CYBERAGGRESSION IN THE WORKPLACE:

CONSTRUCT DEVELOPMENT, OPERATIONALIZATION, AND MEASUREMENT

By
Terrance Gordon Weatherbee

A Thesis Submitted to
Saint Mary's University, Halifax, Nova Scotia
In Partial Fulfillment of the Requirements for
The Degree of Doctor of Philosophy

December, 2007, Halifax, Nova Scotia

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7 December 2007

ABSTRACT

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CONSTRUCT DEVELOPMENT, OPERATIONALIZATION, AND MEASUREMENT

By Terrance Gordon Weatherbee

Previous research on aggression and violence in the workplace has focused on factors in an organizationally and physically bounded context. Over the last two decades, as organizations have adopted information and communication technologies to support work processes, a new form of workplace aggression has emerged – symbolic aggression using email.

Cyberaggression, defined as aggressive or hostile behaviours that are either perceived in received email communications, or enacted in sent email communications, is a recent and understudied form of symbolic aggression in organizations. While the enactment of this type of aggression presupposes access to organizational information and communications technologies the unique nature of the computer mediated context in cyberaggression differentiates the phenomenon, and subsequently the construct, from other workplace aggression constructs.

Cumulatively, this research (a) developed measures for both source and target cyberaggression, (b) investigated and confirmed the dimensionality of the cyberaggression construct, and (c) investigated the relationships between cyberaggression and individual and situational predictors, and individual level psychological, somatic health, and behavioural outcomes.

Using a mixed-methods approach three studies were conducted in series. The first study employed a phenomenological approach using a critical incident methodology in order to understand cyberaggression as a social process. The results identified a theoretical and empirical model and several potential measures of cyberaggression.

The second study utilized a survey methodology administered to a sample of individuals who used email at work to develop scales for measuring cyberaggression and investigating the dimensionality of the cyberaggression construct. Exploratory factor analysis suggested that cyberaggression is a multi-dimensional construct that consists of both perceived and enacted behaviours that are both source and target specific and that are empirically differentiable.

The third and final study, also using a survey methodology administered to a large sample of working individuals, was designed (a) to validate the measurement instruments, (b) to confirm the dimensionality and construct validity of cyberaggression, and (c) to identify and model several antecedent and consequent variables related to cyberaggression. The measures were consistent and reliable across two samples used within the study. Structural Equation Modeling using CFA and Latent Variable Path Analysis were used to develop and test a model of cyberaggression. While the resulting structural models exceeded the minimum thresholds for good model fit, there were mixed results in terms of the number of supported hypotheses.

7 December 2007

ACKNOWLEDGEMENTS

No [*person*] is an island.

John Donne, *Devotions Upon Emergent Occasions, Meditation XVII*

As the opening quotation implies, in life you are never really alone and the arduous journey to a doctorate is certainly never completed in isolation. To you who traveled with me for periods short or long, or who greeted, encouraged, or commended me from the sidelines as I passed by, my grateful thanks. For those of you who were respondents in my studies, subjected to my endless queries and questions, I would also like to extend thanks; for you should be accorded as much credit as anyone else.

To the members of my official committee, who provided guidance, assistance and advice at each and every stage, my sincerest gratitude. This project would not have happened without the tremendous contributions of Jean Helms Mills, Aaron Schat, and Lori Francis. To Loraleigh Keashly my thanks for agreeing to serve as my examiner and I do appreciate the time and travel you have committed to this project.

I must also acknowledge my unofficial committee members. To Kelly Dye, Margaret McKee, Ian Hutchinson, Scott MacMillan and Wendy Carroll, all who have shown tremendous patience with me and my musings (whether in mumble or in writing), as I proposed, conducted, analyzed, and wrote this dissertation, I truly, truly thank you. No one could ask for better friends and colleagues. I am blessed in this regard.

I always thought that the expression 'find something you love doing and never work another day in your life' was simply a cliché. To Albert Mills and Jean Helms

Mills, my especial thanks for your friendship, the collegial opportunities you have given me, and for showing me that sometimes clichés come true.

To my supervisor, Kevin Kelloway who assumed the varying roles of taskmaster, mentor and guide, editor and colleague, with each and every role executed brilliantly as and when required, (and who was never loquacious in any email – ever!) my sincere respect, appreciation and gratitude. A more exciting journey I could not imagine and thank you for showing me the way.

To my parents who placed me on this path by sending me to university in the first instance - my deepest love, my eternal gratitude, and thanks.

Finally, to my wife Marion who with my sons shared this journey closely with me, I know that words are not enough - a lifetime of love and deeds I offer instead. For, my sons Riley and Corwin, it's done – let's go play. :)

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INTRODUCTION

Over the last decade, the topic of workplace violence and aggression has become an important focal issue for organizational researchers. Whether variously conceptualized as counterproductive (Fox & Spector, 2005c), deviant (Robinson & Bennett, 1995), violent or aggressive behaviours (Schat & Kelloway, 2005) all of these behaviours have at least one characteristic in common – they usually result in some form of harm-doing, either psychological or physical, to organizational persons or material.

As distinguished from the broader concept of social violence (Felson & Tedeschi, 1993), the effects of workplace aggression are mediated or moderated by factors unique to the organizing principles found within a workplace. While our understanding of contributory factors related to workplace aggression is rapidly growing (see for example; R. A. Baron & Neuman, 1996; R. A. Baron & Richardson, 1994; Douglas & Martinko, 2001; Hershcovis et al., 2007); organizations are now experiencing an emergent phenomena, quintessentially modern in form, that are adding to the already complex and heterogenic domain of workplace aggression. Specifically, those behaviours associated with organizational Information and Communication Technologies (ICTs) where the unique characteristics of the technology permit new forms of harm-doing. These forms of aggressive, counterproductive, or deviant behaviours have been labeled *cyberdeviancy* (see Weatherbee & Kelloway, 2006). A specific set of behaviours found within the cyberdeviancy construct concerns the use of email for interpersonal harm-doing. This construct has been labeled *cyberaggression* (Weatherbee & Kelloway, 2006).

Pragmatically, the study of cyberaggression is timely. Although the scientific impetus for the study of workplace harm-doing was first a result of the occurrence of

extremely violent incidents that resulted in death or severe injury (Jockin, Arvey, & McGue, 2001), there is now growing recognition that even the more minor forms of harm-doing hold the potential for even greater levels of cognitive and psychological damage to persons (Kaukiainen et al., 2001). Non-violent or non-physical forms of aggression, such as incivility, or indeed cyberaggression, have not been a major focal point of study. Collectively, aggression researchers have only recently begun to mobilize and attend to the myriad forms of harm-doing in the workplace (see for example Robinson & Bennett, 1995).

Given the much heralded advantages of information systems in organizations, the increasing rates of its adoption, installation, and use, (Negroponte, 2000) and its very ubiquity in most organizational settings, it has become critical to understand cyberaggression as it has so far remained largely an unforeseen or second order effect (Sproull & Kiesler, 1994). The genesis of this research was a desire to understand how cyberaggression results in interpersonal harm-doing within an organizational context.

Situating Cyberaggression in Context

While the construct of cyberdeviancy is grounded within the counterproductive or deviancy frameworks, (Weatherbee & Kelloway, 2006) cyberaggression is conceptualized as ICT use that results in interpersonal harm-doing and is, more appropriately, considered a form of workplace aggression. Specifically, it is the use of organizational email in such a fashion that the behaviour is either enacted as aggression by an author of an email, or where an email is perceived as hostile or aggressive by a recipient.

Evidence suggests that not only is cyberaggression a rapidly growing feature of the modern workplace, but that cyberaggression may have serious negative outcomes for both individuals and organizations (Weatherbee & Kelloway, 2006). Although increasing attention is being paid to this phenomenon within the mass media (Villano, 2007), practitioner and trade journals (Zeidener, 2007) and most recently, the popular business press (see for example Shipley & Schwalbe, 2007), there is a near total lack of study to be found in the organizational literature.

The Cyberaggression Construct

Theoretical substantiation and conceptualization are critical precursors to effective construct development, operationalization, and measurement (Kaplan, 1964). Therefore, prior to any empirical work a delineation of construct characteristics, both similarities and differences, between cyberaggression and other related constructs is required. Just as it is methodologically important to distinguish empirically between violence and aggression (Schat & Kelloway, 2005) it is important to explicate the justification for treating cyberaggression as a construct in and of itself rather than as a form of behaviour that can be subsumed into other workplace aggression constructs.

Since cyberaggression is a context specific form of workplace aggression (Weatherbee & Kelloway, 2006), a form of behaviour only possible when using organizational email, the cyberaggression construct is heavily premised upon and articulated from both social and communicative perspectives. In the following sections the unique characteristics associated with cyberaggression will be used to differentiate cyberaggression from similar forms of behaviour, such as verbal aggression (Infante & Wigley, 1986) and its electronic counterpart *flaming,* (Reinig, Briggs, & Nunamker,

1998; Siegel, Dubrovsky, Kiesler, & McGuire, 1986), as well as from other organizational constructs, such as deviancy (Robinson & Bennett, 1995), workplace incivility (Andersson & Pearson, 1999) or abusive supervision (Zellars, Tepper, & Duffy, 2002).

Social and Communicative Dimensions of Cyberaggression

Although aggression research has been previously conceptualized within a social interactionist framework (See for example Felson & Tedeschi, 1993; Tedeschi & Felson, 1995) this perspective has been more often used within the broader study of societal victimology or criminological violence (Tedeschi & Felson, 1995) rather than within the more restrictive realm of organizational aggression (Neuman & Baron, 2005). This is perhaps somewhat surprising given that interpersonal relations and communication are both "structurally and socially critical" to organizations (Graumann, 1998, p. 46). Although a social interactionist perspective does inform the conceptual basis for bullying and mobbing (Keashly & Jagatic, 2003; Rayner & Keashly, 2005; Zapf, Knorz, & Kulla, 1996), workplace incivility (Andersson & Pearson, 1999), and to a certain extent, social undermining (Duffy, Ganster, & Pagon, 2002) it remains an underutilized theoretical perspective in the more general study of workplace aggression.

Given the functional marriage of personal, social, and task-related uses of ICTs in organizations (Weatherbee & Kelloway, 2006), the re-conceptualization of workplace aggression as a range of interpersonally oriented behaviours, whose enactment and perception are socially dependent, has several theoretical and methodological advantages. By shifting the focus of study away from isolated individual behaviours and emphasizing a focus on behaviours within the context of symbolic interactions between individuals

embedded within organizational environments, permits a more effective empirical

account of cyberaggression from both an actor and a target perspective.

Differentiating Cyberaggression from Similar Behaviours and Aggression Constructs

Verbal Argumentation and Verbal Aggression

Almost four decades ago Buss (1961) proposed that all aggression may be

classified using the dichotomous dimensions of physical-verbal, active-passive, and

direct-indirect behaviours. By combining these dimensions this classification method was

expanded to produce a typology of eight forms or types of workplace aggression (see R.

A. Baron & Neuman, 1996 for a detailed exposition). Within this expanded framework,

the *verbal-active-direct* type of behaviour is a form of symbolic aggression. Non-

physical, or symbolic aggression, has been a focus of research and study within the field

of communication studies for several decades (see Rancer & Avtgis, 2006 for a summary

of work in this area). Despite the wealth of theoretical development and empirical

results, organizational aggression scholars have drawn upon little of this body of work.

From a communications standpoint, email may be considered an analogue of verbal

behaviour (Weatherbee & Kelloway, 2006). As cyberaggression is a parallel form of

verbal or symbolic aggression the communications literature provides a significant

theoretical foundation for the development of the cyberaggression construct.

The two most applicable constructs within this domain are verbal argumentation

and verbal aggression (Rancer & Avtgis, 2006). Verbal argumentativeness occurs where

a communicant engages in an exchange where the focus of the exchange is disagreement

or conflict over topics, subjects, or issues (Infante & Rancer, 1982). Verbal aggression,

consists of communicative exchanges that employ language designed to attack the self

concept of a target person through verbal constructions such as swearing, degrading language or the attribution of socially or personally negative characteristics (Infante, Trebing, Shepherd, & Seeds, 1984; Infante & Wigley, 1986). Though both verbal aggression and verbal argumentation are linguistically similar in form, it is the focus of the communicative exchange that is the major defining characteristic that conceptually and empirically separates the two. In verbal argumentation the focus of the communication is an issue or position, whereas in verbal aggression the focus is shifted to one of the communicants.

Although cyberaggression is similar to face-to-face verbal aggression in gross form - the use of words in an aggressive or hostile fashion, cyberaggression may be differentiated from face-to-face verbal aggression as a function of the unique mediation and transformative effects of ICTs. While the form of an aggressive email may be similar in terms of language use, i.e., written text that mirrors the spoken words characteristic of an aggressive exchange, cyberaggression has contextual information which is different than that of face-to-face verbal aggression. Cyberaggression contains domain specific cues such as iconics (emoticons or text formatting such as all capitals, bolding etc.), contextual information such as the *From*: address, the *To* address, the *CC*: address(es), the *Subject*: line, the *date-time*-stamp, as well as information present as a function of any electronically attached files (documents, graphics, etc.). Therefore, unlike a face-to-face verbally aggressive exchange, the use of ICTs not only mediates the aggressive message by providing a different set of communicative cues to the target, but it also potentially transforms the context of the aggression itself.

Evidence of this can be observed within the ICT literature, specifically research that deals with a related form of verbally aggressive expression in computer-mediated-communications (CMCs); what has been termed 'flaming' behaviour. Flaming is an intentional behaviour defined as hostile or aggressive. While the term *flaming* originated within the early social context of online exchanges (O'Sullivan & Flanagan, 2003) these behaviours may also be enacted using email (Siegel, Dubrovsky, Kiesler, & McGuire, 1986), within group support systems (Alonzo & Aiken, 2002), or in within virtual learning environments (Valacich, Nunamker, & Vogel, 1994).

Flaming

A flame has been variously defined as an "electronic diatribe" (J. A. Barry, 1991, p. 243), or as a series of publicly conducted "vitriolic on-line exchanges" (Dery, 1994, p. 1), where 'flamers' "hurl insults with impunity" (Danet, Ruedenberg, & Rosenbaum-Tamari, 1997, p. 1). Flames are comprised of language that is derogatory and aimed at a specific other (Mabry, 1997). Despite these numerous definitions, the descriptor *flaming* is normatively used to refer to exchanges consisting of various forms of hostile or aggressive expressions (Kayany, 1998; Lea, O'Shea, Fung, & Spears, 1992; McGuire, Kiesler, & Siegel, 1987; O'Sullivan & Flanagan, 2003; Reinig, Briggs, & Nunamker, 1998; Siegel, Dubrovsky, Kiesler, & McGuire, 1986). Researchers generally consider flaming as intentional use of insulting, uncivil, obscene or profane language directed at a target whether an individual, group or organization (Aiken & Waller, 2000; Alonzo & Aiken, 2002; Reinig, Briggs, & Nunamker, 1998; Sproull & Kiesler, 1994).

Although some of the behaviours classed as flaming may be found in organizational email, cyberaggression can be differentiated from flaming along a number

of dimensions. First, cyberaggression is located within an organizational context. In this context interpersonal communications are normally mediated by a formal structure and by a pre-defined purpose (Jablin & Sussman, 1983). Flaming on the Internet may have no or little imposed structure or purpose beyond the self-interest of the individual. Second, unlike in Internet spaces cyberaggression is committed using organizational ICTs that do not permit anonymous communications, Organizational ICTs, at the very least, usually have some form of organizational or structural identifier; such as job titles, or names, used in email headers (Sproull & Kiesler, 1986). Third, and related to the first two, there is normatively either some form of a priori relationship between individuals who are communicating for organizational purposes (i.e., known others in the workplace), or an expectation of a relationship based upon structural roles (i.e., subordinate to supervisor or employee to customer exchanges). The relationship or relational expectations are based upon task and authority linkages that organizational ICTs are designed to support (Jablin & Krone, 1994; Keyton, 1999) and which set the context for the communications. The organizational role constraints placed upon communicative behaviours and the relational structure between individuals serve to distinguish cyberaggression from flaming.

Therefore, while cyberaggression is a form of *verbal-active-direct* aggressive behaviour, the characteristics associated with its technical basis make cyberaggression different from either face-to-face verbal aggression; and the structural and relational characteristics differentiate cyberaggression from Internet-based flaming behaviour. Thus verbal aggression and cyberaggression may be considered as two separate, yet

related, constructs within the verbal-active-direct aggressive behavioural classification.

Other Workplace Aggression Constructs

Within the general research space occupied by organizational counterproductive behaviours, deviancy, or other workplace aggression constructs (O'Leary-Kelly, Duffy, & Griffin, 2000) there exists a great deal of conceptual and empirical overlap. One of the main reasons for this overlap is that these constructs comprise many of the same or similar behaviours. For example, when committed by a supervisor, the act of attacking the self-concept of another person, such as by verbally denigrating the personal characteristics of an employee, could be classified simultaneously as any of counterproductive behaviour (Fox, Spector, & Miles, 2001), emotional abuse (Keashly, 1998), or tyrannical behaviour (B. E. Ashforth, 1994, 1997). Alternatively, if enacted by a work colleague it could also be considered an act of incivility (Andersson & Pearson, 1999) or if sufficiently vitriolic perhaps even an act of aggression (R. A. Baron & Neuman, 1996). This same type of behaviour when committed through email would define the behaviour as cyberaggression (Weatherbee & Kelloway, 2006).

Due to the similarity of behaviours within and across these constructs, other contextual or definitional characteristics must be used to distinguish amongst them. Differentiation may be made on the grounds of the focal perspective of the behaviour - whether an actor or target is the subject of the explanatory research (Fox & Spector, 2005c). Another differentiating characteristic is the type of target the behaviour is focused upon- whether an individual, group, or organization (Robinson & Bennett, 1995), or by bystander effects (McCann & Pearlman, 1990). Additionally, the severity of the outcome(s) associated with the behaviour, such as rudeness and incivility versus

aggression or violence (Andersson & Pearson, 1999; R. A. Baron & Neuman, 1996) may also be a defining difference. Whether the intent and motivation that lay behind the behaviour(s) is accounted for, as in revenge versus retaliation (Aquino, Tripp, & Bies, 2001; Folger & Skarlicki, 2005). Or even the form, type and patterns of the behaviours in general - whether onetime only, repeated, or with some level of persistence (Keashly, 1998) may be differentiators.

Even though an isolated act of cyberaggression may be subsumed into several of these constructs in behavioural terms, there are other characteristics of cyberaggression that have no counterparts or parallels. For example, revenge motivated aggression is a form of interpersonal aggression where one person is motivated to inflict harm upon another person who has been judged to be responsible for some initial wrongdoing or perceived workplace injustice (Bies, Tripp, & Kramer, 1997). The action of taking revenge is an intentional and reflective response that is perpetrated upon the perceived harm doer (Aquino, Tripp, & Bies, 2001; Bies & Tripp, 2005). An individual may choose to use email as an instrument for taking revenge, by releasing evidence of mistreatment by a supervisor to other employees in the organization (Rosman, 2002), perhaps seeking to embarrass or damage their supervisor's reputation. Though it is possible that individuals may engage in a vengeful act using email as a tool, not all acts of cyberaggression would fit neatly within the definitional bounds of this construct.

Organizational retaliatory behaviours (ORBs) are those actions taken in response to perceived unfairness in the workplace. These acts are normally directed at the organization, rather than individuals, or if directed at individuals they are directed at target members that serve as a proxy of the organization (Skarlicki & Folger, 1997).

While ORBs and revenge may both be *responses* to perceived unfairness or injustice in the workplace, depending on the behaviour observed, the differences may be more conceptual than empirical. The previous example of seeking revenge is a case in point. While the act of revenge may be directed at one individual, the supervisor, the outcomes of the act may also fit within the definition of another construct. In the case above the release of information concerning a supervisor could be an act of retaliation against the employing organization and simultaneously be considered a form of revenge. The outcomes of these acts may be directed at both the individual, group, and organizational levels *simultaneously* – and consequently not accounted for within these constructs.

This form of conceptual and empirical complexity also exists in the relationship between cyberdeviancy, cyberaggression and these other constructs. Cyberdeviancy is a broader concept that delineates the use of ICTs in a negative, non-normative or deviant manner, only one of which is to bring harm to an organization (Weatherbee & Kelloway, 2006). Thus a cyberdeviant act, such as when spreading a dangerous virus throughout an organization's ICT, could meet the definitional criteria within the ORB construct. Cyberaggression, on the other hand, is an act of interpersonal aggression and is considered a particular sub-type of cyberdeviancy. Therefore, a single act of cyberaggression could variously meet a definitional criterion for revenge, ORB, aggression, or other constructs such as incivility, abuse, tyranny, or violence. A form of co-occurrence that is a conceptual and empirical confound in the study of aggression (Glomb, 2002). However, for cyberaggression this type of confound operates only at the behavioural level where single acts may be empirically, or through definition, considered the same. If the analytic focus is shifted to contextual and process variables and their

characteristics and outcomes, cyberaggression becomes distinguishable from these other constructs.

Unique Characteristics of Cyberaggression

Conceptual distinction of cyberaggression is supported by several characteristics that arise as a *function* of the technological features and capabilities of ICTs and second, by how these technologies *mediate* interactions between organizational persons. These characteristics include (a) the lack of a requirement for simultaneous co-presence when interacting, (b) the mediating effects of the technology upon the process of communication and the symbolic forms of aggression contained within them, (c) the moderating effects of both communicative reach (e.g., the ability to mass distribute the email) and the potential for cognitive rumination as a function of the asynchronous nature of the process and the time between receipt and response, (d) the potential for simultaneity across focal target types through multiple addressing, and (e) the potential for mixed-mode outcomes at individual, group, organizational and extra-organizational levels (see, for example, primary, secondary and tertiary outcomes of cyberdeviancy in Weatherbee & Kelloway, 2006).

Lack of Co-presence. In cyberaggression, unlike face-to-face verbal aggression, there is no requirement for co-presence of the actor and target for the exchange or interaction to take place. This implies that a greater range of contextual variables will be of influence. For example, receipt of an aggressive email at work versus at home or when away from the organizational setting. This difference potentially introduces unique and confounding factors. The distal and temporal nature of the technology permits the effects of behavioural impacts to be felt beyond the physical and time constraints of the

worksite. Thus, the processes of communication may be elongated in time due to the lack of immediate grounding and feedback between receipt and response. This opens the communicative process to a range of factors or influences such as increased ambiguity of message interpretation, an increased opportunity for reflection or rumination over the message, and a greater separation of response from initiating conditions.

Mediating Effects. The technical capabilities that change the communicative processes between actor and target may also have a transformative effect as 'speaking' can itself be an act apart from what is being said (Graumann, 1998). First, the range of communication cues is different. Email has fewer cues than in face-to-face communications as non-verbal behaviours such as body language are absent. These non-verbal cues are needed for grounding of communicative context and when missing increase the potential for misunderstanding and misinterpretation (Clark & Brennan, 1991). Second, the nature of the medium allows for either immediate or delayed response as feedback cycles are temporally shifted as synchronicity is disrupted by the medium. This disrupts the linearity of feedback found in face-to-face communications and again increases the potential for perceptual ambiguity or misinterpretation.

Moderating Effects. Unlike face-to-face verbal aggression which is a synchronous event, cyberaggression in email is asynchronous. This allows targets an increased opportunity for rumination between receipt and response. This affords increased time to engage in cognition or affect concerning the event. Rumination is likely to increase the intensity and duration of any anger and negative affect as elicited by the event (Rusting & Nolen-Hoeksema, 1998). Additionally, should the actor choose to move beyond a dyadic exchange when using the ICT to include multiple others, it is

expected that this form of aggression will be perceptually differentiated by a target recipient. If the recipient perceives hostility or aggression in the email, then not only does the target perceive an attack but that attack is now being made 'publicly' if the email is distributed to others via carbon copy: in effect analogous to the combining of several forms of aggression, such as verbal aggression, social undermining, and gossip (Duffy, Ganster, & Pagon, 2002) into one act with potentially exacerbating effects.

Simultaneity of Focal Target Domain(s) and Mixed-Mode Outcomes. One of the distinguishing dimensions of other negative workplace constructs is the type of focal target involved, such as the differences found between revenge and ORBs with individual versus organizational level targets. Cyberaggression permits multi-level targeting directly or indirectly. This can occur when technical reach and multiple addressability is used. For example, when an aggressive message is copied to other organizational members, or even to the public, it may have a negative impact directly upon the target who receives the email, an indirect or vicarious impact upon others who receive a copy, and ultimately may have an adverse effect upon the organization as a whole (Weatherbee & Kelloway, 2006).

Similarity of Cyberaggression with Other Negative Workplace Constructs

While negative, anti-normative, deviant or workplace aggression constructs differ along several dimensions, such as target versus actor focus, severity of outcomes, etc., and they vary in the forms of behaviour that are incorporated within them, there still remains conceptual and empirical overlap. In this regard, these constructs may be situated along a dimensionality where the behaviours associated with the construct range from physical through to purely symbolic acts (See Figure 1).
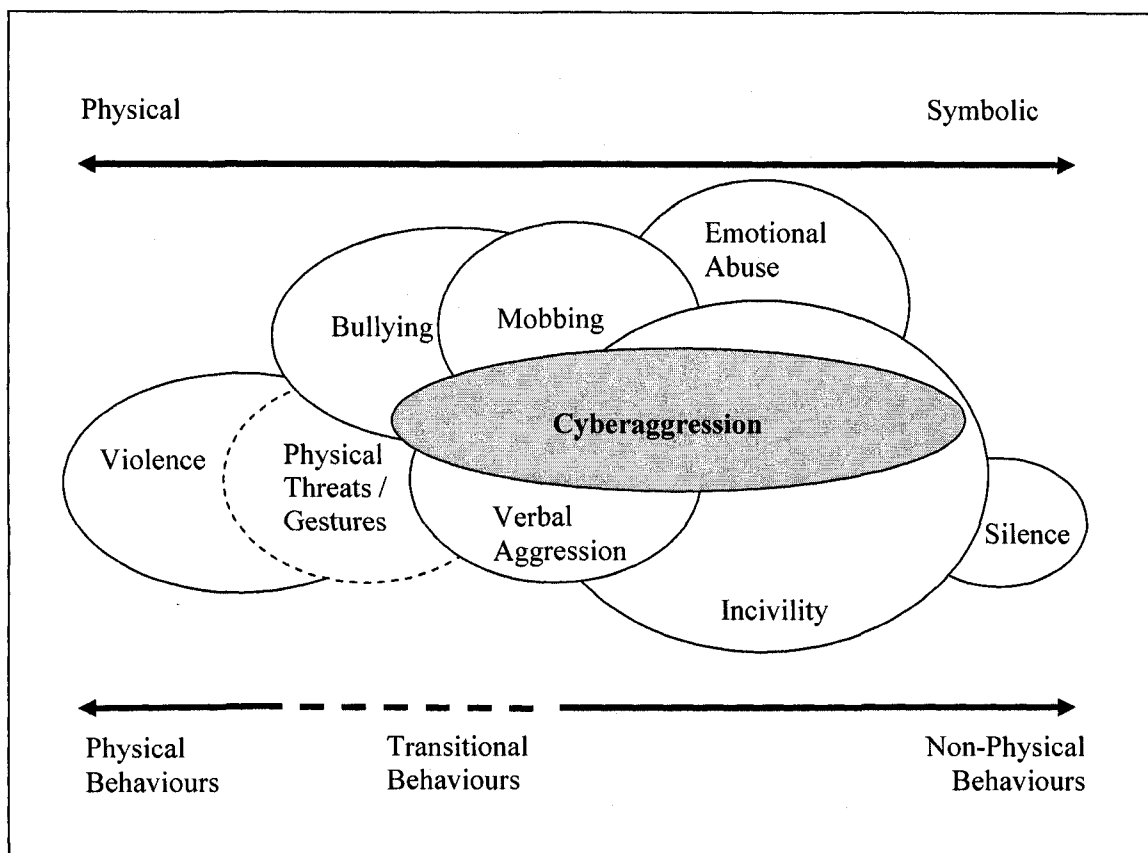
Figure 1. *Cyberaggression Construct Domain*

At the purely physical anchor are located the most violent of behaviours; such as

homicide or physical assaults resulting in injury. At the symbolic anchor are located the

purely symbolic actions; such as silence - where an individual is ignored, ostracized, or

where communications that are required or expected receive no response. From a

behavioural perspective cyberaggression overlaps several of these more 'socially based'

and behaviourally symbolic constructs. These include incivility, face-to-face verbal

aggression, emotional abuse, and bullying and mobbing. This overlap is representative of

those singular behaviours found within these other constructs that may be enacted

through the use of email. However, while individual acts may be the same, when taken as a whole, the mediating and moderating effects of the technology, and the increased potentials found within the domain of effect of the use of technology for aggression in this way, indicate that cyberaggression is justifiably a separate and unique workplace aggression construct. The similarity and dissimilarity of cyberaggression with these other non-violent or socially based constructs is discussed in the following sections.

Incivility. The behaviors included within this construct are primarily symbolic or communicative in form. Incivility is a form of deviant behaviour that violates organizational norms of respect for persons. It is interpersonal in nature, usually of a relatively low-intensity, and it occurs in the workplace with an ambiguous intent for harm (Andersson & Pearson, 1999; Pearson, Andersson, & Porath, 2005; Pearson, Andersson, & Wegner, 2001).

Though Pearson et al. (2005) specifically use 'flaming' or the sending of a 'nasty email' as a behavioural example of incivility, their conceptualization is of an email that is rude rather than one that is openly aggressive, for example where an email is used to directly and openly attack the character or competency of a target individual. Within the incivility construct intent to inflict harm is ambiguous, in that harm may be a byproduct of being rude or uncivil to another but it is not the primary intent or focus of the behaviour itself. Within cyberaggression, the behaviour is instrumental or goal-driven, prompted by the experience of cognition or affect, where the sending of an aggressive email is intentional; or it may be solely perceptual, in so far as aggression or aggressive intent is a function of the perception of the focal target of an email.

Emotional Abuse. Emotional Abuse is conceptualized as intentional harm doing, excluding physical harm, involving symbolic aggression where self-concepts or identity are the target of the hostility (Keashly, 1998; Keashly & Harvey, 2005). The behaviours are usually focused upon one individual by another; they occur repeatedly over an extended period of time, and consist of a mix or pattern of verbal and non-verbal behaviours. Emotional abuse is normally intentional and is usually based upon an inequitable distribution of power or authority as they relate to the organizational structure, i.e., supervisor behaviours directed at a subordinate. Within this construct the primary focus is the target's subjective experience of these hostile social interactions. Even though cyberaggression may be a method for engaging in or perpetuating emotional abuse against an individual there are other additional non-verbal mechanisms incorporated into emotional abuse that have no parallel in cyberaggression. Additionally, cyberaggression may be perpetrated by a subordinate upon a supervisor, a type of behaviour which is excluded from the domain of emotional abuse.

Bullying. Bullying is a construct comprised of persistent and negative interpersonal behaviour normally perpetrated by one individual against one or more other persons (Rayner & Keashly, 2005), with varying behaviours ranging from infrequent physical aggression to minor forms of uncivil behaviour. Similar to emotional abuse and incivility, it comprises symbolic communications of both verbal and non-verbal hostility. A strong definitional component is the a priori relationship between the actor and the target or an evolving relational dynamic as the behavior unfolds over time. Bullying may involve incidents of cyberaggression, but there are additional behaviours and relational contexts incorporated within cyberaggression not included in bullying. Within

cyberaggression the capabilities of reach and addressability mean that there is no requirement for any developed a priori relationship, it may be a structural expectation only, and there is no physical aggression equivalent.

Mobbing. Mobbing is goal directed behaviour designed to bring harm against another by one or more individuals including superiors or co-workers. It is persistent and systematic behaviour that takes place over extended periods of time (Zapf & Einarsen, 2005; Zapf, Knorz, & Kulla, 1996). It is usually intended to force individuals out of a work setting by making it an intolerable environment for the target person. It is comprised mainly of socially offensive, harassing behaviours designed to interfere with an individual's successful task completion or work accomplishments. While cyberaggression is an interpersonal construct, where the actor is an individual and not a group, it is possible to posit a circumstance where multiple individuals engage in cyberaggression and where the aggregate effect may be incorporated within this behavioural domain. However, similar to differences between emotional abuse, bullying, and cyberaggression, there are differences not accounted for within the mobbing construct domain.

A Process Model of Cyberaggression

In the preceding review, the theoretical and behavioural similarities and differences that exist between cyberaggression and other related workplace aggression constructs demonstrate that while individual cyberaggression behaviours may be potentially subsumed into several other constructs, when taken *in toto,* cyberaggression represents a specific and different construct domain.

Given the unique nature of cyberaggression as a construct composed of technically mediated behaviours it is also important to understand the potential changes or influences that the technical capability of organizational ICTs may have upon the symbolic behaviours of an actor or target. These effects are discussed individually in the following sections.

Changes to Social Context of Processes of Communications. When organizations deploy and employ ICTs for purposes of communications, new social systems are created and superimposed over existing ones (Carpenter, 1983). These new arenas of social interaction (Cheseboro & Bonsall, 1989) have different characteristics and potentials than conventional face-to-face interactions or exchanges. Consequently, ICT-based organizational communications may shift or change the ongoing social processes of interaction in unique ways. Therefore, to effectively capture the variables of influence, conceptual focus should account for *processes* of communication rather than be solely directed towards either a *discrete* or *static* focal event(s) of communication. This implies that the incorporation of the context of communication processes is necessary, i.e., the form and type of ICT in use to account for ICT effects, as well as the organizational communicative context, whether it is relational or instrumental for example.

Within the general body of the communications literature, communicative context is a multi-dimensional construct that is normatively associated with those situational factors that guide or influence communicant interactions. Context has been conceptualized as the social setting where interpersonal communication takes place, the relationship that exists or develops between communicants, or the role held by

communicants, whether that role definition is family, work or institutionally based (Knapp, Miller, & Fudge, 1994).

Within organizational contexts, due to the complex nature of organizational settings, communicative conflicts between members are inevitable (Jablin & Sussman, 1983). These workplace conflicts may be categorized as interpersonal, task-related (Priem & Price, 1991) or process-related (Jehn, 1997). Interpersonal conflict is normally personality or emotionally based conflict that is usually unrelated to organizational performance or task accomplishment (Wall & Nolan, 1986). Task conflict is the result of arguments or disagreement over the task, or the manner in which the task is to be performed. Lastly, process-related conflict, conflict that arises as a function of the management or coordination of tasks and resources usually arises in circumstances where interdependencies between organizational members are high (Jehn, 1997). While interpersonal and organizational based conflicts may thus be differentiated, organizational communication is inherently a social process where these two forms of conflict may co-occur. This suggests that similar to some other forms of workplace aggression that both individual personality characteristics and contextual social characteristics affect organizational communications and ICT use, and hence cyberaggression.

Mediation of Symbolic Exchanges. ICTs by their very nature, mediate the form and types of communications that are possible in domain specific ways - those changes to communicative capability enabled by the technology. ICTs have the technical capability to facilitate, amplify, or augment conventional communications and communication effects, or outcomes, within organizations (Weatherbee & Kelloway, 2006). Depending

on the specifics of their use ICTs may; (a) simply *facilitate* communications by reducing

or removing barriers to dyadic exchange (no co-presence required); (b) they may *amplify*

communications by permitting exchanges beyond the dyadic level, such as within or

between groups, through specific technical capabilities (multiple addressing); and finally

(c) they may *augment* communications by permitting forms and types of exchanges that

could not happen under conventional circumstances (multiple addressability plus use of

blind carbon copy, plus target addressability beyond organizational barriers or

boundaries). Consequently, the actor/ target and the related domain of the effects and

outcomes of cyberaggression may be an individual within a dyad, a team or group, the

organization as a whole, the broader public, or any combination thereof.

As the potential domain of interaction is significantly different from equivalent

conventional forms of symbolic aggression there is greater situational range of outcome

effects. Hence, in cyberaggression there is potential for a greater variation of outcomes

beyond primary outcomes between two communicants. Two conclusions may be drawn

from these observations. First, cyberaggression is highly contextual and social in nature

and will likely be simultaneously influenced by variables at the individual, dyad, and

group or organizational levels. Second, given the process-based and reciprocal nature of

communications in organizations, initial empirical work necessitates investigation into

both actor and target perspectives.

Actor/Target Perception and Appraisal. As individuals engage in event appraisal

(Lazarus & Folkman, 1984), they assign various social meanings (Tedeschi & Felson,

1995) to the event based upon their perceptions of contextual and individual level factors.

As these meanings may be assigned differentially across persons, individual reactions or

responses also may vary (Barling, 1998; Folkman & Lazarus, 1985). Empirical support for the differentiation of meaning assigned to the same event has been observed in third party judgments of acts of revenge in organizational settings (Aquino, Tripp, & Bies, 2001; Tripp, Bies, & Aquino, 2002). Thus, perceptions of both actor and target individuals, and appraisals by target individuals will likely play major roles within cyberaggression and any nomological network within which it is embedded.

A review of the counterproductive, deviant, or workplace aggression literature demonstrates a surprisingly broad array of behaviours associated with responsive acts of aggression. Therefore, a social-interactionist perspective permits greater opportunity to capture the affective and cognitive elements underlying individual appraisal of event(s) and any subsequent intent or motivation to respond. This can be achieved by focusing empirical effort on identifying the salient factors at the individual level, initially by using a qualitative method for accessing these data.

As noted by Fox and Spector (2005a), qualitative access to the appraisal processes is highly utilitarian as theoretical or empirical insight into the factors influencing motivation and intent may then be associated with action or response by a target individual. This approach also permits differentiation between intent and motive as casual factors of aggressive behaviour engaged in by actors. An aggressor, or actor, engages in aggressive behaviours in pursuit of both proximate and distal or terminal outcomes and goals with the actor's intent being their cognitive focus upon the goal(s), and where their motivation is the associated rationale for the pursuit of the goal(s) (Tedeschi & Felson, 1995). This approach is also more parsimonious as it collapses the problematic distinction between reactive versus instrumental aggression (Bushman &

Anderson, 2001) and more directly parses out the actor's intent, motivation, cognition, and affect. Incorporating goal directed behaviour within a process model of cyberaggression will also serve to address a significant theoretical and empirical gap in the broader literature on counterproductive or aggressive workplace behaviours concerning intent (Fox & Spector, 2005b; Tedeschi & Felson, 1995).

Actor/Target Action and Response. There are several alternative responses to aggression that are available to an individual who experiences a negative event. These responses include non-response, a retributive response, or responses intended to escape or de-escalate the pattern of exchanges (See Tedeschi & Felson, 1995 for a detailed presentation). These choices are available at either the first, or any subsequent, experience of a negative event and are a function of an individual's process of appraisal. Understanding the appraisal process should therefore permit identification of individual, situational and contextual variables related to subsequent response choice.

Social interaction is an exchange based process where individuals take turns. Within the context of symbolic aggression this implies that any given interaction may consist of a series of exchanges where any one individual may take dual roles. That is, an individual in one exchange may be the 'target' of the aggression and in a subsequent exchange may be an 'actor' committing aggression. This is the pattern of behaviour(s) observed when symbolic aggression between individuals escalates reciprocally (Felson, 1982) as observed within an incivility or conflict spiral (Andersson & Pearson, 1999). Though not a direct measure of the factors or variables initiating aggression for any given exchange, understanding of the appraisal and reaction process itself, and determination of

the factors that influence switching from target to actor perspective should identify a set of variables that are likely to be operant in cyberaggression.

Social Nature of Actor / Target Relations. A social interactionist perspective may also serve as a conceptual bridge between those theories that focus on dyadic interaction, as in an uncivil exchange (Andersson & Pearson, 1999) or employee emotional abuse (Keashly, 1998), and those that focus on collective social interactions such as bullying (Keashly & Jagatic, 2003) or mobbing (Zapf & Einarsen, 2005). This is particularly germane to this research because while cyberaggression is conceptualized theoretically as a distinct form of aggression in the workplace, it is possible for an act within other aggression, deviant or counterproductive constructs to be focused at either dyadic or group levels and carried through a variety of media including email.

Summary

The regulation of communicative exchange between individuals is accomplished through both verbal and non-verbal cues and "daily discourse is replete with incongruent, ambiguous, and incomplete messages" (Knapp, Miller, & Fudge, 1994, p. 15). The absence of the fullest range of interpersonal cues, grounding and feedback means that any email communicative exchange is therefore extremely context dependent and hence, open to multiple interpretations (Kiesler, Siegel, & McGuire, 1984; Kiesler & Sproull, 1992).

As aggression is "intrinsically a social affair" (Graumann, 1998, p. 40) this necessitates a careful consideration of communication for social purposes (Andersson & Pearson, 1999) within organizations. As communication is irretrievably intertwined with context, whether the context is focused on either work or social relations (Knapp, Miller, & Fudge, 1994), investigation of cyberaggression must be sensitive to changes in the

context. In many ways, the context *is* the communication that takes place within organizations. This can be seen in the formation and maintenance of interpersonal relationships and the social interactions between organizational members needed for task accomplishment; all of which are crucial for effective organizational functioning (R. A. Baron, 1996).

Although the importance of having positive social interaction and interpersonal relationships is growing within the organizational literature, the effects of negative social interactions and relations has not yet received the attention its importance would indicate (Duffy, Ganster, & Pagon, 2002) given the potential for adverse outcomes for careers, social relations with coworkers, and job satisfaction (Jablin & Krone, 1994). As exposure to perceived negative events such as aggression or hostility act as a trigger that commences a process of perception, appraisal, and interpretation in individuals, cyberaggression as a construct should be broad enough to account for a variety of organizational and sub-organizational social contexts. However, empirical study necessitates sufficient specification in order to identify a range of variables or sets of variables of influence within any specific context (Green, Wilson, & Lindy, 1985).

