

Differentiating Between Harmless and Harmful Threats: What Factors Increase Risk of Violence?

**by
Madison Edge Almond**

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Name: Madison Edge Almond

Degree: Master of Arts

Title: Differentiating Between Harmless and Harmful
Threats: What Factors Increase Risk of Violence?

Committee: **Chair: Matthew Sigal**
Lecturer, Psychology

Kevin Douglas
Supervisor
Professor, Psychology

Stephen Hart
Committee Member
Professor, Psychology

Mario Scalora
Examiner
Professor, Psychology
University of Nebraska-Lincoln

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Abstract

Threats of violence are a relatively common phenomenon that can evoke stress and fear in their recipients; while most threats are not carried out, a portion are a precursor to acts of physical violence. Past research has preliminarily identified a handful of factors that may indicate that a threat will lead to violence yet is limited by the small number of variables and specific environments examined. This study investigated the association between 17 commonly accepted historical and dynamic risk factors, as well as threat characteristics and warning behaviours, and violence following threat within a community sample who threatened ($N = 257$). All investigated risk factors except insight were related to threat violence; several threat characteristics and number of warning behaviours displayed were also linked to higher likelihood of violence. These results imply that traditional violence risk assessment instruments may be helpful in threat risk evaluation when the perpetrator is known.

Keywords: Threat assessment; Violence risk assessment; Threats of violence; Warning behaviours; Community sample

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Chapter 1.

Introduction

Threat assessment can be defined as a process of information gathering and systematic recognition of a threat posed by a specific person, group, or organization and the subsequent strategies and actions taken to mitigate or neutralize the threat (Meloy et al., 2014a; Meloy et al., 2014b). Threat assessment is the close younger cousin of the practice of violence risk assessment but is differentiated by the specificity of the victim, which must be a particular individual, group, or organization, the frequent paucity of information on the perpetrator, and the significant consideration of the context of the threat and the current behaviours of the perpetrator (Mitchell & Palk, 2016). In contrast, violence risk assessment may provide an estimate of future risk for a specific perpetrator but is less likely to narrow its focus to risk to one specific individual, except for cases where the type of violence is particular to one victim (i.e., intimate partner violence). Risk assessment will typically be conducted within a contained environment for an individual with a demonstrated history of violence, while threat assessment often evolves dynamically when a person who may or may not have a violent history is brought to the threat assessor's notice (Meloy et al., 2012). The outcome of a threat assessment is, ideally, a case-specific plan to intervene in and prevent the threatened violent behaviour (Meloy et al., 2014a); however, this outcome overlaps significantly with the process of case formulation in violence risk assessment, and in practice, violence risk and threat assessment terminology are often used interchangeably and share more similarities than differences.

Past research has conceptualized "threat" as a clear oral or written expression of the intent to harm a target, stated either implicitly or explicitly (Dietz et al., 1991; Meloy, 2000; Mitchell & Palk, 2016). Individuals who engage in threat assessment aim to accurately assess the likelihood of a certain threat being enacted by a known or unknown individual via an evaluation of the evidence for or against a violent outcome (Burnette et al., 2018; Cornell et al., 2009). A diverse range of professionals must engage in the threat assessment decision-making process at some point in their careers, including law enforcement, school and university employees, mental health professionals, and the protective detail of public figures (Mitchell & Palk, 2016).

Threats and threat assessment in educational settings have received the most research interest in the past two decades, likely due to the rise in frequency of school shootings in the United States in the late 1990s. Subsequent studies conducted by the Federal Bureau of Investigation (O'Toole, 2000) and the United States Secret Service (Vossekuil et al., 2002) found that no singular profile could capture the diversity of students who committed school-based violence yet almost every perpetrator communicated their intent to commit violence via threats or warnings heard by third parties such as peers. However, exploratory research like this suffers from lack of a control group wherein rates of individuals who threatened but did not commit violence could be calculated. Educational threat assessment research has culminated in the development of the Virginia School Threat Assessment Guidelines (VSTAG; Cornell & Sheras, 2006) and subsequent Comprehensive School Threat Assessment Guidelines (CSTAG; Cornell, 2018), which have shown efficacy in differentiating substantive (serious) from transient (non-serious) threats (Burnette et al., 2018) and in general improvement of the school safety climate (Cornell & Crowley, 2021; Cornell et al., 2009).

Many different workplace environments will also make use of threat assessment decision-making procedures. Meloy et al. (2013) reported that aggression or violence in the workplace often arises from conflicts, disputes, or rejections an employee may perceive to be directed at them or the experience of job loss or other major career setbacks. Workplace stalking can occur, and although past research has shown this behaviour occurs more frequently for certain professionals (i.e., mental health workers; Galeazzi et al., 2005; Purcell et al., 2005), there is evidence that employees working in other professions can experience it as well. In a study that surveyed victims on various aspects of their experience of workplace stalking, it was found that most victims were female, were fearful of their stalker, were stalked for over two years, and the stalking had particular work-related consequences, such as the stalker threatening the victim with employment repercussions or general negative impacts on the victim's professional life (Sheridan, North, et al., 2019). Considering stalking behaviour in broader contexts, prevalence of violence perpetrated by stalkers ranges from 3% to 79% within diverse samples (Douglas & Dutton, 2001) and the presence of explicit threats has been reported to increase the odds of stalking violence by 2.16 (McEwan et al., 2007). Several risk assessment instruments have been created to evaluate risk in the unique context of stalking (i.e., Guidelines for Stalking Assessment and Management [SAM]; Kropp et al.,

2008; Stalking Risk Profile; MacKenzie et al., 2009), which display acceptable psychometric properties (James & Sheridan, 2020).

Violence risk assessment tools such as the Historical Clinical Risk Management-20 (HCR-20^{V3}; Douglas et al., 2013) have shown promise in the evaluation of future violent behaviour of employees in diverse workplace settings (Cawood, 2017). Meloy et al. (2013) also developed an assessment tool that specifically aims to predict risk of future targeted violence (i.e., violence directed at a specific individual, group, or organization) within professional settings: the Workplace Assessment of Targeted Violence Risk (WAVR-21). Research on the WAVR-21 has demonstrated fair to good inter-rater reliability for most tool items and, while other items showed poor reliability due to lack of information available to raters, the structured nature of this tool is proposed to decrease the amount of error inherent to unstructured human decision-making (Meloy et al., 2013). However, more research is needed to fully support this conclusion as scant validity data exists. In other literature, it was found that workplace mass shooters displayed many of the same individual risk factors (e.g., social marginalization, problems with family, a precipitating crisis event) that school campus shooters and suicide terrorist bombers experienced prior to their violent act(s) (Lankford, 2013).

One of the longest-running uses of threat assessment may be the assessment of risk of individuals who threaten and/or approach public figures (e.g., government officials, celebrities). Early research on this topic highlighted a relationship between mental illness and problematic approach of public figures, with psychosis and the experience of delusions often being the most significant source of the perpetrators' mental instability (Hoffman, 1943; Logan et al., 1984; Sebastiani & Foy, 1965). Indeed, later literature found that mentally ill individuals were more likely to engage in more contacts (via telephone, letter, or physical approach) and these contacts were more likely to contain help-seeking or religious content (Scalora et al., 2003). However, physical approach in isolation was not displayed more frequently by participants with mental illness. The importance of systematically evaluating threatening or otherwise problematic communications to public figures and less eminent individuals led to the creation of the Communications Threat Assessment Protocol (CTAP; James et al., 2014), which appears to be one of the first threat assessment protocols that can be used across multiple settings. The CTAP has demonstrated strong inter-rater and test-retest reliability, and a handful of items were associated with initial and persistent approach of

the victim by the communicator (James, Allen, et al., 2022; James, MacKenzie, et al., 2022). However, the association between these items and approach behaviour was only assessed within a sample of corporate threat cases, making generalizability to other threat assessment settings unknown. The instrument's ability to predict aggressive or violent behaviour also remains untested.

As physical approach is considered an indicator of higher likelihood of subsequent violence (Scalora et al., 2003), lack of significant difference in approach frequency may mean that individuals who threaten and display signs of a mental illness may not be at a higher risk for violent behaviour than those who do not. In two studies that analyzed a dataset of problematic behaviours perpetrated on staff of public figures, it was found that significantly more than half of the surveyed staff members experienced at least one form of intrusive behaviour, with the most common being inappropriate telephone calls, threats of legal action, and physical approach; it should be noted that the perpetrator showed signs of a possible mental illness in over half of the cases (Lowry et al., 2015; Sheridan, Pyszora, et al., 2019). There has been preliminary efficacy demonstrated by special threat assessment teams and/or centers for the early identification and management of individuals of concern and the coordination and triage of services in conjunction with mental health professionals (Pathé et al., 2015).

In recent years, threat assessment has also been applied to perpetrators of mass murder and terrorism. Leakage, a term first coined by O'Toole (2000) which refers to the perpetrator communicating their intent to commit violence against a certain target via any written or oral form to either the target themselves or a third party, was present in 58% of a sample of American mass murderers (Silver et al., 2018). Within this study, the perpetrators' possession of a grievance against the target significantly predicted the presence of leakage. The frequency of acts of terrorism in the United States has served as an impetus for research into the prediction of these acts, which sparked the creation of the Terrorist Radicalization Assessment Protocol (TRAP-18; Meloy, 2017). This terrorism-focused assessment tool rates the presence of individual historical risk factors for violence (e.g., history of criminal violence) and eight dynamic, proximal behaviours (e.g., leakage); half of the items were found to discriminate between individuals who committed terrorist attacks and who were deemed a national security concern but did not perpetrate terrorism-related violence (Meloy et al., 2019). In sum, threat assessment has been demonstrated to be a flexible decision-making framework that can be applied in a

range of different situations where a known or unknown person may be at risk for violent behaviour; efforts have been made to structure the threat assessment practice, but they are nascent, under-researched, and typically specific to the assessment of threats within certain domains.

