) I haven't lost much weight, if any, lately. b) I have lost more than five pounds. c) I have lost more than ten pounds. d) I have lost more than fifteen pounds.
19.	a) I am no more worried about my health than usual. b) I am worried about physical problems like aches, pains, upset stomach, or constipation. c) I am very worried about physical problems and it's hard to think of much else. d) I am so worried about my physical problems that I cannot think of anything else.
20.	a) I have not noticed any recent change in my interest in sex. b) I am less interested in sex than I used to be. c) I have almost no interest in sex. d) I have lost interest in sex completely.

Beck Anxiety Inventory

Please rate how much you have been bothered by each symptom over the past week.

		Not at all	Mildly	Moderately	Severely
1.	Numbness or tingling.				
2.	Feeling hot.				

3.	Wobbliness in legs.				
4.	Unable to relax.				
5.	Fear of the worst happening.				
6.	Dizzy or lightheaded.				
7.	Heart pounding or racing.				
8.	Unsteady.				
9.	Terrified.				
10.	Nervous.				
11.	Feelings of choking.				
12.	Hands trembling.				
13.	Shaky.				
14.	Fear of losing control.				
15.	Difficulty breathing.				
16.	Fear of dying.				
17.	Scared.				
18.	Indigestion or discomfort in abdomen.				
19.	Faint.				
20.	Face flushed.				

21.	Sweating (not due to heat).				
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