In the preceding sections, cyberaggression has been delineated as a workplace aggression construct that is distinct and separate from several other constructs. Cyberaggression, as a set of behavioural phenomena and as a theoretical construct has been situated conceptually within the broader domain of workplace aggression. On this basis, and building upon the initial work of Weatherbee and Kelloway (2006) in this area, a tentative model of cyberaggression is presented in Figure 2. This model will form the

theoretical and conceptual basis for the empirical study of cyberaggression within

organizational settings.
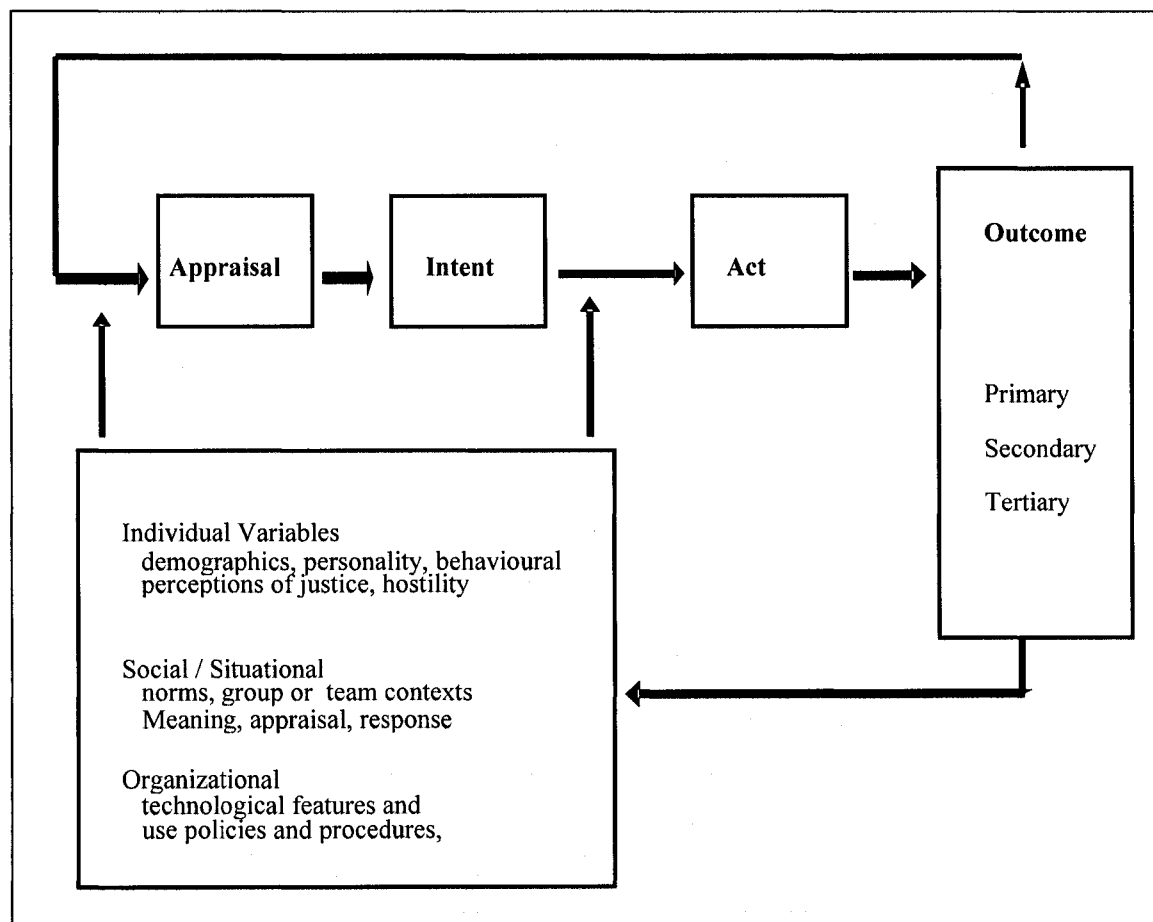
Figure 2. *Process Model of Cyberaggression* adapted from (Weatherbee & Kelloway, 2006).

STUDY 1

Cyberaggression as a Negative Critical Incident

Purpose

Although primarily exploratory in nature, this first study was designed to investigate the construct and proposed model of cyberaggression. The specific purpose of the study was (a) to identify the communicative and perceptual cues used by individuals to appraise the receipt of an email communication as hostile or aggressive, (b) to identify potential antecedent individual and situational variables that influence an individual's appraisal process(es), (c) to identify the potential affective and cognitive outcomes, and (d) to identify any potential behavioural outcomes. Finally, the methodological approach used within the study was also designed to facilitate the modeling of cyberaggression from an experiential and temporal perspective.

Method

Theoretically (Lazarus & Folkman, 1984; Taylor, 1991) and empirically (Weatherbee & Kelloway, 2006) it is justifiable to define the experience of cyberaggression as a negative and potentially harmful event. In order to validate the cyberaggression construct, and to distinguish empirically between related or confounding constructs, data gathering was focused specifically on the appraisal process(es) used by individuals during incidents of cyberaggression (C. A. Anderson & Huesmann, 2003; Andersson & Pearson, 1999).

Therefore, in order to understand the experience of individuals involved in cyberaggression, intimate access to individual perceptions was needed in order to develop a model of the process(es) of cyberaggression, select measures of behaviour(s) and

outcomes associated with these processes, and for establishing a reasonable degree of ecological validity. This required access to the experienced affect and cognition of individuals involved in cyberaggression with a view to how these are related to subsequent behaviours. As detailed understanding of the experiential and perceptual nature of individuals would have been difficult to capture using solely quantitative methods (Burns, Williams, & Maxham, 2000), the Critical Incident Method (CIM) (Flanagan, 1954) used in combination with the Long Interview (McCracken, 1988) was chosen as when used in combination they provide complementary advantages.

First, given the subjective nature of the phenomenon, the experiential focus of the long interview (Feldman, 2004) with the event/process focus of CIM (Flanagan, 1954) permits a broader capture of the perceptual experience(s) of individuals involved in cyberaggression. Second, the complementary nature of the data gathered using this combined method encourages a higher level of self-disclosure in respondents (Derlega & Grzelak, 1979) concerning their cognitive and affective states. Third, an additional benefit associated with the process orientation of CIM, is that the data collected permitted the 'mapping' of the cyberaggression in affective, cognitive, and behavioural terms by situating cyberaggression temporally. The result was a process model of cyberaggression anchored upon the collective experience(s) of respondents engaged in activities of receiving, interpreting, appraising, and responding to what is perceived to be a negative email.

Finally, this approach avoids the trap of losing the salience of the unique or distinct features of cyberaggression, i. e., the individual level detail found within a

specific incident of aggression, that would normally be masked if a quantitative or aggregate quantitative approach was used (see Glomb, 2002).

Respondents

Participants for this study were selected through a process of discriminate sampling (Strauss & Corbin, 1998) using a set of purposive criteria (Silverman, 2000). Inclusion in this study sample was based upon the following; (a) respondents had recently (within the past year) been the focal target of an aggressive email at work; (b) if respondents themselves were not a focal target, they were witness to an incident of cyberaggression involving another individual at their place of work vicariously through a technical feature such as 'carbon copy' or through face-to-face discussion with the focal target, and finally, (c) respondents meeting either of the criteria above who perceived themselves to be negatively or adversely affected by these event(s).

Snowball sampling commenced with three respondents who were known to the researcher. These respondents were recruited, one on a university campus and two from two work sites in the private sector, into the study by personal invitation. Subsequently, they were asked to act as references for other respondents. They provided the names of additional individuals who were likely to have met the sampling criteria and who were located at other separate work sites. In total, sixteen respondents met the sampling criteria. In addition to the selection criteria, the interview schedule was also used to discriminate between individuals within the initial sample population. The ordering of respondents for interviews was designed so as to ensure that initial respondents represented as wide a range of occupation and job-tenure as possible.

The interviewing of respondents was continued until theoretical saturation (Glaser, 1978) was assessed as having been reached. This point was initially assessed as having been achieved in the seventh interview and was subsequently confirmed by the ninth interview. The remaining seven respondents that had been identified in the sample were not interviewed. During these final interviews three signaling criteria were observed to conclude saturation had been reached. First, general patterns in the respondent statements concerning the process through which cyberaggression events unfolded became observable. Second, across the respondents there was convergence of interpretations (McCracken, 1988) concerning their cognitive and affective states and their subsequent actions. Finally, additional respondents ceased to provide any new or unusual data.

The final sample demographics included four women and five men, comprising an age range of 28 through 65 years of age, representing a varied selection of employees of both profit/not-for profit occupations. The occupations and professions included three university academics (two senior, one junior), a software engineer with a Fortune 500 firm (15 years tenure), a mechanical engineer employed as a senior manager in the aviation industry (20 years tenure), a senior HR manager in the health services sector (2 years tenure), a middle-management administrator (nine years tenure), and a senior manager/consultant (35 years tenure) who worked for the largest business communication service provider in the world.

The interviews were conducted in accordance with an interview protocol and were normally conducted with the respondents at a site of their choosing. Two of the interviews had to be re-scheduled due to time conflicts between researcher and

respondent work activities. These two interviews were subsequently conducted by telephone. All the interviews were recorded using a digital voice recorder supplemented with extensive hand-written field notes. The total data generated from the interviews included 218 minutes of recordings, 52 pages of field notes, and 108 pages of transcripts. The data gathered represented respondent perceptions concerning approximately thirty-one separate incidents of cyberaggression. All of the events occurred within the past year having taken place across nine different work settings located in four different countries.

Measures and Data Analysis

A phenomenological frame, generated from the perspective of the respondents themselves (Patton, 1990), was chosen for the initial analysis of respondent experiences and interpretations of cyberaggression (see Interview Protocol at Appendix A). This approach not only more accurately captures a respondent's worldview (Schutz, 1970) but it also permits greater access to the affective and cognitive appraisals of the event(s), and the related respondent logics generated by these experiences. Though the data gathered were retrospective in nature, respondent bias for reporting stereotypical or socially received opinions was minimized by having the respondent focus upon specific negative email event(s) within the recent past (deMarrais, 2004). Data validity was further reinforced as evidence suggests that when individuals believe that they have been wronged or harmed in some way, as in the experience of being a focal target of aggression, then individuals are more willing to disclose information considered highly personal in nature (Folger & Skarlicki, 2005) such as their emotional state, their thought processes, or their subsequent reactions. Personal disclosure by respondents was quite

apparent as evidenced by the highly personal and extremely detailed descriptions of their experiences, thoughts, and feelings.

Procedure

In order to formulate a theoretical model capable of explanation (Strauss & Corbin, 1998) the transcriptions of the interviews were subjected to a four stage analytic procedure. This process was designed to generate a model of cyberaggression that accounted for the observations drawn from the data and that could be used as the basis for later hypothesis testing and quantitative analysis.

Seeking Understanding. In the first stage of the analysis effort was focused on gaining an in-depth understanding of the overall experiences of the respondents concerning negative events involving email. This was done following the interview analytics as recommended by McCracken (1988). First, the transcripts were read and iteratively annotated with observations concerning respondent expressed affect, cognition, behavioural timing and sequencing. This method of inspection and labeling was designed to identify potential analytic categories, themes, or patterns that were shared between and across respondents (Holsti, 1969). Respondent dialogue was first parsed into statements that contained relatively irreducible elements such as an action, an expressed emotion, or explained cognition. Other elements, deemed important by the respondents, were also captured in this fashion. This included information concerning situational context, a respondent assessment or opinion, a belief such as suspected motivation or justification, or their perceived causal linkages. Each element was assigned an individual descriptive label such as *anger, accusation, immediacy, blame,* or *motivation.*

Clusters and Categories. In the second analytic stage, the labeled elements were organized using the constant-comparative method (Glaser & Strauss, 1967; Silverman, 2000) to identify clusters of like perceptions, interpretations, understandings, reactions and actions, within the context of the respondent statements. The labeled elements were grouped into clusters such as *Cues* (containing labeled statements such as all capitals, punctuation, swearing, etc.), *Context* (containing labeled statements such as email policy, interdependency, etc.), or *Relationship* (peer, subordinate, supervisor, history, etc.). This process was repeated where linkages or relationships that existed between clusters were identified, or where clusters themselves could also be grouped on a cognitive, affective, or behavioural basis. Groups of clusters were then organized into *categories* such as *Reaction* (clusters concerning affective, cognitive and behavioural reaction to the event) or *Action* (those actions taken by respondents in response to the experience of receiving a negative email).

Though there is some overlap across clusters and categories, this is not viewed as problematic for two reasons. First, while the process of analysis itself is necessarily linear and sequential, the process *under* analysis is not. Specifically, while respondents would generally describe their experience in linear terms, the experiences they described were not necessarily linear. These experiences included instances of simultaneity or cognitive and affective linkages that were recursive in nature. Second, the process of analysis is also essentially a process of translation - where individual respondent descriptors and language is aggregated into a common set of researcher based descriptors and language. Consequently, some overlap was to be expected.

Process Modeling. During this stage the clusters and categories were re-organized in terms of temporal sequencing in how the event unfolded, which of the identified elements/categories came first, second, third, and how they were inter-related etc. The results of this analysis produced; an empirical description of cyberaggression as a process, identified several potential variables and outcomes, and established tentative linkages and relationships amongst these variables and outcomes.

To complete this stage of analysis, the outline process was presented to three respondents in order to solicit their observations and comments concerning the categorization schema, the taxonomic clusters, and the process depiction. All three respondents endorsed the results with no amendments required. Descriptively, the cyberaggression process was labeled the CCARA process, an acronym for Context, Cues, Appraisal, Reaction, Action, and depicted as a 'path' model that incorporates the event descriptions as identified by the respondents.

CIARAA Model. In the final stage, the CCARA process was reviewed and adjusted to incorporate the theoretical basis of the general model of cyberaggression (Weatherbee & Kelloway, 2006), and both theoretical and empirical results as drawn from other relevant literatures: either those literatures that had been previously identified during the general review (see Weatherbee & Kelloway, 2006 for a detailed review) or that had been identified as pertinent during the process of data analysis (organizational revenge, retaliation, incivility, self-concept, image-management, etc.). The originally labeled CCARA process was subsequently re-labeled CIARAA (Context, **Interpretation**, Appraisal, Reaction, *Appraisal*, Action.). This new designation more accurately aligned the cyberaggression process with extant theory concerning an

individual's reaction to hostility/aggression (C. A. Anderson & Huesmann, 2003;

Barling, 1996), and was necessary in order to differentiate between the respondent

determination of the degree of negativity - a primary appraisal analogous to an

assessment of threat, and their consideration of potential courses of action - a secondary

appraisal analogous to choice of fight or flight (see Figure 3).

The result of this process was a theoretically and empirically grounded process-

model of cyberaggression that depicts the major variables involved, potential antecedents,

potential relationships, and potential outcomes. When combined with the respondent

description of cues used to determine the degree of hostility or aggression in email, the

general model of cyberaggression from a CIARAA process perspective is also suitable

for use in scale development and hypothesis testing.
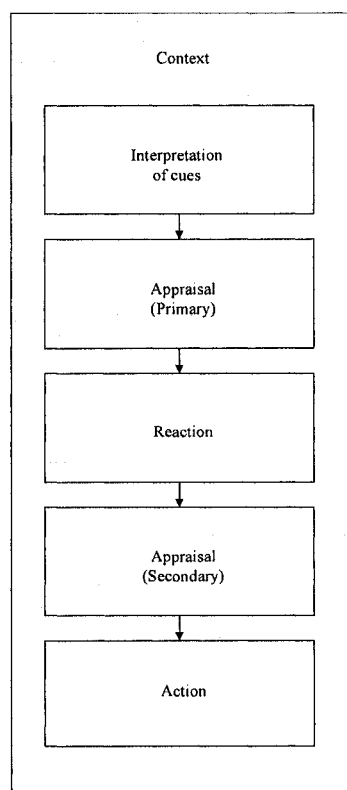
Figure 3. *CIARAA Process of Cyberaggression*

Results

This section presents and describes the clusters and categories, themes and patterns that were identified during the various analytic stages. For the sake of clarity they will be presented using the categories and sequencing as depicted within the resulting CIARAA model. Results will be presented first by describing the general *context* in which cyberaggression takes place. Second, the *interpretation* of cues by respondents involved in cyberaggression is described. Third, the initial respondent *appraisal* processes used to categorize hostile or aggressive email is depicted. Fourth, the *reaction* of respondents is then presented, including the affective, cognitive and behavioural components of those responses. Fifth, the secondary *appraisal* of respondents is detailed, and sixth the *actions* taken by respondents are identified. Finally, other factors affecting the overall process, or specific stages, of the CIARAA model are described.

For each stage, one or more example excerpts from respondent transcripts were used to illustrate each cluster or category. The data excerpted from the transcripts, that was used throughout all stages of analysis, is contained at Appendix B, and the individual summary tables for each cluster/category are contained in Appendix C.

Context

For the majority of the respondents, task completion at work was heavily dependent on the contextual use of email. Most respondents were very familiar with email and its use in different organizational settings. This was true across most of their experiences in the various organizations they had been members of, regardless of job type

or length of tenure as respondent work experience ranged from five to twenty-five years. In their current employment email was normally the primary means used for the communications needed to support their work activities (for descriptors identifying context see Table C1).

Patterns of Email Use. Email was used by respondents for both internal communications within work groups and divisional or group structures that were relatively physically proximate, as well as for external purposes such as between organizational divisions that were physical separate or for inter-organizational purposes. As none of the respondents worked in a virtual setting the majority of their organizational email use was with supervisors, subordinates or coworkers with these individuals normally being located in the same building or building complex. Some of the respondents had, on occasion, used email to communicate with more senior personnel who were located at some distance from the respondent such as a distal head office, or when dealing with off-site customers. Most respondents indicated that in addition to use for work purposes they also used email for personal reasons, normally for relational or social purposes not directly related to work tasks even when this communication was also with organizational persons. However, the bulk of daily email use was for the coordination of work and other organizationally sanctioned purposes.

Frequency of Email Use. Respondents use of email was acknowledged as a necessity for most job tasks and was considered especially critical for a smaller subset of those tasks on almost a daily basis. While receipt of email may have been higher, their frequency of email generation ranged from a low of 10-20 to a high of 50-70 each day. Depending on the work task, email use may have been more for those engaged in

deadline driven project work or other more time sensitive or critical tasks. The critical role of organizational email in today's workplace was expressed succinctly by one respondent who stated that "email tends to be relied on more than any other method of – any other method of communication." and in the assessment of this respondent working colleagues would "literally live and die" by their use of email.

Purpose of Email Use. Respondent email was most frequently used to manage inter-dependencies that existed as a function of their work responsibilities. These interdependencies were normally found between the respondents and others within the organization with whom they needed to communicate for the purpose of task accomplishment. Generally, these emails contained messages that; focused on specific information exchange such as a draft document, contact information, the asking or answering of a specific question or query; where content was for the purposes of coordination of scheduling or meetings; for general notification such as when a task element had been accomplished or when a policy had been issued or changed; or for content containing decisions or information concerning task outcomes such as performance feedback, product delivery, or project completion.

Relationship and Relational Use of Email. Email was used laterally and hierarchically in dyadic relationships or within/between workgroups for task accomplishment and coordination. It was heavily used by direct reports in subordinate-superior relationships, for information exchange, coordination and notification, decision awareness and direction, and delivery of performance feedback. Lastly, email was also used for the maintenance of social relations within the organization. While somewhat overlapping the social and relational communications did not completely correspond or

mirror the communicative relationships necessitated by organizationally mandated or task related interdependencies (see Table C2).

Distribution of Email. Dependent on the level and type of task interdependency and the requirement for coordination associated with that task, email may have either been addressed or distributed in such a way as to reach a single individual or a group. The frequency of individual versus group distribution varied highly across respondents as it was generally related to the type of message, the specific work environment, and the organizational email policy (i.e., permissive authority for use). Broadcast forms of notification and general information messages were usually more widely distributed than those dealing with task specific coordination between dyads, groups or direct-reports.

Organizational Email Use Policy. The presence of a policy on the permissive use of organizational email systems varied highly across the work sites discussed by respondents. Even as some organizations had a comprehensive policy others had no formal policy at all. For those organizations that had promulgated a policy, this policy could include measures and sanctions concerning; communicative authority such as who could or could not send an email, and to whom it could be addressed. Policy could also specify the email form and style such as letter, memorandum, or note format; its content and how it was framed such as business versus personal subject matter and the language, or tone used; or other specifically mandated elements such as formal signature blocks, or boiler-plate information concerning the confidentiality of the email, its organizational use, liability statements, and confirmation of intended recipient. Respondents varied in their awareness and adherence to these organizational policies. Compliance ranged from

high levels of awareness and strict adherence to the organizational policy through to a generally assessed low level of awareness where;

most people would not be aware of the policy. That's a deficiency

in the organization, so they would not know, you know, what email

etiquette might look like or, you know – the protocols for email

within the organization. (BOB.33.A)

or to circumstances where individuals consistently violated communicative organizational norms in general, demonstrating "a lack of understanding of what is appropriate communications, lack of understanding of what is appropriate in the chain of command." (LOC.8).

Organizational Norms. Whether there was an organizationally mandated email policy or not, most respondents described what were considered normative behaviours they experienced in organizational email and communication. Email was primarily viewed as a tool for organizational or professional use, and the corresponding expectations were that email would be 'business-like'. Email, as a form of business correspondence, was seen by respondents to have specific characteristics such as: the use of rational versus emotional language and phrases, the use of fact and objective descriptors versus opinion or subjective judgments, and direct open statements versus indirect messaging. The expectation was that the email was to be used for the accomplishment of organizational or work tasks, and that generally accepted 'business' standards would apply; with adherence to specific organizational and social practices of communication (see Table C3).

While most respondents indicated that the organizations that they worked in usually adhered to standard 'business' practices, organizational norms did vary across some work sites. Variation included those where communications were more or less polite;

> *there was a communication style [that] was far more direct, far*
>
> *more – I won't say personal, but it was less politeness. It was – to*
>
> *me, coming out of [organization], it seemed pretty aggressive, but*
>
> *after I was there for a fairly short term I realized it was aggressive*
>
> *across the board.* (IME.4.A)

to those where organizational norms were neither polite nor homogenous. Internal variation could be identified in different divisions, elements or persons within an organization. They would violate organization-wide norms, or would adhere to a different or sub-set of normative practices of communication. For example, one respondent noted that particular groups were known to have different patterns of communications than the balance of an organization such that; *"you would still – you know, you would still get some ... fairly rough emails* [from] *the technical department."* (IME.6.A).

A Priori Relationship History. While many individuals adhered to organizational or sub-group norms, most respondents also identified specific individuals who were known to communicate generally in styles that violated these norms on a consistent basis. These individuals were normally acknowledged as either having a " *'particular style' of communications"* (AMR.38.A), or of having a chronic difficulty with communicating in general. Usually they had a history or pattern of *"send*[ing] *negative emails to the entire*

[organization]." (LEK.22.A). These individuals were recognized as regularly violating

norms and were often labeled as "*someone who had communications problems*"

(lOC.3.A), and where individuals would create circumstances where coworkers felt that

they had no choice but to "*ignore them*" (LEK.22.A). In other circumstances coworkers

would have to tolerate the behaviour, particularly if the individual was senior in status.

As one respondent put it; "*while I didn't like it and didn't think it was appropriate, I just*

sort of accepted it as something, you know, that had to be endured, I guess."

(AMR.38.A).

Interpretation

Even as individual respondents spoke to the unique nature of the negative email

events that they were involved in, there were common patterns discernable across

respondents. One commonality involved the features or characteristics of the received

email and the cues (see Table C4) used to interpret the email (see Table C5). The cues

used by respondents to assess email consisted of those drawn from the email itself, and

other more contextual ones. In terms of perceived negativity, assessments ranged from

the minor uncivil or discourteousness to appraisal of major hostility or outright

aggression. In terms of the perceived intent of these emails, when taken as a whole, the

interpretation of the cues in the aggregate could be perceived to be unambiguously

aggressive or hostile, or ambiguous and potentially hostile. These latter interpretations

were directly related to the perceived ambiguity of the email cues themselves.

Direct cues were drawn primarily from the style and content of the email. Style

cues included the use of capital versus sentence case, over-use of punctuation, or a style

that was not consistent with norms concerning the written rules of grammar or normative

views concerning business correspondence. As described by one respondent *"I got back an email that had been written in all caps and with a lot of punctuation, especially exclamation marks."* (AMR.4). For another respondent the use of capital case and/or over punctuation resulted in an interpretation where the email *"starts off in my view as almost shouting at you."* (BOB.6). The use of capital case and the over use of punctuation, when used in combination, appeared to compound respondent perceptions of negativity.

Respondents also reported other violations of norms for email use, or comparative violations of norms used for email when analogous to verbal communications. These included email that was written in *"very short, clipped sentences"* (RAM.7) or where they generally *"...seemed to lack some of the niceties of normal communication."* (AMR.21).

More severe direct content cues included the use of swearing, foul or inappropriate language, or derogatory terms or statements. One respondent reported on an email that *" was sent to me by our – the* [supervisor] *- that referred to everyone as cows – or, no sheep."* (LIJ.2.A) while another indicated that *"Swearing. You know"* (IME.6.A) was interpreted as direct and unambiguous, or *"openly violent, openly aggressive, you know, "you son of a bitch", that kind of name calling, threatening."* (RAM.6).

Interpretation or sense of 'tone' appeared to be based upon a more global assessment of the style characteristics of the email in combination with the context within which it was received. These assessments were based upon a fairly broad and diverse set of cues. These included minor to major violations of contextual communicative behaviour concerning such features as the normative standards associated with email use

within or between dyads and workgroups, or the norms found in the organization as a whole. Other cues included language use, the email distribution, the type of organizational relationship existing between sender and respondent, and the history that existed between sender and respondent. For example, for one respondent the handling of a coworker with a history of inappropriate email use meant that she "*usually just ignore*[d]" (LEK.22) the tone, as she was familiar with the tenor of emails from this source.

Respondents used language cues that included those where the email contained "*strong language*" (LEK.31.A), had a "*condescending tone*" (RAM.39.A), or where the email included "*the use of sarcasm*" (LEK.4.A) and the

> *tone in them was often, you know, what I would describe as not*
>
> *harsh, but really pushing back, like, and didn't spend a lot of time*
>
> *or effort trying to finesse the language in any way, you know, in*
>
> *terms of positioning things. It was just pretty – pretty direct and,*
>
> *at times, pretty forceful.*" (AMR.18.A)

Overly emotional content was also viewed as a violation of acceptable norms. In these cases the email was described as "*not quite as professional as it should be*" (RAM.5.A) or as demonstrating a "*lack of professionalism*" (LEK.7A). These emails may also have been considered overly emotional or irrational where there "*was not a lot of reasoning to it*" (BO.13.A) or where respondents cued to the strong emotional content when it was apparent that the senders "*were pissed*" or that they would "*rag all they* [the sender] *want to*" (RAM.6.A). In these cases the sender was assessed to be in a

"heightened emotional state far beyond what most people would consider to be

reasonable or normal." (LOC.3).

Respondents also differentiated between private (i.e., no additional distribution

other than the dyad itself) and more public (i.e., distributed to others in addition to the

dyad) distribution of email. The difference between private and public distribution

appeared to elicit differentials in respondent appraisals and behavioural responses. Public

distribution appeared to make the email more salient and perceptually more severe. One

respondent, who usually ignored emails from an individual known for sending

inappropriate, hostile or aggressive email, reacted differentially when one particular

email was distributed in a public forum.

> *I usually just ignore them, but one of them was targeted to me and*
>
> *was copied to the [VP and President of the organization]. So I did*
>
> *respond to that one and voiced my displeasure. Kept it very*
>
> *professional, but said I do not appreciate accusations, especially*
>
> *those that are made publicly and copied to* [the VP and President
>
> of the organization]. (LEK.22)

Another respondent observed that when emails are distributed more widely they

can generate a collective sense of norm violation as when "[the] *team gets them, I know,*

from time to time. Actually, the - we had a little bit of a - what I would call a - not an

uprising, but certainly a reaction." (BOB.70). This type of cue salience was still

observable even for smaller public distributions. One respondent, who was a member of

a small team that was copied on an email noted that since it was publicly distributed and

that since it was a small team " [she] *responded by letting this person know exactly what*

the committee was doing and that [she] *resented the hostility, the tone - the hostile tone of*

the e-mail that he had sent." (LEK.29).

Primary Appraisal

When discussing their thoughts concerning their appraisal of email, respondents

appeared to be engaging in two levels or types of appraisal processes. Though the

respondents themselves did not speak directly to these two appraisal processes, there was

a distinct and observable difference between the cognitions and affect associated with

assessing the *email* itself (see Table C6), and those cognitions and affective

considerations concerning decisions regarding any *action* to be taken in response to the

email. Cognitions involved in the assessment of the email focused primarily on the

extraction of salient direct and contextual cues while cognitions concerning action in

response focused primarily on the consideration of both these and other additional

factors. The action appraisal will be described separately in the section on *Secondary*

Appraisal.

Respondent descriptions of their primary appraisal focused on the perceived

negativity in the email in terms of a perceived continuum of severity. Respondent

descriptions of email that tended to the minor anchor included assessments of email as

not being *"cordial"* (RAM.7) or as *"not polite"* (IME.4). One respondent described these

types of email where she *"just didn't find it was very, you know, civil is one word - just*

courteous" (AMR.21). Other descriptors used by respondents, which tended to rank in

the middle of this range, included the use of terms such as *"inappropriate"* (LIJ.10),

"rude" (LOC.6), *"snotty"* (LEK.7.A), *"snarky"* (LEK.30), or *"petty"* (LEK.9.A). As

perceived negativity increased respondents used terms such as *"condescending and*

insulting" (RAM.42.A), "*belittling*' (LEK.3.A) or "*harsh*" (RAM.42). Towards the

major anchor respondents described email in terms such as "*pretty direct, pretty forceful*"

(AMR.14), or "*hostile*" (LEK.9), and finally as "*just aggressive*" (LEK.25.A).

For email that was perceived to be strongly negative, two very clear distinctions

became observable in respondents descriptions and categorizations. Assessment of

negativity was based on the extraction of direct easily interpretable cues, which were

unambiguously interpreted by respondents. Assessment was also based upon the more

contextual and implied cues and these emails were more likely to be perceptually

ambiguous for respondents. Although respondents categorized both forms as being

strongly negative they differentiated categorically between them.

Differentiation appeared to be based upon the level of directness, or conversely

ambiguousness, present. Respondents almost universally categorized the unambiguous,

open and direct emails as *aggressive* (see Table C7). The more ambiguous, subtle or

indirect email form was most often labeled as *hostile* (see Table C8). Respondents would

relate assessments where they were careful to distinguish between the two. For example,

one respondent did so by saying an "*incident I'm thinking of aggressive is a better word*

than hostile to refer to the exchange happening "(RAM.5).

Hostile email was labeled "[h]ostile *because it wasn't overtly aggressive.*

(LEK.4). This categorization was reserved for email that was less direct, for those

containing "... *no swear words ...no overt accusations.*" (LEK.5) and where appraisals

were based on more contextual and less direct language use, where email hostility was

done "... *subtly and with sarcasm.*". Or in cases where "*She* [the sender] *didn't call me*

names. She doesn't overtly accuse me of anything. She didn't express anger. It was all

more subtle, so I would say it was hostile. (LEK.5). Hostile emails were not "*... openly insulting*" (RAM.39) or "*...openly violent, openly aggressive, you know, 'you son of a bitch', that kind of name calling, threatening*". (RAM.39). For one respondent, with a self-admitted history of sending emails that recipients often perceived as hostile there was a careful delineation between email that was considered hostile and that of aggressive. It was a case where;

> *you understand that there's a line you can't cross, so you go up to*
>
> *the point of the line and you don't cross it. I think never - you can't*
>
> *come out and accuse somebody of something or - at least on my*
>
> *end you can't, you can't threaten them in any manner or anything*
>
> *like that.* (LIJ.28)

Aggressive email was universally understood to be more direct, perceived as intentional and "*deliberately written*" (NOJ.8) and it "*ha*[d] *a much more direct communication style ...*" (IME.4) with "*openly stated threats or accusations*" (LEK.35). In aggressive email there is clarity of message where language is direct and "*very straightforward*" (LIJ.18) where for the recipient it was understood that in;

> *The first line* [they] *knew immediately what it was. It was an*
>
> *attack. It was an attack. That was very clear. And it went on to,*
>
> *you know, suggest to my superiors that I shouldn't be in the job I*
>
> *was in and, oh, yeah! ... CC'd to a number of - yeah, my superiors.*
> (NOJ.11).

Though both hostile and aggressive categorizations were considered negative, hostile emails were more veiled, with the hostility contained within the language and

context of the email. On the other hand, aggressive emails were overt. Regardless of whether the interpretation was hostile or aggressive, respondents believed they were the focal point of the email and they "*took it personally.*" (LEK.29). They felt they were somehow being aggressed against.

Hostile emails were generally more subtle and less focused in their content, the aggressive email contained attacks directed at the respondents who were the intended recipients. These attacks were made through mechanisms such as threats, accusation, blame, questioning of authority, questioning of competence, or derogation of professional or personal characteristics, accusation, blame or fault finding.

Accusations could be tied to completion of tasks, task timing, assessment of performance where " *The tone of the e-mail was very accusatory about my staff making some serious errors ...and just the choice of words, as I recall, was very accusatory*" (BOB.11) or more global shortcomings in an overall assessment where "*It was just - well, the sarcasm, you know. Sarcasm was present. And incredulity that, you know, that somebody like me could hold a job in the position I hold.*" (NOJ.20).

Competency attacks included email that was perceived to imply openly or indirectly failings in professional characteristics by "*Questioning* [of] *our professional competence.*" (RAM.39), or where the email "*... said that we didn't know what we were doing.*" (BOB.6) or "*Because the way the response was suggested was that it was their fault - when I say their, I mean our engineers.* " (Ram.20). Other stronger forms included perceived threats where email was "*accusing her, almost threatening her. Not physical threat, but threat of reporting her to higher-ups, accusing her of unethical behaviour.*" (LEK.35).

Though respondents did differentiate between the forms of email they categorized as hostile versus those they categorized as aggressive, there also appeared to be a 'grey' or ambiguous form of email (see Table C9) where appraisal was either difficult or where the respondent was unsure whether an attack was present. Ambiguity was usually concurrent with the more indirect and hostile forms of email. Consequently, respondents would often seek *"validation that the communication was inappropriate ..."* (LOC.62) or confirmation of their interpretation, where respondents sought feedback to determine if their interpretation *"is the right one"* or in order *"to get a second opinion."* (LEK.38). As described by one respondent, these forms of email often appear to carry more than a single message. Respondent effort may have to be focused on determining the *"kind of the message that had been delivered within the message, if you like."* (BOB.23), in order to answer the question of *"Am I being sensitive, or is this hostile?"* (LEK.9).

Reaction

Respondent reactions to receipt of an email that they perceived to be hostile or aggressive were usually negative. A qualitative indication of the level or degree of the negative reaction was directly observable in the respondent's behaviour during their recounting of the events during the interviews. For all of the respondents, with the exception of two interviews conducted by phone, respondents were observed as being recognizably distressed to varying degrees. When discussing the details of the event, when recounting how they interpreted cues or the assessments they made, or the feelings and emotions they experienced at the time, most respondents became visibly agitated. This was apparent as their faces would become flushed in a blush response; they employed paralinguistic expressions such as clenched fists, over-exaggerated hand and

arm movements, or stern facial expressions associated with the signaling of anger or distress. It was obvious that for the respondent these experiences were emotionally laden and distressful events.

Although these experiences were considered universally negative, the degree or level of negative impact experienced by the individual respondents did vary (see Table C10). These variations appeared to be linked to the context within which the email was received such as work conditions, prior experience with the communicant, the relationship the respondent had with the corresponding individual, the perceived level of hostility or aggression (the presence and types of cues), whether the email was distributed in a private (dyadic) or a public (cc'd to others) forum and individual differences amongst the respondents. Respondent's affective reactions ranged from expressed annoyance and irritation, through higher levels of affect including frustration and anger (see Table C11). Cognitive reactions included disbelief, surprise, shock or anxiety (see Table C12).

Context. Even though most respondents spoke about the general influence of context, in at least three instances the work context directly influenced the respondent reaction. One respondent had been working in an environment that could be considered stress inducing and the respondent reaction was *"just a knee-jerk reaction and was - it was based primarily, I think, on the frustration, the workload, the lack of sleep, the - I wasn't, you know, thinking that clearly about it."* (BOB.42). For another, the respondent who *"got this e-mail late on a Friday, and I responded with one of those e-mails that you shouldn't respond by. You know, I sent it out before I left, yeah. It was bad. So I responded in like kind"* (NOJ.25). In a similar fashion another respondent involved in a

work task with a specific deadline looming, the context contributed to an aggressive

email exchange as the expectations placed upon the respondent

> *to solve all their problems by suddenly having all the RESes*
>
> *magically go out the door at the same time, same day without any*
>
> *consideration to the amount of work that was going to be required.*
>
> (RAM.6)

were considered very unrealistic and unreasonable.

Relationship. Respondents varied in their reaction to a hostile or aggressive

email, in part, based upon their relationship with the sender. All of the respondents

indicated that the aggressive or hostile emails they received were normally from, or

directed to, individuals with whom they had prior contact of some form. These a priori

contacts were the result of organizationally sanctioned relationships. These relationships

were variously described as having developed on either a formal basis (i.e., the

individuals knew of one another through their job role or position, usually had never

developed a more personal basis, or they may have never met face-to-face), or a more

personal dimension (i.e., they had worked together in the past, the individuals knew one

another, and normally had physically met on more than one occasion).

Two of the respondents indicated that they had either received, or been witness to,

aggressive or hostile email from 'strangers' (i.e., from someone with no previous

contact). Again, however, these were organizationally sanctioned relationships with

individuals external to the organization itself. They included an individual customer and

an organizational customer.

Though the bulk of the email exchanges observed within this study took place between peers, there were also a number of cases where hierarchical exchanges occurred. These exchanges were bi-directional, initiated by either a supervisor or a subordinate. Regardless of the type of a priori relationship, the level or directionality of the exchange, it is clear that for these respondents that email aggression and hostility are inextricably bound to work tasks and organizational norms of communication within the role and structural dictates of the organization.

Respondents appeared to consider or take into account two relational factors; first, the nature of the priori relationship, and second, whether the relationship was with a subordinate, peer, or senior person in the organization. For pre-existing relationships two significantly different reactions were observed.

In the first case, where a sender was known for sending email that was hostile or aggressive, there was little reaction as the previous communicative experiences provided for a way to rationalize the sender's behaviour. As stated by one respondent *"This person hadn't bothered me in quite a while, but this person tends to send negative e-mails to the entire* [organization]. *And I usually just ignore them.* (LEK.22). In another case where there was a history of communicative problems with one particular, senior individual the respondent simply *"resolved in my own mind that this was just her particular style, and while I didn't like it and didn't think it was appropriate, I just sort of accepted it as something that, you know, had to be endured, I guess."* (AMR.36). The 'endurance' or 'tolerance' of the behaviour from a person senior to the respondent was a function of the structural relation reflecting the junior status of the respondent

Degree of Hostility or Aggression. As the level of perceived hostility or aggression increased reactions also increased in magnitude. Often respondents were surprised to receive the email in the first instance, or with the level or degree of hostility or aggression they perceived in the email. As one respondent described "[she] remember[s] *really being surprised by the email and by what* [she] *perceived to be its forcefulness.*" (AMR.11.A). Once received, the degree of negative reaction was such that it even became obvious to third party observers. As noted by one respondent "*I think he* [a subordinate] *was more pissed off than anyone else, certainly more than I was.*" (RAM.31.A).

Affective reactions included minor reactions where respondents admitted they were "*not as composed and calm as* [they] *should be*" (BOB.6.A) to those where,

> *As soon as I read it, I was ready to – it raised my level of – not anger – well,*
> *almost anger, I think it was. I got really worked up about it because my team, I*
> *know, does a good job.* (BOB.11.A).

Individual Differences. As noted by one respondent, whose position in the organization meant that they were exposed to numerous third party cases of hostility or aggression in email, individuals reacted differentially as a function of their tolerance and sensitivity to these forms of behaviour. (LOC.6). One respondent openly admitting that she found email challenging in that she considered it to be "*really easily misunderstood, misinterpreted, misused.*" And as she had a self-admitted "*very sensitive personality*", she "*read things into e-mails that probably* [weren't] *there.*" (LEK.34). In one particular case she had replied to an email stating,

you know, I didn't like his accusation. And he responded by

saying, "What accusation? I've read the e-mail I sent you three

times. There's no accusation." And at which point I realized I was

probably just being over sensitive ... that I, in fact, over-reacted.
(LEK.31).

Forum. Respondents would react differentially to emails that were either private

or public in nature. Public emails, or emails that had been cc'd to relevant others,

appeared to be perceived as either more hostile or aggressive, or caused greater concern

in the respondent. For one respondent who would usually *"just ignore"* email from one

particular individual, when an email was cc'd to senior personnel within the organization,

their reaction was such that it changed their pattern of behaviour and " [she] *did respond*

to that one and voiced my displeasure." (LEK.22).

Respondents themselves may take an otherwise private email into the public

forum in one of two ways. First, showing or discussing the email with others and second,

respondents may have chosen to share the contents of the email and their own reply with

others such as a supervisor. As one respondent put it for those emails that are more

ambiguous, or where the respondent is uncertain as to the email itself, respondents may

wish to gauge other people's reactions to make sure [their] reaction is the right one."*The*

same reason we discuss any stressful situation, just to relieve stress and get a second

opinion." (LEK.38).

For another respondent it was important to ensure that their supervisor was aware

of the situation. For this respondent,

If it's something that looks like it's going awry, I like to let

him - I cc him just for no other reason so that he can read it

and kind of be aware that he may be called upon, like

questions from his highers, you know, if the director of that

department [inaudible] at least he would know roughly

what was going on. (RAM.24)

which is an indicator of the importance of the influence of structural

relationship between individuals who are communicating for role, task, or

informational purposes.

Secondary Appraisal

After an appraisal was completed respondents would engage in a process of

secondary appraisal where they would determine what, if any, action was to be taken in

response. Not surprisingly, there was a great deal of descriptive overlap between the

Reaction and *Secondary Appraisal* categories (see Table C13). This similarity resulted

from the *post hoc* nature of the respondent descriptions of their reactions to the email and

their subsequent actions. While their lived experience was ordered by the activities of

appraisal-reaction-secondary appraisal-action, their *post hoc* descriptions tended to

collapse the reaction-secondary appraisal distinction. This was because they were

actually describing a past reaction that had already been modified by a past secondary

appraisal. Consequently, the moderating/mediating factors described in the *Reaction*

category were also used by respondents in the *Secondary Appraisal* category that also

formed part of their explanation for their reaction.