1.1. Violence Risk and Human Decision-Making

The practice of classical violence risk assessment can be viewed through the lens of decision theory, wherein it is asked why humans decide to engage in violent actions and what factors push or pull an individual closer to or farther from the decision to perpetrate violence (Hart & Logan, 2011). Two criminological decision-making theories tailored specifically to the explanation of violent action have influenced the practice of risk assessment. First, Bounded Rational Choice Theory posits all acts of violence as instrumental and as deliberate actions their perpetrators intend to commit to achieve desired outcomes that do not bring about too great of cost; this rationality is considered “bounded” as these decisions are made subjectively in accordance with the individual’s own judgments about costs and benefits (Felson, 2009; Matsueda et al., 2006). Secondly, Situational Action Theory has proposed that violent actions should be explained as fundamentally moral actions, guided by the actor’s conceptualizations of right and wrong (Wikström & Treiber, 2009). It is also argued that violence must be seen by the acting individual as a viable action alternative (a possible action to take in a given situation), and that an individual’s inner propensity to engage in violence interacts with exposure to situations promotional of violence to produce their likelihood of viewing violence as an action alternative (Wikström & Treiber, 2009). Specifically, violence becomes a more likely action alternative when individuals are tempted by opportunities they desire or when they perceive another person, group, or object as a source of friction and are therefore provoked to remove that source. These theories both emphasize the agency humans possess in decisions to commit violence and that these decisions are not made in a vacuum; internal and external factors (i.e., costs and benefits, temptations, opportunities) interplay to make violence a more or less attractive choice.

The structured professional judgment (SPJ) method of violence risk assessment and case formulation draws heavily on decision theory frameworks. Briefly, the SPJ approach is a discretionary method of risk assessment in which the groundwork of the assessment of violence is laid by empirically based risk factors. Risk assessors will

systematically base estimates of violence risk on these specified factors while simultaneously considering other factors specific to the individual and their case if need be (Douglas & Belfrage, 2015; Nicholls et al., 2016). In this fashion, SPJ assessment of risk aims to anticipate the decision-making of the examinee by pinpointing possible factors that will influence their likelihood of future violent acts with nods to both standardized, empirically based risk factors and case-specific risk factors chosen at the examiner's discretion. While there are distinctions between the practices of threat assessment and risk assessment, the disciplines share the goals of prediction, management, and prevention of violence (Douglas & Kropp, 2002; Mitchell & Palk, 2016) and both do so using more or less structured decision-making techniques.

Actuarial (non-discretionary) methods of risk assessment have been argued to be too static for dynamic threat assessment settings (Mitchell & Palk, 2016), but the flexible SPJ approach has been deemed applicable for threat assessment usage and reflects the disciplines' common goals, particularly when case formulation is also introduced (Cook et al., 2014). Therefore, an SPJ tool that accounts for dynamic and contextual risk factors and has already amassed a strong evidence base for the ability to predict a diverse range of violent acts, such as the HCR-20 (Brookstein et al., 2020; Persson et al., 2017), could be just as useful within traditional threat assessment contexts when the perpetrator is known. However, this assessment tool has not been investigated for its ability to predict acts of violence following explicit threats, which is a situation highly relevant to the many professionals that engage in threat assessment. Examination of the instrument's performance in this context could be viewed as a logical first step in the evaluation of the utility of SPJ risk assessment tools in traditional threat assessment environments more generally.

The SPJ approach has proposed case formulation as an integral step in a full conceptualization of a person's risk for violence. Case formulation in violence risk assessment is used to pull the puzzle pieces of the examinee's risk together; it relies on the aforementioned decision theory structure to conceptualize a person's past violence and provides an evidence-grounded framework for the assessor to hypothesize about future violence within (Hart & Logan, 2011). The ultimate goal of case formulation is the development of a strong case management plan. Key to the discussion of case formulation is the concept of risk factors influencing the thoughts and behaviours of potential perpetrators of violence in three distinct ways: as motivators (factors which

increase perceived rewards of violence), disinhibitors (factors which decrease perceived costs of or barriers from violence), and destabilizers (factors which hamper the ability to make rational decisions related to violence perpetration; Hart & Logan, 2011).

Understanding how risk factors can lead to a perpetrator's decision to commit violence through one or more of these pathways allows the assessor to more easily construct potential scenarios that are more or less likely to lead to violence and in turn, generate and implement tangible intervention plans that manage this risk. This alignment of management strategy to specific scenarios dovetails with the dynamic, situation-specific nature of threat assessment and management (Meloy et al., 2012; Mitchell & Palk, 2016) and would be a valuable addition to threat assessment procedures within any context.

Specific factors that increase the likelihood of future violence if they are applicable to the examinee have been researched at length and have been incorporated into many established risk assessment tools. These are factors such as a history of violent behaviour (DeLisi, 2001; Kunz et al., 2004), a history of substance use (Carter et al., 2020; Goldstick et al., 2016), and association with violent peers (Walters, 2019). Risk factors such as these are what empirically validated violence risk assessment tools are built upon. However, risk factors have received much less research attention within a threat assessment framework, and in particular, there is a paucity of literature regarding what factors may predict subsequent violent action when a threat of violence has been made (Warren et al., 2011). This may be in part because preliminary studies have failed to discover a common perpetrator "profile" for cases typical of threat assessment attention such as mass shootings or attacks on public figures. However, this view places disproportionate emphasis on the individual risk factors of the perpetrator. Previous research has speculated that situational risk factors may be more promising in the endeavour to pinpoint risk factors that may be common to these types of violence (i.e., access to weapons, perpetrator experience of a perceived grievance; Vossekuil et al., 2015). As scholars like Mulvey and Lidz (1995) have noted, overwhelming attention is frequently paid to individual risk factors in the practice of risk assessment whereas the choice to use violence is often dependent on the situation the individual finds themselves in. Although the SPJ approach to risk assessment and threat assessment has made strong efforts to account for dynamic, situational specifics in research concerning the broad prediction of violence, further study into risk factors that may specifically predict

when a threat carries an active risk of violence with a particular emphasis on dynamic and situational factors is sorely needed.

1.2. Threat Assessment and Targeted or Threat-Related Violence

Over the past two decades, research across risk and threat assessment domains has begun to explore if certain, identifiable factors may signal that an individual is at greater and/or imminent risk of committing targeted violence. Targeted violence can be conceptualized as intended or perpetrated violence which is planned, purposeful, and goal-directed in nature (Meloy et al., 2013; Schouten & Brennan, 2016). This type of violence is inherently differentiated from violence committed impulsively and without forethought. The relationship between the mental health of the perpetrator and the severity of threat of targeted violence is one of the most frequently investigated topics, with inconclusive results. Perpetrators with symptoms or diagnosis of a mental illness have been found to make contact with the target of their threats more frequently (Scalora et al., 2003), and 23% of adolescent mass murders and 26% of non-ideologically motivated active shooters showed signs of poor mental health (i.e., a history of psychiatric contact or formal diagnosis; Capellan, 2015; Meloy et al., 2001). The prevalence of mental disorder was found to be 41% in a sample of solo mass murderers (Gill et al., 2017) and Bennett (2010) discovered that planning and pre-existing intent were more likely to be displayed by homicide offenders who were diagnosed with a psychotic illness. Yet Scalora et al. (2003) did not find physical approach behaviour more likely when the offender was mentally ill, and other research has found risk of serious violence is predicted more strongly by prior victimization history, substance use, firearm possession, and other historical and dynamic factors (Aitken et al., 2008; Metzl & MacLeish, 2015). Despite the equivocal evidence, consideration of the perpetrator's mental health was found to be the most recommended practice for assessors within a systematic review of threat assessment guidelines (Mitchell & Palk, 2016).

As acknowledged previously, there is no singular set of individual risk factors that has been found to predict acts of targeted violence (Allwinn et al., 2019; Vossekuil et al., 2015). Some studies have found evidence of low educational achievement and single and/or divorced relationship status among perpetrators of targeted violence (Capellan, 2015; Gill et al., 2017), while others reported significant diversity in perpetrators'

relationship status, education, employment, and weapon usage (Allwinn et al., 2019). Histories of criminal activity and substance use were common in some studies (Gill et al., 2017; Meloy et al., 2001) and Allwinn et al. (2019) reported that about half of their sample experienced some type of difficult childhood (i.e., substance use or abuse by parents, contact with foster care, death of a parent).

These risk factors cannot be pronounced specific to targeted violence, as they are echoed in the literature examining many types of violent and non-violent crime (e.g., Carter et al., 2020; Kunz et al., 2004; Ramakers et al., 2011). Overwhelmingly, perpetrators of targeted violence were found to have experienced a crisis, stressor, or negative life event within the year before their violent act (Allwinn et al., 2019; Gill et al., 2017; Meloy et al., 2001; Meloy et al., 2004; Vossekuil et al., 2015), the exception being ideologically motivated active shooters (Capellan, 2015). Related to this is the finding that many targeted violence perpetrators develop a strong grievance with their target for logical or illogical reasons; this grievance can then morph into a fixation or obsession (Dutton et al., 2013; Vossekuil et al., 2015). Many perpetrators communicated their intent to harm to third parties prior to their attack (i.e., leakage) in one study of targeted attacks of public figures and schools but most did not threaten their target directly (Vossekuil et al., 2015).

Table 1.1. List of warning behaviours (Meloy et al., 2012).

Behaviour	Description
Pathway behaviour	Research, planning, or preparation for an attack
Fixation	Intense preoccupation with a specific person or cause
Identification	Identification with law enforcement/military, previous attackers, or other perpetrators of violence; a “warrior mentality”
Novel aggression	Violent behaviour that is committed for the first time and is unrelated to other pathway behaviour; a test of ability for violence
Energy burst	Acceleration in frequency or variety of behaviour/activities related to the intended target of the violence
Leakage	Communication of intent to be violent to a third party
Last resort behaviour	Increasing distress or desperation that leaves no alternative to violence
Direct communication of threat	Communication of a threat of violence directly to the target or law enforcement

Specific behaviours occurring proximally to the violent act have been proposed as being “warning behaviours” that may signal an individual’s risk of violence is quickly

and dynamically accelerating (Meloy et al., 2012; see Table 1.1 for a list of the eight proposed behaviours). These are behaviours and are therefore not static in nature; for example, evidence that a person is actively researching or planning a violent attack indicates high risk of imminent violence, yet the risk of violence will immediately decrease if the individual's efforts are curtailed. Warning behaviours have been proposed to signal that a person is at imminent risk of perpetrating targeted violence and preliminary research into the predictive validity of these behaviours suggests individuals may demonstrate more warning behaviours as they move closer to committing the violent act (Meloy et al., 2004). The prevalence of leakage, one of the eight identified behaviours, ranged from 13% to 64% in samples of various targeted violence forms, including mass murderers, lone-actor terrorists, attackers of public figures, and educational campus attackers (Drysdale et al., 2010; Fein & Vossekuil, 1999; Gill et al., 2014, 2017). All warning behaviours except the eighth (direct communication of a threat to its target) were shown by at least 45% of psychotic and non-psychotic mass murderers, with the latter displaying pathway behaviour and direct communication of threat significantly more frequently (Allwinn et al., 2019). All participants in this sample displayed at least one warning behaviour prior to their homicides. Moreover, four warning behaviours (pathway behaviour, identification, energy burst, and last resort behaviour) were demonstrated by significantly more perpetrators than attempters prior to a violent act in a sample of terrorist attackers (Meloy et al., 2019).