Therefore, as reactions varied the respondents' actions in response also varied. The variations in responses appeared to be linked to: the perceived level of hostility or aggression within the email, the context within which the email was received, characteristics attributable to individual respondents, and whether the email elicited a primarily affective or cognitive reaction (i.e., affective immediacy of response versus a more cognitive or ruminative response). Other factors appeared to influence respondent action choices including the a priori relationship between communicants (i.e., previous knowledge and experience with the sender, or whether the email exchange was in an initial or a continuation stage), the type of relationship (peer or subordinate/supervisor), and the original distribution of the offending email (i.e., a private direct sender-to-target or more public multiple addressee distribution).

Action

Though some respondents spoke of potential off-line actions in response to the receipt of a negative email (i.e., following up with a face-to-face exchange, or seeking the advice of others) all of the respondents' actions in this sample also included the use of email itself. Respondent secondary appraisals resulted in a variety of actions chosen (see Table C14). These ranged from non-response, responding in 'kind', or attempts at clarification, conciliation, or de-escalation. Other actions were designed to seek confirmation/validation or advice from others prior to taking any specific action in response. Finally, responses also included the generation of an email reply in an almost overly rational form of professional business correspondence. Any or all of these actions may have been taken in either a private or public forum. That is, depending upon the context and detail of the event the action chosen may have been a private response

between the involved dyad, or it may have been a public response where others were copied in the distribution of the responding email. Responses may have been relatively immediate (mirroring or reciprocating) generated within a short period of time post-receipt. Other responses were delayed through either through respondent engagement in rumination or in confirmation and validation seeking activities. Finally, time may also have been taken to generate a more detailed and thoughtfully constructed response.

Mirroring or Reciprocating. These actions tended to occur when there was a primarily severe negative affective reaction to an email (see Table C15). These actions were usually near immediate responses with little reflective cognition or thought. As described by one respondent, the emotional reaction was such that they immediately crafted a " *nuclear response*" as they "*just didn't have time. I shouldn't have - I didn't have time to craft a - you know, an all-knowing response on Friday night, so I sent that snarl off via e-mail.*" (NOJ.36). For another respondent;

> *the tendency was to - and, in fact what I did, I created an e-mail.*
>
> *Unfortunately, I was not as composed and calm as I should be. It*
>
> *was an immediate reaction to just the receipt of that original one.*
>
> (BOB.6).

In another case, one respondent attempted to break a pattern or habit of mirroring or reciprocating with one particular individual, where they stated that;

> *I have responded aggressively to an e-mail before, but it was*
>
> *somebody who had consistently sent me aggressive e-mails, you*
>
> *know what I mean. This was a one time thing. I wanted to end it*
>
> *and walk away.* (LE.18)

Clarification, Conciliation, De-escalation. Depending on the communicative context, whether an initial exchange versus mid-exchange, and other factors such as prior experience, respondents may have attempted to clarify, defuse or de-escalate the situation through an email exchange (see Table C16). While clarification may be attempted off-line, for one respondent it was simply a matter of asking a straight question via email where "… *he responded by saying, 'What accusation? I've read the e-mail I sent you three times. There's no accusation.'"* (LEK.31). This was sufficient cause for the recipient to apologize in a public forum as she had " …*realized I was probably just being over sensitive and I sent an apology, which I cc'd all the committee members on so they could all see that I, in fact, over-reacted.*" (LEK.31).

One respondent soberly reflected upon an immediate, emotional, reciprocating response he had sent two days previously. As a consequence of reflection he;

> … *realized that what I'd done was not worthy, and so I crafted a -*
>
> *part of it is I just didn't have time. I shouldn't have - I didn't have*
>
> *time to craft a - you know, an all-knowing response on Friday*
>
> *night, so I sent that snarl off via e-mail and then, even as I did that,*
>
> *I began trying to answer this e-mail, first of all, with an apology*
>
> *for what I sent, and addressing his valid points. And I sent that on*
>
> *Monday morning,* … (NOJ.36)

Another respondent, sensing the emotional tone of the email and recognizing that since "[o]*bviously* [the senders] *were frustrated, too.*" he took pro-active steps to ensure that the exchange would not escalate any further. In his reply he constructed the email ensuring that " *the tone … was not accusatory*" where he was "*trying to be conciliatory.*"

(BOB.13). Finally, for another respondent it was important that the exchange be concluded, and to sever the task relationship where;

> *you know, I hope there's no hard feelings and I certainly didn't*
>
> *intend to insult you in any way, but yes, I agree that at this point*
>
> *it's probably best to remove me from the [activity]. So it was - I*
>
> *certainly didn't retaliate with a hostile e-mail. I didn't get*
>
> *aggressive in return.* (LEK.16).

Confirmation and Validation. When respondents received an email that was perceived as potentially hostile or when they were unsure of the meaning(s) within an email, they would seek clarification or validation from other individuals (see Table C17). These individuals were normally other persons, coworkers or supervisors, within the organization. Respondents would either go to see these persons on a face-to-face basis, or they would forward the original email and seek advice electronically, such as

> *What do you think of this? This is what I sent her. This is my*
>
> *question. This is the response I got. Am I being sensitive, or is this*
>
> *hostile? And they said absolutely, it was hostile.* (LEK.9.A)

After receiving confirmation or validation respondents would normally reply to the original email accordingly. One respondent offered this observation concerning this type of action;

> *Well, I think there's a couple of reasons why we share them. One*
>
> *is to gauge other people's reactions to make sure our reaction is*
>
> *the right one. The same reason we discuss any stressful situation,*
>
> *just to relieve stress and get a second opinion.* (LEK.38)

Rational and Hyper-Normative. These actions tended to occur when there was a primarily cognitive reaction to an email. Though respondents still reported negative affective reactions, in these forms of response the content was literally 'stripped' of any emotional tone whatsoever (see Table C18). The respondent intent was to produce a *"Cool but professional"* response (LEK.15) that was normative within the context. For one respondent this meant stepping back from the affective reaction, and spending more time thinking about the response;

> *No. I – it festered, in my own mind, obviously. You know, I gotta –*
>
> *fortunately as they say, you know, clearer heads prevailed. I did*
>
> *step back from it a bit and said I gotta come at this another way,*
>
> *maybe after I get my head clear a bit more.* (BOB.42.A)

For another respondent, it was personally important that the reply be very professional and so she;

> *... crafted my own response, and I remember, you know, very*
>
> *deliberately trying to take the high road in terms of the response. I*
>
> *remember feeling that - you know, I remember feeling that I*
>
> *thought she had over-reacted in terms of the response and I*
>
> *remember feeling that I wasn't going to go back and do the same,*
>
> *that I was going to try to, you know, maintain things on a civil kind*
>
> *of level, not to over-react.* (AMR.25)

Hyper-normative responses usually were taken in a public forum. Respondents would either cc to the original addressee list in the received email, or they would themselves cc the email to their supervisor. As described by one respondent;

my bosses are very easy to work with, easy to get along with. I try

not to surprise him and catch him off guard. If it's something that

looks like it's going awry, I like to let him - I cc him just for no

other reason so that he can read it and kind of be aware that he

may be called upon, like questions from his highers, you know, if

the director of that department [inaudible] at least he would know

roughly what was going on. (RAM.24)

Sending a copy of the response to a supervisor was a fairly common mechanism for ensuring that the supervisor was aware of the email exchange, and any implications that it may have for task accomplishment, or work relations within the organization. As put by one respondent;

And my boss was, you know, one of the folks who had - who shared

those concerns. And so I wanted her to be aware of, you know, the

tone of the communication that we were having and, I guess, the

way I was trying to deal with that." (AMR.29)

One additional and important factor that many respondents considered before any choice of action to be taken in response to a hostile or an aggressive email was centered on respondent concerns relating to image. As put by one respondent, *"you understand that there's a line you can't cross, so you have to go up to the point of the line and you don't cross it."* (LIJ.28.A) as the respondent was always careful to ensure to *"position* [him]*self as an individual who is above the fray."* (LIJ.19.A). Similarly, another respondent made an exception and replied to an email when she normally would not have, as;

the information in the email was incorrect. The information said

that I had done something that I hadn't done – made me look bad.

(LEK.22.A) and the email had been *"copied to the* [organization]

Vice-President and the [organization] *President. So I did reply to*

that one and voiced my displeasure. Kept it very professional.

(LEK.23.A).

Outcomes

Outcomes associated with cyberaggression included negative individual level outcomes such as negative affect, stress and anxiety, reduced job satisfaction, or job withdrawal. For one respondent where *"there was a lot of very – a lot of tension and stress"* (IME.4.A), anxiety or resignation since *"... it was always a big deal when we had to deal with her. Like it was just – you felt like – that there was going to be a – you know – a problem with everything that you were – it was kind of a – just something you had to get through."* (AMR.35.A). For another she discovered that she *"... didn't enjoy working there"* as she *"... didn't enjoy the communication style."* (IME.8.A). The negative influence on the work environment may have led to work withdrawal where individuals chose not to work with certain persons (LEK.15.A).

In addition to the individual negative experiences, the consequences of individual events may also have had a negative or adverse impact at the group or organizational level. Quite frequently a single event escalated into a chained or spiral-type exchange between two individuals where *"it went back and forth and maybe one or two – I think that there were maybe a total of like three emails, you know."* (RAM.15.A) or the exchange escalated to *" a series of back and forth emails"* (LIJ.10.A). These exchanges

may also have moved beyond an initial dyadic form to an exchange involving others. This occurred under circumstances when multiple "*testy emails* [were] *exchanged around*" (AMR.45.A), or because "*one or two other individuals in the* [organization] *were upset about it* [an email] *and blasting him* [the sender] *back.*" (LIJ.10.A). In other cases the initial exchange chained into subsequent exchanges that resulted in a more broadcast email that was "*cc'd to me, cc'd to that manager's manager and a director level – a supervisor's supervisor*" (LOC.7.A).

In more serious cases there was also a potential for further negative collective impacts. Some of these would result in off-line activities where one or more individuals would invoke an organizational authority. Groups would approach the "*... boss about the* [cyberaggression] *and her raising this as an issue with other people in the organization because there was friction and it was making it hard to get – you know, to get work done.*" (AMR.39.A).

Cyberaggression may also serve as a trigger for other off-line activities such informal counseling where individuals are "*told that* [they] *needed to be less rude, less direct*" by their supervisors. For more major events other formal mechanisms were triggered as when one organizational member "*claim*[ed] *harassment and all the rest*" as the result of an exchange of aggressive emails (LIJ.25.A).

Discussion

This study was carried out to investigate the experience of cyberaggression in the workplace. More specifically, the study was designed (a) to identify the types and forms of cues in email that individuals used to appraise an email as hostile or aggressive, (b) to identify individual and situational variables that influenced the processes of interpretation

and appraisal, (c) to identify potential antecedent factors that give rise to cyberaggression, and finally (d) to identify the potential outcomes associated with the experience of cyberaggression at work.

Using the critical incident methodology (Flanagan, 1954) to access personal experiences of cyberaggression permitted a relatively comprehensive description of the nature of an aggressive incident using email. The results generated by this approach determined that being the focal target of this form of behaviour was universally considered a negative and unpleasant experience, and that despite dissimilarity in the circumstances leading up to the experience of cyberaggression across multiple individuals in highly different work settings, that cyberaggression as an event in the workplace unfolded in a process-like fashion.

The process through which cyberaggression takes place, the CIARAA model of cyberaggression, commences with the receipt of an email that contains cues that are subsequently interpreted by a focal target. Cues could be as 'subtle' as the lack of a greeting , salutation or closing, as 'simple' as an implied insult to an individual's sense of professionalism or pride in work, to as 'blunt' as the use of swear words.

Once cues are extracted the focal targets engage in appraisal of both the cues and the context within which the email is received. Similar to the cues, the contexts associated with the receipt and appraisal of the email could be relatively straightforward or complex. The source, content, timing, and whether the email was an initial act of aggression, or an element of an ongoing conflict, were used as contextual cues.

Should the appraisal lead the focal target to perceive impoliteness, hostility or aggression, it was usual for the target of the email to experience an affective reaction to

it. The reaction was normally a mixture of distress, frustration, and anger. The experience of these negative affects usually initiated a process of secondary appraisal – similar to the determination of a flight or fight response when threatened. Based upon several factors, most notably the source of the email, the degree of hostility or aggression appraised within the email, and the individual characteristics of the focal target receiving the email, focal targets engaged in a range of response choices.

First, focal targets may do nothing. Justification for non-response included fear of sanctions or retaliation, avoidance of potential future confrontation or exacerbation of the circumstances. Alternatively, focal targets could also engage in various advice seeking, coping behaviour, or appeals to authority, and lastly even engage in a reciprocal response in a 'tit-for-tat' fashion (Andersson & Pearson, 1999). Regardless of the choice of response activity, the initial constellation of negative affective experiences played a major role in the determination of response.

Additional, contributory factors for the appraisal and action elements within the CIARAA model included both individual characteristics and organizational factors. For example, respondents with self-professed 'thick' skins, or respondents with a history of problematic email interactions with another individual, responded in similar ways. Alternatively, respondents who perceived unwarranted or unfair treatment in email would respond differently depending on their position within an organizational structure, e.g., a subordinate to supervisor relationship versus a coworker relationship. The work context also had an influence in determining both primary and secondary appraisals. For example, respondents who worked in a more stressful higher paced environment were more likely to be sensitive to email that questioned their ability or decisions. These

results indicate that cyberaggression is primarily a perceptual assessment, is subjected to the influence of both individual and organizational level factors, and may result in a number of adverse outcomes.

Potential Limitations

The primary limitation of this study was the nature of the phenomenon itself. As cyberaggression is a function of an individual's perceptual assessment, and is inextricably bound with the experience of negative affective reactions, the *post hoc* description of the events given by respondents may have biased their descriptions. Specifically, many of the respondents became agitated and appeared to react affectively to the experience of remembering and speaking about their experiences. The affective nature of the experience and the *post hoc* re-visiting of the affect may have biased the respondents description in terms of the level or degree of their affective response.

However, two issues militate against the potential for over description and hindsight bias. First, as the experience is perceptually based, and as the experience was almost universally considered negative and aversive by respondents, the likely point of bias in the respondent's descriptions is in terms of the level or degree of negative affect they experienced. Although this may have biased their description of the reasoning behind, or their motivation for, reaching an appraisal or reacting in a specific fashion – any bias present in the *post hoc* description should not have introduced bias into the description of any actions they engaged in. Secondly, despite the range of negative affective experiences, there was a consistent and sequential process contained within their descriptions, the CIARAA model.

Conclusion

The contribution this study makes to the study of this form of aggression in organizational settings is threefold. First, this study provides tentative evidence for the theoretical and assumptive basis of the only other work in this area (see Weatherbee & Kelloway, 2006) by providing empirical support to the proposition that cyberaggression is an operant and differentiable form of workplace aggression. Second, the identification and formulation of the Context, Interpretation, Appraisal, Reaction, Appraisal, and Action (CIARAA) process model of cyberaggression provides the basis for an empirical framework within which to commence the study of cyberaggression. Finally, the identification of a range of cues and factors that will permit measurement instruments to be developed to serve as the basis for follow-on empirical study.

STUDY TWO

Operationalization, Measurement, and Dimensionality of Cyberaggression

Purpose

The goals of Study Two were (a) to develop measures of cyberaggression, (b) to investigate the underlying factor structure of the construct, and (c) to explore the relationships between cyberaggression, demographics, and contextual work variables. This was achieved through the analysis of data collected by the administration of a survey on a sample of working persons who use email.

To achieve these goals, the results of Study One were used to generate an initial set of items sampled from within the proposed cyberaggression construct domain. Using the CIARAA process-model, these items where then organized into several measures reflecting the various stages in an incident of cyberaggression. These measures were then administered, along with other demographic variables, in a survey to individuals who worked with email in organizational settings. The data generated by the survey was then analyzed in order to identify the structure of the cyberaggression construct, and to determine the validity of the cyberaggression measures.

Method

Measure Development

In order to ensure that the measures developed in this study would accurately reflect the cyberaggression construct domain, a three stage process was followed including item generation drawn from the construct domain, organization of items into scales and, finally, scale evaluation (Schwab, 1980). In the absence of a body of previous empirical work or other expert knowledge, the best starting point for scale development

was the utilization of the descriptive data provided by individuals found within a specific population of interest (Dawis, 1987). This is especially applicable when these individuals are describing incidents that they perceive as important or critical to themselves or their experiences (Donovan, Drasgow, & Munson, 1998).

Item Generation. The descriptive data from the interview transcripts in Study One were used as the basis for creating an initial pool of test items. Interview transcripts were iteratively reviewed for declarative or descriptive statements concerning the respondent experience(s) involving the receipt of email that they considered to have been negative in some fashion. At this stage the methodological focus was on capturing the full range of respondent descriptions from receipt, through interpretation and appraisal, affective and cognitive reaction, and ultimately any response engaged in. This first step resulted in a list of 82 potential items reflecting respondent descriptions of the form and content of email, their appraisal of the email as negative, their affective and cognitive reaction to the email, and finally actions taken (see Appendix D).

In addition to generating potential items from respondent descriptions, treating cyberaggression as an email analogue of verbal aggression (Weatherbee & Kelloway, 2006) permitted the addition and refinement of items specifically designed to reflect 'aggressive' elements in parallel with verbal forms of aggression (Infante & Gorden, 1985; Rancer & Avtgis, 2006). These items reflect the types of self-concept attacks found in verbally aggressive behaviour, such as attacks on a target's individual or job related characteristics, their personal character, their level of professionalism, or their job or role competency (Infante & Rancer, 1996; Infante, Riddle, Horvath, & Tumlin, 1992). These items were then modified, consistent with the appraisal of respondents in Study

One; as attacks of these kinds were previously identified by respondents as mid-level aggressive descriptors. This step resulted in a further ten potential items (see Appendix D). Finally, the total item pool was then subjected to further refinement in a two stage process. In the first stage, items that were considered ambiguous or that could be easily misinterpreted due to colloquialism or their uncommon nature were removed. In the second stage, redundant or similar items were then removed from the item pool. This final process resulted in 46 items retained for use in the cyberaggression measures.

Structure and Composition. The general model identified in Study One was used as the basis for structuring items into measures. The respondent descriptions of pre-event, event and post-event activities, their associated thoughts and feelings, reactions and responses provided the initial basis for grouping items. Groups of items included those items which (a) were cues found in email and used in the appraisal process, (b) those items describing appraisal categories used to assess level or degree of aggression in email, (c) items reflecting the range of affective reactions that could be experienced in response to being a target of cyberaggression, and finally (d) a set of items describing potential behavioural responses that targets could engage in.

Two additional considerations influenced the final structuring of item groups into draft scales. First, scales were structured in such a way as to be able to capture empirically the communicative and relational nature of cyberaggression or aggressor-target dyads. Second, scales were constructed so as to be able to measure the potential of aggressor-target role reversal within dyads. Each of these is discussed individually in the sections that follow.

Relational Dyads. Study One results demonstrate that both the a priori and structural relationships between individuals influences the appraisal, affective and cognitive reactions, and the subsequent responses made by a target of cyberaggression. In other words, cyberaggression between coworkers was found qualitatively different than a similar event taking place in a supervisor-subordinate exchange. This is supported by research that shows that there are measurable differences in the predictors and outcomes associated with variations in aggressor-target dyads - where different factors predict supervisor to subordinate versus coworker to coworker aggression (Bruk-Lee & Spector, 2006; L. Greenberg & Barling, 1999; LeBlanc & Kelloway, 2002).

In most work settings, the relationships between organizational personnel may be classed as a coworker-coworker dyad, supervisor-subordinate dyad, or subordinate-supervisor dyad. It is also possible for organizational personnel to have an organizationally based relationship with individuals outside of the immediate work setting (a customer, or an individual in another related organization), a condition that is much more likely given the inter-organizational and extra-organizational potentials of email communications (Weatherbee & Kelloway, 2006).

Research on these related others as sources of aggression is sparse, however, there is evidence to suggest that customers are more likely to aggress verbally than are insiders (Grandey, Kern, & Frone, 2007), and non-related members of the general public aggress at rates higher than insiders (LeBlanc & Kelloway, 2002). Though organizational outsiders may or may not have a relationship with those employed by an organization (LeBlanc & Kelloway, 2002), for the purposes of this study only outsiders within a relationship will be considered. Almost no research has focused on subordinate to

supervisor aggression though this behaviour may occur if subordinates perceive themselves as being treated unfairly (Dupre & Barling, 2006). To capture as much data as possible concerning cyberaggression between these source-target dyads, measures were structured into matrices that allowed respondents to indicate the source of the email.

Role Switching. As the cyberaggression model shows, it is also possible for a target of cyberaggression to, in turn, become a perpetrator of cyberaggression targeted against another. For example, when a target of cyberaggression experiences a strongly affective reaction such as anger, they may use email to respond - a form of counter-aggressive action taken against the initiating aggression source (Buss, 1961). Consequently, it is logical, and methodologically possible, to 'flip' behavioural scales so as to measure the same behaviour from two perspectives – both a victim's perspective and an aggressor's perspective (Blau & Andersson, 2005). While not unique to this research, this measurement approach remains significantly underutilized within the aggression literature (Glomb & Liao, 2003; Hershcovis et al., 2007; Pearson, Andersson, & Wegner, 2001). Therefore, two of the four scales designed to measure cyberaggression from a target's perspective were 'flipped' and re-written to reflect an aggressor's or cyberaggression source perspective.

Item Stems. Using a declaration/agreement paradigm (De Vellis, 1991), item stems were created and then formulated to reflect the various processes in the model. For example, a stem would include a statement such as *"You would describe the email as ..."*. Item descriptors were then re-formatted as response choices that respondents could select from to signify agreement or endorsement: for example, *"unfairly questioning your competence."* The result of this process produced a set of item-stem response pairs for

each group of items for both perception of aggression by source, as well as for the enactment of aggression towards a target type.

Scaling. To capture the maximum variance possible, a seven point Likert scale was used. For the cyberaggression scales, scale points were designed to capture frequencies of behaviours. Frequencies ranged from *Never* to *Very Frequently,* and for each scale point a parenthetical description of the frequency was provided. For example the midpoint label and associated descriptor was *Occasionally (at least several times a month).*

Cyberaggression Scales. The complete process of item generation, structuring and compositing resulted in a total of six scales. These included four scales designed to measure facets of experienced cyberaggression from a target's perspective, and two from an aggressor's perspective. The target measures included Cues-In, Perceived-Cyberaggression, Cyberaggression-Target-Reaction, and Cyberaggression-Counter Action. The aggressor measures consisted of two 'flipped' target scales designed to capture data concerning the commission of cyberaggression including Cues-Out and Enacted-Cyberaggression.

Contextual Measures. Two contextual measures were also developed. These included; Organization Email Policy - a measure of whether, and to what degree, the workplace had a policy concerning email use - and Employer Support - a measure of whether organizations provided support to individuals who were the subject of aggression in email.

Procedure

Sampling

Potential respondents were contacted via email. Three primary groups were targeted in this fashion. First, working individuals known to the researcher; second, employees on an internal mailing list at an educational institution, and third, employees of a private corporation that was willing to sponsor the distribution of the email. For all three groups a standard invitational email was used. The email introduced the study in general terms and incorporated an html link to the web page containing the survey. An opportunity to win an Apple iPod mp3 music player was used as an incentive for respondents to complete the survey. This resulted in 237 responses, representing an estimated response rate of approximately 22%.

Participants

The final sample of 237 cases was composed of 119 (50.6%) male and 118 (49.8%) female respondents. Their ages ranged from 19 to over 70, with the mean age lying between 30 and 39 years of age. The organizations in which respondents were employed varied widely. Almost half were working in larger organizations (> 500 employees, 42.4%), one-third were employed in medium sized organizations (100-499 employees, 29.9%), and the balance worked in smaller organizations (< 5 – 99, 27.7%). The majority of respondents were employed in organizations classified as Educational Services (44.5%), Finance and Insurance (12.3%), and Professional, Scientific and Technical (10.1%) positions, Services (4.8%), Administrative Support (4.4%), Manufacturing (3.1%), Utilities (2.2%), and Retail trade (2.2%). Positions held within these organizations ranged from very junior positions (Administrative Clerk), with tenure

of less than a year, to organizationally senior positions (Divisional Vice President) with tenure of over 30 years.

Most respondents worked on a fulltime basis (88.7%), with a mean tenure of six and one-half years (79.42 months) in their positions. A slight majority were employed in a unionized environment (60.2%) with union membership at 44.6% of the sample overall. Slightly greater than one-third of the participants were employed in managerial positions (35.5%) with the sample work week at an average of 41.73 hours. The mean income of respondents was between $50-59,000 per annum with a low of less than $1,000 and a reported high of over $80,000.

Though most respondents indicated that they received more email than they would like (77.9%), the vast majority of respondents also strongly agreed that email was critical to their work (68.0%). Most received substantial numbers of email on a daily basis, in the range of 30-40 emails. Despite the reported criticality of email to their work, and the numbers of email received, only 42.9% of respondents indicated that their employer had a formal policy regulating the use of email by organizational personnel.

Measures

The survey instrument comprised eight measures including three scales to measure experienced cyberaggression, one scale to measure reaction to cyberaggression, one scale to measure actions taken in response, two measures of the commission of cyberaggression, one scale to measure Organization Email Policy, and one scale for Employer Support. Demographic variables designed to capture a range of information concerning the respondents and their workplaces were also incorporated. These included items such as gender, age, tenure, type of industry, size of organization, whether

individuals worked part-time or fulltime, etc. All measures were compiled into a survey instrument and converted to an html or web format in order to support administration of the study via the Internet. The formatted survey instrument is presented in Appendix E.

Data Preparation

The sample data were first screened for missing, out-of-range data, univariate and multivariate outliers, and violations of the assumptions of linearity, normality, collinearity, multicollinearity, and heteroskedasticity. Not unexpectedly, the distribution of the data exhibited positive skew. This is not unusual in studies involving phenomena that have a low base rate in the general population (R. A. Baron & Neuman, 1996) and is similar to other studies of workplace aggression (Schat, 2004; Schat & Kelloway, 2003b). Six cases that exhibited significant levels of both leverage and discrepancy were removed leaving 231 valid cases for further analysis.

The sample exceeded the recommended minimum sample size of 200 necessary for factor analysis (Guadagnoli & Velicer, 1988; Guilford, 1956), and each individual analysis met or exceeded the recommended ratios of 2:1 (Kline, 1994) for subjects to variables and 20:1 for subjects to factors (Arrindell & Ende, 1985).

The data were found suitable for each factor analysis as indicated by the presence of multiple significant correlations exceeding .30 (Tabachnick & Fidell, 2001), with matrix determinants being non-zero, and acceptable values for the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (Kaiser, 1974; Kaiser & Rice, 1974) and for Bartlett's Test of Sphericity (Bartlett, 1950).

Results

Exploratory Factor Analysis of Cyberaggression

    Perceived-Cyberaggression. Principal Axis Factoring (PAF) with an oblique rotation (promax, kappa=4) was used to explore the factor structure of cyberaggression. Based upon the factor loadings in the pattern matrix, those items that were heavily cross-loaded on two or more factors were first removed from the analysis and then the factors re-computed. To achieve simple structure (Thurstone, 1947), this process was repeated until items loaded heavily (> .40) on a single factor with minimal (< .30) loading on other factors. Once simple structure had been reached the factor analysis was then re-computed using a constrained four factor extraction criteria. The final result was a four factor structure with each factor comprising a collection of items with strong loadings on factors representing the type of source of cyberaggression (e.g. supervisor, coworker, etc.).

    Inspection of the loadings and correlations in the pattern and structure matrixes show relatively definitive factor structure, reflecting a four by-source grouping of items. The descriptive statistics, loadings, extracted communalities, inter-correlations and internal reliabilities of these factors are presented in Table 1. The factors were subsequently named after the source of the cyberaggression behaviour. Perceived-Cyberaggression structurally consists of four factors labeled *Supervisor*, *Subordinate*, *Coworker,* and *Customer/Other Persons.*

    Exploratory Factor Analysis for Enacted-Cyberaggression. As the Enacted-Cyberaggression scale was a 'flipped' scale, consisting of the same items reworded to reflect a perpetrator perspective, the subject to variable and subject to factor minimums

Table 1.

Means, Standard Deviations, Structure Matrix Correlations, Communalities, Proportion of Variance, and Cronbach Alpha for the

Constrained Four Factor EFA of the Perceived-Cyberaggression Items

					Factors			
					Customer/Other			
Items	Email described as ...	*M*	*SD*	Supervisor	Person	Subordinate	Coworker	Communalities
	Email received from a subordinate which was described as ...							
2i.	unfairly questioning your professionalism	1.24	0.66	0.14	0.30	**0.79**	*0.38*	0.65
2j.	unfairly questioning your competence	1.17	0.56	0.15	0.30	**0.88**	*0.38*	0.79
2k.	unfairly questioning your authority	1.26	0.64	0.15	0.27	**0.76**	*0.30*	0.58
2l.	unfairly questioning your character	1.09	0.42	0.16	0.21	**0.90**	*0.21*	0.81
2m.	hostile towards you	1.16	0.53	0.15	0.24	**0.87**	*0.31*	0.76
2n.	aggressive towards you	1.16	0.57	0.10	0.12	**0.74**	*0.23*	0.56
2o.	threatening to you	1.05	0.30	0.11	0.17	**0.74**	*0.19*	0.56

(tables continues)

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Table 1 (*continued*)

Items	Email described as …	*M*	*SD*	Supervisor	Customer/Other Person	Subordinate	Coworker	Communalities
					Factors			
	Email received from a coworker which was described as …							
2e.	unfairly accusing you of something	1.46	0.93	0.23	0.35	0.21	**0.70**	0.51
2f.	personally insulting	1.27	0.70	0.26	0.20	0.20	**0.74**	0.56
2g.	as demeaning	1.23	0.66	0.33	0.29	0.29	**0.88**	0.78
2h.	as belittling	1.23	0.69	0.23	0.20	0.21	**0.81**	0.66
2i.	unfairly questioning your professionalism	1.32	0.74	0.14	0.23	0.31	**0.78**	0.63
2j.	unfairly questioning your competence	1.29	0.76	0.12	0.30	0.32	**0.77**	0.62
2k.	unfairly questioning your authority	1.30	0.76	0.21	0.18	0.30	**0.64**	0.42
2m.	hostile towards you	1.23	0.65	0.24	0.18	0.23	**0.64**	0.42

(*table continues*)

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Table 1 (*continued*)

Items	Email described as ...	M	SD	Factors				
					Customer/Other			
				Supervisor	Person	Subordinate	Coworker	Communalities
	Email received from a supervisor which was described as ...							
2a.	impolite or uncivil	1.38	0.94	**0.80**	0.20	0.02	*0.25*	0.65
2b.	disrespectful or discourteous	1.33	0.86	**0.86**	0.14	0.05	*0.23*	0.74
2e.	unfairly accusing you of something	1.43	0.92	**0.82**	0.26	0.19	*0.28*	0.68
2f.	personally insulting	1.21	0.72	**0.84**	0.24	0.10	*0.31*	0.71
2g.	demeaning	1.26	0.82	**0.84**	0.23	0.19	*0.30*	0.70
2h.	belittling	1.18	0.67	**0.80**	0.28	0.14	*0.37*	0.67
2i.	unfairly questioning your professionalism	1.32	0.80	**0.75**	0.25	*0.26*	0.25	0.58
2m.	hostile towards you	1.17	0.65	**0.87**	*0.13*	0.08	0.11	0.77
2n.	aggressive towards you	1.15	0.60	**0.77**	*0.14*	0.12	0.13	0.60
2o.	threatening to you	1.09	0.45	**0.72**	0.09	*0.25*	0.19	0.55

(*table continues*)

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Table 1 (*continued*)

Items	Email described as ...	*M*	*SD*	Supervisor	Customer/Other Person	Subordinate	Coworker	Communalities
	Email received from a Customer/Other							
	Persons which was described as ...							
2a.	impolite or uncivil	1.73	1.18	0.20	**0.74**	0.15	*0.25*	0.55
2b.	disrespectful or discourteous	1.58	1.12	0.15	**0.77**	0.17	*0.19*	0.59
2e.	unfairly accusing you of something	1.47	1.01	0.22	**0.75**	0.25	*0.28*	0.57
2f.	personally insulting	1.32	0.87	0.23	**0.72**	0.14	*0.25*	0.53
2g.	demeaning	1.28	0.84	0.21	**0.78**	0.12	*0.22*	0.62
2h.	belittling	1.19	0.64	0.17	**0.79**	0.17	*0.25*	0.63
2i.	unfairly questioning your professionalism	1.39	0.88	0.17	**0.81**	0.31	*0.20*	0.67
2j.	unfairly questioning your competence	1.29	0.74	0.14	**0.85**	*0.31*	0.30	0.73

(*table continues*)

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Table 1 (*continued*)

Items	Email described as ...	M	SD	Supervisor	Customer/Other Person	Subordinate	Coworker	Communalities
					Factors			
2k.	unfairly questioning your authority	1.22	0.66	0.09	**0.68**	0.16	*0.23*	0.48
2m.	hostile towards you	1.23	0.69	0.23	**0.70**	*0.35*	0.22	0.52
	Total Variance Explained			29.53	15.24	12.22	9.56	
	Coefficient Alpha			0.94	0.92	0.92	0.91	

Note. $N = 231$. Principal axis extraction with promax rotation. Primary loadings are presented in boldface type; secondary loadings are presented in italics.

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were also met. The procedures and steps used for factoring Perceived-Cyberaggression were similarly followed. Most items were either heavily cross-loaded, or did not sufficiently load on any one factor.

Though the overall observed pattern of association between and across items was similar to those found in the factoring of Perceived-Cyberaggression, no clearly interpretable factor structure could be derived. One potential explanation for these results is the nature of the data and the restricted item variance for these behaviours, even more restricted than for the Perceived-Cyberaggression items. Consequently, the low variance and range restriction may have adversely affected the factor analytics and the derivation of interpretable factor structure (Hunter & Schmidt, 1990).

Cyberaggression Target-Reaction. Tests of sphericity were significant and the determinant was non-zero indicating suitability for factoring. Again, the first items dropped from the analysis were those items that loaded across multiple factors. These included items that seemed to represent broader more general adverse reactions such as worry and anxiety, sadness or depression, and fear. Simple structure (Thurstone, 1947) was achieved with four factors extracted. Again, each factor represented a collection of items that loaded by-source including items accessing respondent reactions such as anger, stress, frustration, and rumination. Once the structure was clearly identified the factor analysis was re-computed using a constrained four factor extraction criteria rather than the eigenvalue rule. The descriptive statistics, factor loadings, structure loadings, extracted communalities, and internal reliabilities of these factors are presented in Table 2.

Contextual Measures

Organizational Email Policy and Employer Support. Principal Axis Factoring with an orthogonal rotation (varimax) was again used to explore the factor structure of these items. Based upon the factor loadings in the pattern matrix, those items that were cross-loaded on two or more factors were removed and the analysis re-computed. This process was repeated until simple structure (Thurstone, 1947) was achieved. The analysis identified two factors, one reflecting aspects of organizational email policy, and a second factor consisting of items concerning forms and types of employer activities taken in support of email policy. The factor was re-computed constrained to a two factor solution. The descriptive statistics, loadings, extracted communalities, inter-correlations and internal reliabilities of these factors are presented in Table 3.

Scale Refinement

Once stable factor structure had been identified, items composing the Perceived-Cyberaggression, Cyberaggression-Target-Reaction, Organization Email Policy and Employer Support were subjected to test reliability analysis. Item-Total, Squared Multiple Correlations, and Cronbach Alpha were used to determine the most parsimonious set of items needed to create reliable scales.

Perceived-Cyberaggression. As the Perceived-Cyberaggression measures factored into four by-source factors including Subordinates, Coworkers, Supervisors, and Customer/Other Persons, each factor was treated as a sub-scale for testing purposes. The Cronbach Alpha for these scales ranged from .91 to .94, all considered acceptable. The individual sub-scale items, Item-Total and Square Multiple Correlations are presented individually in Appendix F.

Table 2.

Means, Standard Deviations, Structure Matrix Loadings, Communalities, Proportion of Variance, and Cronbach Alpha for the

Constrained Four Factor EFA of the Cyberaggression Target-Reaction Items

				Factors				
				Customer/Other				
Items	Items by Source	*M*	*SD*	Person	Supervisor	Coworker	Subordinate	Communalities
	Reaction to email received from a subordinate							
3a.	feel – angry	1.58	1.15	0.36	0.40	0.32	**0.67**	0.473
3b.	feel – stressed	1.52	1.13	0.32	0.36	0.37	**0.80**	0.635
3d.	feel – frustrated	1.77	1.37	0.32	0.33	0.32	**0.81**	0.653
3g.	think about the email after you received it	1.88	1.49	0.29	0.37	0.43	**0.81**	0.659
	Reaction to email received from a coworker							
3a.	feel – angry	1.99	1.45	0.41	0.59	**0.79**	0.36	0.651
3b.	feel – stressed	1.91	1.44	0.40	0.55	**0.81**	0.40	0.659
3c.	feel - anxious or worried	1.69	1.28	0.36	0.44	**0.72**	0.40	0.519

(*table continues*)

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Table 2 (*continued*)

Items	Items by Source	M	SD	Customer/Other Person	Supervisor	Coworker	Subordinate	Communalities
					Factors			
3d.	feel – frustrated	2.19	1.58	0.33	0.40	**0.68**	0.30	0.462
3g.	think about the email after you received it	2.50	1.82	0.27	0.42	**0.84**	0.35	0.716
	Reaction to email received from a supervisor							
3a.	feel – angry	1.90	1.47	0.36	**0.88**	0.49	0.32	0.779
3b.	feel – stressed	2.08	1.62	0.34	**0.88**	0.51	0.45	0.785
3c.	feel - anxious or worried	1.84	1.49	0.35	**0.79**	0.54	0.41	0.633
3d.	feel – frustrated	2.05	1.59	0.36	**0.82**	0.48	0.36	0.675
3g.	think about the email after you received it	2.54	1.96	0.26	**0.83**	0.53	0.41	0.704

(table *continues*)

Table 2 (*continued*)

				Customer/Other				
						Factors		
Items	Items by Source	*M*	*SD*	Person	Supervisor	Coworker	Subordinate	Communalities
	Reaction to email received from a customer/other person							
3a.	feel – angry	1.82	1.42	**0.88**	0.34	0.31	0.30	0.793
3b.	feel – stressed	1.75	1.45	**0.93**	0.35	0.37	0.36	0.869
3c.	feel - anxious or worried	1.61	1.25	**0.84**	0.38	0.42	0.37	0.716
3d.	feel – frustrated	2.08	1.67	**0.84**	0.31	0.37	0.37	0.708
3g	think about the email after you received it	2.08	1.62	**0.82**	0.36	0.49	0.39	0.688
	Total Variance Explained			40.86	12.20	7.74	6.42	
	Coefficient Alpha			.92	.92	.85	.86	

Note. N = 231. Principal axis extraction with promax rotation. Primary loadings are presented in boldface type.

Table 3

Means, Standard Deviations, Structure Matrix Correlations, Communalities, Proportion of Variance, and Cronbach Alpha for the EFA of the Organizational Email Policy and Employer Support Items

				Factors		
				Employer	Organization	
Items		*M*	*SD*	Support	Email Policy	Communalities
7a.	There is a formal written policy on the proper use of email at work	3.80	2.26	.23	**.85**	.77
7c.	The people in the organization follow the email policy	3.68	1.78	.30	**.80**	.72
7d.	The people in the organization receive training on the proper use of email	2.63	1.72	.30	**.77**	.68
8a.	Your employer does enough to protect employees from email misuse	4.20	1.78	**.76**	.24	.64
8b.	Your employer supports employees regarding complaints of email misuse	4.47	1.54	**.81**	.26	.72

(table continues)

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Table 3 (*continued*)

				Factors		
				Employer	Organization	
Items		M	SD	Support	Email Policy	Communalities
8f.	Your employer is willing to invest time and money in reducing email misuse	3.69	1.71	**80**	.30	.71
8h.	You employer takes the issue of email misuse seriously	4.00	1.77	**.80**	.29	.71
	Total Variance Explained			57.26	13.50	
	Coefficient Alpha			0.85	0.80	

Note. N = 231. Principal axis extraction with promax rotation. Primary loadings are presented in boldface type.

Cyberaggression Target-Reaction. As the Cyberaggression-Target-Reaction measures factored into four by-source factors including Subordinates, Coworkers, Supervisors, and Customer/Other Persons, each factor was again treated as a sub-scale for testing purposes. The Cronbach Alpha for each sub-scale was acceptable, ranging from .85 to .92. The individual sub-scale items, Item-Total and Square Multiple Correlations are presented individually in Appendix F.

Organization Email Policy. Three of the four items in this measure loaded strongly on one factor so the fourth item was dropped from further analysis. The Cronbach Alpha for this scale was acceptable at .89 (see Table F9).

Employer Support. Four of eight of the items in this measure loaded strongly on one factor. The Cronbach Alpha for this scale was acceptable at .85 (see Table F10).

Relationships Between Major Variables

Prior to further exploratory analyses, scale scores were computed for Perceived-Cyberaggression, Enacted-Cyberaggression, Cyberaggression-Target-Reaction, Organizational Email Policy, and Employer Support. Scale means were computed for all major variables except Organizational Email Policy and Employer Support whose scores were summed.

Descriptive Statistics and Frequencies of Major Variables. While the majority of respondents reported no incidents of cyberaggression within the last year, 20-30% of respondents did report at least one incident with 1-4% of respondents reporting more frequent and regular incidents with approximately half of these respondents reporting experiencing an adverse reaction. The commission of cyberaggression by respondents occurred with much less frequency, with the majority of respondents reporting they had

not engaged in this behaviour. However, 21-36% of respondents did report engaging in cyberaggression at least once in the last year, with 1-2% reporting they had committed cyberaggression more frequently with coworkers the most frequent target. A more detailed description of the various forms, types and patterns of cyberaggression reported by respondents is presented descriptively in Appendix G.

Correlation Analysis. The means, standard deviations, and correlations for the summated scales are presented in Table 4. The correlation matrix shows significant association amongst most of the measures with low to moderate strengths. For the Perceived-Cyberaggression and Enacted-Cyberaggression scales, correlations ranged from a low of .17 a high of .70. All correlations were significant at $p < .01$, less two that were significant at $p < .05$. For the React scales all correlations but one were significant with correlations ranging from a low of .12, *ns* through a high of .63, $p < .01$. Amongst the contextual measures, nine were significant, five at $p < .01$, four at $p < .05$, with strengths ranging from a low of .01 to a high of .65. Fifteen correlations were not significant.