While warning behaviours have clearly demonstrated a preliminary association with acts of targeted violence and may therefore be useful tools in risk and threat assessment practice, these behaviours have not undergone widespread study. More research within diverse populations of different ages, backgrounds, abilities, and across types of targeted offences is necessary if these behaviours are to be validated as reliable precursors to planned or targeted violence. Furthermore, the substantial majority of research on warning behaviours and other historical and dynamic risk factors for targeted violence has aimed to determine factors predictive of violence within samples where all participants have attempted or committed an act of violence; there has been scant use of control groups to test if these factors are more likely to be displayed by individuals who subsequently perpetrate violence, and if said violence is typically targeted or instrumental in nature.

1.2.1. Discerning Between Threats and Threat-Related Violence

Every year, almost 2% of the population of the United States receive a threat that causes them to fear for their own or others' safety (Bureau of Justice Statistics, 2006; van Kesteren et al., 2000); only a small portion of these threats are carried out (Meloy et al., 2014a). More colloquial threats (i.e., "he makes me so mad I could kill him") are even more common. However, a subset of threats are a precursor to future violent behaviour (Meloy et al., 2012; Warren et al., 2008) and research has made a preliminary foray into factors that may reliably determine the nature of these threats with the goal of improving risk and threat assessment practices.

Past school-based threat assessment research has classified threats with a high likelihood of future violence as substantive (i.e., serious) and those without as transient (i.e., non-serious). This distinction has demonstrated preliminary validity, as Burnette et al. (2018) found that student threats that school officials classified as substantive were over 36 times more likely to lead to attempts than threats classified as transient. Variables that significantly distinguished substantive threats from transient threats include threats that: contained an explicit expression of homicidal intent; expressed harm to the threatener themselves or others; contained a bomb threat or reference to a weapon; and originated from a student who displayed a higher number of warning behaviours (Burnette et al., 2018). Of note is the limited generalizability of a school-based sample to other settings, the amalgamation of all warning behaviours into one variable, and the limited investigation of non-situational risk factors (only gender, race, and grade were examined), possibly due to the limitations of data collected via file review. In a sample of adolescent and young adult German school shooters and students of concern who ultimately did not commit violence, direct communication of a threat of violence were made less frequently by perpetrators of school shootings (Meloy et al., 2014c). Five other warning behaviours (identification, fixation, pathway behaviour, novel aggression, and last resort behaviour) were found to significantly predict serious school violence with large effect sizes.

Some differentiation between threats and threat-related violence has been discovered in inpatient psychiatric settings as well. Leach and colleagues (2021) examined differences in offending history, psychosocial factors, and history of psychiatric diagnosis in an inpatient sample of adolescents who had been referred for

violence risk assessments, threat assessments, or both. Overall, adolescents referred for a threat-only assessment were deemed lower risk; specifically, they were more likely to have threatened school-related targets (versus participants assessed for threat and violence risk, who were more likely to have threatened targets within the home), belong to a family with fewer mental health issues, and have experienced less physical abuse and police contact. Moreover, it was found that adolescents that underwent a threat assessment were 20 times more likely to have been diagnosed with a mood disorder than those who underwent a risk assessment only (Leach et al., 2021).

In another study by Warren et al. (2011) of adult inpatients who uttered at least one threat to kill, patients with a history of substance use, a history of violence, and fewer than ten years of formal education were at least three times more likely to enact subsequent violence after threatening; the absence of treatment for a mental health disorder increased the odds of violence over two times. These four variables were entered into a receiver operating characteristic (ROC) analysis which produced an area under the curve (AUC) value of .76. Similarly, Australian inpatients in the civil psychiatric system who threatened were found to perpetrate violence directly related to their threat in over half of cases (55%). The dynamic factors of active psychotic and mood (manic) symptoms and lack of current substance use and treatment adherence, as well as the relatively static factors of intellectual impairment and younger age, significantly differentiated patients who followed their threat with physical violence from those who did not (Mitchell et al., 2019). In most cases, physical violence was committed within 24 hours of the threat being uttered, and no threat characteristics (i.e., content of threat, method of communication) significantly predicted threat-related violence. While sufficiently laying the foundations for the identification of threats that carry serious risk of violence, these studies were constrained to a singular setting and type of participant and examined a restrictive range of dynamic variables. The presence of warning behaviours, proximal crises or stressors, and grievance with the target of the threat were also not examined in the majority of these studies.

1.3. Current Study

A goal of threat assessment is to reliably ascertain which threats do and do not have high potential to be enacted (Meloy et al., 2014a), however, research is lacking concerning the ability of various risk factors to aid in this judgment. The extant literature

is comprised of a small number of studies that mainly focus on exceptional cases of violence (i.e., mass murderers and active shooters); it is unknown whether similar risk factors that have been preliminarily identified within these samples would still demonstrate predictive utility within samples of more common threats and violent offences, and further, if factors shown to be predictive of indiscriminate violence within the risk assessment literature may extend to situations where threats are made.

This research also frequently suffers from lack of a control group. The few studies that do examine differences between individuals that threaten and those who commit violence following their threats are limited by the specificity of their sample setting (i.e., school, psychiatric inpatient ward) and their small number of investigated risk factors which are largely static in nature. Furthermore, there is no existing literature that studies perpetrator motivations for either enacting or not enacting violence following a threat, which are continuously stressed in threat assessment research as being integral to the conceptualization of a person's risk (Gill et al., 2017; Vossekuil et al., 2015).

As such, the aim of this thesis was as follows. I analyzed a comprehensive set of variables that have demonstrated prior promise of predictive ability for violence in risk and threat assessment literature within two groups: (1) a group of individuals who have threatened a specific target and went on to commit violence against that target or another individual and (2) a group of individuals who threatened a target but did not enact their threat. This analysis was undertaken with the goal of determining which variables represent risk factors that are significantly predictive of subsequent violence in an active threat context. These risk factors were informed by item domains of an SPJ risk assessment tool with demonstrated predictive validity for acts of general violent behaviour (i.e., the HCR-20^{V3}; Douglas et al., 2013). In this fashion, a broad number of risk factors that are static and dynamic in nature were surveyed and the applicability of an established risk assessment tool was preliminarily piloted in a threat assessment context. Warning behaviours (Meloy et al., 2012) and other risk factors that have shown promising ability to predict threat-related violence in past research, such as characteristics of the threat itself and the perpetrator's possession of a grievance, were also examined. Additionally, the motivations of participants were analyzed by surveying participants on the applicability of motivating, disinhibiting, and destabilizing mechanisms (Hart & Logan, 2011) to their decision to enact or abstain from violent behaviour. A key

strength of this study was the diversity of the participants, who were recruited from the general public. This permits the results to be cautiously extrapolated to many of the settings risk and threat assessment are used within.

Chapter 2.

Methods

2.1. Participants

Three hundred and forty-five individuals were recruited from the general community via Amazon's Mechanical Turk (MTurk). All participating individuals received monetary compensation in exchange for their participation; however, 88 of these participants were excluded from all analyses due to validation check failure (see below), resulting in a final sample of 257 participants. The sample mostly identified as male (64.6%; $n = 166$), with one individual identifying as non-binary (0.4%) and the rest identifying as female. Regarding ethnicity, participants indicated that they were White/Caucasian (75.9%; $n = 195$), Black/African American (16.3%; $n = 42$), Asian/Pacific Islander (4.7%, $n = 12$), or Hispanic/Latinx (2.3%, $n = 6$); one participant identified as an unlisted ethnicity but did not elaborate and another did not select their ethnicity. When an a priori power analysis was performed, it was found that a sample of 265 participants would allow the current study to have sufficient power ($1 - \beta = .80$) to detect at an odds ratio value of at least 1.50 and a pseudo- R^2 of .15 within a two-tailed binomial logistic regression analysis if the probability of physical violence ($Y = 1$) is .35 or greater when the null hypothesis is true (i.e., each continuous predictor is at its mean value). While there is little existing theory on computing power for multivariate logistic regressions, a linear regression power analysis conducted as a proxy estimate determined that 118 participants were needed to achieve sufficient power ($1 - \beta = .80$) to detect a medium effect size ($f^2 = .15$) within a model that comprises 10 predictors. Additionally, the current sample size is still in excess of a common "rule of thumb," which recommends 10-20 observations (participants) per predictor (Gotelli & Ellison, 2004).

2.1.1. Inclusion Criteria

The participants were members of the general population who have threatened another person, identifiable group of people, or organization on at least one occasion within the last six years but not within the most recent year (2015-2020; excluding 2021). Threats could be communicated verbally or by writing via various mediums, such as a

letter or a post on an Internet forum. Individuals who made a threat against a target within the past year were excluded due to considerations of safety and data confidentiality, as it could be the responsibility of the researcher to disclose any threats that contain active serious and imminent risk of harm to another person or persons, therefore breaking confidentiality. A sufficient amount of time for the participant to have opportunity to enact the threat should also have passed. Additionally, participants eligible to participate in this study were required to (1) currently reside in Canada or the United States of America, (2) be at least 18 years of age, and (3) be able to speak and read English.

Participants were asked to self-report if they have threatened a target within the last six years; it was not required that they be formally charged or convicted with uttering threats within the criminal justice system. Furthermore, study participants were asked to self-report if they perpetrated any type of physical violence related to the content of their threat against the target of their threat or a third party. Violence was clearly defined as physical to maintain adequate separation between the constructs of a threat and a violent act. This information permitted the identification of two separate participant groups: those who threatened but did not commit subsequent violence and those who threatened and went on to commit violence.

Self-reports of perpetration of threats and violence were utilized with the goal of broadening the sample. Official crime records may substantially underestimate true rates of crime since these records only capture crimes detected by law enforcement (Blumstein & Larson, 1971); this fact may be even more salient for the act of threatening another, which is often done anonymously. Moreover, the reliability and validity of self-report methods of data collection on crime and violence has been found to be similar to other standard measures of these variables (Hindelang et al., 1981; Huizinga & Elliot, 1983). To ensure that participants provided honest responses to the survey questions and were not suffering from respondent fatigue, a validation check was included at the end of the survey. Using methods found to be successful in previous research with similar methodology (Hanniball et al., 2019; Monjazeb, 2019), participants were queried on their relationship with the person they threatened (e.g., partner, friend, co-worker, acquaintance) once at the beginning of the survey and again at the end of the survey, which was anticipated to take participants approximately 45-60 minutes to complete. Participant responses to this question needed to be identical to be included in statistical

analyses. Responses from 88 participants did not match and therefore, their data were excluded from study analyses.

2.2. Procedure

Participants of this study were recruited via Amazon's Mechanical Turk (MTurk) website, an online crowdsourcing platform that connects participants with currently recruiting studies that they are eligible for. A post was advertised that gave a brief description of the study and a link which participants could click if they decided to participate. The link navigated participants to the beginning of the survey, which was hosted on Qualtrics. The four inclusion criteria were first presented to participants (residing in the USA or Canada; 18 years of age; English language capabilities; have threatened an identifiable person, group, or organization from 2015-2020) and they were required to endorse each criterion; participants who did not confirm their eligibility were directed away from the survey. The inclusion criteria contained a comprehensive description of what is considered a threat for the purpose of this study: "Please think of a threat as at least one instance of communication that implicitly or explicitly states a wish or intent to damage, injure or kill a specific person, identifiable group of people, or organization." If participants indicated that they had made a threat that fit this definition, they were then queried whether their threat was made within the same situation as an act of physical violence. If participants endorsed this follow-up question, they were excluded, as threats that were made in a specific violent context where violence immediately follows (e.g., an armed robbery where the perpetrator makes a verbal threat of violence to the victim and harms them minutes or seconds later) were not the focus of this study.

Participants who fulfilled inclusion requirements were then presented with an online consent form which described the nature of the study in more detail and comprehensively outlined the potential costs and benefits of participating. Data confidentiality was assured unless the participant spontaneously provided information in a text box that signalled serious and imminent harm to themselves or another; however, no questions asked for this type of information and no such incidents occurred. The researcher's contact information was also provided. Participants were required to intentionally select the option indicating that they consent to participate before they were able to proceed to the next page. If participants did not indicate consent to the study,

they were directed away from the survey. Requisite ethics approval from Simon Fraser University's Office of Research Ethics was obtained prior to data collection. Data that was collected for this study was password-protected and securely housed on Simon Fraser University's internal server.

2.3. Measures

2.3.1. Threat Characteristics

Participants were first prompted to answer questions about the threat they made that permitted them to be eligible for participation in this study (see Appendix A to review a copy of the survey, which contains all threat variables queried). If the participant made more than one threat within the specified timeframe, they were asked to respond based on the instance where they followed the threat with related violent activity that fell within the 2015-2020 inclusion timeframe; if they never perpetrated violence following a threat, they were asked to select the most recent instance to inform their responses. As there is no established psychological tool to assess threat characteristics, the selection of independent variables for examination was partially informed by previous research examining threats (Burnette et al., 2018; Mitchell et al., 2019). As such, the content of the threat (e.g., homicide, physical assault, sexual assault), direct or indirect threat delivery, the method of threat delivery (e.g., online, via written note, telephone), the target of the threat (e.g., partner, health service provider, acquaintance), reference to a weapon, and context of the threat (e.g., educational, workplace, health care setting) were assessed.

2.3.2. Violent Activity

Participants then responded to brief questions about their physical violent behaviour or attempted violent behaviour following their threat, if applicable. They were first asked if they committed or attempted to commit any act of violence following the threat; this was coded dichotomously as the main outcome variable of this study. Follow-up questions collected for descriptive purposes included the similarity of the threatened violence to the violence attempted or actually perpetrated, the type of violence (i.e., physical assault, robbery, homicide), if the participant was arrested, charged with, or convicted with a crime related to the violence, the setting the violence took place in, and

the time that passed between the threat of violence and the actual or attempted violent act.

2.3.3. Demographics

Participants were also asked standard demographic questions, such as their gender, age, ethnicity, country of origin, country and state/province of residence, years of education, and relationship status. This demographic information was collected as independent variables and to serve as potential covariates for statistical analyses.

2.3.4. Measures of Historical Risk

For the purpose of this study, “historical” factors refer to any factor that is individual-level and has been applicable to the participant and/or present at any time in the person’s past. In an effort to capture the broadest range of historical risk factors possible, participants were first surveyed on ten risk factor domains which were guided by the items of the Historical (H) scale of the Historical-Clinical-Risk Management 20 Version 3 (HCR-20^{V3}; Douglas et al., 2013). The HCR-20 is a widely used structured professional judgement risk assessment tool and each of its versions has demonstrated strong predictive validity for general types of violence (Arbach-Lucioni et al., 2011; Brookstein et al., 2020; O’Shea et al., 2016); the most recent empirical review of the predictive validity of Version 3 continues to support this claim (Douglas & Shaffer, 2021). Version 3 of the Historical scale has further shown a comparable ability to predict violence in isolation from the rest of the measure (Doyle et al., 2014; Penney et al., 2016). These ten risk domains represent a comprehensive assessment of empirically supported historical risk factors for violence, as such, they cover three general categories: 1) historical problems in adjustment to typical demands of life (H3: Relationships, H4: Employment, H8: Traumatic Experiences); 2) historical problems in mental health (H5: Substance Use, H6: Major Mental Disorder, H7: Personality Disorder); and 3) historical problems with antisocial or oppositional behaviour or tendencies (H1: Violence, H2: Other Antisocial Behaviour, H9: Violent Attitudes, H10: Treatment or Supervision Response; Douglas et al., 2013).

Each historical risk domain was operationalized by a composite score comprised of multiple variables to strengthen measurement reliability, comprehensively capture the

theoretical meaning of the risk domain, and simultaneously assess both the presence and the relevance of each risk domain to the participant's unique life circumstances, as first conducted successfully by Monjazez (2019). Variables that comprise each composite risk domain were either adapted from existing validated instruments developed specifically for assessment of constructs similar to the risk domain (i.e., Pathways to Desistance Study measure of Peer Delinquency-Antisocial Influence [Mulvey et al., 2014], NIDA Quick Screen V1.0 [National Institute on Drug Abuse, n.d.], Adverse Childhood Experiences Questionnaire [Felitti et al., 1998]) or selected based on logical relevance to risk factor item indicators within the HCR-20^{V3} manual (see Appendix A for the queried questions that comprised each historical risk domain). When internal consistency was assessed for each of these risk domain composite scores previously, Cronbach's alpha values ranged from .86 to .94 (Monjazez, 2019). All but two risk domains demonstrated fair to excellent internal consistency in the current study ($\alpha = .69$ to $.91$). Other antisocial behaviour (H2) and treatment or supervision response (H10) displayed Cronbach's alphas of .57 and .52, respectively. However, the H2 item domain displayed an inter-item correlation mean of .31, which falls within the acceptable range (i.e., .20-.40; Piedmont, 2014). When one item was removed from the H10 risk domain, its Cronbach's alpha rose to .56 and its mean inter-item correlation rose to .25; the latter of which is an acceptable value. Therefore, analyses proceeded with one item from the H10 domain omitted.

2.3.5. Measures of Dynamic Risk

Participants were also surveyed on dynamic risk factors. Factors were deemed dynamic in nature if they could fluctuate across time and/or situations (e.g., active symptoms of mental illness at time of threat, exposure to destabilizers or stress). Similar to the HCR-20^{V3} Historical risk domains, items on the Clinical (C) and Risk Management (R) scales of the HCR-20^{V3} were conceptualized as risk domains and variables were summed into composite scores to provide estimates of participants' scores on each (see Appendix A for the queried questions that comprised each dynamic risk domain). Items on each of these scales were separated from the Historical scale items due to their dynamic nature. The Clinical scale included five items that assessed risk of violence at the time the participant made their threat via factors relevant to current psychological, psychosocial, and behavioural functioning (C1: Lack of Insight; C2: Violent Ideation or

Intent, C3: Active Symptoms of a Major Mental Illness, C4: Instability, C5: Current Treatment/Supervision Response). Participants were explicitly prompted to consider their state in the hour(s) prior to making their threat when responding to each question that comprised a C item. Lastly, the Risk Management scale comprised five items intended to assess key aspects of violence risk relevant to an individual's future plans and psychological and behavioural functioning (R1: Professional Services and Plans, R2: Living Situation, R3: Personal Support, R4: Future Treatment/Supervision Response, R5: Stress/Coping) (Douglas et al., 2013). As the Risk Management scale guided participant self-report of risk factors as opposed to its traditional use (i.e., clinicians rating clients on each risk item), participants were also instructed to answer each question as it pertains to their state in the hour(s) prior to making their threat, not their current or future situation. For this reason, participants were not assessed on items R1, R2, and R4.

Variables that comprised the composite scores on each item of the Clinical scale were adapted from the definition and indicators listed within the HCR-20^{V3} manual for item C5, which is not comprehensively assessed by any existing psychological measurement tool. Item C1 was assessed in part by the Mood Disorders Insight Scale (Sturman & Sproule, 2003), adapted from the Birchwood Insight Scale (Birchwood et al., 1994), which has demonstrated test-retest reliability and construct validity for the assessment of insight into one's own mental illness (Büchmann et al., 2019; Sturman & Sproule, 2003), and was also informed by HCR-20^{V3} indicators. Item C2 was assessed by the Schedule of Imagined Violence (Grisso et al., 2000), a brief questionnaire first used in the MacArthur Violence Risk Assessment Study. Items on this questionnaire are not intended to be summed and therefore, no internal consistency information is available. Item C3 adapted variables asked within Historical risk domain H6, however, variables that refer to lifetime evidence of a mental illness were omitted, and the participant was explicitly instructed to answer these questions based on their experiences directly preceding the threat. Lastly, item C4 was assessed by adapting items from the Barratt Impulsiveness Scale (BIS-11; Patton et al., 1995) that reflect the definition and indicators listed by the HCR-20^{V3} manual. The BIS-11 has continued to demonstrate good internal consistency decades after its initial validation (Stanford et al., 2009). Internal consistency of the Clinical scale risk domains in the current study ranged from acceptable to excellent ($\alpha = .68$ to $.94$) with the exception of C5 ($\alpha = .55$). When

one item was removed from the C5 risk domain, its Cronbach's alpha and mean inter-item correlation both rose to acceptable values ($\alpha = .61$, MIIC = .28); analyses proceeded with this item omitted.