In general terms, the observed pattern of correlations among the study variables support the results found in Study One. The strongest associations were between the matched source-target dyads for Perceived-Cyberaggression, Enacted-Cyberaggression, and reaction to cyberaggression. Organizational Email Policy was significantly but weakly correlated with the frequency of experienced cyberaggression by both coworkers and supervisors ($-.19$, $p < .01$ and $-.15$, $p < .01$ respectively). The direction of the correlation was negative in all but three correlations. Organizational Policy was moderately correlated with Employer Support (.58, $p < .01$).

Table 4.

Means, Standard Deviations, Inter-Correlations, and Reliabilities for Major Variables

		M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Source of Perceived-Cyberaggression																
1.	From subordinate	1.16	0.44	*.92*													
2.	From coworker	1.29	0.58	.34	*.91*												
3.	From supervisor	1.25	0.62	.17	.29	*.94*											
4.	From customer/other person	1.37	0.68	.27	.30	.24	*.92*										
	Target of Enacted-Cyberaggression																
5.	Sent to subordinate	1.12	0.34	.27	.21	.20	.34	*.91*									
6.	Sent to coworker	1.21	0.47	.17	.47	.22	.28	.66	*.91*								
7.	Sent to supervisor	1.12	0.36	.16	.33	.53	.25	.53	.64	*.92*							
8.	Sent to customer/other person	1.12	0.38	.17	.18	.19	.38	.70	.67	.61	*.93*						
	Target-Reaction to Cyberaggression																
9.	From subordinate	1.69	1.07	.56	.14	.18	.21	.38	0.12	.16	.13	*.85*					
10.	From coworker	2.15	1.32	.31	.63	.24	.20	.24	.41	.31	.15	.39	*.86*				
11.	From supervisor	2.15	1.48	.31	.32	.60	.18	.21	.28	.44	.21	.42	.55	*.92*			
12.	From customer/other person	1.93	1.39	.29	.16	.17	.57	.23	.18	.23	.37	.38	.41	.35	*.92*		
	Contextual Measures																
13.	Organization Email Policy	3.75	1.83	-.06	-.19	-.16	-.08	.03	-.08	-.10	-.02	.07	.04	.01	.06	*.89*	
14	Employer Support	3.71	1.35	-.08	-.26	-.30	-.14	.01	-.14	-.15	.00	.01	.22	.18	.01	.58	*.85*

Note: $N = 231$, Correlation $>= |.12|$ $p < .05$ (2-tailed), correlation $>= |.17|$ $p<.01$ (2 tailed), Cronbach Alpha for scales are presented on the diagonal

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Employer Support showed a similar pattern of relationship with other variables, significantly but weakly correlated with the frequency of cyberaggression experienced by both coworkers and supervisors (-.25 and -.30, $p < .01$ respectively), and negatively correlated with expressed cyberaggression by coworkers and supervisors (-.14 and -.15, $p < .05$). The direction of the correlation was also negative across all significant associations.

Discussion

Identification of a Model of Cyberaggression

Building upon initial theoretical work on cyberaggression (Weatherbee & Kelloway, 2006) this study commenced the empirical development of the cyberaggression construct. Similar to other negative experiences that generate physiological and psychological reactions in a target (Taylor, 1991) the results of this study, combined with those of Study One, demonstrate that the experience of cyberaggression may be considered, at times, a deeply negative experience. Target experiences of cyberaggression are associated with affective, cognitive, and behavioural outcomes.

Dependent on the strength of the affective reactions and the structural relationship with the aggressor, the targets of cyberaggression could engage in a primarily affectively motivated 'response in kind' or a more cognitively based instrumental response, or a period of rumination prior to a response. Alternatively, the target could also engage in conciliatory or de-escalatory actions, either through email or offline, or finally, the target may simply take no action at all.

The results also tentatively identify several associated individual and situational variables that may be operant in a cyberaggression episode. These included the appraisal of email cues, form and content, dispositional or affective characteristics, negative affective states, and organizational role. Potential situational variables included the general work climate, the 'social' norms concerning the use of email, and the structural nature of the relationship between communicants. Additionally, situational determinants included the importance and frequency of the use of email for organizational purposes, the presence of policy prescriptions or proscriptions on the use of email, and types and forms of support provided to employees when using email.

Several potential outcome variables were also identified. These included the experience of negative affect, anxiety or fear, and the potential for deleterious effects on psychological and somatic health. Finally, the experience of being a target of cyberaggression may itself function as a 'trigger' that leads targets of cyberaggression to respond by using email to retaliate against an aggressor – thereby becoming an aggressor themselves.

Incorporating these variables into a process model of cyberaggression yields a model can then be tested (see Figure 4).
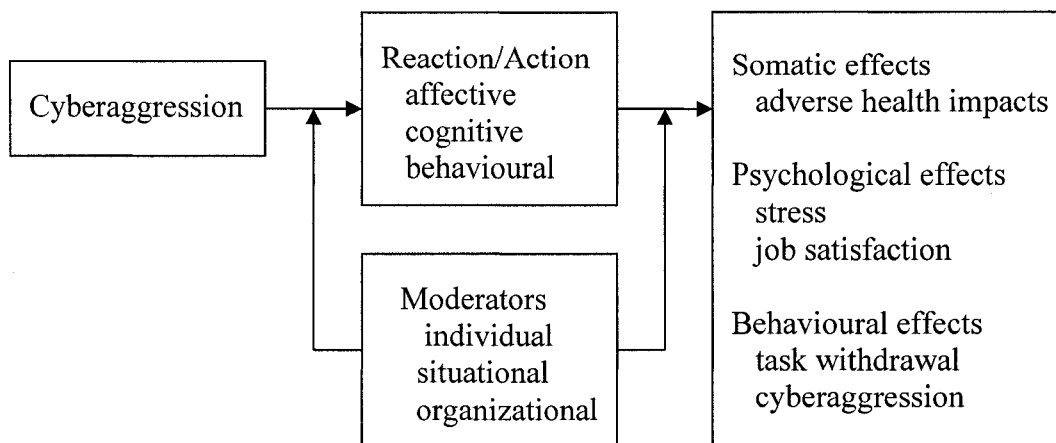
Figure 4. *A General Process Model of Cyberaggression*

'Standardization' of Perceived-Cyberaggression and Enacted-Cyberaggression Scales

Little research has focused on distinguishing among sources of aggression even though there is increasing evidence that there is an empirically distinct relationship between types of aggressive behaviours and the sources of those behaviours (LeBlanc & Kelloway, 2002). The inherent danger in failing to measure these differences may be the confounding of understanding of the individual and situational variables that contribute to, mediate/moderate, or inhibit these behaviors (Hershcovis et al., 2007).

While it may be expected that different individuals in an organization will exhibit different sets of behaviours, particularly if these behaviours are promoted/suppressed by organizational roles, there is the danger that using the currently derived scales in future studies will restrict results to a very narrow range of the potential phenomena found within the cyberaggression construct.

During the exploratory factoring, many of the scale items were observed to be 'complex' items with multiple cross loadings on several factors. Three potential

explanations for the presence of shared loadings are possible. First, they may be due to the influence of a higher order factor, or second, the limited variance of some of the items in the sample may have affected the correlations between items. As these complex items were iteratively removed from the analysis, the end result was the identification of four factors, each composed of items that were highly one-dimensional, strongly loading on one source factor. Hence these items would be less likely to be influenced by any potential second-order factor, or a factor arising from differing types of behaviour across source. Finally, it is possible that the restricted nature of the data, in terms of the number of items being analyzed in combination with the low variance lead to solutions based upon source versus the potential of structure being determined by types of behaviour across source. However, as cyberaggression is a new construct with no prior empirical study, when taken in combination the results of the EFA and the principles of parsimony and plausibility suggest that a by-source structure is likely.

From a more pragmatic perspective and for the purposes of enhancing respondent completion of any survey instrument using these scales, a 'matrix' of common items would be both theoretically and empirically desirable. Therefore, the potential for a 'standardized' scale matrix based upon a common set of items across sources was investigated.

Selection of items was based upon the criteria of (a) maximum use of between-source common items, (b) a set of items that represented the full range of behaviours found within and between each source, and (c) items would have to cohere with acceptable reliability scores.

The result of this process produced four eight-item common sub-scales for Perceived-Cyberaggression. Each Perceived-Cyberaggression sub-scale had an acceptable Cronbach Alpha ranging from .87 - .92 (see Appendix H). These scales were then 'flipped' to create scales to measure Enacted-Cyberaggression. All of these scales had acceptable levels of Cronbach Alpha, ranging from .84 to .89 (see Appendix H).

Summary

This study was carried out to develop measures of cyberaggression, investigate the underlying factor structure of the cyberaggression construct, and to explore and identify potential variables of interest for model development. Drawing upon the communications and workplace aggression literature an item pool of potential indicators of cyberaggression designed to sample the domain was created. This item pool was further refined using the results from Study One. Based upon the CIARAA model of cyberaggression, item were then composed into three primary measures of cyberaggression reflecting the experiences of cyberaggression by respondents. These measures included Perceived-Cyberaggression, Cyberaggression-Target-Reaction, and Enacted-Cyberaggression. When taken in combination, the development of the CIARAA model, the item generation and compositing methods used for the measures contributed to content validity. These measures were then administered in a survey to working respondents.

Construct and structural validity was assessed through Exploratory Factor Analysis. The results of the EFA suggest that Perceived-Cyberaggression comprises four factors representing different sources of behaviour, and the sources of cyberaggression, whether cyberaggression from a subordinate, coworker, supervisor, or customer-other

person, are empirically distinguishable. Similarly, the results suggest that Target-Reaction comprises four factors reflected a reaction to source structure. However, the results for Enacted-Cyberaggression are more equivocal. As no clear factor structure emerged the dimensionality of this behaviour remains to be confirmed.

The indeterminacy of the structure of Enacted-Cyberaggression could be a function of the nature of the data. Any structural relationships may have been analytically indeterminate due to the low variance of items (Hunter & Schmidt, 1990). Alternatively, a second potential explanation is that, unlike Perceived-Cyberaggression where source is the overriding perception for focal targets, it is possible that for Enacted-Cyberaggression it is the behaviours themselves rather than the target of the behaviour that is perceptually important to the respondents who engaged in cyberaggression. That is, engaging in cyberaggression reflects a uni-dimensional structure or a group of behaviours that are perceived to be aggressive. Once a decision to engage in cyberaggression has been made, the actual target of the behaviour is perceptually relegated to secondary importance. The structure of Enacted-Cyberaggression will need to be further investigated in future studies.

Potential Limitations

The results of this study may be subject to several potential limitations. These include the nature of the phenomenon and its presence in the population from which any sample is drawn, the cross-sectional nature of the study, and the self-report nature of the data. Each of these is addressed in the sections that follow.

Although not insurmountable, the low base rate of this phenomenon in the population combined with the low variance associated with measurement presents unique

methodological and analytical challenges. This is a particularly acute issue in this study as there appears to be a dimensional aspect to the cyberaggression construct wherein the perception of aggression is based upon both the form (i.e., specific cues contained in an email) and the source (i.e., from whom the email originates) of the aggression. These issues suggest that progress in understanding cyberaggression will only accumulate across multiple studies.

The cross-sectional nature of the study also restricts conclusions of causality. Given the probable reciprocal nature of the phenomenon wherein a target of cyberaggression becomes a source of cyberaggression, and given that any cross-sectional study, by its very nature, captures data *in media res*, causal relationships cannot be concluded. Even though results show that there is a significant relationship between perceptions of cyberaggression and acts of cyberaggression, it is possible to hypothesize circumstances where causal relationships work in reverse. That is, individuals who regularly aggress against others are the focal target of reciprocal cyberaggression themselves.

There is also a concern that this study is subject to common method variance (Lindell & Whitney, 2001) due to the self-report nature of the observations (D. T. Campbell & Fiske, 1959) in this study. The danger is that common method variance may obscure the strength and direction of the *true* associations between the study measures, thereby engendering explanations for the observed relationships that are not present (Podsakoff, MacKenzie, Jeong-Yeon, & Podsakoff, 2003). Though a longitudinal methodology should overcome these challenges, the nature of the phenomenon, arguably

non-normative antisocial behaviour, remains subject to social desirability bias and single-source measurement challenges.

Given the highly personal nature and unique form of the behaviour under study, what are considered 'private' or 'organizational' communications between individuals, measurement in other than self-reports presents an almost insurmountable obstacle to the aim of this research, that is to understand the phenomenon as experienced by the target of the behaviour (Fox & Spector, 1999). As the experience of cyberaggression is a personal and perceptual-based phenomenon, and given that measurement of this phenomenon must originate from the source of the experience, the use of their self-report data, despite potential limitations, is necessary.

Conclusion

The present study contributes to our knowledge of workplace aggression through an initial operationalization of a new construct, cyberaggression, which is a growing but heretofore unacknowledged 21st century workplace phenomenon. It presents initial evidence to support both the perceptual and process nature of cyberaggression, and demonstrates that the same behaviours engaged in by individuals with different structural relationships are empirically distinguishable from one another. It also provides evidence that shows that targets of cyberaggression experience multiple adverse affective and cognitive reactions. More importantly, perhaps, it also provides evidence to show that target reactions vary as a function of the source of cyberaggression.

Further, the results provide tentative evidence to show that the affective and cognitive reactions experienced by targets of cyberaggression may act to mediate the relationship between the experience of cyberaggression and engaging in cyberaggression.

Finally, this study has proposed a model of cyberaggression and identified several potential variables of interest within the model. Future research will be needed to (a) validate the cyberaggression construct and measures, and (b) test the initial model, and (c) begin to emplace the cyberaggression construct within a network of antecedent and consequent variables.

STUDY 3

Development and Evaluation of a Model of Cyberaggression

Purpose

The purpose of this study was to develop and evaluate a model of cyberaggression. In this study the exploratory results of the first two studies were synthesized with findings from the general aggression literature to develop and evaluate such a model. Based on this synthesis, several variables were then selected to model a nomological network of predictors and outcomes of cyberaggression. The dimensionality of the cyberaggression construct explored in Study Two was assessed using Confirmatory Factor Analysis. Several potential individual dispositional characteristics, environmental or contextual factors, as well as the observed effects of negative affective reaction as a partial mediator on outcomes of cyberaggression, were then composed into an hypothesized nomological network. The model was then assessed using a structural equation modeling approach.

Model Development

Modeling Aggression

A continuing point of debate across the literature concerning workplace aggression is the theoretical and empirical rationale for the selection of predictor variables. Specifically, the central element of concern is the relative importance of individual versus situational factors and their contribution to aggression (see for example Douglas & Martinko, 2001; Folger & Skarlicki, 1998). A recent study has re-emphasized the importance of investigating both individual and situational factors expected to contribute to workplace aggression in order to understand the relational and contextual

nature of when and where, and between whom aggression occurs in the workplace (Hershcovis et al., 2007). As cyberaggression is a function of the use of organizational email communications (Weatherbee & Kelloway, 2006), it may be expected that both the structural and the social relationships between communicants and the context within which any specific communication occurs will likely influence (a) the interpretation and appraisal of a received email, and (b) any cognitive, affective or behavioural reaction to such email. This suggests that a nomological model incorporating cyberaggression should be composed of both individual and situational or contextual factors.

Individual Predictors of Aggression. While there is no definitive 'archetype' of aggressor-characteristics in the literature, there is an emerging consensus concerning several individual differences and their role in aggression in the workplace (Douglas & Martinko, 2001). Individual differences such as Type A behaviour, dispositional or trait anger, attribution style, self-monitoring, negative affectivity, attitudes towards revenge, and locus and levels of self-control have all been found to be significant determinants of counterproductive or aggressive behaviours (R. A. Baron & Neuman, 1996; Douglas & Martinko, 2001; Skarlicki, Folger, & Tesluk, 1999; Spector & Fox, 2005). Results also suggest that individual differences influence decisions to engage in reciprocal aggression against other persons (Skarlicki & Folger, 1997). For example, when provoked, individual differences such as trait anger, tendency for rumination-dissipation, and Type A behaviour were found to differentially mediate aggressive responses (Bettencourt, Talley, Benjamin, & Valentine, 2006).

Situational Predictors of Aggression. In addition to these individual predictors, several situational determinants have been found to be predictive of, or related to,

workplace aggression. These include perceptions of justice and fair treatment at work (Irving, Coleman, & Bobocel, 2005; Skarlicki & Folger, 1997) and the presence or absence of workplace stressors such as interpersonal conflict (C. A. Anderson & Huesmann, 2003). Other factors such as resource constraints (Fox, Spector, & Miles, 2001), workplace climate (Hammer, Saksvik, Nytro, Torvatn, & Bayazit, 2004), group norms (Ehrhart & Naumann, 2004) or group social processes (Glomb & Liao, 2003) also play a significant role. All of these factors may function as environmental, situational, or task-related dissatisfiers (Judge, Scott, & Ilies, 2006) either enhancing the likelihood of workplace aggression or acting as triggers for workplace aggression.

Unlike workplace violence which involves physical acts that are rarely equivocal, symbolic aggression (Neuman & Baron, 1998) is much more contextual in nature (Inness, Barling, & Turner, 2005). The role of perception is particularly salient in cyberaggression as it is a target's perception of an email that determines if an email is appraised as aggressive or not. So much so, that independent of any intent of the sender of an email, cyberaggression as a phenomenon does not actually occur until an individual interprets and appraises that email as aggressive or hostile in some way – a form of subjective experience where a target concludes they are a victim of mistreatment (Aquino & Lamertz, 2004). Based upon these findings and the results from Studies One and Two, a number of individual and situational factors demonstrate likely potential to be operant within any nomological network incorporating cyberaggression. The rationales for each specific situational and individual variable expected to predict cyberaggression, and those variables that are expected to be resultant outcomes of the experience of cyberaggression, are detailed in the sections that follow.

A Model of Cyberaggression: Predictors

　　　　Organizational Climate. Consisting of the collective beliefs, values, and norms concerning expected behaviour (Katz & Kahn, 1978), an organization's climate is multi-dimensional in nature (Carr, Schmidt, Ford, & DeShon, 2003). Research has shown that various elements of climate are related to numerous individual and organizational level outcomes (J. P. Campbell, Dunnette, Lawler, & Weick, 1970). Climate constructs influence a wide range of affective, cognitive, and behavioural activities at work, such as job satisfaction, work performance, health and stress, and work withdrawal (Carr, Schmidt, Ford, & DeShon, 2003). The overall environment or climate of an organization is also affected by the introduction of new technologies that change work processes (Scheider & Reichers, 1983). Technologies, such as email, may change the way in which organizational members communicate to achieve work tasks (Hinds & Kiesler, 1995). Indeed, as organizational members use computer mediated communications, new and different normative practices for both internal and external communications often result (Bansler, Havn, Thommesen, Damsgaard, & Scheepers, 1999; Markus, 1994; Weatherbee & Kelloway, 2006); these practices are critical and necessary for achieving organizational goals (Milton & Westphal, 2005). As these practices are critical to organizational success, organizations normally develop new policies to control or influence practices so that they are congruent with the sanctioned organizational climate. Consequently, the social and relational use of email in the workplace, and the policies organizations develop to manage and control behaviours concerning the use of email are significant factors contributing to the overall organizational climate.

Organizational Policy. One of the mechanisms through which organizations attempt to affect work practices is through promulgation of organizational policies or standards (Ashkanasy, Wilderom, & Peterson, 2000). Policies put in place by organizations may be considered indicators of those behaviours that an organization values, deems desirable, or permissible. To encourage certain behaviours, or to suppress undesirable ones, policies may be articulated in either prescriptive or proscriptive terms, detailing and articulating the positive outcomes related to valued behaviours and the sanctions relating to unacceptable behaviours (N. S. Baron, 2002). As aggression is generally considered deviant or anti-normative behaviour the use of email for aggression should be viewed as deviant and organizationally unacceptable. Therefore:

Hypothesis 1: *Organizational policies concerning the normative use of email will negatively predict Perceived-Cyberaggression.*

Workplace Norms. The changes in the organizational practices associated with the use of computer mediated communications may also affect more than work or task-related communications as circumscribed by policy. Computer mediated communications also affect interpersonal communications and their related socio-emotional norms, such as relationship building or social maintenance, that exist between and amongst organizational personnel (Scheider & Reichers, 1983; Steinfield, 1985). Thus, new communicative practices may evolve over time to support the interactional and relational behaviours (B. Barry & Crant, 2000; Baym, 1995) of organizational members. Therefore, the organizational climate may also be influenced by the changes to normative practices, or the development of new practices and norms through the use of communications technologies. One implication of this mutual influence is that while

organizational policy may address the use of email systems for work or task related applications or uses, these policies are also reliant on congruent social practices as well.

Differences between an articulated policy and the actual practices engaged in by organizational personnel within the policy domain have been described as *espoused-values* versus *in use*-values (Argyris & Schon, 1974). It is possible to have conditions where (a) policy and practice are congruent, (b) an organization has an espoused policy concerning appropriate organizational communications but in-use practices do not fully support the stated policy, or (c) where a sub-element within the organization (J. Martin, 1995) does not implement or enforce the policy in their practices (i.e., by paying only 'lip service' to the policy).

In organizations where norms of politeness, honesty, and respect are fostered by policy and supported by practice (Edwards & Bello, 2001), congruency should function so as to prevent or reduce impolite or aggressive communications. In organizations where the practices are less congruent, perhaps more oppositional than mutually respective in nature, or where open confrontation and negativity become tolerated by organizational personnel, individuals will be more likely to express themselves directly and overtly in their communications (Aquino, Douglas, & Martinko, 2004). This implies that the tolerance for breaching either stated policy or policy congruence in-practice norms of politeness by organizational personnel will act to reduce rates of cyberaggression found in organizational communications. Therefore:

Hypothesis 2: *Workplace norms for appropriate use of email will negatively predict Perceived-Cyberaggression.*

Individual Characteristics

Affective Disposition. Affectivity is a general dispositional characteristic that influences the manner in which persons perceive and attend to stimuli within their external environment (Watson, 2000; Watson, Clark, & Tellegen, 1988). Previous work in this area has shown that individuals who are predisposed to experience negative emotional states such as anger or hostility are more sensitive to what they perceive are negative cues in their immediate environments. These individuals are more likely to focus on negative cues in general (Baumeister, Bratslavsky, Finkenhauer, & Vohs, 2001) and to perceive these cues as provocative (Berkowitz, 1993; Berkowitz & Harmon-Jones, 2004; Watson, Clark, & Tellegen, 1988; Watson & Pennebaker, 1989). This disposition is also related to a general tendency to attribute blame to external sources (Buss, 1961), a form of attribution bias wherein individuals will attribute hostile intent to provocation, even in the absence of unequivocal evidence (Dodge & Coie, 1987). Two individual characteristics present in the constellation of variables which measure levels of hostility include trait anger and trait verbal aggression.

Trait Anger. Persons are differentially prone to experience more or less anger in their lives - either in general terms such as in the characteristic of *trait anger*, or when specifically triggered by a negative event (Taylor, 1991), as in the experience of *state anger* (Berkowitz & Harmon-Jones, 2004; Spielberger, 1996). As individuals with higher levels of trait anger are more likely to perceive provocation in the environment around them, they should be more likely to perceive aggression in either aggressive or equivocal email.

Trait Verbal Aggression. Politeness and honesty are critical social elements of communication (Edwards & Bello, 2001). When norms of social and interpersonal politeness are violated, or when individual self-concepts are perceived to be slighted or attacked, verbal communication is perceived as being impolite, hostile, or aggressive (Infante & Wigley, 1986). Individuals who exhibit higher levels of trait verbal aggression tend to see their environment as more hostile than those who are less verbally aggressive in nature (M. M. Martin, Mottet, Weber, Koehn, & Maffeo, 1998; M. M. Martin, Weber, & Mottet, 2003). They also tend to expect verbally aggressive behaviour in the communications they receive from others (Rancer & Avtgis, 2006). This effect is present in both face-to-face verbal behaviour as well as in computer mediated communications, e. g., email or online in an Internet chatroom. In both face-to-face and computer mediated communications, individuals higher in trait verbal aggression tended to perceive more negative, individual characteristics in the individual with whom they were communicating, and tended to expect more aggressive communications (M. M. Martin, Hiesel, & Valencic, 2001). Verbal aggression is usually perceived as a symbolic form of aggression that may be interpreted as a signal of hostility, a potential pre-cursor to other forms of aggression (Bostrom, Baseheart, & Rossiter, 1973). Therefore:

Hypothesis 3: *Hostile dispositional characteristics will positively predict Perceived-Cyberaggression.*

Cyberaggression as an Affective Event. Over the last decade, research on the role of affect in the workplace, particularly as affect relates to counterproductive, deviant or aggressive behaviour, casts the function of general affect or mood and discrete emotions in a new light, specifically, the ability of dispositional and state affect to account for

criterion variance in models of aggression both individually and collectively. Using

Affective Events Theory (Weiss & Cropanzano, 1996), Lee and Allen (2002) show that

hostility, as a trait nested within the broader more general mood construct of negative

affectivity, separately accounts for predictive variance in deviant workplace behaviour

beyond that of negative affectivity. They determined that while negative affectivity was

related to negative workplace behaviours, individual emotional predispositions also

played a significant role and that predicative validity improved when both general and

discrete emotional predispositions were controlled for.

These results are supported by other recent research that shows that hostility and

anger are more strongly related to aggressive behaviours than other predictors such as

fear or anxiety (Fox & Spector, 1999), and that some workplace behaviours and

outcomes are affect driven rather than cognitively driven (Fisher, 2002; Thoreson,

Kaplan, Barsky, Warren, & Chermont, 2003; Weiss & Cropanzano, 1996).

Even more recently, research has shown that workplace events that result in the

experience of major affective responses, such as the perception or experience of injustice

or incivility, are not only predicted by dispositional affect, but that the subsequent actions

taken in response are mediated by state affect. For example, Domagalski and Steelman

(2005) found that trait anger not only predicted perceptions of incivility and injustice, but

state affect mediated the subsequent behavioural response engaged in by individuals who

perceived themselves as being treated unfairly.

Consequently, the evidence suggests that dispositional or trait affect, as well as

state affective experiences, will likely have potentially similar, but independent effects

within a nomological network centered upon cyberaggression. That is, while trait affect

is likely to be related to the perception of cyberaggression, state affect is a justifiable candidate for the mediation of any behavioural response taken as a result of the experience of cyberaggression. This theoretical supposition is further supported by the results of Studies One and Two, as well as the work of Van Katwyk and colleagues (Van Katwyk, Fox, Spector, & Kelloway, 2000). Van Katwyk et. al. found evidence to suggest that different affective states were differentially related to predictors and outcomes of well-being at work.

This evidence has two theoretical and methodological implications for the modeling of cyberaggression. The first implication is that state affect will likely mediate the relationship between the experience of cyberaggression and outcomes associated with this experience, a mediating relationship that is tentatively supported by the findings of Studies One and Two. Second, the model should examine if there are independent predictive effects of both dispositional and state or specific negative affect. Therefore:

> Hypothesis 4: *State Affective Reactions will fully mediate the relationship between Perceived-Cyberaggression and outcomes associated with the experience of cyberaggression.*

A Model of Cyberaggression: Outcomes

Dissatisfaction in the Workplace. Workplace aggression is related to a number of negative psychological, somatic, and behavioural outcomes (Schat & Kelloway, 2000, 2003a; Spector & Jex, 1998). These include negative affect (Barling, 1996; Spector & Fox, 2002), fear, anxiety, stress (Rogers & Kelloway, 1997), and turnover (LeBlanc & Kelloway, 2002).

While negative social interactions such as aggression serve to provoke reactions like anger (Mikula, Scherer, & Athenstaedt, 1998), they may also lead to the experience of other effects including anxiety, hostility, frustration, and distress (Leary, Springer, Negel, Ansell, & Evans, 1998). This suggests that cyberaggression, perceived as hostile or aggressive interactions with others, may also have similar negative outcomes upon an individual's general satisfaction with the work environment.

Organizational Justice. Organizational Justice has been an important area of study within the organizational literature for several decades (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). While there is still debate concerning the exact structure of the organizational justice construct, there is growing consensus that organizational justice has four distinct sub-types including distributive and procedural justice (Leventhal, 1976), interactional justice (Bies & Moag, 1986), and informational justice (Colquitt, 2001).

Interactional justice is based upon of the appraisal of interpersonal treatment by organizational members within the workplace, and whether that treatment is perceived as fair or not (Bies, 2001). Perceptions of fairness in interpersonal communications and relationships (Donovan, Drasgow, & Munson, 1998) are critical to perceptions of interactional justice (Bies & Moag, 1986; Dupre & Barling, 2006). This linkage has led to the consideration of interactional justice as an interpersonal construct (J. Greenberg, 1993) considered closely related to constructs of interpersonal fair treatment or fairness (Donovan, Drasgow, & Munson, 1998). More specifically, perceptions of interpersonal or interactional fairness are dependent upon two elements, the provision of information and the presence of emotional rapport. When organizational members provide suitable and appropriate information to others in their interpersonal interactions, and when this is

done in an emotionally supportive fashion, individuals are likely to perceive themselves as being treated more fairly. However, when these elements are missing perceptions of injustice or unfair treatment usually result (J. Greenberg, 1997, 2006; Litzky, Eddleston, & Kidder, 2006).

Perceptions of fairness of treatment in the workplace have also been found to be influenced by workplace climate. When the workplace climate is considered as interpersonally hostile by organizational members, the work environment is perceived to be less fair and more unjust (Donovan, Drasgow, & Munson, 1998). Consequently, if an organization's climate is more tolerant of, or if workplace practices permit the open expression of impoliteness, disrespect, hostility or aggression in organizational communications, it is more likely to result in perceptions of unfairness and injustice in the workplace.

Job Satisfaction. Workplace aggression or incivility is normally experienced as a negative and stressful event (Taylor, 1991), and prior research has consistently demonstrated that these forms of experience adversely impact the levels of satisfaction individuals derive from their work (Bowling & Beehr, 2006; Cortina, Magley, Williams, & Langhout, 2001; Irving, Coleman, & Bobocel, 2005; Van Katwyk, Fox, Spector, & Kelloway, 2000).

Intent to Quit. Those victims of workplace aggression or violence who have been found to suffer from increased levels of stress (Rogers & Kelloway, 1997) also generally experience increased levels of job dissatisfaction, intent to quit, and turnover (Bowling & Beehr, 2006; LeBlanc & Kelloway, 2002). As focal targets of cyberaggression experience the event as negative and distressful they suffer from increased stress.

Increased levels of stress should result in associated negative outcomes such as increased

job-dissatisfaction, which in turn should lead to increased intent to quit or turnover.

Therefore:

> Hypothesis 5: *Perceived-Cyberaggression will positively predict dissatisfaction*
>
> *with the work environment, and*

Strain Outcomes. Victims of workplace aggression have been found to perceive

aggression as a stressor (Barling, 1996). Individuals who are subjected to stress usually

experience some form of adverse effects (Pratt & Barling, 1988). If the experience of

workplace aggression or violence is severe enough, or if stress accumulates as a function

of repeated exposures to stressors, outcomes may manifest themselves as adverse

emotional or adverse health effects (LeBlanc & Kelloway, 2002). If focal targets of

cyberaggression experience these events as negative and distressful, then, similar to the

outcomes associated with other forms of stress inducing workplace aggression, focal

targets should also experience similar negative effects.

Negative Affectivity. Within the organizational literature there are mixed results

concerning the exact nature of the role and effects that trait negative affectivity plays in

regard to outcomes (e.g., job satisfaction) in the workplace (Spector, Zapf, Chen, &

Frese, 2000). Specifically, even though there is empirical support for trait negative

affectivity as a predictor and mediator for stress-strain-job satisfaction relations, there is

also evidence that the relationship between negative affectivity and job satisfaction is

bidirectional and that events in the workplace also affect levels of trait negative affect in

individuals over time (Spector, Chen, & O'Connell, 2000; Watson & Slack, 1993). This

evidence suggests that occasion factors such as events that invoke state affective

reactions may influence levels of general negative affect over time (Spector, Zapf, Chen, & Frese, 2000). From this perspective, general or dispositional negative affect, though related to the experience of state affect and job stress, is considered an outcome associated with general levels of dissatisfaction with the work environment. Therefore:

Hypothesis 6: *The general level of dissatisfaction with the work environment will be positively related to strains,*

Hypothesis 7: *Perceived-Cyberaggression will positively predict strains.*

Engaging in Cyberaggression. Recent work argues strongly in favour of developing a model of aggression that accounts for a constellation of personality characteristics that contribute to both a *general* tendency to aggress across situations, as well as a related but separate *specific* tendency for some individuals to aggress only when provoked (Bettencourt, Talley, Benjamin, & Valentine, 2006). When provoked, individuals may experience high levels of affect, such as anger, reinforcing a desire to inflict injury or harm upon a chosen target (Berkowitz & Harmon-Jones, 2004). This may serve as further justification for engaging in acts of retaliation (Bies & Tripp, 2005; Cortina & Magley, 2003; Skarlicki & Folger, 1997) or counter-aggression (Buss, 1961) against the source of the provocation (Cortina & Magley, 2003; Dodge & Coie, 1987; Matthews & Norris, 2002).

Focal targets are normally those individuals who are perceived to be responsible for the initial provocation (Lazarus, 1991). Previous research shows that the overt expression of anger in retaliatory remarks was found to be the most common reaction to being a target of verbal aggression (Leary, Springer, Negel, Ansell, & Evans, 1998), supporting the results of Study One and Study Two that identified that one of the

potential actions that may be taken by a focal target of cyberaggression is to retaliate by

engaging in cyberaggression directed against the source. This is a form of reciprocal

behaviour, engaged in by a target against a perpetrator, in reaction to provocation that

may be observed in incidents of aggression in workplaces (Aquino & Lamertz, 2004).

Therefore:

> Hypothesis 8: *Perceived-Cyberaggression will positively predict Enacted-*
>
> *Cyberaggression,* and
>
> Figure 5 depicts the hypothesized relationships between cyberaggression,

organizational and individual predictor variables, and outcomes discussed in the previous
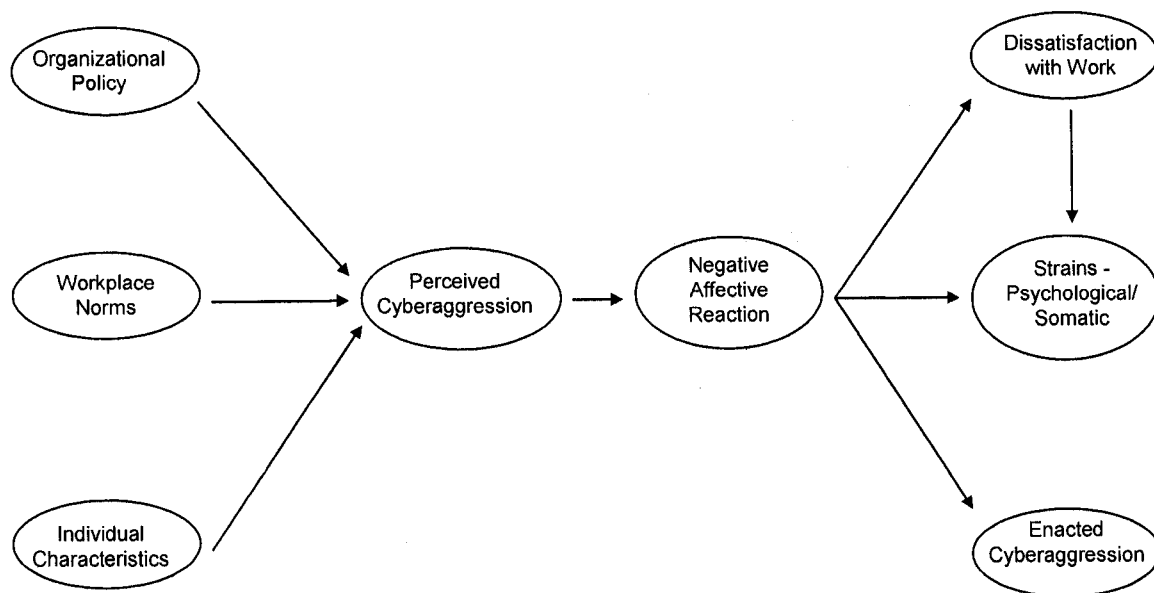
sections.

Figure 5. *Fully Mediated Model of Cyberaggression*

This model is a fully mediated model wherein the predictors are associated with cyberaggression and state negative affective reactions which, in turn, are associated with the proposed attitudinal, health-related, and behavioural outcomes.

Other Work Events as Triggers of Enacted-Cyberaggression. Finally, even as cyberaggression perceived in received email may serve as provocation and lead focal targets to counter-aggress, this is certainly not the only justification or rationale for individuals to engage in cyberaggression in the workplace. It is not only possible, but highly probable, that an individual who either tends to behave aggressively generally, or who tend to react to an incident perceived as provocation specifically, may choose to engage in aggression for many reasons other than reciprocal action in response to perceived aggression (R. A. Baron & Neuman, 1996; R. A. Baron & Richardson, 1994; Glomb, 2002; Glomb & Liao, 2003; Skarlicki & Folger, 1997; Skarlicki, Folger, & Tesluk, 1999; Tepper, 2000).

Given the hypothesized relationships between individual characteristics and situational factors and aggression in the workplace in general terms, a fully mediated model that posits that Enacted-Cyberaggression is an outcome only associated with Perceived-Cyberaggression is under identified theoretically. For example, it is entirely possible Enacted-Cyberaggression may be the first act of aggression taken by a perpetrator rather than a response to cyberaggression. Enacted-Cyberaggression could be triggered by situational or individual factors previously hypothesized for Perceived-Cyberaggression, such as an aggressive or hostile work climate. To account for the potential of these other factors to function as predictors of Enacted-Cyberaggression, the

variables previously identified as predictors of cyberaggression were reviewed to determine if they would also predict Enacted-Cyberaggression.

Organizational Policy. In organizations the legitimate potential for reward or sanction of behaviour, enabled by either work policy or by proxy as represented by the actions taken by organizational supervisors, may serve as behavioural constraints (B. Ashforth & Mael, 1989; Dupre & Barling, 2006) upon organizational or normatively prohibited behaviour. Therefore:

Hypothesis 9: *Policies concerning the appropriate use of email will negatively predict Enacted-Cyberaggression.*

Workplace Norms. As organizational personnel may be more or less tolerant of violations of social or work practices concerning norms of politeness and respect it is hypothesized that the general tolerance of organizational members is related to Perceived-Cyberaggression. It is also then hypothesized that this relationship also exists between tolerance and Enacted-Cyberaggression. For example, abusive supervisors (Tepper, 2000) may use compliance strategies by using communications containing threat or censure (Ouchi, 1981) that violate norms of politeness, or norms of interpersonal fair treatment. Communications of this type may invoke resentment or negative affect as these forms of communications are often perceived as hostile or aggressive by subordinates (Infante, Anderson, Martin, Herrington, & Kim, 1993; Infante & Gorden, 1985). Therefore:

Hypothesis 10: *Workplace norms for appropriate use of email will negatively predict Enacted-Cyberaggression.*

Research shows that there is often a reciprocal behavioural relationship amongst coworkers concerning hostile or aggressive acts in the workplace. For example, acts that are considered violations of norms of politeness may serve as triggers for further violations, as in an incivility spiral (Andersson & Pearson, 1999) where the actor-target directionality may reverse itself. Evidence suggests that this is not limited to incidents of incivility but also applies to more severe violations of workplace or social norms involving more serious forms of aggression such threats of physical violence (Glomb, 2002; Glomb & Liao, 2003).

Trait Anger. There are a multitude of behaviours other than cyberaggression that may be considered hostile or aggressive acts, and that may be interpreted as provocation (see for example Mignonac & Herrbach, 2004) generating an aggressive response (Berkowitz, 1980, 1993). As individuals high in trait anger are more likely to engage in aggressive workplace behaviours in general (Douglas & Martinko, 2001; Hepworth & Towler, 2004) and perceive aggressive acts as provocative it is likely that they may choose to aggress using email.

Trait Verbal Aggression. Similar to trait anger, individuals who are higher in trait verbal aggression are more predisposed to expect and perceive aggressive verbal behaviour from others – even in the absence of hostile or aggressive intent in verbal communications (Rancer & Avtgis, 2006; Rancer, Kosberg, & Baukus, 1992). Additionally, research shows that being the subject or witness to verbal aggression itself may function as a trigger and increase the likelihood of an individual engaging in deviant acts themselves by responding in a verbally aggressive fashion (Marrs, 2000). Therefore:

Hypothesis 11: *Hostile dispositional characteristics will positively predict*

Enacted-Cyberaggression,

Hypothesized Model of Cyberaggression. Based upon the conceptualization of

cyberaggression as an affective event, as discussed in the previous sections, and

accounting for the reality of the workplace where engaging in cyberaggression may occur

as a result of triggers or circumstances unrelated to cyberaggression (e.g., not reciprocal

cyberaggression) a more fully developed model is depicted in Figure 6. This is a partially

mediated model incorporating individual and situational antecedents of both Perceived-

Cyberaggression as well as those of Enacted-Cyberaggression.
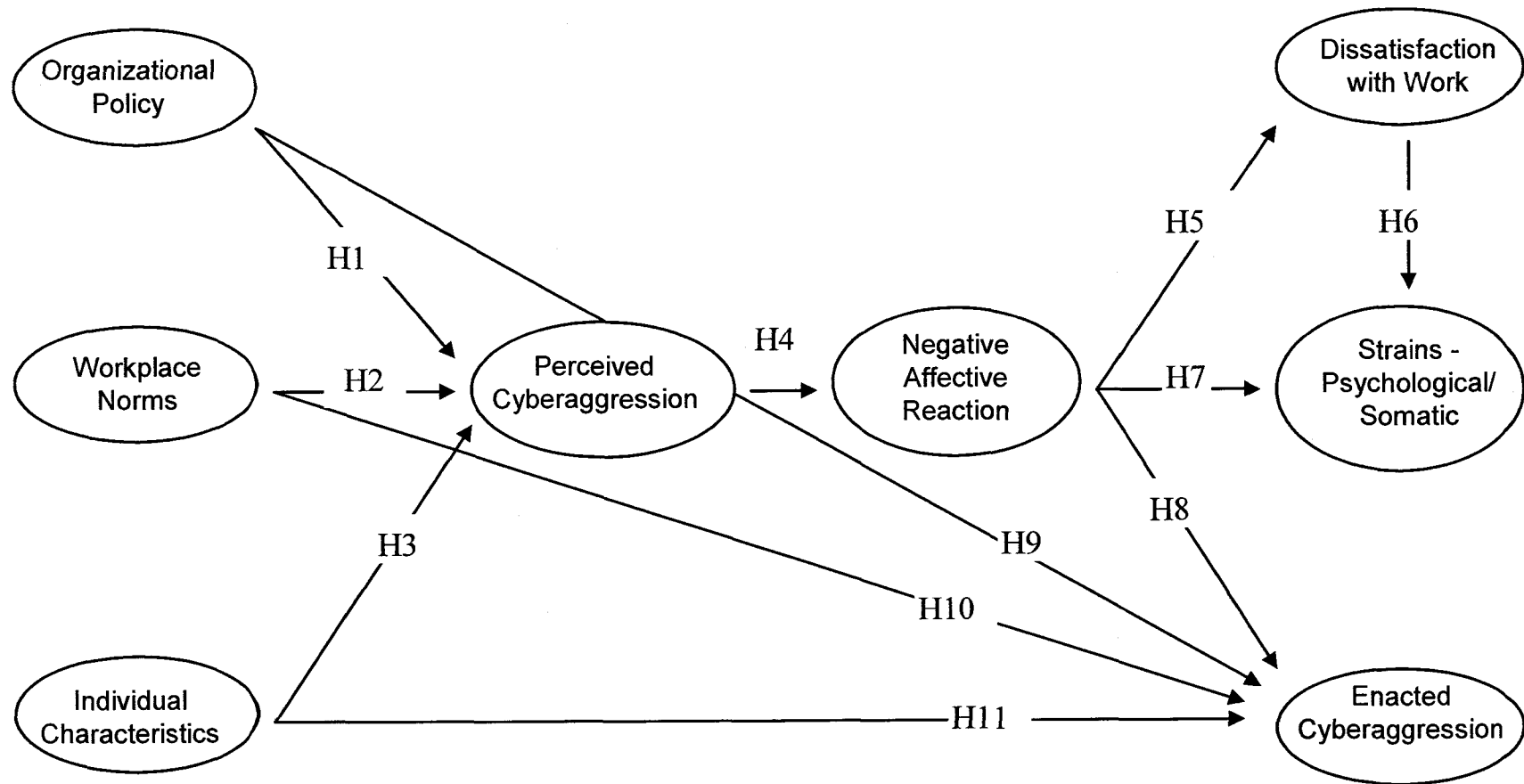
Figure 6. *Hypothesized Model of Cyberaggression (Partially Mediated Model)*

<div align="center">Procedure</div>

Participants. Participants were members of a provincial employee's union

employed across multiple organization and work sites. As this union was a composite

union, i. e. composed of government employees who were previously in several different

bargaining units, there was a wide variety of occupations represented in the sample.

Procedure. The survey instrument was formatted for use in web administration

permitting respondents to complete the survey with point-and-click interfaces using any

web-browser application. Participants were sent an introductory email invitation to

complete the survey. The invitation informed participants that their participation was

both voluntary and anonymous and directed them to the survey website through a

hyperlink that was embedded in the email. A small prize (online gift certificates) was

used as an incentive to encourage participation.

The survey was operational for a period of eight weeks in order to maximize

responses as the survey was administered during the summer holiday months (July and

August). Three reminder notices were emailed to all union members at two, four, and six

weeks from the date of the initial invitation. A total of 570 usable English language

responses were collected during this period thus meeting the minimum sample

recommendation of 500 required for model evaluation using a split-sample

replication/confirmation methodology (Cudeck & Browne, 1983) using derivation and

confirmation samples (Floyd & Widaman, 1995). This represented a response rate of

approximately 24% of available respondents. The sample was randomly divided into two

samples (samples n = 250 and n = 320) for analysis. The demographics of each of the

samples were comparable and a summary is provided in Table 5.

Table 5.

Comparative Demographics for Derivation and Confirmation Samples

Characteristic	Sample 1 N = 250		Sample 2 N = 320	
	M	*SD*	*M*	*SD*
Sex (% male)	38.0 %		33.8 %	
Age	42.00	9.98	41.70	9.75
Job Tenure (years)	13.32	9.74	13.73	9.49
Supervisor (% Yes)	26.0 %		19.4 %	
Job Classification				
Health Care	27.2 %		25.0 %	
Administrative	24.8 %		25.9 %	
Education	12.4 %		13.8 %	
Professional/Scientific	7.6 %		11.6 %	
Resource Industry	7.2 %		4.7 %	
Public Administration	6.8 %		6.9 %	
Other	14.0 %		12.1 %	

Measures

Measures. The survey instrument consisted of the Perceived and Enacted-Cyberaggression sub-scales developed in Study Two, predictor, outcome and demographic measures.

The survey is contained at Appendix I. Each of the survey measures are discussed individually in the sections that follow.

Negative Affectivity. Negative Affectivity was measured using the ten item Negative Affectivity (NA) sub-scale drawn from the PANAS (Watson, Clark, & Tellegen, 1988). The NA sub-scale has good reliability with Watson and Clark (1988) reporting a mean score greater than .80 across several samples, and with Douglas and Martinko (2001) reporting a reliability coefficient of .87. A seven point Likert format was used with scores ranging from 1 (Strongly disagree) to 7 (Strongly agree). The reliability of this scale in this study was $\alpha = .93$.

Trait Anger and Trait Verbal Aggression. Trait Anger and trait Verbal Aggression were measured using the three item anger and verbal aggression subscales from the 12-item short form of the Aggression Questionnaire (BPAQ-SF; Bryant & Smith, 2001) as originally developed by Buss and Perry (Buss & Perry, 1992). The four factor structure of the questionnaire (physical aggression, verbal aggression, anger and hostility sub-scales) has been validated across multiple samples, found to be invariant across gender (Diamond & Magletta, 2006), and has moderate reliabilities for both anger ($\alpha = .71$) and verbal aggression ($\alpha = .74$) sub-scales (Bryant & Smith, 2001). A five point Likert format was used with scores ranging from 1 (Extremely uncharacteristic of me) to 5 (Extremely characteristic of me). The reliability of the anger sub-scale found in this study was $\alpha = .68$ with the reliability of the verbal aggression sub-scale at $\alpha = .80$.

Organizational Justice. Interactional Justice was measured using a modified form of the four item Interpersonal Justice scale (Colquitt, 2001). This measure has high reliability, .92 to .94 in several studies (Colquitt, 2001; Spell & Arnold, in press). A

seven-point Likert scale format was used with scoring ranging from 1 (Strongly disagree) to 7 (Strongly agree). The reliability of this scale in this study was $\alpha = .94$.

Organizational Policy. Organizational climate was measured using two measures, a measure for organizational policy and a measure for enforcement practices. Organizational policy concerning email was measured using a modified sub-scale drawn from the Inventory of Organizational Tolerance of Aggression (IOTA) (Schat, 2004). The organizational email policy scale was a three item scale (items one to three from the original IOTA) with scaling on a seven-point Likert format with a scoring range of 1 (Strongly disagree) to 7 (Strongly agree). The reliability of this scale in this study was $\alpha = .86$. The scale for enforcement practices concerning the use of email was a modified five item IOTA sub-scale. (items four to eight from the original IOTA) with scaling on a seven-point Likert format with a range of 1 (Strongly disagree) to 7 (Strongly agree). The reliability of the enforcement scale had $\alpha = .88$ in this study.

Workplace Norms. Normative practices that contribute to organizational climate were measured using a modified four item sub-scale on supervisory attitudes concerning email misuse (items nine to twelve from the original IOTA), and a modified four item sub-scale on coworker attitudes towards of email misuse (items 13-16 of the original IOTA). Scaling for both was on a seven-point Likert format with a range of 1 (Strongly disagree) to 7 (Strongly agree). The reliability of the supervisor attitude measures was $\alpha = .89$, with the reliability of the coworker attitude scale at $\alpha = .81$.

Perceived-Cyberaggression. Perceived-Cyberaggression in received email was measured using the eight item sub-scales developed in Study Two. These measures were designed to capture cyberaggression by source (subordinate, coworker, supervisor,

customer-other person) and had good reliability across all sub-scales ($\alpha = .84 - .89$).

These measures employed a seven point Likert-type frequency scale with scaling on a

range of 1 (Never) to 7 (Very frequently). The reliability of the sub-scales in this study

was $\alpha = .92$ for subordinate, $\alpha = .93$ for supervisor, $\alpha = .90$ for coworker, and $\alpha = .93$ for

customer/other person.

State Negative Affective Experiences. State negative affective experiences were

measured using a version of the Job-Related Affective Well-Being Scale (JAWS) (Van

Katwyk, Fox, Spector, & Kelloway, 2000). Two sub-scales were used, the five item Low

Pleasure High Arousal (LPHA) sub-scale and the five item Low Pleasure Low Arousal

(LPLA) sub-scale. A seven point Likert format was used with scoring ranging from 1

(Never) to 7 (All of the time). The reliability of the scale overall was $\alpha = .93$.

Enacted-Cyberaggression. Enacted cyberaggression was measured using the

eight item sub-scales developed in Study Two. These measures captured the targets and

type of intended cyberaggression (directed at subordinate, coworker, supervisor,

customer/other person). These measures demonstrated good reliability across all sub-

scales ($\alpha = .87 - .92$) in Study Two. A seven point Likert-type frequency scale with a

scaling range of 1 (Never) to 7 (Very frequently) was used in this study and the reliability

of the sub-scales was found to be $\alpha = .90$ for subordinate, $\alpha = .87$ for supervisor, $\alpha = 89$

for coworker, and $\alpha = 87$ for customer/other person sub-scales.

Job Satisfaction. A single item was used to measure job satisfaction. Single item

measures have been found to be comparable to measures with more items (Scarpello &

Campbell, 1983; Wanous, Reichers, & Hudy, 1997). A seven point Likert format was

used with scores ranging from 1 (Extremely dissatisfied) to 7 (Extremely satisfied). Scoring of this scale was reversed to produce a measure of job dissatisfaction.

Intent to Quit. Turnover Intention was measured using a three item measure that addresses the frequency of thoughts of quitting, the psychological desire to quit, and intention to quit (Michaels & Spector, 1982). A seven point Likert scale was used with scores ranging from 1 (Never) to 7 (All of the time). The reliability of this scale in this study was $\alpha = .89$.

Psychological and Physical Strains. Strains on psychological health were measured using a shortened 12 item version of the 60 Item General Health Questionnaire developed by Goldberg (1972), which has been successfully employed in work settings (Banks et al., 1980). This scale measures emotional well-being is reliable ($\alpha = .84$) (LeBlanc & Kelloway, 2002) with test-retest reliability of .73 (Brodaty et al., 2002). A seven point Likert format was used with scores ranging from 1 (Not at all) to 7 (All the time). The reliability of the scale in this study was $\alpha = .85$.

The effects of strains on physical health were measured using the Physical Health Questionnaire (PHQ) (Schat, Desmarais, & Kelloway, 2005). The internal reliabilities for each of the sub-scales have been previously found to be greater than .70. A seven point Likert format was used with scores ranging from 1 (Not at all) to 7 (All the time). The reliability of the overall scale in this study was $\alpha = 87$.

Demographic Measures. Information concerning the demographics of the sample was also collected including measures of gender, age, job tenure, industrial job classification, importance of email for work, management status, work status (Full/Part),

supervisory status (Yes/No), number of direct reports, and other measures concerning email use at work.

Study Analytics

Method of Analysis. Data were first screened for missing values, out-of-range values, univariate and multivariate outliers, and violations of the assumptions of linearity, normality, collinearity, multicollinearity, and heteroskedasticity. Analysis of the data then proceeded progressively in several stages. First, Confirmatory Factor Analysis (CFA) was conducted on the derivation sample to confirm the construct dimensionality and factor structure of the Perceived-Cyberaggression and Enacted-Cyberaggression measures as identified in the exploratory factor results of Study Two. The CFA results were then cross-validated on the confirmation sample. In the second stage the indicators were composed into latent variables and the measurement models then assessed for fit using CFA, first on the derivation sample followed by cross-validation using the confirmation sample. Third, the hypothesized structural model was tested using Latent Variable Path Analysis (LVPA) on the derivation sample. Non-significant paths were removed and the model reassessed until all paths were significant. The derived structural model was then cross-validated on the second sample. Finally, the structural model was assessed for parameter invariance across samples. Each of these stages is described in the sections that follow.

Data Cleaning. The total sample was first screened for missing data. There was relatively little missing data, less than two percent for any one item within a measured variable and the data did not appear to be missing in any systematic fashion otherwise. However, there were greater levels of missing data (up to 12% by item) within some of

the demographic measures - primarily gender, job title, and income. For all analysis listwise deletion was employed.

Test of Assumptions. The data violated the assumption of normality for Perceived and Enacted-Cyberaggression which had non-normal skewed distributions. This deviation from normality was not considered problematic for two reasons. First, and similar to the results of Study Two, the low base rate for the cyberaggression measures was fully expected as the base rate in the population would also be expected to be low. Similar base rate results are normal for the study of aggressive behaviour in general. Second, in the absence of any other significant violations, the methods employed for analysis in this study are relatively robust to deviations from normality (Tabachnick & Fidell, 2001).

Violations of the assumptions of collinearity, multicollinearity, and heteroskedasticity were investigated using several procedures. First, correlations were inspected for all major variables to identify potential candidates for collinearity. Second, all major variables were subjected to a regression analysis against a dummy variable, as implemented in SPSS v.14. The results were inspected including, collinearity indices, variable inflation factors, deviations of z-scores, and residual plots. Though several potential univariate outliers were identified, they were retained in the data pending identification of multivariate outliers. Subsequent inspection of Mahalanobis' and Cook's Distances and residuals suggested that none of the study cases or variables exhibited sufficient leverage that would justify removing them from the analysis.

Results

Cyberaggression Construct Dimensionality

Confirmatory Factor Analysis. As the variables of interest within the cyberaggression construct were not directly observable, confirmatory factor analysis was selected as the most appropriate method for the investigation of these latent variables (Bentler, 1980); a recommended approach when used to confirm and validate the dimensionality of factor structure results (Kelloway, 1998) initially produced through exploratory factor analysis (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Floyd & Widaman, 1995; Gerbing & Hamilton, 1996). Confirmatory Factor Analysis was conducted using LISREL 8.80 (Joreskog & Sorbom, 1996) using Maximum Likelihood (ML) estimation.

Assessing Alternative Model Fit. The CFA results were assessed using the chi square statistic. In CFA the chi-square statistic is an index of absolute fit that assess the differences between observed and model implied covariance. Under ideal conditions this statistic should approach zero, indicating a 'good' fit, i. e. small differences between the implied and observed covariances, and be non-significant, indicating no significant differences between the two. However, as chi-square is calculated using sample size its value becomes inflated as sample size increases which usually results in significant chi square values. Therefore, model assessment is normally conducted using the differences between model chi square values, ($\Delta\chi^2$) within a nested sequence of models (Kelloway, 1998) and other fit indices. The difference in chi square is then tested to determine if there is a significant difference in chi square values between models. Significant differences in this test indicate that there has been a significant improvement to model fit.

Perceived-Cyberaggression Alternative Models. Alhough the exploratory factor structure for Perceived-Cyberaggression found in Study Two consisted of four correlated by-source factors, there are at least four theoretically potential alternative factor structures. As the factors were correlated a uni-dimensional structure is also feasible. In addition to a four facture orthogonal and four factor oblique model, theoretically a two factor 'insider – outsider' model is possible. There is evidence that individuals perceive similar types of aggressive behaviours differentially when engaged in by customers or persons from outside their employing organization as opposed to organizational personnel or insiders (LeBlanc & Kelloway, 2002). Consequently, a two factor model is also a viable alternative.

The first model assessed was a uni-dimensional model with all items loaded on a single factor. The second model assessed was a two factor model with items designated to load on either an 'insider' or 'outsider' factor. The supervisor, subordinate and coworker items were loaded on the 'insider' factor, with the customer/other person items loaded on the second or 'outsider' factor. The third model assessed was a four factor orthogonal model with items loaded on their respective source factors. Finally, a four factor oblique model with items loaded on their respective source factors with correlations permitted between the source factors. The results for the CFA analysis for each of the alternative Perceived-Cyberaggression models are presented in summary form in Table 9. This process was cross-validated on the second sample with similar results, therefore only the former is reported.

The four by-source oblique model was the best fit to the data and the results show significant chi square difference values between all the models, indicating progressively

significant improvement in fit to the data. Even though the models were not assessed as having a good fit to the data given fit indices for the models did not meet minimum thresholds; the fit indices for the four factor oblique model do approach these thresholds. Due to the number of structural constraints imposed in CFA models when investigating construct dimensionality, particularly when using a large number of indicators, it is not unusual to achieve less than a perfect fit (Kelloway, 1998). Nevertheless, the four factor oblique model is the best fitting model amongst several theoretically plausible alternative models.

Enacted-Cyberaggression Alternative Models. Due to the low variance of the Enacted-Cyberaggression items in Study Two, a clear factor structure was not achieved using EFA. However, as the item correlations and the scale reliabilities for Enacted-Cyberaggression were similar to the results found in Study Two, a CFA on the Enacted-Cyberaggression items was carried out. The approach used was the same as that used for assessing the dimensionality of Perceived-Cyberaggression. The first model tested was a uni-dimensional target model with all items loaded on a single factor.

The second model was a two factor model with items designated to load on either an 'insider' or 'outsider' target factor. The supervisor, subordinate and coworker items were loaded on one factor with the customer/other person items loaded on the second. The third model was a four factor orthogonal model with items loaded on their respective source factors with no inter-factor correlation permitted. Finally, a four factor oblique model with items loaded on their respective source factors, with correlations between the four source factors was tested. This process was cross-validated on the second sample with similar results, therefore only the former is reported here.

Table 6.

CFA Model Fit Indices: Comparison of A Priori Factor Structure for Perceived-Cyberaggression

Structure	χ^2	*df*	$\Delta \chi^2$	GFI	AGFI	PGFI	NFI	NNFI	RMSEA
1-factor uni-dimensional	9685.60	464	-	0.28	0.19	0.25	0.54	0.53	0.29
2-factor Inside/Outside	6296.53	470	564.85***	0.38	0,30	o.34	0.65	0.65	0.23
4-factor orthogonal	2128.52	464	694.67***	0.64	0.59	0.57	0.82	0.83	0.12
4-factor oblique	2046.00	458	13.75*	0.65	0.60	0.57	0.84	0.82	0.12

Note : $N = 241$. All χ^2 significant at $p < .001$, for ΔX^2 * $p < .05$, *** $p < .001$. Indices: GFI = Goodness of Fit Index. AGFI = Adjusted Goodness of Fit Index. PGFI = Parsimonious Goodness of Fit Index. NFI = Normed Fit Index. NNFI = Non-normed Fit Index. RMSEA = Root Mean Squared Error of Approximation.

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The results of the analysis for each of the Enacted-Cyberaggression models are presented in summary form in Table 7. Similar to the results for Perceived-Cyberaggression, the four by-source oblique model was the best fit to the data. There was a significant chi square difference between each of the models which indicated a progressively significant improvement to data fit. Again, similar to the interpretation of the Perceived-Cyberaggression CFA results, even though fit indices for the four factor oblique Enacted-Cyberaggression model did not meet minimum threshold requirements this model was assessed as having the best fit amongst several plausible alternatives.

Assessment of the Hypothesized Nomological Model of Cyberaggression.

Development and testing of the hypothesized model of cyberaggression was completed in a two stage process as recommended by Anderson and Gerbing (1988). In the first step a measurement model was composed and tested. The measurement model was then used as the baseline fitted model (Kelloway, 1998) for the structural model that was assessed in the second step.

Measurement Model. The individual measures were used as indicators and composed into latent variables as hypothesized. The results of this process formed the predictor latent variables of Organizational Policy using the Policy and Enforcement scales as indicators, Workplace Norms with supervisor and coworker attitudes as indicators, and finally, the latent variable for Individual Characteristics using trait anger and verbal aggression as indicators.

Table 7.

CFA Model Fit Indices: Comparison of A Priori Factor Structure for Enacted-Cyberaggression

Structure	χ^2	df	$\Delta \chi^2$	GFI	AGFI	PGFI	NFI	NNFI	RMSEA
1-factor uni-dimensional	9534.98	434	-	0.29	0.19	0.25	0.51	0.49	0.29
2-factor Inside/Outside	6296.53	470	89.96	0.38	0.30	0.34	0.65	0.65	0.23
4-factor orthogonal	4167.39	434	59.14	0.48	0.41	0.42	0.73	0.73	0.19
4-factor oblique	3872.97	428	49.07	0.51	0.42	0.43	0.76	0.76	0.18

Note : $N = 249$. All χ^2 significant at $p < .001$. $\Delta\chi^2$ between each model significant at $p < .001$. Indices: GFI = Goodness of Fit Index. AGFI = Adjusted Goodness of Fit Index. PGFI = Parsimonious Goodness of Fit Index. NFI = Normed Fit Index. NNFI = Non-normed Fit Index. RMSEA = Root Mean Squared Error of Approximation.

Perceived-Cyberaggression was formed using the individual sub-scale scores from each of the four source factors as indicator measures. For the Negative Affective Reaction latent variable the LPHA and LPLA sub-scales were used as indicators. Outcome variables included; Dissatisfaction with work, formed using the Quit, Job Satisfaction (reverse scored), Interpersonal Justice (reverse scored), and Strains, using the GHQ, PHQ and NA measures as indicators.

Finally, the Enacted-Cyberaggression latent variable was composed of the four by-target sub-scales. The measurement model was then assessed using LISREL's Latent Variable Path Analysis with Maximum Likelihood Estimation. All analyses were based on the covariance matrices. The initial measurement model would not converge and subsequent analysis indicated that non-convergence was a function of the composition of the Enacted-Cyberaggression latent variable. Specifically, inspection at the item level for the four sub-scales indicated that extremely low variance within some of the items was the most probable cause. An alternative strategy was then employed, where the Enacted-Cyberaggression latent variable was re-composed with the total mean score for all four source sub-scales was used as a single indicator. The amended measurement model, depicted in Figure 7, was then re-assessed.

The amended measurement model for sample 1 was assessed has having close fit, χ^2 (125, N = 241) = 239.46, $p < .001$, χ^2 / df = 1.91, GFI = .90, PGFI = .60, NFI = .89, NNFI = .92, RMSEA = .062, ns, RMSEA confidence interval (.050, .074).

The model was then cross-validated on sample 2 which resulted in similar fit χ^2 (125, N = 316) = 230.77, $p < .001$, χ^2 / df = 1.85, GFI = .93, PGFI = .61, NFI = .92, NNFI = .95, RMSEA = .052, ns, RMSEA confidence interval (.041, .062).
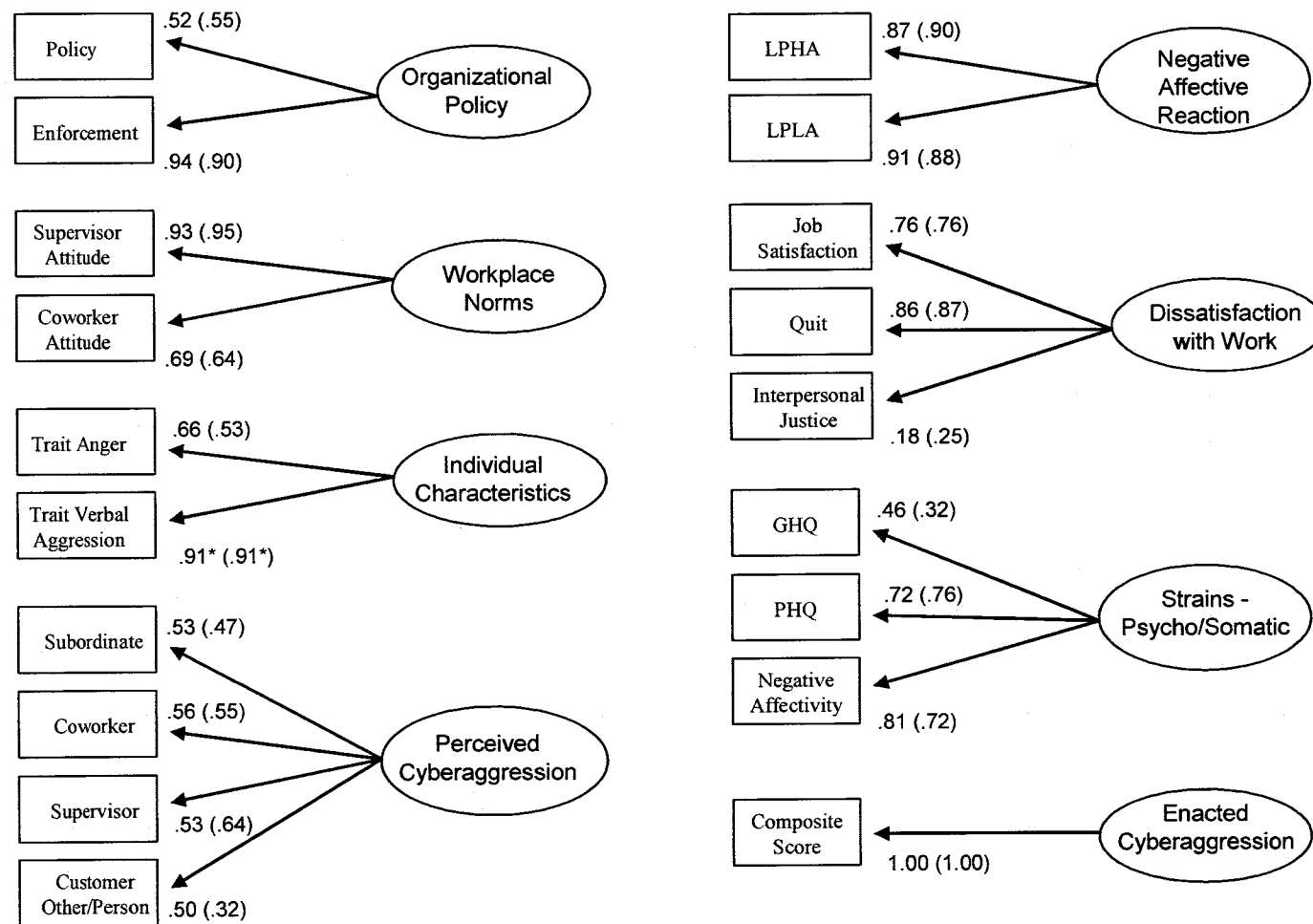
Figure 7. Measurement Model: Enacted-Cyberaggression Composite Measure

Note: All standardized parameter estimates significant at $p < .001$ less * significant at $p < .01$. Sample 1 and sample 2 parameters are presented with sample 2 estimates enclosed in parentheses ( ). Correlations are presented in Tables 8 and 9 for sample 1 and 2 respectively.

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Full Model.

Model Assessment. The full model was analyzed using the derived measurement model with structural paths added. This model was assessed using Latent Variable Path Analysis using LISREL 8.80 (Joreskog & Sorbom, 1996) using Maximum Likelihood (ML) estimation as implemented in a Windows XP environment. Replicating the process used to assess the measurement model the full model was first assessed using sample 1 followed by cross-validation on sample 2 data.

Model Re-specification. Model re-specification was conducted in two steps. First, non-significant paths were removed from the model, and then the model was recomputed and reassessed. Once all non-significant paths had been removed, Modification Indices (MI) were inspected to determine if there were any further re-specifications that would improve model fit. However, in order to avoid the pitfall of improved model fit that was a function of capitalizing on sample specific characteristics (Brown, 2006) paths were only added if there was a theoretical justification to do so; therefore, based upon this criterion only three paths were considered for addition to the model. The first path was from Individual Characteristics to Strains, the second path was added from Workplace Norms to Dissatisfaction with Work, and the third and final path added was from Perceived-Cyberaggression to Enacted-Cyberaggression. The model was then re-assessed with the addition of these three paths.

The descriptive statistics, zero-order correlations, and scale reliabilities are presented in Table 8 for sample 1. The final full model for sample 1 was assessed as having a good fit, χ^2 *(142,* $N = 241) = 264.85$, *p* $< .001$, χ^2 / *df* $= 1.87$, GFI $= .90$, PGFI $=$

.67, NFI = .89, NNFI = .93, RMSEA = .060, *ns*, RMSEA confidence interval (.046,

.071). The model, with standardized parameter estimates, is presented at Figure 9.

All parameter estimates within the model are significant and all estimates were in

the hypothesized direction. Strain was predicted by Individual Characteristics (β = .32, *p*

< .001), and Negative Affective Reaction (β = .30, *p* < .001) with Negative Affective

Reaction itself predicted by Perceived-Cyberaggression (β = .81, *p* < .001) that was

predicted in turn by Organizational Policy (β = -.42, *p* < .001).

Strain was also predicted by Dissatisfaction with Work (β = .26, *p* < .01), which

was also predicted by Negative Affective Reaction (β = .35, *p* < .001) and Workplace

Norms (β = -.39, *p* < .001). Finally, Enacted-Cyberaggression was predicted only by

Perceived-Cyberaggression (β = .30, *p* < .001). The final model from sample one was

then cross-validated on sample two. The means, standard deviations, zero-order

correlations, and reliability estimates are presented in Table 9. The cross-validation also

resulted in a good fit with χ^2 *(142, N* = 316) = 263.19, *p* < .001, χ^2 / *df* = 1.72, GFI = .92,

PGFI = .69, NFI = .91, NNFI = .95, RMSEA = .052, *ns,* RMSEA confidence interval (

.042, .062). The model, with standardized parameter estimates, is presented at Figure 10.

Similar to the results from sample one, all parameter estimates were significant

and in the hypothesized direction. Strain was predicted by Individual Characteristics (β

= ..14, *p* < .01) and Negative Affective Reaction (β = .36, *p* < .001).

Negative Affective Reaction was predicted by Perceived-Cyberaggression (β =

.74, *p* < .001) which was predicted in turn by Organizational Policy (β = -.49, *p* < .001).
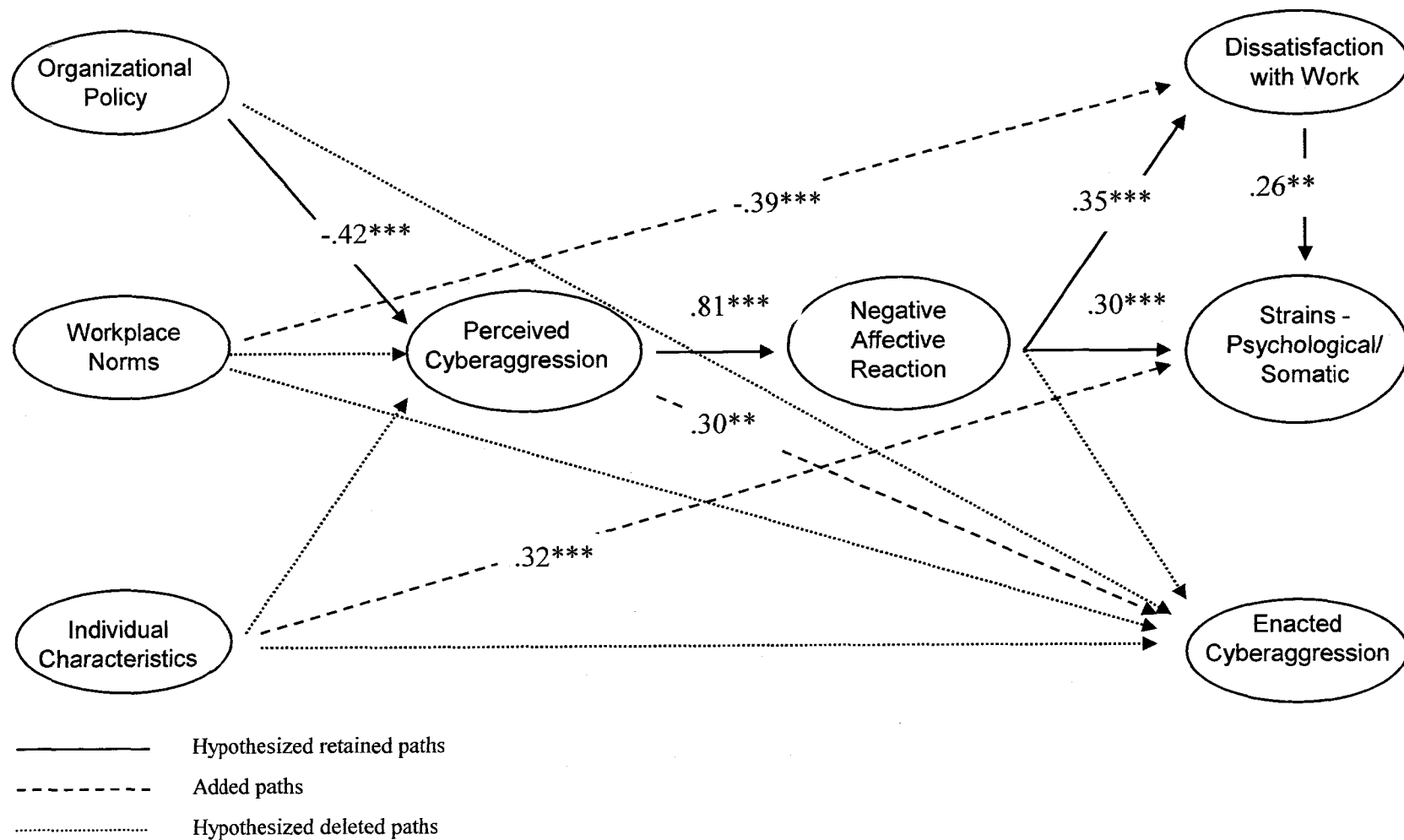
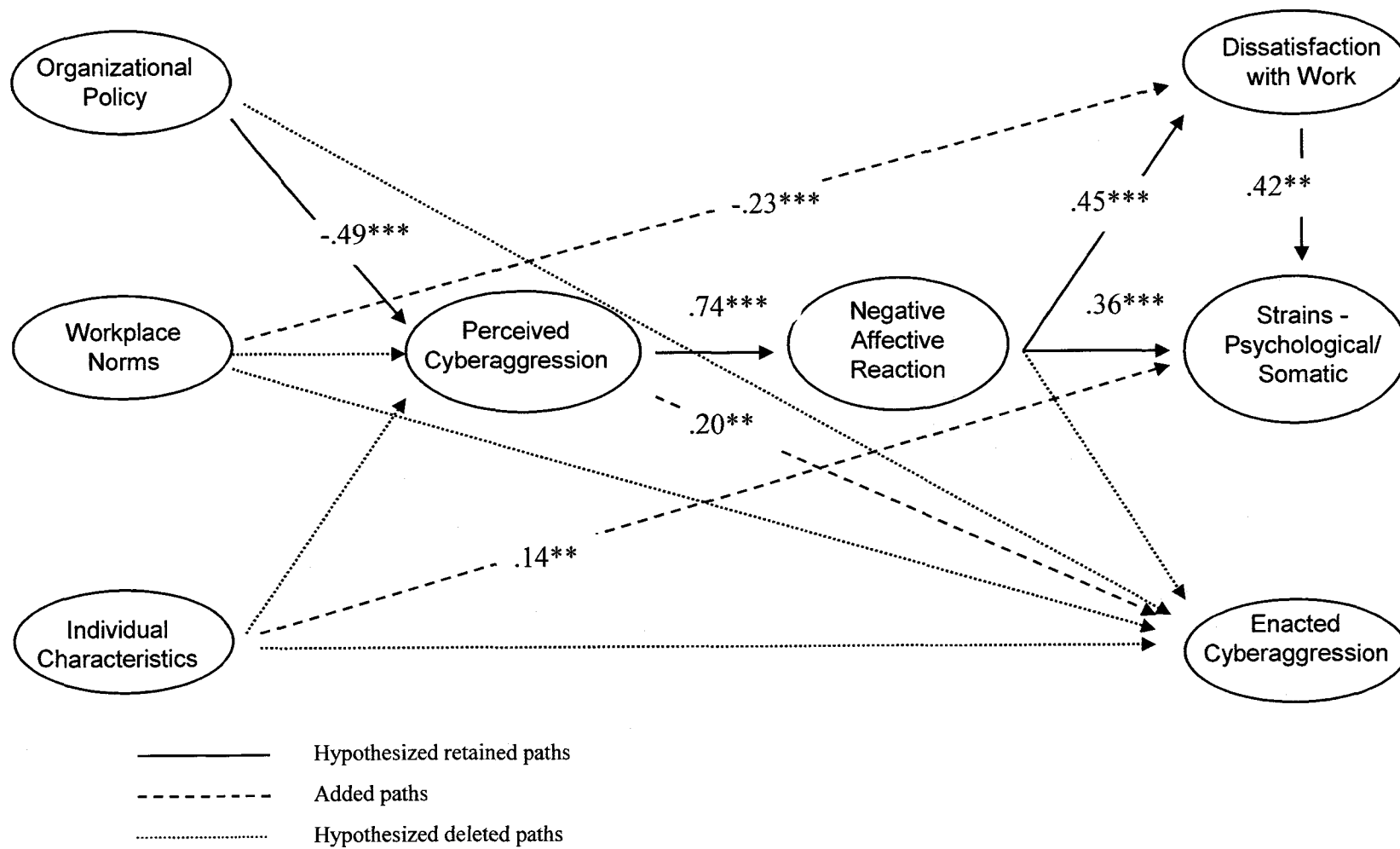Figure 8. Standardized Parameter Estimates Sample 1
Note: $n = 241$, ** $p < .01$, *** p ,.001.

Table 8 (*continues*)

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 1

	Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1	Organizational Policy	4.72	1.18	-									
2	Email Policy	4.67	1.60	.82**	(.86)								
3	Enforcement	4.75	1.21	.90**	.49**	(.88)							
4	Workplace Norms	4.85	1.07	.55**	.31**	.61**	-						
5	Supervisor Tolerance	4.94	1.26	.56**	.33**	.61**	.92**	(.89)					
6	Coworker Tolerance	4.76	1.10	.42**	.22**	.48**	.89**	.65**	(.81)				
7	Individual Characteristics	1.46	.53	-.02	-.09	.04	0.08	.10	.04	-			
8	Verbal Aggression	1.52	.68	.01	-.06	.06	0.11	.13*	.07	.92**	(.80)		
9	Anger	1.39	.51	-.06	-.12	-.00	.02	.03	-.01	.86**	.60**	(.68)	
10	Perceived-Cyberaggression	1.25	.42	-.31**	-.24**	-.29**	-.22**	-.23**	-.16*	.05	.03	.06	-

Note. $n = 241$. * $p < .05$, ** $p < .01$, coefficient α for observed variables presented on the diagonal ( ).

(table continues)

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Table 8 (*continues*)

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 1

	Variable	M	SD	1	2	3	4	5	6	7	8	9	10
11	P-C Subordinate	1.12	.40	-.30**	-.21**	-.31**	-.21**	-.14*	-.25**	.03	-.00	.07	.62**
12	P-C Supervisor	1.26	.73	-.34**	-.26**	-.33**	-.26**	-.28**	-.20**	.01	.01	.01	.66**
13	P-C Coworker	1.33	.68	-.10	-.08	-.09	-.12	-.13*	-.09	-.02	-.03	-.01	.70**
14	P-C Customer/Other	1.32	.78	-.14*	-.13*	-.11	-.05	-.10	.01	.10	.09	.10	.71**
15	Negative Affective Reaction	1.88	1.11	-.31**	-.28**	-.26**	-.20**	-.24**	-.13	.04	.02	.06	.61**
16	LPHA	1.91	1.21	-.29**	-.24**	-.26**	-.19**	-.24**	-.11	.05	.02	.07	.58**
17	LPLA	1.85	1.13	-.29**	-.29**	-.22**	-.19**	-.21**	-.13*	.03	.02	.04	.58**
18	Dissatisfaction with Job	2.95	1.31	-.39**	-.29**	-.37**	-.36**	-.39**	-.26**	.09	.04	.13*	.35**
19	Quit	2.46	1.61	-.36**	-.29**	-.33**	-.38**	-.40**	-.28**	.05	.01	.09	.33**
20	Job Satisfaction (R)	3.31	1.80	-.28**	-.23**	-.26**	-.26**	-.31**	-.15*	.10	.08	.10	.27**

Note. $n = 241$. * $p < .05$, ** $p < .01$

(table continues)

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Table: 8 (*continues*)

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 1

	Variable	M	SD	11	12	13	14	15	16	17	18	19	20
11	P-C Subordinate	1.12	.40	(.92)									
12	P-C Supervisor	1.26	.73	.48**	(.93)								
13	P-C Coworker	1.33	.68	.25**	.23**	(.90)							
14	P-C Customer/Other	1.32	.78	.20**	.18**	.34**	(.93)						
15	Negative Affective Reaction	1.88	1.11	.40**	.39**	.47**	.40**	-					
16	LPHA	1.91	1.21	.38**	.40**	.43**	.36**	.95**	(.89)				
17	LPLA	1.85	1.13	.37**	.35**	.45**	.40**	.94**	.79**	(.88)			
18	Dissatisfaction with Job	2.95	1.31	.12	.32**	.24**	.24**	.36**	.32**	.36**	-		
19	Quit	2.46	1.61	.17*	.40**	.15*	.18**	.36**	.35**	.34**	.76**	(.89)	
20	Job Satisfaction (R)	3.31	1.80	.11	.24**	.17**	.19**	.30**	.25**	.32**	.80**	.66**	

Note. $n = 241$. * $p < .05$, ** $p < .01$, coefficient α for observed variables presented on the diagonal ( ).