The composite scores for the two Risk Management scale items included in the current study (R3 and R5) were also comprised of variables that closely reflect the HCR-20^{V3} manual definition and indicators. Item R3 was also comprised of items from the Social Support Questionnaire 6 (Sarason et al., 1987), which demonstrated strong internal consistency during preliminary validation (Sarason et al., 1983; 1987) and in subsequent research (Cénat et al., 2020). Item R5 was further adapted for the specific context of the study, as variables comprising it included participants' experience of life stressors like the death of a loved one or the end of a romantic partnership prior to perpetrating their threat, which are risk factors that have occurred frequently prior to targeted violence in past literature (Allwinn et al., 2019; Gill et al., 2017; Meloy et al., 2001; Vossekuij et al., 2015). Items from the Perceived Stress Scale (PSS; Cohen et al., 1983) also comprised this risk domain. The PSS has shown good to strong internal consistency (Lee, 2012) and strong test-retest reliability and factorial validity across diverse populations (Khalili et al., 2017; Taylor, 2015). Additionally, both Risk Management item domains included indicators informed by the HCR-20^{V3} manual and displayed Cronbach alpha values of .54 (R3) and .81 (R5), respectively. Three items were removed to improve internal consistency of the R3 scale; subsequently, its Cronbach's alpha rose to .68 and its mean inter-item correlation improved to .23. Analyses proceeded with these items omitted.

2.3.6. Context-Specific/Situational Risk Factors

Participants were then assessed on whether they held a grievance against the target of their threat and, if so, details relevant to the grievance were queried (i.e., when they developed the grievance, the intensity of the grievance, who the grievance was specifically against). There is currently no structured assessment tool created to assess the presence and intensity of grievances held by individuals at risk of violence; however, some research has demonstrated that the presence of a grievance puts a person at higher risk of targeted violence perpetration (Dutton et al., 2013; Vossekuij et al., 2015) and the presence of a personal grievance is included as an item on the TRAP-18 (Meloy et al., 2017).

Lastly, participants were assessed on dynamic variables that were considered situational or specific to the study context of the perpetration of threats and threat-related violence. Risk factors were deemed situational if they were external influences that could fluctuate and may be difficult or impossible for the individual to control (i.e., availability of weapon, threat in response to target's behaviour). The inclusion of situational risk factors was inspired by the arguments of Mulvey and Lidz (1995), which state that violence rarely occurs in a vacuum that is entirely comprised of internal risk factors possessed by the individual; violence is typically a result of the interaction of environmental factors exerting influence on the individual with internal factors already possessed by the individual.

Participants were asked if they used any substances immediately prior to the threat, if the threat was in response to real or perceived behaviours exhibited by the target, and if a weapon was easily available prior to the threat, as previous research has demonstrated an association with weapon availability and violence (Gonzales & McNiel, 2020; Metzl & MacLeish, 2015). Participants' interactions with the target were comprehensively surveyed as well, including if they had any direct or indirect contact with the target before the threat and if so, what the nature of that contact was (i.e., if they were in conflict with the target or were rejected romantically by the target).

2.3.7. Warning Behaviours

Participants were then surveyed on whether they exhibited any warning behaviours prior to their threat. Mirroring what was first proposed by Meloy and colleagues (2012) and examined in past research (Burnette et al., 2018; Meloy et al., 2014c, 2019), seven of the eight purported warning behaviours were examined: 1) pathway behaviour; 2) fixation; 3) identification; 4) novel acts of aggression, unrelated to other pathway behaviour; 5) energy burst behaviour; 6) leakage; and 7) last resort behaviour. The eighth, direct communication of a threat to the target of the offence or a third party, was not included, as this was a requirement of study participation. As discussed previously, some warning behaviours have preliminarily been found to occur in cases of targeted violence significantly more frequently than in cases where an at-risk individual or individual of concern does not go on to commit violence (Meloy et al., 2014c, 2019) and to increase odds of threats resulting in actual or attempted violence in school settings (Burnette et al., 2018).

2.3.8. Motivating, Disinhibiting, and Destabilizing Mechanisms

Informed by decision theory, which forms the theoretical foundations of case formulation in the SPJ approach to risk assessment (Hart & Logan, 2011), participants who perpetrated a threat and a subsequent violent act were asked to identify the motivators, disinhibitors, and destabilizers relevant to their act. Similarly, perpetrators who solely threatened another but did not commit physical violence were asked to identify possible mechanisms that decreased their motivation to enact the threat, increased their inhibitions surrounding threat enactment, and increased clarity of judgment regarding threat enactment (the inverse of a destabilizing factor). Hart (2015) proposed mechanisms that may serve as motivators, disinhibitors, or destabilizers (see Table 2.1); prior research on case formulation has successfully employed this structured approach to these mechanisms (Ryan, 2020). Eight possible motivating mechanisms, eight possible disinhibitory mechanisms, and six possible destabilizing mechanisms were presented in plain language and the participant was asked to check off each mechanism they deem relevant to their motivation for perpetrating or abstaining from violence following their threat. As previous studies on risk factors for targeted violence have emphasized the absence of a common perpetrator profile when individual risk factors have been examined, these mechanisms were assessed in an effort to elucidate themes across participants that may not emerge when considering risk factors in isolation.

Table 2.1. List of motivating, disinhibiting, and destabilizing mechanisms (Hart, 2015).

Motivators	Disinhibitors	Destabilizers
Defense, distance, or protection	Negative attitudes	Disturbed sensation/perception
Justice, honour, or retribution	Negative self-concept	Impaired intellect
Gain, profit, or acquisition	Alienation	Impaired memory
Change, control, or compliance	Nihilism	Impulsive or intrusive thinking
Status, esteem, or dominance	Lack of insight	Disturbed
Release, expression, or emotion	Lack of guilt	attention/concentration
Arousal, activity, or excitement	Lack of anxiety	Obsessive or perseverative
Proximity, affiliation, or conformity	Lack of empathy	thinking

2.4. Data Analysis

2.4.1. Preliminary Analyses

Statistical Package for the Social Sciences (SPSS) Version 25 was used for all quantitative statistical analyses performed for this research. First, the several individual risk items that comprised the HCR-20^{V3} risk domains were standardized into z-scores and summed to compute a total score for each domain. This procedure was employed by Monjazeb (2019) to prevent heterogeneity of individual item measurement from influencing the total domain score too strongly in any direction.

The respective assumptions for all statistical analyses were tested prior to their conduction. The distributions of all continuous independent variables were examined for normality via skewness and kurtosis z-scores (i.e., by calculating the ratio of each variable's skewness and kurtosis to their standard errors). Due to the medium-sized sample, any z-scores at absolute values of over 3.29 were considered non-normally distributed (Kim, 2013). If risk domains were non-normally distributed, the traditional correction methods (e.g., square root transformations, base 10 log transformations) were unable to correct for this assumption violation, as the prior standardization and summation of risk domain items resulted in the mean of each risk domain being centred at approximately 0. This caused many of the risk domain scores to be negative numbers, which cannot have square roots or logarithms taken. Therefore, non-parametric procedures that are not conditional on a specified population distribution were employed in cases where scores were non-normally distributed.

Descriptive statistics were calculated for demographic variables (e.g., gender, ethnicity, country of residence, years of education, income level, marital status). Frequencies and percentages for these variables were reported separately for participants who did and did not commit violence after threatening.

2.4.2. Primary Analyses

Due to the exploratory nature of this study, descriptive statistics were also reported for all variables of interest. This includes the individual risk domains (H1-10, C1-5, R3, R5) as well as characteristics of the threats participants made, if they held a

grievance against the victim of their threat, the presence of warning behaviours, and the acts of physical violence that some participants engaged in. Frequencies and percentages were calculated for categorical variables while means and standard deviations were computed for quasi-continuous variables. These statistics were similarly calculated separately for participants who did or did not engage in physical violence.

Next, bivariate statistical analyses were run to assess the predictive validity of each focal independent variable for the outcome variable (i.e., presence or absence of violence following the threat). The association between each independent variable and presence of violent behaviour was preliminarily investigated via chi-square analyses (for categorical variables) and independent-samples t-tests or Mann-Whitney U tests (for continuous variables), depending on normality of distribution of the data. Considering that the outcome variable was dichotomous, bivariate logistic regression analyses were then performed. Wald chi-square χ^2 statistics and pseudo- R^2 (i.e., Nagelkerke R^2) values were calculated to assess statistical significance of the regression analyses and subsequently, odds ratios were calculated as measures of effect size.

Associations between the independent variables and the outcome variable that were significant at the bivariate level were then examined at the multivariate level to assess whether each of the independent variables added incremental validity to the model. Each independent variable that showed significance at the bivariate level was included within a multivariate regression model; it was necessary to construct three separate models due to the number of independent variables found to be significant within previous analyses (i.e., 22 variables). Variables were grouped within models based on their conceptual similarity (e.g., all historical risk factors were grouped together). Again, Wald chi-square χ^2 statistics and pseudo- R^2 values were used to assess model statistical significance and goodness-of-fit; odds ratios were also employed to assess effect size. Lastly, all independent variables that maintained their statistical significance within the three separate multivariate models were entered into a single, final model to further investigate which predictors demonstrated the greatest incremental predictive ability across all three models. All previously specified regression analyses were investigated for poor model fit, bias, and violations of assumptions through the standard measures (i.e., undue model influence, nonessential multicollinearity, heteroscedasticity, normality of residuals).

As decision theory framework purports that the motivators, disinhibitors, and destabilizers discussed previously act as mechanisms of change in the relationship between risk factors and violence, frequencies and percentages were calculated for each mechanism to assess which mechanisms or types of mechanisms were most commonly endorsed by participants who committed violence following their threat in an exploratory fashion. Similarly, frequencies and percentages were computed to examine which motivating, disinhibiting, and destabilizing mechanisms were most commonly absent for participants who made a threat and subsequently abstained from violence. As qualitatively different variables were investigated depending on if participants had or had not perpetrated a violent act (i.e., presence of mechanisms that were applicable to participants' decisions to commit violence, versus absence of mechanisms that were applicable to participants' decisions to abstain from violence), the difference in prevalence of mechanisms applicable to violent and non-violent participants was not compared via statistical analyses.

Chapter 3.

Results

3.1. Preliminary Analyses

3.1.1. Descriptive Statistics

Participants' status on descriptive variables are presented in Table 3.1.

Table 3.1. Descriptive statistics of violent vs. non-violent individuals following threat.

Variable	Violent <i>N</i> (%)	Non-Violent <i>N</i> (%)	χ^2
Gender			1.08
Male	86 (64.7)	80 (64.5)	
Female	47 (35.3)	43 (34.7)	
Non-binary	0 (0)	1 (.8)	
Ethnicity			17.60**
White	94 (70.7)	101 (81.5)	
Black/African American	33 (24.8)	9 (7.3)	
Asian/Pacific Islander	3 (2.3)	9 (7.3)	
Hispanic/Latinx	3 (2.3)	3 (2.4)	
Other	0 (0)	1 (.8)	
Country of Residence			2.45
United States of America	128 (96.2)	123 (99.2)	
Canada	5 (3.8)	1 (.8)	
Currently in a Relationship	124 (93.2)	92 (74.2)	17.35**
Highest Education			23.77**
Completed high school	3 (2.3)	9 (7.3)	
Some college/university	4 (3.0)	10 (8.1)	
Completed college diploma	2 (1.5)	7 (5.6)	
Completed 4-year university degree	66 (49.6)	75 (60.5)	
Some graduate education	7 (5.3)	3 (2.4)	
Completed graduate degree	51 (38.3)	20 (16.1)	
Income Bracket			8.18
Under \$20,000	15 (11.3)	14 (11.2)	
\$20,000-\$34,999	18 (13.5)	27 (21.8)	
\$35,000-\$49,999	32 (24.1)	25 (20.2)	
\$50,000-\$74,999	38 (28.6)	34 (27.4)	
\$75,000-\$99,999	22 (16.6)	20 (16.1)	
Over \$100,000	6 (4.5)	4 (3.2)	

The majority of participants who both committed and did not commit violence after threatening were male, White, and currently resided in the United States of America. Most participants were in a romantic relationship at the time of this study, although a significantly larger percentage of violent individuals reported being in a relationship than non-violent individuals. It was most common for both groups of participants to have completed a four-year university degree; additionally, a substantial minority of both groups had completed a graduate degree. Participants in both groups most frequently earned between \$50,000 and \$74,999 per year. An annual income of between \$35,000 and \$49,999 was the second most common range for those who had been violent, while an income bracket of between \$20,000 and \$34,999 was the second most common range for participants who had only threatened.

3.2. Primary Analyses

3.2.1. Descriptive Statistics

Characteristics of all participants' threats are summarized in Table 3.2. Participants most frequently made their threat in their own workplace and communicated their threat directly to the victim of it. This typically occurred in person. If a threat was communicated indirectly (i.e., to a third person), it was also most frequently communicated in person to the third party. Threat victims were most commonly the participants' co-worker(s), but romantic partners or ex-partners, family members, roommates, friends/acquaintances, and strangers were also frequent targets. A weapon was referred to in just under half of the threats; in most cases, a weapon was available to the participant but difficult to obtain. Furthermore, the participant interacted with their victim prior to the threat in some way in most cases, and this interaction was most frequently characterized by perceived conflict or victimization by the participant. Over half of participants used legal or illegal substances in the 24 hours preceding their threat. This number only decreased slightly when substance use within the hour before the threat was examined in isolation.

Table 3.2. Descriptive statistics of sample for threat characteristics and grievances.

Variable	N	%
Threat Context/Setting		
Educational	45	17.5
Participant's workplace	92	35.8
Another workplace	63	24.6
Prison/correctional	21	8.2
Psychiatric institution/hospital	8	3.1
Online	14	5.4
Other	13	5.1
Threat Communicated Directly	202	78.6
In person	161	62.6
Via telephone	29	11.3
Via paper letter	5	1.9
Via online format (e.g., email, direct message)	7	2.7
Threat Communicated Indirectly	55	21.4
In person to third party	19	7.4
Via telephone to third party	15	5.8
Via paper to third party	8	3.1
Via online format directly to third party	6	2.3
Via online format to no specific recipient (e.g., forum)	7	2.7
Victim of Threat		
Romantic partner or ex-partner	40	15.6
Family member(s)	25	9.7
Roommate(s)	20	7.8
Friend(s) or acquaintance(s)	36	14.0
Boss/supervisor(s)	7	2.7
Co-worker(s)	63	24.5
Neighbour(s)	17	6.6
Law enforcement	1	.4
Other professionals (e.g., doctor, teacher, clerk)	3	1.2
Public figure(s)	8	3.1
Co-patient(s)	3	1.2
Stranger(s)	26	10.1
Government	1	.4
Private organization	2	.8
Identifiable group of people (e.g., race, religious group)	4	1.6
Other	1	.4
Weapon Reference	128	49.8
Type of Weapon		
Firearm	38	14.8
Knife	88	34.2
Other object	2	.8
Weapon Availability		

	Not available	66	25.7
	Available, but difficult to obtain	109	42.4
	Fairly available	57	22.2
	Extremely available	25	9.7
Any Interaction with Victim Prior to Threat		205	79.8
	Romantic relationship with victim	100	38.9
	Conflict with victim	153	59.5
	Rejected by victim	119	46.3
	Victimized by victim	147	57.2
Substance Use in 24 Hours Prior		143	55.6
Substance Use in Hour Prior		119	46.3

Additionally, 66.9% ($n = 172$) of participants reported that they possessed a grievance with the victim of their threat before the threat was made. This grievance was usually developed a day (14.8%; $n = 38$), a week (12.5%; $n = 32$), or a month (19.8%; $n = 51$) before the threat; however, it was possible for a participant to develop the grievance an hour before (6.6%; $n = 17$), one to six months before (6.2%; $n = 16$), or over six months before (7.0%; $n = 18$). Participants who possessed a grievance rated the intensity of their grievance as a mean of 4.74 ($SD = 3.52$) on a scale of 1-9 with an interquartile range of 7 (Table 3.5). The median grievance intensity was 6 and the modal value was 0.

Approximately half of the sample (51.8%; $n = 133$) committed an act of physical violence following their threat. Details of the violent acts that these participants committed are summarized in Table 3.3. Notably, over three quarters of the sample committed their violent act against the same person that they threatened and 57% of participants committed the same type of violence that they threatened. Violent acts were most commonly of a similar severity as threats. Physical assault was the most commonly perpetrated type of violence; sexual assault, homicide, and robbery were also committed by at least 10% of the total number of violent participants. Weapons were involved in over half of the violent acts, with a knife being the most frequent type of weapon used. Most participants (60.2%) were arrested following their act of violence. Out of all violent participants, just under half (47.4%) were charged for their violent offence after their arrest and the majority of these individuals were subsequently convicted of the offence. Participants who were convicted of their offence most frequently received a prison sentence that was less than one year (19.5%) or between one and five years (15.8%).

Table 3.3. Descriptive statistics of participants' violent behaviour.

Variable	N	%
Victim of violence and threat were the same	101	77.1
Threatened act and violent act were the same	76	57.1
Comparison of severity of threat and violence		
Less severe	14	10.5
Similar severity	81	60.9
More severe	34	25.6
Type of violence committed		
Homicide	17	12.8
Attempted homicide	7	5.3
Physical assault	50	37.6
Sexual assault	19	14.3
Robbery	17	12.8
Weapons offence (e.g., possession, dangerous use)	6	4.5
Kidnapping (e.g., unlawful confinement, abduction)	6	4.5
Hijacking	3	2.3
Arson	4	3.0
Human trafficking	4	3.0
Time between the threat and the violent act		
A few hours to a day	20	15.3
Between a day and a week	21	16.0
Between a week and two weeks	28	21.4
Between two weeks and one month	30	22.9
Between one and six months	13	9.9
Six months or more	19	14.5
Weapon involved in act	76	57.1
Firearm	22	16.5
Knife	50	37.6
Other object	4	3.0
Arrested for act	80	60.2
Charged for act	63	47.4
Convicted for act	57	42.9
Sentence received for act		
Probation	7	5.2
Less than one year in prison	26	19.5
One to five years in prison	21	15.8
Over five years in prison	4	3.0

The threat characteristics of persons who had and had not perpetrated violence following their threat were then compared (Table 3.4). The overall frequency patterns of threat characteristic variables with more than two levels were compared for violent

versus non-violent participants via chi-square tests, and if the percentage of one category was at least double that of the other category, post-hoc chi-square tests were conducted to investigate the statistical significance of the difference.

The two groups significantly varied regarding the context their threats were made in overall, and violent individuals made a greater proportion of their threats in educational and correctional settings. Non-violent threateners were statistically more likely to make their threats online or in another context (i.e., at home or in a bar or other public setting). Participants in the violent group were significantly more likely to communicate their threats directly to their victim, rather than indirectly. No post-hoc comparisons of specific direct or indirect communication methods were significant. Overall differences in victim of threat were nonsignificant, but post-hoc analyses revealed that victims of violent participants were more likely to be romantic partners or ex-partners. Threateners who were violent were more likely to refer to a weapon within their threat and to have a weapon somewhat or fairly available, but the type of weapon referred to did not differ by group. Participants in the violent group interacted with their victim prior to threatening more frequently and were more likely to have been in a romantic relationship with their victim, experienced real or perceived rejection by their victim, or felt victimized by their victim before making their threat. Participants who were violent after their threat were also more likely to use substances 24 hours and a single hour prior to their threat, with greater proportional differences displayed for substance use in the hour before the threat.

Table 3.4. Threat characteristics and grievances of violent vs. non-violent individuals.

Variable	Violent N (%)	Non-Violent N (%)	X ²
Threat Context/Setting			33.72**
Educational	32 (24.1)	13 (10.5)	8.19**
Participant's workplace	45 (33.8)	47 (37.9)	
Other workplace	32 (24.1)	31 (25.0)	
Prison/correctional	16 (12.0)	5 (4.0)	5.47*
Psychiatric institution/hospital	5 (3.8)	3 (2.4)	
Online	1 (.8)	13 (10.5)	11.80**
Other	1 (.8)	12 (9.7)	
Threat Communicated Directly	111 (83.5)	91 (73.4)	3.87*
In person	88 (66.2)	73 (58.9)	
Via telephone	16 (12.0)	13 (10.5)	
Via paper letter	4 (3.0)	1 (.8)	1.30
Via online format (e.g., email, direct message)	3 (2.3)	4 (3.2)	
Threat Communicated Indirectly	22 (16.5)	33 (26.6)	3.87*
In person to third party	5 (3.8)	14 (11.3)	2.27
Via telephone to third party	9 (6.8)	6 (4.8)	
Via paper to third party	5 (3.8)	3 (2.4)	
Via online format directly to third party	2 (1.5)	4 (3.2)	.13
Via online format to no specific recipient (e.g., forum)	1 (.8)	6 (4.8)	2.21
Victim of Threat			19.40
Romantic partner or ex-partner	29 (21.8)	11 (8.9)	8.17**
Family member(s)	14 (10.5)	11 (8.9)	
Roommate(s)	9 (6.8)	11 (8.9)	
Friend(s) or acquaintance(s)	16 (12.0)	20 (16.1)	
Boss/supervisor(s)	3 (2.3)	4 (3.2)	
Co-worker(s)	28 (21.1)	25 (28.2)	
Neighbour(s)	12 (9.0)	5 (4.0)	2.59
Law enforcement	1 (.8)	0 (0)	
Other professionals (e.g., doctor, teacher, clerk)	2 (1.5)	1 (.8)	
Public figure(s)	3 (2.3)	5 (4.0)	
Co-patient(s)	2 (1.5)	1 (.8)	
Stranger(s)	11 (8.3)	15 (12.1)	
Government	1 (.8)	0 (0)	
Private organization	0 (0)	2 (1.6)	
Identifiable group of people (e.g., race, religious group)	2 (1.5)	2 (1.6)	
Other	0 (0)	1 (.8)	
Weapon Reference	85 (63.9)	43 (34.7)	21.94**
Type of Weapon			1.68
Firearm	27 (20.3)	11 (8.9)	.52
Knife	56 (42.1)	32 (25.8)	
Other Object	2 (1.5)	0 (0)	
Weapon Availability			11.42*