(*table continues*)

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Table 8 (*continues*)

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 1

	Variable	M	SD	1	2	3	4	5	6	7	8	9	10
21	Interpersonal Justice (R)	3.07	2.05	-.22**	-.13*	-.23**	-.17**	-.16*	-.14*	.05	.00	.09	.19**
22	Strains	3.05	.64	-.16*	-.19**	-.10	-.17**	-.16*	-.15*	.24**	.17**	.28**	.21**
23	GHQ	4.11	.48	-.08	-.13*	-.03	-.07	-.02	-.11	.16*	.15*	.14*	.06
24	PHQ	2.86	.98	-.15*	-.14*	-.12	-.20**	-.20**	-.16*	.13*	.09	.15*	.23**
25	Negative Affect	2.18	.90	-.13*	-.17**	-.07	-.10	-.11	-.08	.29**	.19**	.35**	.18**
26	Enacted-Cyberaggression	1.03	.13	-.04	-.14*	.04	.04	-.02	.08	.13*	.12	.13	.31**

Note. $n = 241$. * $p < .05$, ** $p < .01$

(*table continues*)

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Table 8 (*continues*)

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 1

	Variable	M	SD	11	12	13	14	15	16	17	18	19	20
21	Interpersonal Justice (R)	3.07	2.05	.02	.09	.21**	.15*	.15*	.13	.15*	.63**	.11	.15*
22	Strains	3.05	.64	.14*	.19**	.21**	0.06	.35**	.28**	.38**	.31**	.31**	.33**
23	GHQ	4.11	.48	.08	.07	.05	-0.01	.21**	.18**	.22**	.05	.11	.11
24	PHQ	2.86	.98	.09	.19**	.23**	0.10	.28**	.23**	.31**	.33**	.32**	.35**
25	Negative Affect	2.18	.90	.17**	.16*	.16*	0.03	.32**	.26**	.35**	.27**	.24**	.25**
26	Enacted-Cyberaggression	1.03	.13	.10	.08	.32**	.27**	.21**	.20**	.20**	.03	.05	.03

Note. n = 241. * *p* < .05, ** *p* < .01

(table continues)

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Table 8

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 1

	Variable	M	SD	21	22	23	24	25	26
21	Interpersonal Justice (R)	3.07	2.05	(.94)					
22	Strains	3.05	.64	.06	-				
23	GHQ	4.11	.48	-.10	.61**	(.84)			
24	PHQ	2.86	.98	.07	.88**	.37**	(.87)		
25	Negative Affect	2.18	.90	.11	.85**	.35**	.58**	(.93)	
26	Enacted-Cyberaggression	1.03	.13	-.01	.10	.12	.07	.07	(.91)

Note. $n = 241$. * $p < .05$, ** $p < .01$, coefficient α for observed variables presented on the diagonal ( ).

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Strain was also predicted by Dissatisfaction with Work ($\beta = .42, p < .001$), which was predicted by Negative Affective Reaction ($\beta = .45, p < .001$) and Workplace Norms ($\beta = -.23, p < .001$). Lastly, Enacted-Cyberaggression was predicted by Perceived-Cyberaggression only ($\beta = .20, p < .01$).

Finally, to confirm model equivalence and parameter invariance between the two samples, two further model estimates were conducted and the results assessed. Using LISREL's simultaneous groups capability, both models for sample one and sample two were assessed concurrently. In the first analysis the final models for both sample one and sample two were assessed simultaneously.

In the second analysis the structural parameters for sample two were constrained to those of the sample one model. The difference in chi square values between the first result, and the second constrained result, was computed as having a value of $\Delta\chi^2 (8) =$ 11.28, *ns*. As the chi square statistic was non-significant this indicated that there was no significant difference in the parameters across the two models.

Figure 9. Standardized Parameter Estimates Sample 2

Note: $n = 316$, ** $p < .01$, *** p ,.001.

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Table 9 (*continues*)

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 2

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1	Organizational Policy	4.57	1.15	-									
2	Email Policy	4.60	1.42	.80**	(.79)								
3	Enforcement	4.55	1.27	.92**	.49**	(.89)							
4	Workplace Norms	4.67	1.12	.60**	.37**	.62**	-						
5	Supervisor Tolerance	4.75	1.32	.64**	.39**	.66**	.91**	(.89)					
6	Coworker Tolerance	4.59	1.18	.422**	.26**	.44**	.89**	.61**	(.83)				
7	Individual Characteristics	1.46	0.51	-.08	-.05	-.07	-.11*	-.08	-.12*	-			
8	Verbal Aggression	1.48	0.58	-.0	-.09	-.08	-.10	-.07	-.10	.87**	(.73)		
9	Anger	1.45	0.59	-.04	-0.00	-.06	-.10	-.08	-.10	.88**	.53**	(.68)	
10	Perceived-Cyberaggression	1.28	0.47	-.27**	-.15**	-.29**	-.25**	-.25**	-.19**	.12*	.12*	.08	-

Note. $n = 316$. * $p < .05$, ** $p < .01$, coefficient α for observed variables presented on the diagonal ( ).

(table continues)

Table 9 (*continues*)

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 2

	Variable	M	SD	1	2	3	4	5	6	7	8	9	10
11	P-C Subordinate	1.16	0.59	-.14*	-.05	-.18**	-.07	-.09	-.04	.08	.12*	.02	.63**
12	P-C Supervisor	1.30	0.80	-.27**	-.15**	-.29**	-.28**	-.31**	-.17**	.05	.06	.02	.73**
13	P-C Coworker	1.36	0.79	-.16**	-.06	-.19**	-.22**	-.16**	-.24**	.106	.07	.12*	.69**
14	P-C Customer/Other	1.29	0.68	-.12*	-.13*	-.08	-.04	-.07	-.00	.08	.08	.05	.57**
15	Negative Affective Reaction	2.00	1.17	-.36**	-.25**	-.34**	-.31**	-.29**	-.26**	.17**	.12*	.17**	.52**
16	LPHA	2.02	1.20	-.33**	-.23**	-.33**	-.30**	-.29**	-.24**	.17**	.11*	.19**	.53**
17	LPLA	1.98	1.27	-.34**	-.25**	-.32**	-.29**	-.27**	-.25**	.14*	.12*	.12*	.46**
18	Dissatisfaction with Job	2.99	1.33	-.35**	-.19**	-.38**	-.39**	-.40**	-.29**	.16**	.09	.19**	.31**
19	Quit	2.39	1.64	-.27**	-.17**	-.28**	-.30**	-.28**	-.26**	.16**	.12*	.16**	.26**
20	Job Satisfaction (R)	3.35	1.72	-.24**	-.09	-.28**	-.29**	-.30**	-.21**	.11*	.05	.15**	.21**

Note. n = 316. * *p* < .05, ** *p* < .01

(table continues)

Table 9 (*continues*)

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 2

	Variable	M	SD	11	12	13	14	15	16	17	18	19	20
11	P-C Subordinate	1.16	0.59	(.95)									
12	P-C Supervisor	1.30	0.80	.41**	(.94)								
13	P-C Coworker	1.36	0.79	.23**	.28**	(.92)							
14	P-C Customer/Other	1.29	0.68	.14*	.17**	.24**	(.95)						
15	Negative Affective Reaction	2.00	1.17	.27**	.46**	.41**	.21**	(.92)					
16	LPHA	2.02	1.20	.26**	.44**	.45**	.21**	.94**	(.87)				
17	LPLA	1.98	1.27	.25**	.42**	.32**	.19**	.95**	.79**	(.89)			
18	Dissatisfaction with Job	2.99	1.33	.21**	.28**	.24**	.05	.43**	.37**	.43**	-		
19	Quit	2.39	1.64	.18**	.23**	.24**	.01	.43**	.37**	.45**	.79**	(.90)	
20	Job Satisfaction (R)	3.35	1.72	.13*	.23**	.19**	-.01	.38**	.34**	.37**	.79**	.67**	-

Note. $n = 316$. * $p < .05$, ** $p < .01$, coefficient α for observed variables presented on the diagonal ( ).

(table continues)

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Table 9 (*continues*)

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 2

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
21	Interpersonal Justice (R)	3.22	2.02	-.27**	-.16**	-.28**	-.29**	-.32**	-.19**	.09	.05	.11*	.21**
22	Strains	3.06	0.61	-.22**	-.20**	-.13**	-.12*	-.10	-.11*	.22**	.14*	.24**	.21**
23	GHQ	4.11	0.46	-.03	-.08	.01	.13*	.12*	.12*	.07	.07	.04	.02
24	PHQ	2.85	1.02	-.22**	-.19**	-.19**	-.17**	-.15**	-.15**	.10	.01	.16**	.22**
25	Negative Affect	2.23	0.86	-.20**	-.17**	-.17**	-.13*	-.10	-.13*	.31**	.24**	.31**	.16**
26	Enacted-Cyberaggression	1.03	0.15	-.00	-.00	-.00	-.02	-.00	-.04	.02	.03	.01	.25**

Note. n = 316. * *p* < .05, ** *p* < .01

(*table continues*)

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Table 9 (*continues*)

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 2

	Variable	M	SD	11	12	13	14	15	16	17	18	19	20
21	Interpersonal Justice (R)	3.22	2.02	.15**	.18**	.12*	.10	.17**	.15**	.17**	.66**	.19**	.18**
22	Strains	3.06	0.61	.10	.17**	.17**	.09	.47**	.42**	.47**	.42**	.47**	.35**
23	GHQ	4.11	0.46	.01	-.01	-.00	.03	.16**	.12*	.18**	.06	.12*	.03
24	PHQ	2.85	1.02	.08	.20**	.19**	.10	.44**	.40**	.44**	.45**	.47**	.36**
25	Negative Affect	2.23	0.86	.09	.13*	.13*	.06	.40**	.37**	.39**	.34**	.40**	.30**
26	Enacted-Cyberaggression	1.03	0.15	.15**	.11	.23**	.17**	.07	.05	.08	.01	.02	-.01

Note. $n = 316$. * $p < .05$, ** $p < .01$

(*table continues*)

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Table 9

Means, Standard Deviations, Zero-Order Correlations, and Reliability Coefficients: Sample 2

	Variable	M	SD	21	22	23	24	25	26
21	Interpersonal Justice (R)	3.22	2.02	(.95)					
22	Strains	3.06	0.61	.15**	-				
23	GHQ	4.11	0.46	-.01	.52**	(.85)			
24	PHQ	2.85	1.02	.20**	.88**	.28**	(.89)		
25	Negative Affect	2.23	0.86	.10	.82**	.23**	.54**	(.93)	
26	Enacted-Cyberaggression	1.03	0.15	.01	-.02	.08	-.04	-.04	(.92)

Note. $n = 316$. * $p < .05$, ** $p < .01$, coefficient α for observed variables presented on the diagonal ( ).

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Discussion

This study was carried out to (a) confirm the dimensionality of the cyberaggression construct as explored in Study Two, (b) develop an initial nomological network of individual and situational predictors and consequent outcomes relating to cyberaggression, and to (c) test hypothesized relationships of selected variables to cyberaggression. Each of these is addressed in the sections that follow.

Structure of the Cyberaggression Construct. The results of the CFA on the dimensionality of Perceived-Cyberaggression provide confirmatory evidence for the hypothesized structure of cyberaggression. The CFA results demonstrate that the four by-source structure of Perceived-Cyberaggression and the four by-target structure of Enacted-Cyberaggression are the best fitting models when compared to three other theoretical and empirically plausible alternatives. Even though these results provide evidence for the construct validity of cyberaggression, it must be acknowledged that the CFA results only converged upon, but did not exceed, recommended thresholds for good fit.

In combination with the EFA results of Study Two, these results demonstrate that Perceived-Cyberaggression consists of a range of behaviours manifested in received email, that are perceptually appraised as aggressive by a focal target, and that are empirically distinguishable across the source of the behaviour. That is, focal targets of this form of aggression make distinctions between cyberaggression behaviours on the basis of their source; and as the appraisal is perceptually based it can be argued that this assessment is irrespective of any intent for aggression by the source. All things being

otherwise considered, the appraisal of a 'nasty' email received from a supervisor is not necessarily the same as a similarly 'nasty' email sent by a coworker.

Despite the lack of clear structure for the EFA results in Study Two, the results from the CFA on the dimensionality of Enacted-Cyberaggression also provide evidence that Enacted-Cyberaggression is composed of a range of behaviours intentionally expressed in email sent by an aggressor. Again, the data confirm that the sending of an aggressive email is distinguishable as a function of the intended focal target. That is, sending a 'nasty' email to your supervisor is viewed as a perceptually different aggressive act than sending a similarly 'nasty' email to a fellow coworker.

Cyberaggression is, therefore, a multi-dimensional aggression construct consisting of two highly similar, almost 'mirrored', processes. These are Perceived-Cyberaggression, or the appraisal of email as aggressive, and Enacted-Cyberaggression, or engaging in aggressive behaviour using email.

Measurement of Cyberaggression. The results of this study provide preliminary evidence for the validity of the measures for Perceived and Enacted-Cyberaggression. The Perceived-Cyberaggression Scale reliably measured a range of perceptually aggressive behaviors by source, whether supervisor, subordinate, coworker, or a customer or other person associated with the organization. Further, it exhibited similar internal consistency and reliability across two separate studies and multiple samples. Similarly, the Enacted-Cyberaggression Scale measured a range of behaviours that perpetrators use for the purposes of aggressing against a focal target in email, while simultaneously empirically differentiating the target of the behaviour, whether supervisor, subordinate, coworker, or a customer or another person associated with the organization.

Hypothesized Predictors and Outcomes. Though the results did not support all of the hypotheses concerning the relationships between the selected predictors and outcomes, the results do show that both individual and situational variables play a role in the prediction of cyberaggression. Additionally, the results show that cyberaggression is appraised as a negative affective experience by focal targets, and that these experiences are perceived as stressful and are related to a number of adverse organizational and individual outcomes. Each hypothesis in the initial and final Latent Variable Path Analysis models is discussed individually in the sections which follow.

Organizational Policy. H1 stated organizational polices concerning the normative use of email would negatively predict Perceived-Cyberaggression. This hypothesis was supported with Organizational Policy significantly and negatively associated with Perceived-Cyberaggression. Both the Latent Variable Path Analysis results and the zero-order correlations for the Policy and Enforcement measures support the assumption that (a) having a policy that specifically concerns the appropriate use of emails will result in lower rates of perceived misuse of email, and perhaps more importantly, that (b) when policies are enforced sanctions will reduce the incidents of cyberaggression. The results support the importance of accounting for the role of organizational or situational variables and their unique contribution to cyberaggression specifically, and workplace aggression more generally (see for example Hershcovis et al., 2007).

However, despite the relationship between Organizational Policy and Perceived-Cyberaggression, the hypothesized relationship between Organizational Policy and Enacted-Cyberaggression, H9 which stated that policies concerning the appropriate use of email would negatively predict Enacted-Cyberaggression, was not supported by either

the Latent Variable Path Analysis results or the zero-order correlations. Therefore, the

evidence concerning the role of organizational policy concerning the actual reduction of

behaviour, versus the perception of that behaviour, remains equivocal.

Workplace Norms. H2 which stated that workplaces norms for the appropriate

use of email would negatively predict Perceived-Cyberaggression was not supported.

Although the zero-order correlations between supervisor and coworker tolerance were

significant and negatively related to Perceived-Cyberaggression, the Latent Variable Path

Analysis results showed that there was no significant path from the Workplace Norms

latent variable to Perceived-Cyberaggression. Additionally, there was no significant

relationship between Workplace Norms and Enacted-Cyberaggression as was

hypothesized and therefore H10, which stated that workplace norms for the appropriate

use of email would negatively predict Enacted-Cyberaggression, was not supported. The

Latent Variable Path Analysis results were not significant nor were there significant zero-

order correlations between the latent variable or the indicator measures and Perceived-

Cyberaggression.

However, the Latent Variable Path Analysis results did show that Workplace

Norms were significantly related to Dissatisfaction with Work. The path results and

zero-order correlations across both samples converged in this respect and the valence of

the relationship was negative as expected. That is, as intolerance for violations of email

use increased the associated levels of dissatisfaction with the work environment

decreased. Even though this relationship was not hypothesized in the original model, one

potential explanation is that intolerance for aggression in email may be an indicator of the

general tenor of the workplace in terms of tolerance for aggression in broader and more general terms.

Individual Characteristics. Consistent with the results of the Workplace Norms predictor, neither the relationship hypothesized between Individual Characteristics and Perceived nor Enacted-Cyberaggression was supported by the Latent Variable Path Analysis results. Thus neither hypothesis H3, which stated that hostile dispositional characteristics would be positively associated with Perceived-Cyberaggression, nor H11, which hypothesized that hostile dispositional characteristics would positively predict Enacted-Cyberaggression, were supported. For Perceived-Cyberaggression the zero-order correlations showed mixed results, non-significant for sample 1, and weak but significant correlations in sample 2. For Enacted-Cyberaggression both Trait Verbal Aggression and Trait Anger were weakly but significantly correlated alternatively for these measures across both sample one and sample two. These results suggest that both of these traits may play a weak but contributory role in the expression or commission of aggression rather than the perception of aggression as originally hypothesized. Additionally, this suggests that control of expressed verbal aggression or anger control, as predictor variables, would be more likely (Spielberger, 1996).

Negative Affective Reactions. H4 which hypothesized that state affective reactions would fully mediate the relationship between Perceived-Cyberaggression and outcomes associated with the experience of cyberaggression, was supported. The Latent Variable Path Analysis results and the zero-order correlations both converge to show a strong and positive relationship as expected. Additionally, both H5, the relationship between Negative Affective Reaction and Dissatisfaction with Work, and H7, the

relationship with Strains were also supported. Though the Latent Variable Path Analysis results did not show a significant path between Negative Affective Reaction and Enacted-Cyberaggression, H8, there was a non-hypothesized significant path between Perceived-Cyberaggression and Enacted-Cyberaggression.

Taken together the Latent Variable Path Analysis results and zero-order correlations (a) support the results of Studies One and Two, which show that cyberaggression is experienced as a negative incident, (b) that negative affective reaction to cyberaggression mediates the relationship between cyberaggression and both Dissatisfaction with Work and Strains, and (c) that there is a predictive relationship between Perceived and Enacted-Cyberaggression. These results are consistent with research highlighting the importance of the role of affect generating events at work (Mignonac & Herrbach, 2004; Weiss & Cropanzano, 1996) and reciprocal incivility or conflict spirals (Andersson & Pearson, 1999; Glomb & Liao, 2003).

Dissatisfaction with Work. H6, which stated that Dissatisfaction with Work would be positively associated with Strains, was supported. The path between Dissatisfaction with Work and Strains was positive and significant with weak but significant zero-order correlations. These results are consistent with research that shows that job satisfaction is negatively related to psychological and somatic stress effects (Barling, 1996).

Potential Limitations

Method Effects. Although the results of this study contribute, both theoretically and empirically, to our understanding of cyberaggression there are several potential limitations that must be raised.

The cross-sectional nature of the method employed opens the door to the introduction of mono-method or spurious correlation effects. In this set of studies several observations mitigate any potential for mono-method effects.

First, correlations between major variables did not exhibit signs of inflation. Correlations were generally as hypothesized, parallel with effects observed in other studies, and were of similar magnitude across two studies and three samples. Several of the variables remained uncorrelated in accordance with both theoretical and empirical expectations. If mono-method bias was an operant effect, correlations between variables should have been consistently inflated. The strengths of relationships between like variables across studies varied and did not appear to be inflated. Although method effects could still be present, even though their effects are not manifested in inflated correlations (Schmitt, 1994), this concern may be addressed by the comparison of observations and results across Studies Two and Three.

Second, the relationships between the major study variables across these studies were similar despite (a) the change in survey instruments, and (b) data that were drawn from diverse work sites from two different working populations. If method effects had been present in both or either of these two studies, these effects should have been discernable in differential relationships found between variables across studies. As this

was not the case, this may be taken as an indicator that method bias is not affecting the results.

Two other considerations mitigate potential concerns regarding method variance. First, cyberaggression is a perceptual measure, rather than a measure of an objective workplace phenomenon. Consequently, it is theoretically appropriate to use self-reports (Spector, 1994) for measuring this construct. Second, as this is the first known effort to investigate cyberaggression, and as these studies utilize newly developed measures, there are no previous empirical results from which to make informed judgments concerning method variance effects (Schmitt, 1994). However, it still must be acknowledged that all or most of these concerns could be more specifically addressed through using experimental or longitudinal methods of study and/or dyadic studies using multiple sources of data (see for example Bruk-Lee & Spector, 2006).

Finally, in pragmatic terms, as cyberaggression is dependent upon the perception and subsequent appraisal of an email as aggressive, it would be difficult if not impossible to collect data on perceptual aggression that was not based upon self-report data. In this sense, self-reports are literally the 'best' method available.

Causal Inference. Although no definitive assertion can be made about the results of this study, the theoretical foundation for the relationships between variables and the empirical fit of the data to the models suggest causal inferences may be made. However, the results of this study should be considered initial and tentative only - until such time as the results from additional studies using alternative research approaches sufficiently accumulates (Glomb, 2002).

Organizational Implications.

The results, both individually and collectively, of these studies suggest that cyberaggression in the workplace is viewed by focal targets as a universally negative experience with adverse outcomes. These include negative affective experiences, psychological distress, somatic symptoms related to that stress, job dissatisfaction, and increased turnover intent. Therefore, cyberaggression may be considered individually and organizationally an unwanted and undesirable phenomenon, and similar to other forms of workplace aggression or deviancy with both direct and indirect costs to the organization and organizational members (Robinson & Bennett, 1995; Robinson & O'Leary-Kelly, 1998). To avoid these organizational and personal costs organizations should take steps to prevent this form of aggression from occurring in the first instance, rather than solely focusing on mitigation strategies.

The results of this study suggest that prevention strategies should focus on (a) promulgation of organizational policies on the appropriate use of email, (b) training for both supervisors and coworkers on the appropriate use of email to foster and encourage congruency between practice and policy, and (c) the general fostering of a climate of respect and politeness in organizational communications.

General Discussion

The introduction and adoption of Information and Communication Technologies in the modern workplace has led to both efficiencies and unforeseen consequences. One such consequence is the use of ICTs in an aggressive fashion. I have labeled the aggressive use of ICTs as *cyberaggression* and posit it as a form of cyberdeviancy (Weatherbee & Kelloway, 2006). The rapidity with which these systems were put into use within organizations, when taken in combination with previous research focused on understanding these systems at the organizational level, essentially precluded the study of the impacts of these systems at the individual level. In the absence of needed research into the use of ICTs as a tool for workplace aggression the purpose of my research was to investigate, define, operationalize and model cyberaggression in organizational settings.

To study this phenomenon I designed a program of mixed-method research consisting of three inter-related and progressive studies. The first was a qualitative study designed to explore the nature of cyberaggression through the experiences of focal targets of this behaviour. Given the phenomenological and perceptual nature of cyberaggression this approach was deemed appropriate to begin to identify (a) the perceptual cues used by individuals in their appraisal of email as aggressive or not, (b) to identify a potential set of individual and situational antecedents associated with the experience of cyberaggression, (c) to identify a set of potential cognitive, affective or behavioural reactions focal targets associated with the experience, and (d) to identify potential outcomes or actions experienced, or engaged in, by those persons who were the target of cyberaggression.

The second study was primarily focused upon the operationalization and measurement of cyberaggression as a construct. Specifically, the second study was designed to (a) investigate the underlying structure and dimensionality of cyberaggression, and (b) to develop a measure of cyberaggression.

The final study was designed to (a) confirm the structure and dimensionality of cyberaggression, (b) validate the scales designed to measure the construct, and (c) develop and evaluate a model of cyberaggression incorporating variables which should theoretically predict or result from cyberaggression.

The results of Study One revealed that cyberaggression, as a workplace phenomenon, was present across a wide range of organizational settings. Whether holding senior or junior positions within an organization, cyberaggression was perceived by focal targets as an aversive, affect laden, and highly negative experience which unfolded in a relatively consistent fashion regardless of position or job type.

Cyberaggression was found to be a process phenomenon comprised of distinct steps or stages, which I have labeled the CIARAA model of cyberaggression. This process was found to be first bounded by the *Context*, or situational factors at work within the organizational setting and which served as the 'backdrop' for a focal target's perceptions and reactions. The second component of the model was the *Interpretation* of an email, or those perceptual and cognitive activities wherein a focal target extracted cues to be assessed in the third step of the model, or the *Appraisal* stage. In this stage of the model focal targets determined to what level or degree the email was assessed as hostile or aggressive. A perceptual determination of hostility or aggression inevitably invoked a subsequent *Reaction* comprising both cognitive and affective elements. Focal targets

would then engage in a process of subsequent, or secondary, *Appraisal* in order to determine what behaviours, if any, they would engage in the final stage of the process, or the *Action* stage.

Participant reports of these experiences showed that cyberaggression usually resulted in negative cognitive, affective and behavioural outcomes including the experience of negative affect, association with job dissatisfaction, and manifestation of psychological and somatic strain effects. It also showed that an act of cyberaggression could act as a 'trigger' which initiated a related act of cyberaggression in response.

The results of Study Two revealed that cyberaggression has a structure consisting of four empirically distinguishable factors. These factors represent four potential sources of cyberaggression found within organizational settings. Perpetrators of cyberaggression include supervisory personnel, subordinates, fellow coworkers, and finally, individuals somehow related to the organization such as a customer, or another person in a related organization. The resulting measures developed in this study included a scale for measuring the behaviours perceived by a focal target to be hostile or aggressive which I have labeled Perceived-Cyberaggression. The second scale was a 'flipped' scale which measured the behaviour used by an individual to engage aggression against another person using email. I labeled this measure Enacted-Cyberaggression.

The results of the third and final study revealed that the organizational climate and norms of use for email in organizational settings positively predicted Perceived-Cyberaggression and that the negative affect associated with the experience of cyberaggression plays a mediating role between Perceived-Cyberaggression and dissatisfaction with the work environment and psychological and somatic strain effects.

Additionally, although not originally hypothesized, it was found that Perceived-Cyberaggression positively predicted Enacted-Cyberaggression, and that individual characteristics contributed to strain effects whilst organizational climate also predicted satisfaction with the job environment.

When taken together these studies provide the theoretical basis and associated empirical evidence for concluding that cyberaggression is a unique form of aggression that has emerged in parallel with the introduction and adoption of modern computer mediated communications in organizations, and that cyberaggression is empirically distinguishable by either the source or the target of aggression, and that cyberaggression is a negative experience with negative outcomes.

Contributions.

The results of this research program contribute to and expand upon our current understanding of organizational or workplace aggression in several ways. First, as a direct contribution to the study of workplace aggression through the development and measurement of a new form of aggression construct. Second, as evidences of the importance of the role that structural relationship plays in workplace aggression, highlighting the organizational context and roles as important variables of study necessary for advancing our understanding of workplace aggression in general. Finally, as a basis for researching, developing, and designing organizational strategies and interventions to prevent or reduce the adverse impact of cyberaggression.

As cyberaggression is a newly developed construct these results form the foundation for subsequent study aimed at increasing our knowledge and understanding of this form of technologically enabled aggression; a critical contribution given the

increasing presence of similar forms of technically mediated communications such as Instant Messaging, text-messaging, or mobile email capability (Shipley & Schwalbe, 2007; Society, 2003). Although there is still much more research to be conducted into this form of workplace aggression this research begins to fill a significant gap in the area of technologically mediated symbolic aggression.

The second significant contribution is the empirical results that strongly suggest that the source of aggressive behaviours is a major determinant in the appraisal and perceptual processes of focal targets of aggression. From this perspective we must investigate the *differences* in aggressive behaviours, as either perceived by or engaged in by different persons in the workplace, as a function of the source of the behaviour. Research with this specific focus has been limited (see for example LeBlanc & Kelloway, 2002) despite growing recognition of the issue and recent calls for increased focus on these types of differences (Hershcovis et al., 2007). We can also conclude that the structural relations and a priori relationship that exists between a source-target dyad should be another focus of study in workplace aggression research in general. Research into the factors that define the differences between sources and targets or between behaviours, perceptions and subsequent responses, or reactions to aggression by source-target dyads could potentially open up new and important insights.

The third major contribution of this research is the enhancement to our understanding of affective experiences in the workplace and their role in incidents of aggression, and more specifically, how these are likely to mediate outcomes and responses to being aggressed against.

Finally, given the continuing trend to increase ICTs in the work place, for example the rapid rise to ubiquity of the Blackberry and similar technologies, increased understanding of the nature of their use as enablers of aggression makes possible the development of organizational strategies and effective interventions designed to address targeted or specific behavioural orientations (e.g., supervisor training versus team or coworker training) which may prevent or reduce this form of workplace aggression.

Future Research

This research has theoretically and empirically defined, operationalized, and measured a unique form of workplace aggression that is only possible in a technologically mediated work environment. Given the rapidity with which organizations have adopted computer systems, with the technologically related capability to enhance, expand and augment organizational communications (Weatherbee & Kelloway, 2006) this form of workplace aggression is now sufficiently prevalent that it is being raised as a social issue (Sipior & Ward, 1999) within North American popular culture (Shipley & Schwalbe, 2007). As the use of technologically mediated communications is expected to continue its rapid growth (Society, 2003) it is reasonable to assume that this form of aggressive behaviour will continue and become even more prevalent than it is today as these systems become available to support this type of behaviour. Consequently, additional research into email aggression and related forms is becoming increasingly urgent.

More specifically, though this research provides strong support for some elements of the construct domain, e. g., the structure of Perceived-Cyberaggression, in other areas the results are more tentative or equivocal, e. g., the exact nature and role played by

individual predictors. Several recommendations may be made to address both these and several other potential concerns.

First, as this study opens up a new organizational aggression domain, it is important that the results are confirmed or improved upon through replication. Until empirical results in an area or focus of study sufficiently accumulate our collective understanding remains tentative (Glomb, 2002). Replication studies, or studies focusing on this form of aggression using alternative methods offer promise in this regard.

Second, these results provide further evidence that both individual and situational determinants play a significant role in workplace aggression (Douglas & Martinko, 2001) and suggest a range of potential individual and organizational determinants. Those individual characteristics associated with either the expression or withholding of high levels of negative affect such as anger control or rumination (Aquino, Douglas, & Martinko, 2004; Rusting & Nolen-Hoeksema, 1998; Sukhodolsky, Golub, & Cromwell, 2001) need to be investigated. Other individual characteristics such as attribution styles, attitudes towards revenge, locus control, or self-monitoring are potential individual determinants of aggression (R. A. Baron & Neuman, 1996; Douglas & Martinko, 2001; Skarlicki, Folger, & Tesluk, 1999; Spector & Fox, 2005) that should be investigated as well.

The results also reinforce initial work (see Peterson, 2002) that organizational climate, or component elements thereof, may reduce the potential for aggression in workplaces (Vartia, 1996), and that climate may have affective, cognitive, and instrumental effects (Carr, Schmidt, Ford, & DeShon, 2003) on organizational outcomes. This is an area that requires more attention and effort.

Gender potentially influences styles and patterns of communication in technologically mediated environments and women have been found to be much less likely to engage in aggressive communicative behaviours (Soukup, 1999). However, research on how gender styles of communication relate to expressed aggression (Rancer & Avtgis, 2006) in online environments remains mixed, and in organizational technical environments remains non-existent.

Finally, there is the potential for other methodologies to contribute, to replicate, or to improve upon the results found in these studies. Despite the obvious difficulties and challenges associated with capturing information concerning aggressive behaviours in organizations, a longitudinal approach would permit more surety about causal inferences and the roles predictors play in any nomological framework involving cyberaggression. In addition, however, there are other potential approaches that could also yield valuable insight and understanding, such as investigating the role of context through methods that focus on specific incidents (Glomb, 2002).

<div align="center">General Conclusion</div>

This research was undertaken to investigate a new and relatively recent form of aggressive behaviour in today's workplaces. The three studies, when assessed on a cumulative basis, provide sufficient evidence to demonstrate that cyberaggression, while perhaps sharing similar behaviours with other deviant workplace behaviour, such as incivility, verbal aggression, verbal abuse or elements of supervisor abuse or bullying, represents a unique and thoroughly modern form of symbolic aggression. The analyses provide substantive insight into the dimensionality and construct validity of

cyberaggression, and have provided internally consistent and reliable scales to be used for its measurement.

It is unlikely that this form of aggression will continue to remain 'under the radar' as it has for the last decade. The inevitable momentum that carries ever-increasing technologies into our workplaces assures us that these phenomena will remain present in organizations – so we must now turn our attention to understanding this phenomena in order to prevent or mitigate the inevitability of these and related forms of harm-doing in the workplace.

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Appendix A.

Cyberaggression in the Workplace: Critical Incident Method Interview Guide

Pre-interview administration.

1.   Welcome respondent.

2.   Introduction and review of study purpose.

3.   Explanation of requirement for ethics review and consent.

4.   Have respondent sign consent form and provide a copy.

5.   Ask permission to audio record and to commence session.

Interview

6.   General

a. I want you to specifically think about an incident in the workplace where you either received a hostile or aggressive email, or where you witnessed someone else receiving one (e.g., you were copied on the email distribution list). Could you describe the general circumstances surrounding this event?.

b. Could you describe for me how you assessed the email and the context surrounding this email? This would include how you determined it was a hostile or aggressive email and your thoughts, feelings, emotions, etc. and how these related to the workplace circumstances at the time. Perhaps you could compare it to a similar email that you assessed as non-hostile or aggressive?

c. As a result of your assessment or appraisal, what did you do next?

d. Can you describe to me why you chose this form of response? I am interested in your rationale, justification, and decision making processes. That is, the various factors you saw as important?

e. Can you describe to me what happened next and why you believe this was related to the email incident?

7. Was this an isolated incident, or were their others where you were directly involved? Are you aware of other incidents were you were only indirectly involved, or perhaps not involved at all?

8. Mini Tour Specifics and prompts arising from 6 and 7.

Post-Interview Administration

9. End interview. Turn off audio recorder and thank respondent.

10. Ask respondent if they have any other questions or concerns.

11. Ensure that respondent has consent letter copy, re-confirm respondent's request for research results and mailing address.

12. Thank respondent.

Appendix B.

Transcript Extracts used in Analyses

Transcript Code Reference	Transcript Excerpt	Descriptors
BOB.6	... was in blaring capital letters, which starts off on - in my view as almost shouting at you.	Email form – all capitals Norm violation – shouting
	The tone of the e-mail was very accusatory about my staff making some serious errors within our operations in the human resource management group	Tone – assessment, context Appraisal – blame, accusation
	that, in effect, it said that we didn't know what we were doing.	Appraisal – competency
	The reaction obviously was one of - an immediate reaction was, "I better fire something off to these guys in a reply e-mail and get them straightened out real quick.	Reaction – cognitive, immediacy Appraisal – clarification, urgency
	And the tendency was to - and, in fact what I did, I created an e-mail. Unfortunately, I was not as composed and calm as I should be. It was an immediate reaction to just the receipt of that original one, and I didn't do my e-mail in caps. I tried to create an e-mail that was reasonable, that it was - presented the points, but it had a very, very	Reaction – affect, upset, frustration, anger Response – Cognitive, rational, professional, tonal mirroring

Transcript Code Reference	Transcript Excerpt	Descriptors
	strong tone to it, essentially saying you don't know what you're talking about. Stay out of our business. We are the professionals.	Reaction – cognitive, self concept maintenance
BOB.8	Yeah. With lots of exclamation marks.	Email form – punctuation
BOB.10	Well, that one was probably more aggressive than - well, there were no direct threats. It certainly was aggressive, and it triggered an immediate response from me.	Reaction – immediacy Appraisal – threat
BOB.11	As soon as I read it, I was ready to - it raised my level of - not anger - well, almost anger, I think it was. I really got worked up about it because my team, I know, does a good job. And just the choice of words, as I recall, was very accusatory	Reaction – affect, anger, group concept maintenance Appraisal – accusatory, competency
BOB.13	Well, I think the original e-mail was not a lot of reasoning to it. I think they had an axe to grind and needed to get up on the soap box and with the blare horn and make some noise. Obviously they were frustrated, too. However, the tone of my e-mail was not accusatory. It was trying to be conciliatory.	Email form – emotional, non-rational Appraisal – rationalization, frustration Response – cognitive, rational, conciliatory
BOB.17	Yeah. Another manager.	Relationship - peer
BOB.23	I felt better having, you know, put my side of the story on - or spin on my side of the story, you know. I felt a little bit relieved, a little bit of	Outcome – catharsis, affect, image concerns

Transcript Code Reference	Transcript Excerpt	Descriptors
	catharsis because I had addressed the situation. But the level of anger went down and I felt not completely satisfied because I was still concerned about the - kind of the message that had been delivered within the message, if you like. The problem hadn't been solved yet.	Response – affect, anger, anxiety or future concern
BOB.32	I believe so, yes, but not well known, not well read, not well used.	Email Policy – lack of awareness
BOB.33	Well, not discussed. I believe that most people would not be aware of the policy. That's a deficiency in the organization, so they would not know, you know, what e-mail etiquette might look like or, you know - or the protocols for e-mail within the organization.	Email Policy – lack of awareness Social norms – etiquette, violation Organizational norms – protocols, violation
BOB.42	Anyway, our principals were in the United States, the vice-presidents. And they had their business agenda and obviously were under pressure to maximize profits and make the business grow quickly and - but because of the distance, didn't understand what it was - what was going on on the ground in Manilla.	Relationship – senior supervisor Appraisal – rationalization, urgency, business pressure, frustration
BOB.42	I was the recipient of one e-mail, at least - I remember others- with respect to project completions and target dates being slipped, you know, having slipped. And they got fairly	Appraisal – interpretation of affect, excited, urgency, upset

Transcript Code Reference	Transcript Excerpt	Descriptors
	concerned and excited ... I remember a couple, but one in particular sending e-mails rather than calling ... The nature of the e-mail was not accusatory in this case, but you could tell that people were pretty upset in the language.	
BOB.42	So I crafted a fairly lengthy, more than one page, e-mail, but at that time it was - It was quite aggressive. It was quite reactionary. It was not as well thought out as the first one, and it was just a knee-jerk reaction and was - it was based primarily, I think, on the frustration, the workload, the lack of sleep, the - I wasn't, you know, thinking that clearly about it. But I was, I was really angry about that one. But clearer heads prevailed, and I didn't hit the button, and erased it. But it probably would have, you know, resulted in some real problems down the line had I sent it.	1st Response – affect, frustration, reactionary, immediacy, impulsive 2nd Response – cognitive, rational, future concerns of norm violations and adverse outcomes
BOB.44	No. I - it festered, in my own mind, obviously. You know, I gotta - fortunately, as I say, you know, clearly heads prevailed. I did step back from it a bit and said I gotta come at this another way, maybe after I get my head clear a bit more. But, you know, it was like 3:00 a.m. in the morning. We were working nights and days, two hours running over and having a sleep in a chair and back again. We had all night meetings, all day meetings, and we were just getting whacked out. So the genesis of that, I think, probably was more	Reaction – rumination, affect, upset, frustration Norms – rational, professional, business-like Norm violations – emotional, unprofessional non-business like

Transcript Code Reference	Transcript Excerpt	Descriptors
	my - you know, the state of mind as opposed to - you know, I'm sure in other circumstances I would have been more - less reactionary, more objective, and crafted something that was much more business-like.	
BOB.46	we have some managers who are connected to their computer by an umbilical cord and they live and die by the technology. That's not my style, which may be part of the interesting source because I come out of a different generation. I prefer to talk to people face to face if we can do it. Anyway, it - and I'm not the only one, but it seems like we're running ragged answering inbound e-mail requirements from others, from other officers and managers and senior managers and executives who are demanding more and more information. And in many cases, duplicate requests from silos within the organization who do not talk to one another, but they're asking for the - not exactly the same information. The same data, but maybe in a different format.	Use – dependency, information overload, not necessarily preferred but used
BOB.57	That was from an executive vice-president. Next to the president of the company.	Relationship – senior supervisor
BOB.60	Probably - I wouldn't get one of those in a week, probably. Maybe every three or four weeks, maybe, or less. Maybe one a month ... Typically peers and above.	Frequency – monthly Relationship – peers and supervisor
BOB.70	Yes. Actually, my team gets them, I know, from	Use – public versus

Transcript Code Reference	Transcript Excerpt	Descriptors
	time to time. Actually, the - we had a little bit of a - what I would call a - not an uprising, but certainly a reaction. But it was similar to the case that I mentioned - the first case that I mentioned to you. There was a follow-up to that and - but I don't think they had any others.	private Reaction – uprising, group negative response
RAM.5	The incident I'm thinking of aggressive is a better word than hostile to refer to the exchange happening. The e-mail was - it was certainly not quite as professional as it should be, for lack of a better description.	Appraisal – differentiation between aggressive and hostile Norm violation - unprofessional
RAM.6	In her correspondence back and forth to me, expecting us to solve all their problems by suddenly having all the RESes magically go out the door at the same time, same day without any consideration to the amount of work that was going to be required.	Frequency – exchange of emails, spiral
	... in a timely manner were my engineers fault ... she would suspect.	Appraisal – blame, competency
RAM.7	I got a fairly - short is a better word than irate, but certainly they were pissed that we didn't suddenly roll over and answer their problems for them. ... Short as in like if someone's talking to you they have very short, clipped sentences, not explaining what was - you know, my impression from reading the e-mails was that they were pissed, you know ...	Email form – short, clipped, norm violation Appraisal – affect, upset, anger, frustration

Transcript Code Reference	Transcript Excerpt	Descriptors
	They were getting upset that we suddenly didn't get everything that they want, and they were trying to rag on us over the e-mail, which is fine, because they can rag all they want but we can only do so much with so many people that were working.	
RAM.15	You know, and then it went back and forth and maybe one or two - I think there were maybe a total of like three e-mails, you know.	Frequency – multiple, exchange, spiral
RAM.19	I think a couple of my engineers spent more time thinking about it 'cause they were a bit more pissed than I was.	Reaction – rumination, affect, anger
RAM.20	Because the way the response was suggested was that it was their fault - when I say our, I mean our engineers. But I take that personal, too. But one of my engineers took it as a personal slight and actually dug out the SPP to say, you know, this is indeed we're doing what we're supposed to be doing, not what she thinks that we're supposed to be doing.	Appraisal – blame, fault, competency Appraisal – cognitive/affective, self concept attack
RAM.24	Usually we - personally if I've got - my bosses are very easy to work with, easy to get along with. I try not to surprise him and catch him off guard. If it's something that looks like it's going awry, I like to let him - I cc him just for no other reason so that he can read it and kind of be aware that he may be called upon, like questions from his highers, you know, if the director of that department [inaudible] at least he would know roughly what was going on.	Response – reinforcing hierarchy, awareness, image, task issues, protection