	Not available	23 (17.3)	43 (34.7)	
	Available, but difficult to obtain	63 (47.4)	46 (37.1)	
	Fairly available	35 (26.3)	22 (17.7)	
	Extremely available	12 (9.0)	13 (10.5)	
Any Interaction with Victim Prior to Threat		113 (85.0)	92 (74.2)	4.61*
	Romantic relationship with victim	70 (52.6)	30 (24.2)	18.06**
	Conflict with victim	90 (67.7)	63 (50.8)	3.80
	Rejected by victim	82 (61.7)	37 (29.8)	21.79**
	Victimized by victim	89 (66.9)	57.2 (58 (46.8))	6.76**
Substance Use in 24 Hours Prior		96 (72.2)	47 (37.9)	18.79**
Substance Use in Hour Prior		82 (61.7)	37 (29.8)	26.13**

Note. * = $p < .05$; ** = $p < .01$

Most violent threateners (82.0%; $n = 109$) indicated that they held a grievance against their victim before or at the time of the threat, while a grievance was reported by half of non-violent persons (50.8%; $n = 63$; $\chi^2 = 29.27$; $p < .01$). The groups did not differ on the length of time they possessed their grievance. However, grievance intensity was significantly higher for persons who committed violence following their threat than for those who threatened but were not violent ($t(242) = 6.45$; $p < .01$; Table 3.6).

Table 3.5. Descriptive statistics of predictor variables.

Variable	<i>M</i> (<i>SD</i>)	Median	Range	Skew (<i>SE</i>)	Kurtosis (<i>SE</i>)
H1: History of Problems with Violence	-.02 (4.31)	.51	-6.95 – 10.58	-.01 (.13)	-.92 (.26)
H2: History of Problems with Other Antisocial Behav.	.00 (2.24)	-.06	-3.93 – 5.01	-.34 (.13)	-.83 (.26)
H3: History of Problems with Relationships	.02 (7.39)	1.46	-22.35 – 15.70	-.50 (.13)	-.28 (.26)
H4: History of Problems with Employment	-.01 (6.74)	-.55	-14.59 – 18.72	.20 (.13)	-.62 (.26)
H5: History of Problems with Substance Use	.00 (8.51)	1.59	-16.53 – 19.30	-.21 (.13)	-.84 (.26)
H6: History of Problems with Major Mental Disorder	-.01 (14.18)	.44	-.29.93 – 31.85	-.06 (.13)	.15 (.26)
H7: History of Problems with Personality Disorder	.15 (13.61)	.95	-36.35 – 31.37	-.17 (.13)	-.45 (.26)
H8: History of Traumatic Experiences	-.01 (11.28)	1.91	-17.65 – 19.92	-.09 (.13)	-.99 (.26)
H9: History of Problems with Violent Attitudes	.09 (5.47)	.53	-13.78 – 12.79	-.40 (.13)	-.34 (.26)
H10: History of Problems with Tx or Supervision	.00 (2.28)	-1.64	-4.53 – 7.05	.82 (.13)	-.20 (.26)
C1: Recent Problems with Insight	.00 (3.36)	.29	-9.95 – 10.32	-.15 (.13)	.37 (.26)
C2: Recent Problems with Violent Ideation or Intent	.00 (3.72)	-2.01	-6.32 – 10.88	.75 (.13)	-.80 (.26)
C3: Recent Symptoms of Major Mental Disorder	.00 (18.43)	2.60	-33.49 – 39.43	-.24 (.13)	-.72 (.26)
C4: Recent Problems with Instability	.09 (10.04)	1.21	-27.48 – 21.65	-.43 (.13)	-.27 (.26)
C5: Recent Problems with Tx or Supervision	.00 (2.22)	-1.54	-4.75 – 5.99	1.01 (.13)	-.31 (.26)
R3: Recent Problems with Personal Support	.04 (4.09)	.55	-14.67 – 14.94	-.55 (.13)	2.93 (.26)
R5: Recent Problems with Stress or Coping	.02 (6.62)	.28	-17.15 – 15.57	-.13 (.13)	-.88 (.26)
Grievance Intensity	4.74 (3.52)	6.00	0 – 9	-.45 (.15)	-1.52 (.30)
Warning Behaviours	2.93 (2.75)	2.00	0 – 7	.35 (.15)	-1.48 (.30)

Note. Items R3 and R5 are traditionally future-oriented (e.g., “Future Problems with Personal Support”), but were queried as problems prior to the threat due to the self-report nature of the study.

Table 3.6. Comparison of violent and non-violent individuals by predictor variables.

Variable	Violent <i>M</i> (<i>SD</i>)	Non-Violent <i>M</i> (<i>SD</i>)	Test Statistic	Effect Size (<i>r</i> or <i>d</i>)
H1: History of Problems with Violence	1.53 (3.92)	-2.41 (3.67)	3,781.00**	.47
H2: History of Problems with Other Antisocial Beh.	.49 (2.05)	-.99 (2.19)	5,167.00**	.32
H3: History of Problems with Relationships	2.02 (6.99)	-3.73 (7.11)	4,568.00**	.39
H4: History of Problems with Employment	1.91 (6.51)	-3.49 (5.55)	4,169.00**	.42
H5: History of Problems with Substance Use	1.71 (7.73)	-4.00 (8.02)	5,022.00**	.34
H6: History of Problems with Major Mental Disorder	3.77 (13.14)	-7.21 (12.04)	4,384.50**	.40
H7: History of Problems with Personality Disorder	3.09 (12.87)	-6.66 (12.20)	4,878.00**	.35
H8: History of Traumatic Experiences	3.25 (10.86)	-5.60 (10.01)	4,566.00**	.39
H9: History of Problems with Violent Attitudes	1.31 (5.06)	-2.58 (5.20)	4,800.50**	.36
H10: History of Problems with Tx or Supervision	.61 (2.13)	-1.12 (1.26)	4,372.50**	.45
C1: Recent Problems with Insight	-.08 (3.17)	.11 (3.40)	7,616.50	.07
C2: Recent Problems with Violent Ideation or Intent	1.10 (3.72)	-2.02 (2.44)	4,132.50**	.45
C3: Recent Symptoms of Major Mental Disorder	6.43 (17.44)	-10.84 (16.00)	3,687.00**	.48
C4: Recent Problems with Instability	3.16 (8.73)	-5.98 (9.45)	3,767.00**	.47
C5: Recent Problems with Tx or Supervision	.69 (2.12)	-1.09 (1.25)	4,293.00**	.47
R3: Recent Problems with Personal Support	.79 (3.58)	-1.67 (4.20)	5,103.50**	.33
R5: Recent Problems with Stress or Coping	2.42 (6.06)	-3.83 (5.99)	3,862.00**	.46
Grievance Intensity	6.04 (3.00)	3.40 (3.53)	6.45**	.81
Warning Behaviours	4.46 (2.55)	1.30 (1.88)	11.23**	1.41

Note. Test statistic was either a Mann-Whitney U value or a t-value, depending on whether the predictor variable was normally or non-normally distributed.

** = $p < .01$

Individual risk domain items were standardized via z-scores and summed to create seventeen continuous risk domain total scores for each participant (i.e., H1-H10, C1-C5, R3, R5). Descriptive statistics for all continuous predictor variables are presented in Table 3.5. As all risk indicator domains (i.e., H1-R5) are the summed totals of standardized individual item scores, all means are close or equal to zero. Z-scores for skewness and kurtosis were calculated to test the normality of distribution of each predictor. It was found that three risk domains were positively skewed (H10, C2, and C5) and two risk domains were negatively skewed (H3 and R3). As each domain included negative scores and the traditional transformations were not possible, subsequent statistical analyses of the risk domains employed non-parametric procedures. However, participants' ratings of their grievance intensity and their number of warning behaviours were normally distributed, so analyses of these variables proceeded as planned via independent-samples t-tests.

As shown in Table 3.6, risk domain total scores were significantly higher for individuals who had committed an act of physical violence following their threat ($p < .01$) except for C1 (recent problems with insight into one's mental disorder or risk of violent behaviour; $p = .29$). Similarly, participants who were violent after their threat displayed a higher number of warning behaviours and a stronger intensity of grievance with the victim of their threat prior to behaving violently ($p < .01$).

Table 3.7. Comparison of violent and non-violent individuals by warning behaviours.

Warning Behaviour	Violent <i>N</i> (%)	Non-Violent <i>N</i> (%)	χ^2	ϕ
W1: Planning or preparation	91 (35.4)	23 (8.9)	64.67**	.50
W2: Fixation	89 (34.8)	38 (14.8)	33.17**	.36
W3: Identification	82 (32.0)	20 (7.8)	56.43**	.47
W4: Novel aggression	83 (32.4)	19 (7.4)	58.79**	.48
W5: Energy burst	86 (33.7)	21 (8.2)	60.43**	.49
W6: Leakage	81 (31.5)	17 (6.6)	60.58**	.49
W7: Last resort behaviour	81 (31.5)	23 (8.9)	47.78**	.43

Note. ** = $p < .01$

In addition to total number of warning behaviours, the prevalence of each individual warning behaviour was compared across the violent and non-violent group of participants (see Table 3.7). All seven of the assessed warning behaviours were displayed more frequently by participants who went on to perpetrate violence after threatening ($p < .01$). As stated previously, the eighth warning behaviour (direct

communication of threat) within the typology proposed by Meloy (2012) was excluded because participants were required to have threatened another person or group to be included in this study. Participants most commonly presented with all the warning behaviours they endorsed in the days or weeks prior to communicating their threat (70.2% to 84.3% of individuals who displayed warning behaviours); violent and non-violent participants did not significantly differ on the proximity of their warning behaviours to their threat with the exception of last resort behaviour. Non-violent participants were more likely to display this warning behaviour in the hours or weeks before making their threat while violent participants usually displayed this behaviour in the days leading up to their threat.