Transcript Code Reference	Transcript Excerpt	Descriptors
RAM.31	So basically, I'd say in the course of an afternoon was kind of how long this thing was except for the fact that one of my engineers who I'd cc'd all the information to. I think he was more pissed off than anyone else, certainly more than I was.	Frequency – day, multiple, exchange, public Reaction – rumination, affect, anger
RAM.33	No, no, no. No dead cats on the front seat of the car, no nothing that bad. I don't think anyone took it personally other than, like I said, one of my engineers took it personally, but not an evil kind of thing. He kind of, I guess, didn't appreciate the suggestion that we weren't doing the job we were supposed to be doing more so than I did.	Appraisal – competency Reaction – affect, self concept
RAM.39	Well, again, a condescending tone that we didn't know what we were doing and that only [organization] knows best and the customer knows best and [inaudible] quality of the product was not worthwhile. And I'm paraphrasing. That's not the kind of words they would use, but that's the way one would read their response when we'd send them a suggestion or an answer or recommendations, the kind of response we would get from them.	Email form – condescending, tonal Appraisal – competency Email form - covert
	I don't recall ever running into anything openly violent, openly aggressive, you know, "you son of a bitch", that kind of name calling, threatening. You know, I've never run into that kind of level of	Email form – covert versus overt Appraisal –

Transcript Code Reference	Transcript Excerpt	Descriptors
	anger. Not in my current position. In my previous position, we've come up with certainly things that have raised those kind of feelings when you receive them because, like I said, very condescending and insulting and - but not openly insulting. Not "your momma" or anything, you know. You know, we question your ability to meet this schedule, you know, yadah, yadah, yadah, [inaudible] looked at in great detail, kind of thing. Questioning our professional competence.	condescending, insulting, self concept, competency Reaction – affect, anger, upset
LEK.2	And some new information came to light after the interview that caused me to question the motive of the [activity], so what I did is I sent an e-mail just asking a question ... it was quite an innocent question, and it was met with a very long e-mail that I would consider aggressive.	Appraisal – aggression, out of scale response
LEK.3	It was condescending. She belittled me.	Appraisal – condescending, belittling, self concept
LEK.4	Sarcasm, I guess, so the use of sarcasm, "We're all adults here", that kind of thing ... so I guess you would call that using - God, what was that called? You know, shunning me, kind of thing. "You're no longer part of this [activity]", kind of thing.	Email form – sarcasm, tonal
LEK.4	Hostile. Hostile because it wasn't overtly aggressive.	Appraisal – hostile versus aggressive differentiation, covert

Transcript Code Reference	Transcript Excerpt	Descriptors
		versus overt
LEK.5	There were no swear words. There was no overt accusations. It was all done very subtly and with sarcasm. She didn't call me names. She doesn't overtly accuse me of anything. She didn't express anger. It was all more subtle, so I would say it was hostile.	Appraisal – hostile versus aggressive differentiation, covert versus overt
LEK.7	The first thing I did is I told others. I forwarded it to a few people to get their opinions and make sure I wasn't just being sensitive, and they were even more shocked than I was, so I probably sent it to three other people, close friends and colleagues. They saw it as very defensive and very snotty, and were appalled by this person's behaviour and lack of professionalism. From there, I responded.	Reaction – ambiguous, uncertainty Appraisal – unprofessional, 'snotty' Response – confirmation, validation, clarification, interpretation
LEK.9	Yeah. What do you think of this? This is what I sent her. This is my question. This is the response I got. Am I being sensitive, or is this hostile?	Response – confirmation, validation, clarification, interpretation Appraisal – hostility, ambiguity, uncertainty
LEK.16	Cool but professional ... Yeah. So it was, it was, you know, I hope there's no hard feelings and I certainly didn't intend to insult you in any way, but yes, I agree that at this point it's probably best to	Response – professional, rational, unemotional, de-escalation

Transcript Code Reference	Transcript Excerpt	Descriptors
	remove me from the [activity]. So it was - I certainly didn't retaliate with a hostile e-mail. I didn't get aggressive in return.	
LEK.17	My retribution was probably more covert in that I showed other people, who now knew that this person was being defensive and unprofessional. I did think about telling other participants who are involved in the [activity] so that they could weigh very carefully their participation in the [activity], but I decided against that. I'm very much a conflict avoider and did not want to escalate it. And in all honesty, this wasn't somebody who I'd had any aggressive communications with before, so there was no history there for me to, you know, build on this aggressive act.	A priori – no previous experience, no pattern Individual Difference – shyness, conflict avoidance
LEK.18	I have responded aggressively to an e-mail before, but it was somebody who had consistently sent me aggressive e-mails, you know what I mean. This was a one time thing. I wanted to end it and walk away.	A priori – previous exposure to aggressive email, escape or flight
LEK.22	This person hadn't bothered me in quite a while, but this person tends to send negative e-mails to the entire [organization]. And I usually just ignore them, but one of them was targeted to me and was copied to [the VP and President of the organization]. So I did respond to that one and voiced my displeasure. Kept it very professional, but said I do not appreciate accusations, especially	A priori – previous exposure to repeated aggressive email used as rationalization to ignore or non-react Email form – public, hierarchical distribution

Transcript Code Reference	Transcript Excerpt	Descriptors
	those that are made publicly and copied to [the VP and President of the organization].	Appraisal – affect/cognition, displeasure, image concerns Response – rational, normative, professional, image/self concept maintenance
LEK.25	That was just aggressive ... It was overt. It was more direct. It was "You did this." You could clearly see his anger and frustration in the e-mail.	Appraisal – overt aggressive, rationalization anger, frustration
LEK.29	He tends to react to things very quickly and, without thinking, fires off an e-mail to the entire [organization]. I'm part of a committee that's making an important decision for the [organization], and an e-mail was fired off by this individual that I thought was critical of the committee's work. And I took it personally. It's a small committee, so I responded by letting this person know exactly what the committee was doing and that I resented the hostility, the tone - the hostile tone of the e-mail that he had sent.	Reaction – immediate, affect driven, impulsive Appraisal – criticism, anger, self concept, public distribution Email form – hostile, tonal
LEK.30	Just the language used. Really strong language. Nothing offensive, just "You are doing this. I would hate to think you are doing it this way." I	Email form – tonal, language, competency

Transcript Code Reference	Transcript Excerpt	Descriptors
	know that's hard to explain, but it was just the words that he chose, just the language that he chose, and - and his history, that the only time we ever hear from him is when he has something snarky to say. So just the - you know, more the context than the actual message.	A priori – previous exposure, patterns Appraisal – hostility, contextual, relationship
LEK.31	So I responded saying, you know, I didn't like his accusation. And he responded by saying, "What accusation? I've read the e-mail I sent you three times. There's no accusation." And at which point I realized I was probably just being over sensitive and I sent an apology, which I cc'd all the committee members on so they could all see that I, in fact, over-reacted.	Appraisal – cognitive, over reaction Response – public, apologetic, de-escalation
LEK.34	Because I think it's really easily misunderstood, misinterpreted, misused. I have a very sensitive personality, so I read things into e-mails that probably aren't there. I find it difficult to get at true meanings when I don't have the other cues, and I think this dependence on e-mail ties us too much to technology and makes us accessible wherever we go, even [when on vacation].	Email form – reading in, ambiguity, context Use – dependency, not preferred
LEK.35	I think it's a pretty common occurrence, unfortunately. You know, most people I know have received an aggressive e-mail or two. One of the [peers in the organization] just received one from [a person] the other day accusing her, almost threatening her. Not physical threat, but threat of	Frequency – common, peers Appraisal – aggressive, threats, self concept ethics, public

Transcript Code Reference	Transcript Excerpt	Descriptors
	reporting her to higher-ups, accusing her of unethical behaviour. I think it's a little bit too easy for people to make accusations with e-mail because you don't have to look the person in the eye. What people forget, though, is that it's in print now.	Appraisal – rationalization, anonymity paradox
LEK.38	Well, I think there's a couple of reasons why we share them. One is to gauge other people's reactions to make sure our reaction is the right one. The same reason we discuss any stressful situation, just to relieve stress and get a second opinion.	Outcome – stress Appraisal – ambiguity, uncertainty, validation, confirmation
LIJ.2	I think it wasn't one to me, but it was one that was sent to me by our - the department that referred to everyone as cows - or, no, sheep. No, I think it was stupid cows because we were - we didn't agree with the individual and we decided to make a decision that the individual had other opinions about.	Email form – insulting, self concept, public
LIJ.4	It was calling us names. It was childish. It - I guess it fit this individual's personality that if you didn't agree with the individual, then he would basically come back at you in a fairly harsh manner, either make fun of you or, in other instances, come back quite hostile.	Email form – insulting, immature, norm violation professionalism and maturity Appraisal - hostile
LIJ.10	I think one or two other individuals in the [organization] were upset about it and blasting him	Reaction – mirroring back

Transcript Code Reference	Transcript Excerpt	Descriptors
	back, felt it was inappropriate.	Appraisal – norm violation, inappropriate
LIJ.15	Oh, I think in one e-mail - I mean, you know, it was a series of back and forth e-mails. One individual above me suggested that I seek employment elsewhere copied to my express mail.	Frequency – multiple exchange Relationship – supervisor to subordinate
LIJ.18	My tone was actually quite - it was quite - I wouldn't say it was offensive or anything. It was just very straightforward, but he - the individual took offense to it.	Appraisal – offence, tonal, straightforward
LIJ.22	Because he'd - because he had had his blunt message towards me and I felt to position myself as an individual who's above the fray. It's very important to always keep your image in a small environment. Never let anyone else define you. So if the approach is hostile, come back and - always come back as an innocent.	Appraisal – cognitive, image, self concept
LIJ.25	I think there's another incident involving an individual in the [organization] who had a problem with [inaudible] was moving forward at the time. He didn't want to - what was it? I forget what it was. It was another individual. I forget what it was about. He insulted me and I suggested that he focus his efforts on [activity].	Appraisal – insult, self-concept Frequency – multiple exchange
LIJ.26	He claimed harassment and all the rest.	Outcome – formal

Transcript Code Reference	Transcript Excerpt	Descriptors
		organizational mechanisms, escalation
LIJ.28	Oh, it's - you have a - you understand that there's a line you can't cross, so you go up to the point of the line and you don't cross it. I think never - you can't come out and accuse somebody of something or - at least on my end you can't, you can't threaten them in any manner or anything like that.	Appraisal – accusation is aggressive, hostility is covert
LIJ.29	And whereas in the past the - you know, you may have thought the letter might arrive a week or two later or days later, now it arrives instantly. The same thought process goes in often, but it's just where you might have held back, but now - yeah. But that's the - I think that's the big thing. Never threaten anyone. That's the big thing. But, you know, what I tend to do, and it's not - it's not always well received. I like to suggest ways that we can do things otherwise and, again, that's not often well received. And there's also the issue of not going through the hierarchy. There's still - even though we're in the virtual world, there still are some that insist we should use the hierarchical process, which often means death to your ideas.	Norms – threats, questioning thoughts or ideas
IME.4	... but they also essentially controlled everything, so they were highly technical people, real control freaks in some respects, and they dictated the rules to everybody else. Oddly enough - not so oddly,	Norms – organizational and sub-organizational, site specific

Transcript Code Reference	Transcript Excerpt	Descriptors
	this - that's the sort of technical side of it, but it also ended up being part of the way that that lab, which was known as the [location] lab, operated. It was a - had a much more direct communication style, much more just general aggressiveness in the climate of the lab whereas [other] was a very polite lab. And I have to say I don't think I ever had any rude or hostile e-mails from anybody ever originating in the [other] lab.	
IME.4	Well, as you can imagine, their e-mail and their communication style on line was similarly abrupt and not polite. And I worked with one of these guys, [name] really, for a couple of years, and I - he was in the database area. And one day I was asking him, you know, about - so many of them went back to [lab] after the program, after the project sort of got running in the first year. And I said - he was still there. I said, "Why did you just stay?" And he said, "I like the project. I like the people. It's technically interesting to me, but it hasn't come without a cost." And he said at one point we were all brought in to - we were all counseled - he said, "I was personally counseled by my first line manager about my communication style and told that I needed to be less rude, less direct, let other people speak, sort of speak when spoken to rather than constantly interrupting and being aggressive in terms of what I had to say."	Email form – abrupt, impolite\n\nOutcome – organizational response – counseling

Transcript Code Reference	Transcript Excerpt	Descriptors
IME.4	Well, this somehow hit a raw nerve at [organization], and people were - became an outlet for anger ... They opened up a discussion forum on the internal network to deal with people's reactions to this comment, and within three days they had 10,000 lines of posts that had been put on it. And there were a lot of people who were seriously, seriously angry.	Frequency – scale, anger, group, public
IME.5	I worked in a - I worked at a start-up company, and there the communication style was far more direct, far more - I won't say personal, but it was less politeness. It was - to me, coming out of [organization], it seemed pretty aggressive, but after I was there for a fairly short term I realized it was aggressive across the board, so I wouldn't call it - I don't think it's what you're looking for, which is a critical incident, because if it was, it was all a critical incident.	Norms – organizational norms Email form – direct, less polite, norm violation
IME.7	It was more of - more classic flaming kind of culture, is all I can say, and you got business communication that was not exactly flames, but certainly a lot more flame-like in terms of people's impulsive comments. But, again, it was consistent. It was that's the way it pretty much went, and that's part of what it meant to be coming out of - and making a transaction in a company culture, too, from being an entrepreneurial start-up from four students in their 20s, early 20s, to being, at that	Appraisal – impulsive, impolite, aggressive, rough Norms – organizational norms

Transcript Code Reference	Transcript Excerpt	Descriptors
	time, $100 million company with 160 employees. So you would still - you know, you would still get some what I considered to be fairly rough e-mails in the technical department.	
IME.8	Swearing. You know, well - yeah, sort of swearing, but again, you - they weren't exactly attacks. I don't think of them as being attacks. I just think - I mean, you know, it's part of it is what's acceptable in an engineering context is not necessarily acceptable someplace else. So, you know, I spent 20 years being a technical university and then technical - in technical businesses for 10 years, 15 years, so I thought of them as being ruder, less polite. Not necessarily being particularly aggressive against an individual, but as a group the culture was more aggressive.	Email form – swearing, overt, rude, impolite Norms – organizational, professional and sub-organizational norms, aggressive norms
IME.9	So I would say that I didn't enjoy working there. I didn't enjoy the communication style. But I didn't feel like it was personally aggressive against me.	Outcome - dissatisfaction
AMR.4	- I got back an e-mail that had been written in all caps and with a lot of punctuation, especially exclamation marks. And the - I just reacted to the caps. Like I just found that it made the e-mail strangely - well, it seemed more aggressive to me. It seemed like it - you know, you think of shouting. It almost seemed like the tone was a lot more strident or something.	Email form – all capitals, over use of punctuation Appraisal – aggressive, strident Response – affect, upset

Transcript Code Reference	Transcript Excerpt	Descriptors
AMR.11	As I said, it's kind of odd when I think about it because at the time when I got it, I remember really being surprised by the e-mail and by what I perceived to be its forcefulness ...	Response – surprise Appraisal - forceful
AMR.18	With her, I have to say that there were subsequent e-mails, and the tone in them was often, you know, what I would describe as not harsh, but really pushing back, like, and didn't spend a lot of time or effort trying to finesse the language in any way, you know, in terms of positioning things. It was just pretty, pretty direct and, at times, pretty forceful. Like it just – so?	Email form – language, tonal, not a lot of thought or care Appraisal – harsh, forceful
AMR.21	So I was trying to get some sense of who this person was and what her normal kind of working style was like or, you know, her communicating style. Like was this the way she dealt with everybody or was I, you know, being favoured with what I perceived to be kind of, you know, just overly harsh and - I just didn't find it was very, you know, civil is one word or just courteous, just the whole exchange. I just thought it was a bit too, well, harsh or negative or just - it was not a - it seemed to lack some of the niceties of normal communication.	Appraisal – harsh, forceful, norm violation, uncivil, discourteous Frequency – multiple exchange A priori – no previous exposure, developing sense

Transcript Code Reference	Transcript Excerpt	Descriptors
AMR.25	Then I crafted my own response, and I remember, you know, very deliberately trying to take the high road in terms of the response. I remember feeling that - you know, I remember feeling that I thought she had over-reacted in terms of the response and I remember feeling that I wasn't going to go back and do the same, that I was going to try to, you know, maintain things on a civil kind of level, not to over-react.	Response – rational, image concerns, norm adherence, cognitive versus affective
AMR.29	And my boss was, you know, one of the folks who had - who shared those concerns. And so I wanted her to be aware of, you know, the tone of the communication that we were having and, I guess, the way I was trying to deal with that. And we, you know - like I think I said that the organization, you know, was very heavily reliant on e-mail and so people who lived - who lived - who worked side by side would e-mail rather than...	Response – public, awareness Use – dependency on email, task interdependency, frequent use despite alternative
AMR.34	The end of the whole incident? I'd have to say I think that it coloured future communication with the group, I mean, with this individual in particular.	Outcome – durable, longer term impact Relationship - superior
AMR.35	I never really felt like we communicated, you know, as openly and as - like it was never - you know, it was always a big deal when we had to deal with her. Like it was just - you felt like - that	Outcome – anxiety, possibly stress, toleration of norm violations

Transcript Code Reference	Transcript Excerpt	Descriptors
	there was going to be a - you know, a problem with everything that you were - it was kind of a - just something you had to get through.	
AMR.36	So in the end I kind of, you know, resolved in my own mind that this was just her particular style, and while I didn't like it and didn't think it was appropriate, I just sort of accepted it as something that, you know, had to be endured, I guess.	Relationship - superior Outcome – anxiety, possibly stress, toleration of norm violations
AMR.48	This one individual I'm talking about in accounting, he and I had a bit of a testy relationship at times because I was pushing for, I guess, control over something that he had traditionally had responsibility for, and so I think some of my e-mails with him might have been a little - maybe a little clipped, you know, in terms of things. But I never would have, you know, say, been threatening or derogatory or abusive in my language.	Appraisal – interdependency conflict Email form – clipped, short
LOC.1	I've been cc'd.	Email form - public
LOC.3	Basically, it was an employee who was not happy with a directive they'd been given or a - you know, there's been numerous cases with this one employee. I find it difficult to separate out the incidents. I can't even remember exactly what caused the person to be irate, but it was not - you know, it was not something that - this is definitely someone who had communication problems, so it	A priori – previous exposure, patterned communication difficulties, repeated norm violations Email form – inappropriate language,

Transcript Code Reference	Transcript Excerpt	Descriptors
	was not just electronic communications. They'd been dealing with this person and giving them - trying to correct their aggressive communication in person. They have inappropriate responses. Seem to be for a whole lot of different things. Heightened emotional state far beyond what most people would consider to be reasonable or normal, and the person, even though they had been told - they seemed to like to use their capital button. They seemed to think that it was something to emphasize a point when the people on the other end are like - it's not just to prove a point.	capitals Appraisal – deliberate, intentional
LOC.6	They consider it rude to have the capital locks on. Now, I'm also quibbling whether - but I question that, too, but the reason they think it's rude is because they've been told it's rude. It's rude to use their capital locks, and then when they see something in capitals, they think, "That shouldn't have been in capitals." So I think part - some of it is that people that are receiving this are almost conditioned to believe that the - that - but - so that's just the capital thing. The language used in some of these e-mails I'm thinking about from this person that I've been cc'd in have been inappropriate and not just in the tone of the writing, but also you can tell the person was firing things off quickly without thinking about it because all the spelling and grammar errors are not typical,	Email form – capitals, tonal, inappropriate language and grammar, inappropriate distribution Appraisal – unprofessional, norm violation, hostile and aggressive

Transcript Code Reference	Transcript Excerpt	Descriptors
	which - but I know that this is also a person that has mooned me in a meeting. Yes. So I've seen more of this person than I should see, which is not to be - it's something you shouldn't have to put up with on a - in a professional setting when someone goes off the handle quite easily. But I have been cc'd and they use capitals in the subject line, capitals in the - by the...	
LOC.8	Yes. Supervisor's supervisor. And VPs, so this person's even cc'd stuff to the - in communications has sent things to our CEO. It's a lack of understanding of what is appropriate communications, lack of understanding of what is appropriate in chain of command.	Relationship – supervisor, multiple levels of hierarchy

Email form – distribution, hierarchy use

Appraisal – inappropriate, nor violation |
| LOC.31 | If I've got a complete log of every e-mail I've sent, just basically to cover my butt. Protection of myself and also organizational risk management. | Outcome – self protection, concern, anxiety |
| LOC.61 | Yeah, I have. I'm sorry to say, with a small organization - we're a small group and fairly close-knit, so when I see someone in the cafeteria and say, "Hey, how you doing?" and they say, "Doing well" and chat for a few minutes and they say, "By the way, did you see that e-mail?" So that's the | Email form – public

Appraisal – uncertainty, ambiguity |

Transcript Code Reference	Transcript Excerpt	Descriptors
	way that - one of the ways that I would be brought in.	
LOC.62	Basically what they want is - what they're looking for is just validation that the communication was inappropriate and - 'cause if you have something in an accusatory - somebody sends an e-mail, "[Name] is a real jerk" maybe I might go to the cafeteria and somebody might say, "Did you see that e-mail?" It's kind of like asking, "Do you think it was inappropriate or do you think I'm really a jerk?" So it's just to validate that, you know, the communication was inappropriate.	Reaction – validation, confirmation, self concept
NOJ.8	Right. Yeah. So it's - and it was quite aggressive in its - deliberately written, you know, aggressively.	Email form – overt, aggressive language Appraisal – aggression, open, direct, overt
NOJ.11	The first line I knew immediately what it was. It was an attack. It was an attack. That was very clear. And it went on to, you know, suggest to my superiors that I shouldn't be in the job I was in and, oh, yeah! ... CC'd to a number of - yeah, my superiors.	Email form – distribution Appraisal – attack, self concept, competency
NOJ.20	Yeah. Yes. It was just - well, the sarcasm, you know. Sarcasm was present. And incredulity that, you know, that somebody like me could hold a job	Email form – sarcasm Reaction –

Transcript Code Reference	Transcript Excerpt	Descriptors
	in the position I hold. Sort of that - you know, it's general astonishment used as a - all these things used as a rebuke, just a general strongly worded rebuke.	affect/cognition, incredulity, disbelief, astonishment Appraisal – rebuke, competency, self concept
NOJ.25	So I just - I got this e-mail late on a Friday, and I responded with one of those e-mails that you shouldn't respond by. You know, I sent it out before I left, yeah. It was bad. So I responded in like kind. ... So I got it around quarter to 5:00, I think, something like that, and I sent my reply out an hour later.	Reaction – affect, anger, upset, immediacy
NOJ.36	And then I realized that my reply was - the response was not conventional. It was a nuclear response. I drove him to - you know, you don't want to drive people to the river, as they say in the scam games. You don't want to take too much from them. So I realized that what I'd done was not worthy, and so I crafted a - part of it is I just didn't have time. I shouldn't have - I didn't have time to craft a - you know, an all-knowing response on Friday night, so I sent that snarl off via e-mail and then, even as I did that, I began trying to answer this e-mail, first of all, with an apology for what I sent, and addressing his valid points. And I sent that on Monday morning, and then he sent,	Appraisal – cognitive Reaction – affect, disturbing Response – rational, unemotional, apologetic, de-escalation

Transcript Code Reference	Transcript Excerpt	Descriptors
	Monday afternoon, an apology likewise. And we left it at that. It was actually a very good resolution, yeah, to something that was very disturbing.	
NOJ.56	But nevertheless, I do see - I do have e-mails, and I can remember clearly some very aggressive e-mails. So I'd have - I guess it would be an average of two or three ...could be more, and in between I could be handling, you know, a lot.	Frequency – multiple, weekly
NOJ.69	I've had e-mails come back - e-mails returned to me that I had never expected to see again. And I know some of the e-mails that I've already sent out ill-advised - well, non-advised. I sent them out under my own recognizance too soon. I know they'll come back to me at some point. So the answer is yes. And e-mails that I didn't quite take the time to - you know, I gave a perfunctory reply. They sometimes came back to me. And when they draw in other people, all of a sudden I realize I should have spent more time on those e-mails.	Frequency – multiple Appraisal – clarity, short response, non-thinking
NOJ.72	Well, it's astonishing. And so you have to be - he was being very aggressive in his e-mail, so I had to be firm, but I couldn't, you know, be provocative. And that's a challenge. That's a challenge because your first sense is to respond in kind. That's your first sense. And, of course, that's your first mistake. This goes back to the incident I've already explained. It's the first mistake.	Reaction – affect, mirroring

Appendix C
Categories and Cluster Descriptions

Table C1.

Level Three Category: Context

Level One Descriptive Data	Level Two Cluster	Remarks
peer	Relationship cluster	Descriptive data reflects those factors identified by respondents that positively or negatively influenced their assessments of a received email.
subordinate		
supervisor		
history		
interdependency		
task		
presence of policy	Norms cluster	
awareness of policy		
adherence to policy		
personal communication style		
group communication style		
communications technology		
public / private forum		
situational awareness		
task		

Table C2.

Level Two Cluster: Relationship

Level One Descriptive Data	Remarks
peer	Descriptive data reflects those factors or characteristics that influence the assessment of
subordinate	email as hostile or aggressive.
supervisor	
history	
interdependency	

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Table C3.

Level Two Cluster: Norms

Level One Descriptive Data	Remarks
presence of policy	Descriptive data reflects those factors identified by respondents that influence their
awareness of policy	assessment of a negative event email in comparison with normative practices.
adherence to policy	
personal communication style	
group communication style	
communications technology	

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Table C4.

Level Two Cluster: Cues

Level One Descriptive Data	Remarks
all capital case	Form and content indicators in an email used by respondents to assess an email as
over use of punctuation	negative.
lack of greeting / closing	
foul language, swearing	
distribution	
sender	
negative tone	

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Table C5.

Level Two Cluster: Interpretation

Level One Descriptive Data	Remarks
uncivil or discourteous	Descriptive data represents the interpretation made by respondents of a received
belittling or demeaning	negative email.
accusation or blame	
derogation or insult	
sarcastic or condescending	
overly emotional or non-rational	
unprofessional	
inappropriate content	
inappropriate distribution	

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Table C6.

Level Three Category: Primary Appraisal

Level Two Clusters	Level Two Cluster	Remarks
all capital case over use of punctuation foul language, swearing	Aggression cluster	Descriptive data reflects the type and range of assessments reached by respondents concerning a negative email.
all capital case over use of punctuation negative tone all capital case over use of punctuation negative tone	Hostility cluster	
indirect covert implied or perceived attack	Ambiguous cluster	

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Table C7.

Level Two Cluster: Aggression

Level One Descriptive Data	Remarks
all capital case over use of punctuation foul language, swearing direct, unambiguous, overt negative tone direct attack	Form and content indicators used by respondents to assess a negative event email as aggressive.

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Table C8.

Level Two Cluster: Hostility

Level One Descriptive Data	Remarks
all capital case over use of punctuation negative tone	Form and content indicators used by respondents to assess a negative event email as hostile or potentially hostile.

Table C9.

Level Two Cluster: Ambiguous (Potentially Hostile or Aggressive)

Level One Descriptive Data	Remarks
indirect covert implied or perceived attack	Form and content indicators used by respondents to assess a negative event email as hostile or potentially hostile.

Table C10.

Level Three Category: Reaction

Level One Descriptive Data	Level Two Cluster	Remarks
anger hostility frustration	Affective Reaction cluster	Descriptive data reflects the type and range of respondent reaction to the receipt of an email that was assessed as hostile or aggressive.
shock anxiety personal concern professional concern rationalization	Cognitive Reaction cluster	Related Level Three Category: Context

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Table C11.

Level Two Cluster: Affective Reaction

Level One Descriptive Data	Remarks
anger	Descriptive data reflects the type and range of respondent affective reaction to the receipt
hostility	of an email that was assessed as potentially hostile, hostile or aggressive.
frustration	

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Table C12.

Level Two Cluster: Cognitive Reaction

Level One Descriptive Data	Remarks
shock	Descriptive data reflects the type and range of respondent cognitive reaction to the receipt of
general anxiety	was assessed as potentially hostile, hostile or aggressive.
personal concern	
professional concern	
uncertainty	

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Table C13.

Level Three Category: Secondary Appraisal

Level Two Clusters	Level Two Cluster	Remarks
all capital case over use of punctuation foul language, swearing	Aggression cluster	Descriptive data reflects the type and range of assessments reached by respondents concerning a negative email.
all capital case over use of punctuation negative tone all capital case over use of punctuation negative tone	Hostility cluster	Related Level Three Categories: Context and Reaction
indirect covert implied or perceived attack	Ambiguous cluster	

Table C14.

Level Three Category: Action

Level One Descriptive Data	Level Two Clusters	Remarks
un-emotional business-like 'high-road' detailed / 'by-the-book' professional	Rational/Hyper-Normative Cluster	Descriptive data reflects the type and range of respondent actions taken in response to the receipt of a negative email.
in-kind 'blasting' back	Mirroring/Reciprocating cluster	
uncertainty reduction coping image concerns advice seeking	Validation / Confirmation cluster	
re-informing apologizing	Conciliation / De-escalation cluster	

re-stating

rationalization

offline

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Table C15.

Level Two Cluster: Mirroring / Reciprocating

Level One Descriptive Data	Remarks
in-kind 'blasting' back	Descriptive data reflects characteristics of an action taken in response to the receipt of an email assessed as hostile or aggressive.

Table C16.

Level Two Cluster: Clarification / Conciliation / De-escalation

Level One Descriptive Data	Remarks
re-informing apologizing re-stating	Descriptive data reflects the type and range of respondent action taken after the receipt of an email that was assessed as hostile or aggressive.

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Table C17.

Level Two Cluster: Validation / Confirmation

Level One Descriptive Data	Remarks
uncertainty reduction coping image concerns advice seeking	Descriptive data reflects the type and range of respondent action taken after the receipt of an email that was assessed as potentially hostile, hostile, or aggressive.

Table C18

Level Two Cluster: Rational / Hyper-Normative

Level One Descriptive Data	Remarks
un-emotional business-like 'high-road' detailed / 'by-the-book' professional	Descriptive data reflects characteristics of an action taken in response to the receipt of an email assessed as hostile or aggressive.

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Appendix D.

Cyberaggression Item Generation

Table D1

Initial Item Pool: Sourced from Study One Respondent's Descriptors

	Cues-In		Appraisal (continued)		Action in Response
1	no greeting	33	plain stupid	62	apologizing
2	no closing	34	implying	63	De-escalation
3	inappropriate use of capitals	35	asinine	64	conciliation
4	inappropriate use of punctuation	36	swearing	65	re-informing
5	short or abrupt structure	37	foul language	66	re-stating
6	clipped	38	viscous	67	blasting back
7	cc'd to someone inappropriately	39	outrageous	68	take the high road
		40	condescending	69	business-like
	Appraisal	41	derogatory	70	unemotional
		42	indirect attack	71	rational
8	negative tone	43	covert attack	72	seek advice
9	unprofessional	44	too direct	73	be professional
10	inappropriate	45	inappropriately questioning	74	go offline
11	sarcastic	46	unfairly questioning		
12	ironic	47	unfairly accusing		*Rumination*
13	impolite	48	accusatory		
14	uncivil	49	ambiguous	75	immediate reply
15	discourteous			76	angry reply

Table D1 (*continued*)

16	rude		*Reaction*	77	sent immediately
17	disrespectful			78	retaliation
18	angry	50	angry	79	think about it
19	hostile	51	upset	80	thought about it a lot
20	aggressive	52	worried	81	ignored it
21	threatening	53	anxious	82	hoped it would go away
22	non-business like	54	frustrated		
23	unacceptable business standard	57	stressed out		
24	unacceptable standard	58	stressful		
25	not professional	59	shock		
26	insulting	60	concern		
27	demeaning	61	uncertainty		
28	belittling				
29	unfair				
30	nasty				
31	just not nice				
32	uncool				

Table D2

Initial Item Pool: Sourced from Communications Literature

	Self-Concept Attack Personal Failings Relational Failings Group Membership	
		Potential Items
	Personal Failings	
1	questioning an individual's character	questioning your character
2	questioning an individual's competence or ability	questioning your competence
	Relational Failings	
3	questioning an individual's authority	questioning your authority
4	questioning an individual's professionalism	questioning your professionalism
5	questioning an individual's responsibility	questioning your responsibility
	Group Membership	
6	questioning an individual's character	questioning your character
7	questioning an individual's competence or ability	questioning your competency
8	ridiculing a personal trait or characteristic	ridiculing you
9	being profane towards an individual	using profanity towards you
10	being maledictive towards an individual	being maledictive towards you

Appendix E.

Study Two Survey Instrument

This set of questions concerns the use of email at work. When reading the following questions please think about emails you may have received over the last year. This survey is asking specifically about email which either **upset** you or which you interpreted as **negative** in some way. Focus only on email from subordinates, coworkers, supervisors or someone connected with your work such as a customer or a person in another organization such as a supplier. You should not answer any of the questions based on personal email you may have received while at work.

For each of the questions please answer by placing a number in each space. The numbers 0-6 represent increasing frequency from a low of 0 through to a high of 6. The frequency rating is provided at the top of each question. Each of the columns represents a different person or group of people who may have been the source or target of email in a work environment, and the rows represent various characteristics of email.

SURVEY QUESTIONS

Based upon your email experience(s) at work within the last year, please answer the questions by filling in all of the spaces using the numbers 0-6 as appropriate.

Q1   How often did the email you receive from each person listed ...

0 = **Never** 1 = **Hardly ever** (about once every few months) 2 = **Rarely** (about once a month) 3 = **Occasionally** (at least several times a month)	4 = **Sometimes** (at least once a week) 5 = **Frequently** (at least once a day) 6 = **Very frequently** (at least several times a day)
	Email received from a

		Subordinate	Coworker	Supervisor	Customer	Person in another organization
a	use capital letters inappropriately					
b	have an unusual amount of punctuation					
c	lack a greeting or closing					
d	use abrupt sentences or short sentences					
e	use unprofessional language					
f	use foul language or swear words					
g	get inappropriately copied to other people besides yourself					
h	get copied to a supervisor					
i	discuss inappropriate or private issues					

Q2   How often would you describe the email from each person listed as ...

0 = **Never** 1 = **Hardly ever** (about once every few months) 2 = **Rarely** (about once a month) 3 = **Occasionally** (at least several times a month)	4 = **Sometimes** (at least once a week) 5 = **Frequently** (at least once a day) 6 = **Very frequently** (at least several times a day)

	Email received from a				
	Subordinate	Coworker	Supervisor	Customer	Person in another

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						organization
a	impolite or uncivil					
b	disrespectful or discourteous					
c	sarcastic					
d	ironic					
e	unfairly accusing you of something					
f	personally insulting					
g	demeaning					
h	belittling					
i	unfairly questioning your professionalism					
j	unfairly questioning your competence					
k	unfairly questioning your authority					
l	unfairly questioning your character					
m	hostile towards you					
n	aggressive towards you					
o	threatening you					
p	ambiguous, and you were unsure of whether the sender was intending to be hostile or aggressive					

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Q3   After receiving a negative email, how often did you feel....

0 = **Never** 1 = **Hardly ever** (about once every few months) 2 = **Rarely** (about once a month) 3 = **Occasionally** (at least several times a month)	4 = **Sometimes** (at least once a week) 5 = **Frequently** (at least once a day) 6 = **Very frequently** (at least several times a day)

		Email received from a				
		Subordinate	**Coworker**	**Supervisor**	**Customer**	**Person in another organization**
a	angry					
b	stressed					
c	anxious or worried					
d	frustrated					
e	depressed or sad					
f	fearful					
g	how often did you think about the email after you received it?					

Q4   How often did you do each of the following when responding to these emails ...

0 = **Never** 1 = **Hardly ever** (about once every few months) 2 = **Rarely** (about once a month)	4 = **Sometimes** (at least once a week) 5 = **Frequently** (at least once a day) 6 = **Very frequently** (at least several times a day)

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3 = **Occasionally** (at least several times a month)					
		Email received from a				
		Subordinate	**Coworker**	**Supervisor**	**Customer**	**Person in another organization**
a	reply with an email that was similar in tone and content					
b	attempt to find out what the problem was offline (face to face or by phone)					
c	ignore the email and do nothing at all					
d	seek someone else's advice about whether the email was hostile or aggressive					
e	ask someone what you should do about it					

Q4 continued How often did you do each of the following when responding to these emails …	
0 = **Never** 1 = **Hardly ever** (about once every few months) 2 = **Rarely** (about once a month) 3 = **Occasionally** (at least several times a month)	4 = **Sometimes** (at least once a week) 5 = **Frequently** (at least once a day) 6 = **Very frequently** (at least several times a day)

		Email received from a				
		Subordinate	**Coworker**	**Supervisor**	**Customer**	**Person in another organization**
f	Send a copy to a supervisor					

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g	send a copy to a coworker					
h	send a copy to a subordinate					
i	send an apology in reply					
j	send a response trying to defuse the situation					
k	send an immediate reply					
l	think about your reply for a short while before sending it					
m	think about the email you received over and over for an extended period of time before sending a reply					
n	discover later from the person who had sent the email that you had misinterpreted it as hostile or aggressive when it wasn't intended that way					

The following set of questions concerns **your** use of email at work. When reading the following questions please think about a time during the last year when you **sent** what could be considered a negative email while at work. Focus answers only on email sent to a subordinate, a coworker, a supervisor, a customer or a person in another organization who you work with.

Q5 How often have you sent an email to each of the following persons that you would describe as ...

0 = Never	
1 = Hardly ever (about once every few months)	**4 = Sometimes** (at least once a week)

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2 = **Rarely** (about once a month) 3 = **Occasionally** (at least several times a month)		5 = **Frequently** (at least once a day) 6 = **Very frequently** (at least several times a day)		
		Sent an email to a		
	Subordinate	**Coworker**	**Supervisor**	**Customer**	**Person in another organization**

		Subordinate	Coworker	Supervisor	Customer	Person in another organization
a	impolite or discourteous					
b	rude or uncivil					
c	sarcastic					
d	ironic					
e	accusing someone					
f	personally insulting					
g	demeaning or belittling					
h	belittling					
i	questioning someone's professionalism					
j	questioning someone's competency					
k	questioning someone's authority					
l	questioning an aspect of someone's character					
m	hostile					
n	aggressive					

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o	threatening					
m	normal but discover later from the person who you sent the email to that they had misinterpreted it as hostile or aggressive when it wasn't intended that way					

Q6   How often did the email you send ...

0 = Never **1 = Hardly ever** (about once every few months) **2 = Rarely** (about once a month) **3 = Occasionally** (at least several times a month)	**4 = Sometimes** (at least once a week) **5 = Frequently** (at least once a day) **6 = Very frequently** (at least several times a day)

		Sent an email to a				
		Subordinate	**Coworker**	**Supervisor**	**Customer**	**Person in another organization**
a	use capital letters as a form of shouting					
b	have an unusual amount of punctuation					
c	lack a greeting or closing					
d	use abrupt sentences or short sentences					
e	use unprofessional language					
f	use foul language or swear words					
g	get copied to other people					
h	get copied to a supervisor					
i	discuss inappropriate or private issues					

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For the following questions please put a check mark in the box that best represents your level of agreement with the statements at the left of each row.

Q7   In the organization that you work in ...

		Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree
a	there is a formal written policy on the proper use of email at work							
b	the people in the organization are aware of the email policy							

Q7 continued In the organization that you work in ...								
		Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree
c	the people in the organization follow the email policy							
d	the people in the organization receive training on the appropriate use of email							
e	the use of email is critical to your work							
f	you receive more email than you like							
g	you receive a lot of unnecessary email							

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Q8   In the organization that you work in ...

		Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree
a	your employer does enough to protect employees from email misuse							
b	your employer supports employees regarding complaints of email misuse							
c	your employer provides adequate training regarding possible email misuse situations							
d	your employer considers putting up with email misuse to be just part of the job							
e	clear policies for reporting incidents of email misuse exist							

Q8 continued In the organization that you work in ...							
	Strongly	Disagree	Somewhat	Neither	Somewhat	Agree	Strongly

		Disagree		Disagree	agree nor disagree	Agree		Agree
f	your employer is willing to invest time and money in reducing email misuse							
g	your employer assigns a high priority to the issue of email misuse in the workplace							
h	your employer takes the issue of email misuse seriously							

Q9 The following items are for descriptive purposes only.

a.   Gender   [____] Male   [____] Female

b.   What is your age?
Under 19 [____] 20-29   [____] 30-39 [____] 40-49 [____] 50-59 [____]
60-69 [____]   70 or over

c.   How many emails do you receive on a daily basis at work?
Under 10 [____] 10-19   [____] 20-29 [____] 30-39 [____] 40-49 [____]
50-59   [____] 60 or over

d.   How long have you been employed in your current position? [_____]

e.   Do you work full-time or part-time? Full time [____]   Part time [____]

f.   On average, how many hours do you work per week? [____]

g.   In which industry do you currently work?

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Agriculture, forestry, fishing, and hunting [____]
Mining and oil and gas extraction [____]
Utilities [____]
Construction [____]
Manufacturing [____]
Wholesale trade [____]
Retail trade [____]
Transportation and warehousing [____]
Information and cultural industries [____]
Finance and insurance [____]
Real estate and rental and leasing [____]
Professional, scientific, and technical services [____]
Management of companies and enterprises [____]
Administrative and support [____]
Waste management and remediation services [____]
Educational services [____]
Health care / social assistance [____]
Arts, entertainment and recreation [____]
Accommodation and food services [____]
Public administration [____]
Other services (except public administration) [____]

h.   What is your current job title? [_____]

i.   Do you hold a management position? Yes [____] No [____]

j.   Is your organization unionized?   Yes [____] No [____]

k.   Are you currently a union member? Yes [____] No [____]

l.   Approximately what size is the organization you currently work for?
      Less than 5 employees [____]   5 – 19 employees   [____]   20 – 49 employees [____]
      50 – 99 employees   [____]   100 – 499 employees [____]   More than 500   [____]

m.   What is your approximate yearly income?
      Less than $1,000   [____] $1,000 – $9,999   [____] $10,000 – $19,999 [____]
      $20,000 – $29,999 [____] $30,000 – $39,999 [____] $40,000 – $49,999 [____]
      $50,000 – $59,999 [____] $60,000 – $69,999 [____] $70,000 – $79,999 [____]
      $80,000 and over [____]

      Thank you for taking the time to complete this survey. Please place the completed survey, the signed consent form, and the Apple iPod entry form into the postage paid envelope provided, and drop it in the nearest post box.

Insert here

Appendix F.

Scale Reliabilities

Table F1.

Perceived-Cyberaggression Subordinate Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as unfairly questioning your professionalism	0.79	0.72	0.91
2	email described as unfairly questioning you competence	0.85	0.80	0.90
3	email described as unfairly questioning your authority	0.74	0.60	0.91
4	email described as unfairly questioning your character	0.82	0.81	0.91
5	email described as hostile towards you	0.84	0.75	0.90
6	email described as aggressive towards you	0.70	0.57	0.92
7	email described as threatening to you	0.70	0.62	0.92

Cronbach Alpha = .92

Table F2.

Perceived-Cyberaggression Coworker Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as unfairly accusing you of something	0.68	0.50	0.90
2	email described as personally insulting	0.71	0.57	0.89
3	email described as demeaning	0.81	0.73	0.89
4	email described as belittling	0.75	0.65	0.89
5	email described as unfairly questioning your professionalism	0.75	0.65	0.90
6	email described as unfairly questioning you competence	0.73	0.69	0.89
7	email described as unfairly questioning your authority	0.61	0.43	0.90
8	email described as hostile towards you	0.62	0.41	0.90

Cronbach Alpha = .91

Table F3.

Perceived-Cyberaggression Supervisor Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as impolite or uncivil	0.78	0.79	0.94
2	email described as disrespectful or discourteous	0.84	0.84	0.94
3	email described as unfairly accusing you of something	0.81	0.75	0.94
4	email described as personally insulting	0.81	0.78	0.94
5	email described as demeaning	0.81	0.76	0.94
6	email described as belittling	0.77	0.79	0.94
7	email described as unfairly questioning your professionalism	0.73	0.70	0.94
8	email described as hostile towards you	0.83	0.80	0.94
9	email described as aggressive towards you	0.74	0.70	0.94
10	email described as threatening to you	0.69	0.59	0.94

Cronbach Alpha = .94

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Table F4.

Perceived-Cyberaggression Customer-Other Person Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as impolite or uncivil	0.73	0.65	0.92
2	email described as disrespectful or discourteous	0.75	0.66	0.92
3	email described as unfairly accusing you of something	0.72	0.64	0.92
4	email described as personally insulting	0.69	0.58	0.92
5	email described as demeaning	0.74	0.74	0.92
6	email described as belittling	0.75	0.74	0.92
7	email described as unfairly questioning your professionalism	0.77	0.64	0.91
8	email described as unfairly questioning you competence	0.79	0.69	0.91
9	email described as unfairly questioning your authority	0.66	0.48	0.92
10	email described as hostile towards you	0.68	0.59	0.92

Cronbach Alpha = .92

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Table F5.

Cyberaggression-Reaction Subordinate Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	how often did you feel - angry	0.62	0.40	0.83
2	how often did you feel - stressed	0.71	0.51	0.80
3	how often did you feel - frustrated	0.73	0.54	0.79
4	how often did you - think about the email after you received it	0.71	0.52	0.80

Cronbach Alpha = .85

Table F6

Cyberaggression-Reaction Coworker Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	how often did you feel - angry	0.75	0.58	0.80
2	how often did you feel - stressed	0.73	0.56	0.81
3	how often did you feel - frustrated	0.66	0.45	0.84
4	how often did you - think about the email after you received it	0.70	0.50	0.82

Cronbach Alpha = .86

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Table F7.

Cyberaggression-Reaction Supervisor Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	how often did you feel - angry	0.82	0.69	0.90
2	how often did you feel - stressed	0.84	0.70	0.89
3	how often did you feel - anxious or worried	0.76	0.60	0.91
4	how often did you feel - frustrated	0.78	0.66	0.90
5	super react how often did you - think about the email after you received it	0.80	0.65	0.91

Cronbach Alpha = .92

Table F8.

Cyberaggression-Reaction Customer-Other Person Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	how often did you feel - angry	0.83	0.75	0.90
2	how often did you feel - stressed	0.85	0.76	0.89
3	how often did you feel - frustrated	0.83	0.70	0.90
4	how often did you - think about the email after you received it	0.79	0.66	0.91

Cronbach Alpha = .92

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Table F9.

Organization Email Policy

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	There is a formal written policy on the proper use of email at work	0.69	0.48	0.71
2	The people in the organization follow the email policy	0.67	0.45	0.72
3	The people in the organization receive training on the proper use of email	0.62	0.39	0.76

Cronbach Alpha = .80

Table F10.

Employer Support

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	Your employer does enough to protect employees from email misuse	0.64	0.44	0.84
2	Your employer supports employees regarding complaints of email misuse	0..72	0.52	0.80
3	Your employer is willing to invest time and money in reducing email misuse	0..71	0.54	0.80
4	You employer takes the issue of email misuse seriously	0.71	0.54	0.80

Cronbach Alpha = .85

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Appendix G.

Patterns of Behaviour in Cyberaggression

This appendix describes the patterns of cyberaggression reported by respondents. Both descriptive and tabular summaries are presented.

While cyberaggression was a relatively infrequent behaviour reported by respondents in their workplaces, a fairly consistent number of respondents, approximately 1 to 5%, perceived themselves to be targets of cyberaggression on a regular basis. The most frequent source of this behaviour, where emails were considered to be impolite, where the email questioned the target's personal or job characteristics, or which were simply assessed as aggressive, originated from customers with 47% of respondents reporting at least one incident in the past year, followed by coworkers at 41%, supervisors at 34% and subordinates at 25%.

In these emails, misuse of capitals, punctuation, abrupt sentence structure and lack of greetings were the most frequent characteristics associated with cyberaggression, with the more serious indicators of unprofessional language or swearing being the least reported. In reaction to these experiences, targets of cyberaggression generally reported experiencing a mixture of anger, frustration or stress. Targets of cyberaggression would generally ruminate over the email and seek advice concerning the event. They would either attempt to defuse the situation through either offline or online mechanisms, or would reply to the aggressor in an email that was similar in form and content to the originating email. While respondents reported the frequency of engaging in cyberaggression much less than the rate for which they reported being the target of cyberaggression, coworkers were the most frequent targets with

49% reporting sending at least one email within the last year, followed by supervisors at 33%, subordinates and customers-other persons at 30 and 29% respectively. In these emails lexical violations were the most reported with the use of unprofessional language or swearing the least reported.

The overall experience of a negative reaction (anger, frustration, stress or anxiety and worry) was reported most in reaction to cyberaggression from coworkers (61%), followed by supervisors (54%), customers (48%) and subordinates (43%). Respondents experienced anger, stress and frustration more frequently when the cyberaggression source was supervisors and coworkers over subordinates and customers-other persons and reported similarly greater levels of rumination over the event.

Cues-In Subordinate. The receipt of email from subordinates that were characterized by inappropriate lexical construction (capital letters, punctuation, abrupt sentences, lack of greeting) was frequent with only 38 to 51% reporting having never received email of this type and 49 to 62% of respondents reported receipt at least once a month, with 15% reporting weekly or daily occurrences. The more severe cues (unprofessional language or swearwords) occurred with less frequency with 58 to 84% reporting no such incidents. A minority of respondents, 1 to 5%, did report more frequent incidents on a weekly or daily basis. Emails that were perceived to have inappropriate content, or that were assessed as copied inappropriately to other persons besides the target, occurred with slightly greater frequency with 24 to 30% reporting incidents.

Cues-In Coworker The frequency of lexical violations was slightly higher for email received from coworkers with only 22 to 47% of respondents reporting no such incidents. Similarly, more use of inappropriate language was reported with 24 to 50% reporting cases.

Inappropriate content or distribution was also reported with greater frequency with only 31 to 55% reporting occurrences.

Cues-In Supervisor. Lexical violations in email received from supervisors was less frequent with 30 to 61% of respondents reporting no such incidents. The frequency of foul language and swearing used by supervisors in email was similarly reduced, with 68 to 90% of respondents reporting no incidents, as well as 66 to 83% reporting no cases of inappropriate content or distribution.

Cues-In Customer/Other Persons. Inappropriate email from customers or other persons was the most frequently reported violation of lexical cues across all sources with. 52 to 67% reporting incidents. Inappropriate language use was again more frequent with 20 to 64% reporting cases, and 21 to 36% reporting inappropriate content or distribution of the email.

Perceived-Cyberaggression Subordinate. Email characterized as impolite or discourteous sent by subordinates was relatively infrequent with 69 to 73% of respondents reporting no cases. However, 5% of respondents did report regular incidents weekly and daily. Emails described as accusing, or demeaning were reported with even less frequency with 81 to 95% reporting no incidents, and only 2% reporting monthly occurrence. Emails that questioned person, job or role features such as professionalism, competence, and personal characteristics were reported with even less frequency with 82 to 94% reporting no cases. Emails assessed as hostile, aggressive, or threatening were reported at roughly equivalent frequencies with only 3 to 22% of respondent reporting incidents once every few months.

Perceived-Cyberaggression Coworker. Frequencies for impolite or discourteous emails from fellow workers was higher than for subordinates with slightly almost half, 37 to 47%, reporting events of this type. Frequencies of these reported behaviours were higher with 4 to 5% reporting a regular occurrence. While the frequency of demeaning or insulting emails received was still low, with 72 to 87% reporting no occurrence, 3 to 4% of respondents still reported cases on a regular and frequent basis. Rates of hostile, aggressive and threatening emails were approximately the same with only 2 to 3% reporting cases with any frequency.

Perceived-Cyberaggression Supervisor. Email from supervisors that was perceived as impolite or discourteous was relatively infrequent with 82% of respondents reporting no such cases and only 1% reporting cases with any regularity. Rates of insulting email were even less frequent, with 88 to 92% reporting no occurrence. However, the frequency of regular occurrence, at least several times a month, was slightly higher with approximately 3% reporting cases. Similarly, frequencies of email concerning personal or job characteristics were infrequent with 82 to 93% of respondents reporting no incidents. Hostile, aggressive or threatening email was the least frequent with 91 to 96% of respondents reporting no cases, and only 1% reporting any regular occurrence.

Perceived-Cyberaggression Customer/Other person. Rates of impolite or discourteous email received were elevated with 30 to 37% reporting having experienced this behaviour. However, for those who reported such occurrences the frequency was higher with 5 to 7% reporting regular incidents. Insulting or demeaning email from customers or other persons was somewhat less with 84 to 90% reporting no cases. A pattern reproduced for email concerning personal and job characteristics with 71 to 92% reporting no occurrences.

Rates of hostile, aggressive and threatening email were similarly infrequent with 86 to 94% reporting no cases.

Cyberaggression-Target-Reaction Subordinate. The most frequently reported reaction to cyberaggression from subordinates was anger and frustration where 4% reported a weekly occurrence. Slightly fewer respondents reported experiencing regular frustration, 1%, with even less than 1% experiencing regular depression or fear. However, a significant number, 43%, reported regularly engaging in rumination or thinking about the emails they received.

Cyberaggression-Target-Reaction Coworker. Anger and frustration were the most frequently reported reactions to cyberaggression from a coworker, with approximately 44% reporting experiencing these reactions irregularly, with only 3 to 5% experiencing these reactions on a daily basis. The experience of stress was reported by 38% of respondents, anxiety or worry by 30%, with depression or fear significantly less at 18 and 8% of respondents respectively. Rumination over email was much higher with 50% of respondents reporting irregular occurrence and 7 to 8% reporting daily occurrences.

Cyberaggression-Target-Reaction Supervisor. Unlike subordinate and coworker sources of cyberaggression, the most frequently reported reaction to supervisor cyberaggression was stress and frustration with 39% reporting reacting in this manner irregularly and 10 to 11% experiencing both stress and frustration on a daily basis. Anger was the next most frequent reaction, with slightly less respondents, 36%, reporting this experience irregularly with 3% experiencing anger daily. Anxiety and worry was the next most frequent reaction, at slightly less frequency with 30% of respondents reporting cases. Depression or fear was the least experienced reaction with 84 and 90% respectively reporting

no occurrences. Rumination was significantly more frequent with only 53% reporting no occurrence and with 23% reporting thinking about the email on a weekly and daily basis.

Cyberaggression-Target-Reaction Customer/Other Person. Cyberaggression from customers or other persons engendered frustration as the most frequent reaction with 38% reporting this experience irregularly with 11% experiencing this on a weekly and daily basis. Anger and stress were the next more prevalent reactions with 34 and 29% reporting these reactions. Stress was more frequently experienced on a regular basis with 7% reporting weekly or daily occurrences. Anxiety and worry was reported by 26% of respondents, with sadness or depression and fear as the least reported reactions with approximately 90% reporting no cases. Rumination over this type of email s was experienced by approximately 40% of respondents, with 10% reporting weekly and daily occurrences.

Cyberaggression Counter-Action Subordinate. The most frequent actions taken in response to being the focal target of cyberaggression from a subordinate was to attempt to resolve the issue offline with 39% of respondents indicating that they regularly responded in this fashion. Respondents indicated that they ruminated over the email for either a short period (40%) or an extended timeframe (25%) prior to taking any action. Actions included using email in an attempt to defuse the situation (32%) or to apologize (19%). Some 22 to 26% of respondents would seek advice or assistance from other concerning either the interpretation or action to be taken in response. Approximately 22% of respondents chose to either ignore the email, or to reply with an email that was similar in tone or content. The distribution of copies of any email sent in response where relatively limited. Copying a supervisor was the most frequent (14%), followed by coworker (11%), with only 2% of respondents indicating that they had copied the email to a subordinate.

Cyberaggression Counter-Action Coworker. Attempting to resolve the issue offline was the most frequent response with 56% of respondents indicating that they engaged in these efforts. Approximately 32% of respondents chose to ignore an aggressive email. Just over 40% sought advice from others concerning the interpretation or response to be sent. While 34% of respondents indicated that they usually responded immediately, respondents often engaged in rumination for short (51%) or extended (35%) periods of time. Sending an apology (30%) or an email in an attempt to defuse the situation (42%) occurred most frequently, followed by a reply using email similar in tone and content (36%). If email was used in reply, supervisors would be the most likely individuals to be copied on the email (21%) followed by other coworkers (17%), with the fewest cases of copies being sent to subordinates (2%).

Counter-Action Supervisor. For cyberaggression from supervisors 22% of respondents would ignore the email, 45% of respondents would attempt to resolve the issue offline with 33% seeking advice on interpretation or response options. Respondents would ruminate about the email for shorter (46%) or longer (31%) periods of time with only 27% of respondents indicating that they would reply immediately. When replying 35% of respondents would try to defuse the situation with 24% indicating they would send an apology. A minority of respondents would reply with an email similar in tone and content (25%). Some respondents (15%) would copy their reply to a supervisor or coworker, with a very small minority indicating that they would also copy a subordinate (2%).

Counter-Action Customer-Other Person. For cyberaggression originating from a customer or other person 22% of respondents would ignore the email, taking no further action. Approximately 38% of respondents would seek solutions offline, with 30% seeking

advice on interpretation or actions to be taken in reply to the email. In response, 35% percent would attempt to defuse the issue or send an apology (28%). Only 26% of respondents would send an immediate reply, with 42% and 26% respectively ruminating for shorter or longer periods of time before responding. Approximately 26% would reply with an email similar in tone and content to the one received, and when replying 22% would copy their supervisor, 12% would copy a coworker, and a very small minority would copy a subordinate (2%).

Cyberaggression Out Subordinate. When describing emails that had been sent by respondents to subordinates 7 to 14% indicated that they had very infrequently sent emails that were impolite or uncivil. The number of respondents reporting having sent personally insulting email was much less with only 4% indicating they have done so, on a very infrequent basis. Emails that questioned personal, role or job characteristics where more frequently reported with approximately 11% indicating they had done so, with 2 to 5% reporting they had done so at least monthly. Frequency of hostile, aggressive or threatening email was much lower and very infrequent (2 to 8%).

Cyberaggression Out Coworker. Coworker exchanges of incivility or impoliteness was higher than in email to subordinates, ranging from 11 to 22% of respondents engaging in this behaviour once every few months to monthly. More insulting emails were reported being sent with less frequently (5 to 7%) and only irregularly, every few months. Emails that questioned personal, role or job characteristics of a coworker were more frequent (18 to 20%) and more regular (1 to 6%) at several times a month to daily. Hostile, aggressive, or threatening emails were relatively infrequent (2 to 10%), rarely occurring more than once a month.

Cyberaggression Out Supervisor. Uncivil or impolite emails directed at supervisors were similarly infrequent (6 to 10%) reported as usually no more than once per month. Personally insulting emails were even less frequent (3 to 4%) and irregular, occurring once in several months. Emails that questioned the personal, role or job characteristics of supervisors were slightly more frequent (9 to 13%) but less so for hostile, aggressive or threatening emails (3 to 8%).

Cyberaggression Out Customers/Other Persons. Respondents sending emails to customers or other persons that were impolite or discourteous ranged from 9 to 15%, with the frequency and rate of personally insulting email dropping to one incident every several months, with 5 to 8% of respondents reporting engaging in these behaviours. Emails that questioned either personal or job characteristics were slightly more elevated with 7 to 12% of respondents engaging in these behaviours at least once every several months. A similar pattern was observed for hostile, aggressive and threatening emails with6 to 7% of respondents engaging in these behaviours infrequently.

Cues Out Subordinate. Of the emails sent to subordinates the lack of a greeting or closing was the most frequent behaviour (25%) followed by lexical violations at 10 to 25%. The use of unprofessional language and profanity was highly irregular and limited to 3 to 5%. Copying of the email to supervisors was reported by 16% of respondents and ranged from monthly to daily at 3 and 2% respectively.

Cues Out Coworker. When targeted at coworkers, rates of lexical violations increased to 16 to 40%, with a lack of greeting and abrupt sentence structure being the most reported behaviour. The use of unprofessional language or swear words also was somewhat

elevated at 13 and 6% respectively. While 37% of respondents reported copying the email to another person, supervisors were the most copied persons at 28%.

Cues Out Supervisor. When directed at supervisors respondents rarely used lexical violations, and all capitals or punctuation were more limited (5 and 11%) than failure to include a greeting or closing or sentence structure (24%). Unprofessional language or profanity occurred rarely, 2 to 7%, and was very infrequent. The rate of distributing copies of these emails to others or another supervisor was similar to coworker exchanges at 27 and 17% respectively.

Cues Out Customers/Other Persons. Emails directed at customers or other persons were the least frequently reported over other target types. Lexical violations were the most prevalent, ranging from 8 to 20%, with unprofessional language or swearwords at 5 and 3%. Copying of the email was again fairly consistent at 24% to others and 19% to supervisors.

Table G1.

Means and Standard Deviations for Cyberaggression and Reaction Variables

Variable	M	SD
	Respondents as Targets of Cyberaggression	
1 Perceived-Cyberaggression Subordinate	1.16	0.44
2 Perceived-Cyberaggression Coworker	1.29	0.58
3 Perceived-Cyberaggression Supervisor	1.25	0.62
4 Perceived-Cyberaggression Customer/Other Persons	1.37	0.68
	Adverse Reaction to Cyberaggression	
5 Cyberaggression-Target-Reaction Subordinate	1.69	1.07
6 Cyberaggression-Target-Reaction Coworker	2.15	1.32
7 Cyberaggression-Target-Reaction Supervisor	2.15	1.48
8 Cyberaggression-Target-Reaction Customer/Other Person	1.93	1.39

(*table continued*)

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Table G1 (*continued*)

	Variable	M	SD
		Respondents as Targets of Cyberaggression	
9	Enacted-Cyberaggression Subordinate	1.12	0.34
10	Enacted-Cyberaggression Coworker	1.21	0.47
11	Enacted-Cyberaggression Supervisor	1.12	0.36
12	Enacted-Cyberaggression Customer/Other Persons	1.12	0.38

$N = 231$

Table G2.

Frequency of Respondent Experience of Cyberaggression and Reaction in the Workplace

	Variable	Frequency		
			Rarely	Regularly
		Never	< Once per Month	> Once per Month
		% Respondents as Targets of Cyberaggression		
1	Perceived-Cyberaggression Subordinate	75.32	22.94	1.73
2	Perceived-Cyberaggression Coworker	59.31	37.66	3.03
3	Perceived-Cyberaggression Supervisor	65.80	29.87	4.33
4	Perceived-Cyberaggression Customer/Other			
	Persons	52.81	42.86	4.33
		% Respondents Adverse Reaction to Cyberaggression		
5	Cyberaggression-Target-Reaction Subordinate	56.71	29.87	13.42
6	Cyberaggression-Target-Reaction Coworker	38.96	34.20	26.84

(*table continues*)

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Table G2 (*continued*)

Variable	Frequency		
	Never	Rarely <Once per Month	Regularly >Once per Month
7 Cyberaggression-Target-Reaction Supervisor	45.45	26.41	28.14
8 Cyberaggression-Target-Reaction			
Customer/Other Person	51.95	26.84	21.21
	% Respondents as Sources of Cyberaggression		
9 Enacted-Cyberaggression Subordinate	77.06	21.65	1.30
10 Enacted-Cyberaggression Coworker	61.04	36.36	1.73
11 Enacted-Cyberaggression Supervisor	76.19	22.51	1.30
12 Enacted-Cyberaggression Customer/Other			
Persons	76.62	22.08	1.30

$N = 231$

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Appendix H.

Table H1.

Standardized Perceived-Cyberaggression Subordinate Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as impolite or uncivil	0.64	0.59	0.86
2	email described as disrespectful or discourteous	0.62	0.59	0.87
3	email described as personally insulting	0.66	0.65	0.85
4	email described as belittling	0.46	0.33	0.88
5	email described as unfairly questioning your professionalism	0.80	0.72	0.84
6	email described as unfairly questioning your competence	0.74	0.74	0.85
7	email described as hostile towards you	0.78	0.71	0.84
8	email described as aggressive towards you	0.63	0.56	0.86

Cronbach Alpha = .87

Table H2.

Standardized Perceived-Cyberaggression Coworker Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as impolite or uncivil	0.59	0.45	0.87
2	email described as disrespectful or discourteous	0.69	0.61	0.86
3	email described as personally insulting	0.67	0.50	0.86
4	email described as belittling	0.72	0.60	0.86
5	email described as unfairly questioning your professionalism	0.69	0.64	0.86
6	email described as unfairly questioning your competence	0.63	0.65	0.86
7	email described as hostile towards you	0.66	0.58	0.86
8	email described as aggressive towards you	0.60	0.51	0.87

Cronbach Alpha = .88

Table H3.

Standardized Perceived-Cyberaggression Supervisor Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as impolite or uncivil	0.77	0.77	0.91
2	email described as disrespectful or discourteous	0.84	0.83	0.91
3	email described as personally insulting	0.79	0.77	0.91
4	email described as belittling	0.73	0.71	0.91
5	email described as unfairly questioning your professionalism	0.73	0.68	0.92
6	email described as unfairly questioning your competence	0.63	0.57	0.92
7	email described as hostile towards you	0.82	0.78	0.91
8	email described as aggressive towards you	0.71	0.66	0.92

Cronbach Alpha = .92

Table H4.

Standardized Perceived-Cyberaggression Customer-Other Person Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as impolite or uncivil	0.71	0.62	0.88
2	email described as disrespectful or discourteous	0.73	0.64	0.88
3	email described as personally insulting	0.69	0.51	0.88
4	email described as belittling	0.70	0.62	0.88
5	email described as unfairly questioning your professionalism	0.75	0.61	0.87
6	email described as unfairly questioning your competence	0.77	0.68	0.87
7	email described as hostile towards you	0.69	0.57	0.88
8	email described as aggressive towards you	0.47	0.40	0.90

Cronbach Alpha = .89

Table H5.

Standardized Enacted-Cyberaggression Subordinate Sub-Scale

Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1 email described as impolite or uncivil	0.66	0.52	0.81
2 email described as disrespectful or discourteous	0.68	0.50	0.81
3 email described as personally insulting	0.47	0.38	0.84
4 email described as belittling	0.55	0.46	0.84
5 email described as unfairly questioning your professionalism	0.55	0.42	0.83
6 email described as unfairly questioning your competence	0.65	0.50	0.81
7 email described as hostile towards you	0.68	0.67	0.81
8 email described as aggressive towards you	0.60	0.63	0.82

Cronbach Alpha = .84

Table H6.

Standardized Enacted-Cyberaggression Coworker Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as impolite or uncivil	0.70	0.59	0.85
2	email described as disrespectful or discourteous	0.67	0.65	0.85
3	email described as personally insulting	0.57	0.50	0.86
4	email described as belittling	0.58	0.46	0.86
5	email described as unfairly questioning your professionalism	0.70	0.67	0.845
6	email described as unfairly questioning your competence	0.64	0.63	0.85
7	email described as hostile towards you	0.68	0.65	0.85
8	email described as aggressive towards you	0.58	0.43	0.86

Cronbach Alpha = .87

Table H7.

Standardized Enacted-Cyberaggression Supervisor Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as impolite or uncivil	0.73	0.66	0.85
2	email described as disrespectful or discourteous	0.73	0.70	0.86
3	email described as personally insulting	0.76	0.82	0.86
4	email described as belittling	0.71	0.70	0.86
5	email described as unfairly questioning your professionalism	0.52	0.52	0.88
6	email described as unfairly questioning your competence	0.56	0.47	0.88
7	email described as hostile towards you	0.81	0.76	0.86
8	email described as aggressive towards you	0.62	0.49	0.87

Cronbach Alpha = .88

Table H8.

Standardized Enacted-Cyberaggression Customer-Other Person Sub-Scale

	Scale Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	email described as impolite or uncivil	0.70	0.61	0.88
2	email described as disrespectful or discourteous	0.68	0.56	0.87
3	email described as personally insulting	0.73	0.70	0.88
4	email described as belittling	0.57	0.54	0.89
5	email described as unfairly questioning your professionalism	0.66	0.51	0.88
6	email described as unfairly questioning your competence	0.75	0.59	0.87
7	email described as hostile towards you	0.79	0.72	0.87
8	email described as aggressive towards you	0.65	0.59	0.88

Cronbach Alpha = .89

Appendix I.

Study Three Cyberaggression Survey Instrument

Cyberaggression in the Workplace

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I am a graduate student in the Department of Management at Saint Mary's University. As part of my doctoral dissertation research I am conducting a study under the supervision of Dr. E. Kevin Kelloway. I am inviting you to participate in this study. The purpose of the study is to explore the occurrence of cyberaggression in the workplace. Cyberaggression is the sending or receipt of a hostile or aggressive email. This study involves the completion of an Internet based survey, which should take approximately 15 to 20 minutes to complete. The survey will ask questions about your work environments, how you feel about work, and your experiences with email in the workplace. **Your participation is completely voluntary and you may withdraw from this study at any time.** Although it is hoped that you will consent to full participation in the survey, you are not obliged to answer any question that you do not wish, and you are free to withdraw from the survey at anytime.

All information obtained in this study will be kept strictly confidential and anonymous. The results of this research will be reported as aggregate or group measures only so individual respondents cannot be identified. Your participation in this research will then be completely anonymous and the data from the survey (your responses to questions) will also be treated as confidential research material, accessible only by me. All copies of the data generated from the survey will be stored in a secure and locked facility at the university.

Some of the questions in the survey will specifically ask you to recall an incident where you were the subject of a hostile or aggressive email. Sometimes individuals who are asked to recall a negative event may experience feelings of fear, anger or anxiety. Should you experience any negative emotions you may cease completing the survey. Alternatively, you may contact your employee support representative or a health care professional for support in dealing with these feelings. If they suggest you need to see a specialist, you may be required to pay for these services.

Your participation in this research is very important as understanding what happens in the workplace can only be done with your participation. Should you require further information about the research, or if you have any questions whatsoever please feel free to contact me by phone or email. This research has been reviewed and approved by the Saint Mary's University Research Ethics Board. If you have any questions or concerns about this study, you may contact Dr. Veronica Stinson, Chair, Research Ethics Board, at ethics@smu.ca, or by Telephone: 902-420-5861.

By clicking on the I Consent button below, you are indicating that you fully understand the above information and agree to participate in this study.

I consent to participate in this study ☐

The following questions focus on your work environment, your use of email, and how you feel about your work.

Q1. Please indicate your level of agreement for each of the following statements.

[*1 = Strongly disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Neither Agree/disagree, 5 = Slightly agree, 6 = Agree, 7 = Strongly Agree*]

a) Information about my organization's email policy was communicated to employees.
b) Employees in my organization were made aware of the behaviours that are covered by the email policy.
c) Employees in my organization received training about how the email policy would be applied and enforced.
d) In my organization, there are negative consequences (e.g., disciplinary action) for someone who behaves in a <u>verbally</u> aggressive or threatening manner.
e) In my organization, there are negative consequences (e.g., disciplinary action) for someone who behaves in an aggressive or threatening manner when using <u>email</u>.
f) In my organization, employees are sanctioned for aggressive or threatening behaviours used in email.
g) My organization's policies and practices are effective at preventing or reducing email aggression.
h) In my organization, if someone received an aggressive or threatening email, and wanted to bring forward a complaint they would be taken seriously.
i) My supervisor is concerned about preventing aggression or threatening behaviour in email at work.
j) My supervisor takes steps to deal with someone who behaves aggressively in email at work.
k) My supervisor does not seem to care if aggressive or threatening email behaviour occurs at work.
l) My supervisor ignores problems related to aggressive or threatening email at work.
m) My coworkers are concerned about preventing aggressive or threatening email at work.
n) My coworkers would take steps to prevent another coworker from engaging in aggressive or threatening email at work.
o) My coworkers do not seem to care if aggressive or threatening email behaviour occurs at work.
p) My coworkers ignore problems related to aggressive or threatening email at work.

Q2. Please indicate how often during the last year you …

[1 = Never, 2 = Rarely, 3 = Once in awhile, 4 = Some of the time, 5 = Fairly often, 6 = Often, and 7 = All of the time]

1. actively thought of quitting your job.
2. wanted to quit your job but couldn't.
3. are currently planning to quit your job.

Please indicate (using the numbers 1 through 7) which description would best complete the statement below and most closely matches how you feel.

[Extremely dissatisfied, Mostly dissatisfied, 2 = Somewhat dissatisfied, 4 = Neither satisfied/dissatisfied, 5 = Somewhat satisfied, 6 = Mostly satisfied, 7 = Extremely Satisfied]

Q3. Over the last year I have been _____ with my job.

Please indicate your level of agreement with each of the statements below.

[*1 = Strongly disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Neither Agree/disagree, 5 = Slightly agree, 6 = Agree, 7 = Strongly Agree*]

Q4. During the last year ...
   a) your supervisor has treated you in a polite manner?
   b) your supervisor has treated you with dignity?
   c) your supervisor has treated you with respect?
   d) your supervisor has refrained from making improper remarks or comments?

The following questions are designed to assess your experience of receiving email at work during the last year.
This question is only interested in email that you viewed as negative or upsetting in some way. Focus only on work email you received from subordinates, coworkers, supervisors, or someone connected to your organization such as a customer or a person in another organization (such as a supplier). You should not answer any of these questions based upon any personal email you may have received while at work. Each row contains a statement describing the email you received. Each column represents a different person or group of people who may have sent this type of email to you. In each cell (row and column combination) please indicate the frequency (represented by the numbers 1 through 7) with which you received this type of email over the last year.

Q5. During the last year have you ever received email from a supervisor, a subordinate, a coworker, or a customer or a person from another organization that you would describe as ...

[1 = Never, 2 = Hardly Ever (about once every few months), 3 = Rarely (about once a month), 4 = Occasionally (at least several times a month), 5 = Sometimes (at least once a week), 6 = Frequently (at least once a day), and 7 = Very frequently (at least several times a day)]

a) impolite or uncivil
b) disrespectful or discourteous
c) personally insulting
d) belittling
e) unfairly questioning your professionalism
f) unfairly questioning your competence
g) hostile towards you
h) aggressive towards you

The following question is designed to assess how you felt after receiving negative email at work. Each row contains an emotion you may have experienced in response to the email and each column represents a person or group that may have sent the email. In each cell (row and column combination) please indicate the frequency over the last year (represented by the numbers 1 through 7) where you may have experienced each type of emotion in response to receiving email from these various persons.

Q6. After receiving the email I usually felt ...
[1 = Never, 2 = Rarely, 3 = Once in awhile, 4 = Some of the time, 5 = Fairly often, 6 = Often, and 7 = All of the time]

a) furious.
b) angry.
c) frightened.
d) anxious.
e) disgusted.
f) depressed.
g) discouraged.
h) gloomy.
i) fatigued.
j) bored.

The following questions are designed to assess your general level of physical and emotional well-being. Please answer the following questions by indicating for each statement the frequency (represented by the numbers 1 through 7) with which you have experienced the feelings or symptoms contained in each statement.

Q7. Over the course of the last year, have you ...
[1 = Never, 2 = Rarely, 3 = Once in awhile, 4 = Some of the time, 5 = Fairly often, 6 = Often, and 7 = All of the time]

a) been able to concentrate on whatever you're doing?
b) lost much sleep from worry?
c) felt you were playing a useful part in things?
d) felt capable of making decisions about things?
e) felt under strain?
f) felt you couldn't overcome your difficulties?
g) been able to enjoy day-to-day activities?
h) been able to face up to your problems?
i) been feeling unhappy and/or depressed?
j) been losing confidence in yourself?
k) been thinking of yourself as a worthless person?
l) been feeling happy, all things considered?

Please answer the following questions by indicating for each statement the frequency (represented by the numbers 1 through 7) with which you have experienced each the emotions or symptoms contained in each statement.

Q8. Over the course of the last year, have you ...
[1 = Never, 2 = Rarely, 3 = Once in awhile, 4 = Some of the time, 5 = Fairly often, 6 = Often, and 7 = All of the time]

a) had difficulty getting to sleep at night?
b) woken up during the night?
c) had nightmares or disturbing dreams?
d) slept peacefully and undisturbed?
e) experienced headaches?

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f) had a headache when there was a lot of pressure on you to get things done?

g) had a headache when you were frustrated because things were not going the way they should have or when you were annoyed at someone?

h) suffered from an upset stomach (indigestion)?

i) had to watch what you ate carefully to avoid stomach upsets?

j) felt nauseated ("sick to your stomach")?

k) felt constipated or suffered from diarrhea?

l) had minor colds (colds that made you feel uncomfortable but didn't keep you sick in bed or make you miss work)?
[0 times 1–2 times 3 times 4 times 5 times 6 times 7_ times]

m) more severe colds or respiratory infections that "laid you low" (such as bronchitis, sinusitis, etc.)?
[0 times 1–2 times 3 times 4 times 5 times 6 times 7_ times]

n) If you had a bad cold or flu, how long did it typically last?
[1 day 2 days 3 days 4 days 5 days 6 days 7_ days]

The following questions concern your experience with sending email at work over the last year. Focus only on work email you sent to subordinates, coworkers, supervisors, or someone connected to your organization such as a customer or a person in another organization (such as a supplier). You should not answer any of these questions based upon any personal email you may have sent while at work. Each row contains a statement describing the email you sent. Each column represents a different person or group of people who you may have sent this type of email to. In each cell (row and column combination) please indicate the frequency (represented by the numbers 1 through 7) at which you may have sent this type of email over the last year.

Q9. During the last year have you ever sent email to a supervisor, a subordinate, a coworker, or a customer or a person from another organization that you would describe as ...

[1 = Never, 2 = Hardly Ever (about once every few months), 3 = Rarely (about once a month), 4 = Occasionally (at least several times a month), 5 = Sometimes (at least once a week), 6 = Frequently (at least once a day), and 7 = Very frequently (at least several times a day]

a) impolite or uncivil

b) disrespectful or discourteous

c) personally insulting

d) belittling

e) unfairly questioning their professionalism

f) unfairly questioning their competence

g) hostile towards them

h) aggressive towards them

The following questions concern how you generally get along with others. Please consider these questions in terms of both your personal and work lives.

Q10. Please answer the questions by indicating your level of agreement for each statement below.
[1 = Uncharacteristic of me, 2 = A little like me, 3 = Somewhat like me, 4 = Quite a bit like me, 5 = Characteristic of me]

a) I often find myself disagreeing with people.

b) At times I feel I have gotten a raw deal out of life.

c) I wonder why sometimes I feel so bitter about things.

d) I have trouble controlling my temper.

e) My friends say I am somewhat argumentative.

f) I flare up quickly but get over it quickly.

g) I can't help getting into arguments when people disagree with me.

h) Other people always seem to get the breaks.

i) Sometimes I fly off the handle for no good reason.

The following questions concern how you feel about yourself. Please consider these questions in terms of both your personal and work lives.

Q11. Over the last year, in general terms in both your work and personal life overall, have you ...
[1 = Never, 2 = Rarely, 3 = Once in awhile, 4 = Some of the time, 5 = Fairly often, 6 = Often, and 7 = All of the time]

a) been feeling distressed?

b) been feeling upset?

c) been feeling guilty?

d) been feeling scared?

e) been feeling hostile?

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f) been feeling irritable?
g) been feeling ashamed?
h) been feeling nervous?
i) been feeling jittery?
j) been feeling afraid?

The following questions are designed to assess your experience of general aggression at work over the last year. Each row contains a statement describing a type of behaviour you may have experienced. Each column represents a different person or group of people who may have been the source of this behaviour. In each cell (row and column combination) please indicate the frequency (represented by the numbers 1 through 7) at which you may have experienced aggression.

Q12. While you were working during this last year, how many times did you experience the following behaviours from your supervisor, coworkers, subordinates or customers / members of the public?

[1 = Never, 2 = Hardly Ever (about once every few months), 3 = Rarely (about once a month), 4 = Occasionally (at least several times a month), 5 = Sometimes (at least once a week), 6 = Frequently (at least once a day), and 7 = Very frequently (at least several times a day]

a) Sworn or cursed at
b) The target of a mean prank or joke
c) Subjected to nasty comments
d) Made fun of
e) Treated rudely
f) Have your work judged or criticized unfairly
g) Have bad things said about you to others
h) Made to look bad
i) Have them take their anger out on you
j) Have negative comments made about you to others
k) Told that your thoughts or feelings are stupid
l) Teased
m) Treated with disrespect
n) Hit, kicked, grabbed, shoved or pushed
o) Spat on or bitten

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p) Have an object thrown at you
q) Threatened with physical violence
r) Threatened with a weapon
s) Have your personal property or workplace property damaged by someone
t) Threatened with damage to any of your personal or workplace property
u) Have a door slammed in your face.

Q13. The following questions are for descriptive purposes only.

a) 1. What is your sex   [_____] Male   [_____] Female
   [values = 1 and 2]

b) What is your age? 19 or Under   [_____] 20-29   [_____] 30-39 [_____] 40-49 [_____] 50-59 [_____]
   60-69 [_____]   70 or over
   [values = 1 to 6]

c) How many emails do you receive on a daily basis at work?
   Under 10   [_____] 10-19   [_____] 20-29 [_____] 30-39 [_____] 40-49 [_____] 50-59   [_____] 60 or over
   [values = 1 to 6]

d) Email is absolutely essential for me to do my job.
   [1 = Strongly disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Neither Agree/disagree, 5 = Slightly agree, 6 = Agree, 7 = Strongly Agree]

e) How long have you been employed in your current position? [_____] years and [_____] months

f) Do you work full-time or part-time? Full time [_____]   Part time [_____]
   [values = 1 and 2]

g) On average, how many hours do you work per week? [_____]

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h) From the list below please select the description that best matches your work?
    [*values = 1 to 21*]

    Agriculture, forestry, fishing, and hunting [____]   Mining and oil and gas extraction [____]
    Utilities [____]   Construction [____]   Manufacturing [____]   Wholesale trade [____]
    Retail trade [____]   Transportation and warehousing [____]   Information and cultural work [____]
    Finance and insurance [____]   Real estate and rental and leasing [____]   Professional/scientific/technical services [____]
    Management of companies and enterprises [____]   Administrative and support [____]
    Waste management or remediation services [____]   Educational services [____]   Health care / social assistance [____]
    Arts, entertainment and recreation [____]   Accommodation and food services [____]   Public administration [____]
    Other services (except public administration) [____]

i) What is your current job title? [_____]

j)   Do you hold a supervisory position? No [____] Yes [____]
    [*values = 1 and 2*]

k) Approximately how many individuals report to you as their supervisor?
    [*values = 1 to 6*]
    Less than 5 [____]   5 – 19 [____]   20 – 29 [____]   30 – 39 [____]   40 – 49 [____]   More than 50 [____]

o) Approximately what size is the work unit you currently work for?
    [*values = 1 to 6*]
    Less than 5 employees [____]   5 – 19 employees   [____]   20 – 49 employees [____]
    50 – 99 employees   [____]   100 – 499 employees [____]   More than 500   [____]

p) What is your approximate yearly income?
    [*values = 1 to 10*]
    Less than $1,000   [____] $1,000 – $9,999   [____] $10,000 – $19,999 [____] $20,000 – $29,999
    [____] $30,000 – $39,999 [____] $40,000 – $49,999 [____] $50,000 – $59,999 [____] $60,000 – $69,999 [____]
    $70,000 – $79,999 [____] $80,000 and over [____]

[END OF SURVEY]

I would like to thank you for participating in the research. Not only will this assist me in completing my doctorate, but it will also help us understand this new form of behaviour in the workplace, and permit us to design effective interventions. **In order to show you our appreciation for the time you have taken to complete the survey you have an opportunity below to enter for a chance to win a number of prizes.**

Please note: The information requested below will not be stored with the answers to the previous questions so that you responses will be completely confidential and anonymous.

If you would like an opportunity to win one of ten $50.00 gift certificates for Chapters / ChaptersIndigo.ca that can be used to make purchases either online or at a participating bookstore please fill out in the information below.

Email you may be contacted at in the event you win a prize. _____

or

Phone number you may be contacted at in the event you win a prize. _____

If you would like to receive a summary of this research when it is completed please check the box below.

Yes, I would like a research summary when completed ☐

Again, my thanks for your assistance

Appendix J.

Research Ethics Board: Certificates of Approval.

Research Ethics Board Certificate Notice

The Saint Mary's University Research Ethics Board has issued an REB certificate related to this thesis. The certificate number is: ___O7-094 (06-156) (06-050)___

A copy of the certificate is on file at:

Saint Mary's University, Archives
Patrick Power Library
Halifax, NS
B3H 3C3

Email: archives@smu.ca
Phone: 902-420-5508
Fax: 902-420-5561

For more information on the issuing of REB certificates, you can contact the Research Ethics Board at 902-420-5728/ ethics@smu.ca .

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