3.2.2. Predictive Ability of Risk Domains, Grievance Strength, Threat Characteristics, and Warning Behaviours

The ability of the individual risk domain total scores and other theoretically determined risk factors (i.e., grievance strength, total number of warning behaviours) to predict violent behaviour following a threat was examined through a series of bivariate logistic regressions. The predictive ability of threat characteristics that could be categorized dichotomously was also investigated. Prior to conducting the analyses, all necessary assumptions for logistic regression analyses were investigated. As the risk domain total scores of multiple participants were negative due to standardization via z-scores, the natural logs of these scores were unable to be calculated. Therefore, a constant (40) was added to each score to ensure all participants' scores were positive numbers while preserving the scores' distribution, and Box-Tidwell (1962) procedures were subsequently performed. These analyses confirmed that the logit of the dependent variable (presence or absence of violence) was linearly related to each continuous independent variable (i.e., risk domains, grievance intensity, total number of warning behaviours). Additionally, significant outliers in the data were identified by examining the standardized residuals of each continuous independent variable. As recommended by Tabachnick and Fidell (2013), any absolute values above 3.29 were classified as significant; therefore, seven cases were not included in these statistical analyses.

The results of the bivariate logistic regressions are presented in Table 3.8. Higher scores on all risk domains except for C1 significantly predicted the likelihood of perpetrating violence after making a threat ($p < .01$); similarly, a stronger intensity of

grievance and higher number of warning behaviours predicted violent behaviour ($p < .01$). Individuals who communicated their threats directly to their victim, made reference to a weapon within their threat, endorsed a prior interpersonal relationship with their victim, and used substances within the 24 hours preceding the threat were also more likely to commit a violent act after threatening ($p \leq .03$).

Table 3.8. Bivariate logistic regressions testing the predictiveness of risk domains, grievance intensity, warning behaviours, and threat characteristics.

Variable	B	Model χ^2	R ²	Odds Ratio	95% CI		p-value
H1: History of Problems with Violence	.28	64.72	.30	1.32	1.22	1.43	.00**
H2: History of Problems with Other Antisocial Behav.	.35	32.48	.16	1.42	1.25	1.61	.00**
H3: History of Problems with Relationships	.12	43.46	.21	1.13	1.09	1.18	.00**
H4: History of Problems with Employment	.17	55.26	.27	1.19	1.13	1.25	.00**
H5: History of Problems with Substance Use	.10	36.13	.18	1.11	1.07	1.14	.00**
H6: History of Problems with Major Mental Disorder	.08	52.97	.26	1.08	1.06	1.11	.00**
H7: History of Problems with Personality Disorder	.06	37.57	.19	1.07	1.04	1.09	.00**
H8: History of Traumatic Experiences	.08	44.04	.22	1.09	1.06	1.12	.00**
H9: History of Problems with Violent Attitudes	.17	40.12	.20	1.18	1.12	1.25	.00**
H10: History of Problems with Tx or Supervision	.58	56.29	.26	1.79	1.50	2.15	.00**
C1: Recent Problems with Insight	-.02	.39	.00	.98	.91	1.05	.53
C2: Recent Problems with Violent Ideation or Intent	.38	69.22	.32	1.46	1.31	1.64	.00**
C3: Recent Symptoms of Major Mental Disorder	.07	68.31	.32	1.07	1.05	1.09	.00**
C4: Recent Problems with Instability	.13	70.52	.33	1.14	1.10	1.18	.00**
C5: Recent Problems with Tx or Supervision	.61	60.02	.28	1.83	1.52	2.21	.00**
R3: Recent Problems with Personal Support	.16	24.56	.12	1.18	1.10	1.26	.00**
R5: Recent Problems with Stress or Coping	.19	72.49	.34	1.21	1.15	1.27	.00**
Grievance Intensity	.24	40.17	.20	1.27	1.18	1.38	.00**
Warning Behaviours Total	.57	101.44	.45	1.77	1.54	2.02	.00**
Direct vs. Indirect Threat	.66	4.64	.03	1.94	1.06	3.57	.03*
Weapon Reference	1.22	22.24	.11	3.40	2.02	5.71	.00**
Interaction with Victim	.73	5.43	.03	2.08	1.12	3.89	.02*
Substance Use Within 24 Hrs.	1.50	32.40	.16	4.49	2.63	7.66	.00**

Note. * = $p < .05$; ** = $p < .01$

Table 3.9. Multivariate logistic regression model testing the predictive ability of H domains.

Variable	B	Odds Ratio	95% CI		p-value
H1: Violence	.19	1.21	1.09	1.35	.00**
H2: Other Antisocial Behaviour	-.13	.88	.72	1.07	.21
H3: Relationships	.02	1.02	.96	1.08	.58
H4: Employment	.05	1.05	.98	1.12	.18
H5: Substance Use	-.04	.97	.91	1.02	.25
H6: Major Mental Disorder	.01	1.01	.97	1.05	.66
H7: Personality Disorder	.01	.80	.97	1.04	.80
H8: Traumatic Experiences	.02	1.02	.97	1.07	.47
H9: Violent Attitudes	.01	1.00	.92	1.09	.97
H10: Tx or Supervision	.26	1.30	1.03	1.64	.03*

Note: Model $\chi^2 = 82.23$, $p < .001$, Pseudo $R^2 = .37$.

Table 3.10. Multivariate logistic regression model testing the predictive ability of C domains, R domains, grievance intensity, and number of warning behaviours.

Variable	B	Odds Ratio	95% CI		p-value
C2: Violent Ideation/Intent	.04	1.04	.90	1.20	.59
C3: Symptoms of Mental Disord.	.00	1.00	.97	1.04	.80
C4: Instability	.03	1.03	.98	1.09	.26
C5: Tx or Supervision	.05	1.05	.82	1.36	.69
R3: Personal Support	-.10	.91	.81	1.03	.12
R5: Stress or Coping	.02	1.02	.94	1.11	.59
Grievance Intensity	.00	1.00	.90	1.11	.97
Warning Behaviours	.42	1.52	1.23	1.88	.00**

Note: Model $\chi^2 = 99.89$, $p < .001$, Pseudo $R^2 = .43$.

Table 3.11. Multivariate logistic regression model testing the predictive ability of threat characteristics.

Variable	B	Odds Ratio	95% CI		p-value
Direct vs. Indirect Threat	.41	1.50	.76	2.99	.25
Weapon Reference	.85	2.34	1.34	4.09	.00**
Interaction with Victim	.32	1.38	.68	2.80	.38
Substance Use Within 24 Hrs.	1.22	3.38	1.92	5.95	.00**

Note: Model $\chi^2 = 45.30$, $p < .001$, Pseudo $R^2 = .22$.

All predictor variables that emerged as statistically significant ($p < .05$) at the bivariate level were subsequently included in one of three multivariate logistic regression models to examine the incremental predictive validity of each risk domain, as well as grievance intensity, number of warning behaviours, and threat characteristics, in comparison to the other assessed variables. The variance inflation factor (VIF) of each

continuous predictor variable was examined for evidence of multicollinearity; all VIF values (1.09-4.82) were under 10, which does not indicate multicollinearity (Cohen et al., 2003). Correlations between continuous predictors were also calculated to assess for potential multicollinearity. Correlations between predictors in the first model (i.e., H1-H10) ranged from $r = .51-.74$, which are relatively high but not unacceptable (i.e., $> .85$; Schroeder, 1990) values. Similarly, correlations between predictors in the second model ranged from $r = -.10$ to $.80$. Multicollinearity was not observed when correlations between the dichotomous categorical predictors within the third model were calculated, as all r values were less than $.40$.

As 22 variables were found to significantly predict violence following a threat at the bivariate level, all significant predictors could not be included in a single multivariate model. Three groups of predictors were formed on a conceptual basis: all historical (H) risk domains were included in one model, all clinical (C) and risk management (R) risk domains, the level of grievance intensity, and number of warning behaviours were included in a second model, and threat characteristics were included in a third. This grouping aligns with way in which HCR-20 items were clustered in previous examinations of predictive validity (Wilson et al., 2013) and separates the risk domains and other predictors that are dynamic in nature and informed by the participant's current state from the domains that are static and/or rated historically.

Out of all historical risk domains (H1-H10), only previous violent behaviour (H1; $p < .01$) and problems with treatment/supervision response (H10; $p = .03$) emerged as incrementally predictive of committing a violent act following a threat; all other historical risk domains lost statistical significance at the multivariate level (Table 3.9). The model remained significant in its entirety. When incremental predictive validity of the dynamic risk domains, grievance intensity, and number of warning behaviours was analyzed, the total number of warning behaviours was the only predictor that retained statistical significance ($p < .01$; Table 3.10). No clinical or risk management domains were incrementally predictive of violence following threat. Within the third multivariate model, threats that contained reference to a weapon and were made within 24 hours of substance use remained more likely to be followed by violent behaviour (both $p < .01$; Table 3.11). Direct communication of the threat to the victim and a previously established relationship with the victim lost statistical significance.

Since previous violent behaviour (H1) was one of the only two predictors found to be statistically significant within the first multivariate model and demonstrates strong conceptual similarity to the outcome (i.e., violence following threat), additional exploratory logistic regressions were performed with and without H1 included as a predictor to test the robustness of this association. This exploration was further supported by the high correlations between historical risk domains that approach thresholds indicative of multicollinearity, as this may have inhibited additional, more highly correlated risk domains from emerging as statistically significant. Forward conditional and hierarchical logistic regressions were performed with all historical risk domains and the first nine historical risk domains (H1-H9) included, respectively. H10 was excluded from the latter due to its statistical significance in the original model and the fact that a maximum of nine steps are permitted within a hierarchical logistic regression. A traditional multivariate model that excluded previous violent behaviour (i.e., H2-H10) was also assessed to determine whether the effects of the other historical risk domains were inhibited by H1. Across all models that contained H1 and H10, these risk domains remained statistically significant. Furthermore, history of problems with employment (H4) became significantly associated with violence following threat (OR = 1.08; $p = .02-.04$) within all additional exploratory models when H1 and H10 were both included and excluded. No other risk domains achieved statistical significance.

Lastly, a final multivariate model comprising each of the predictor variables that emerged as statistically significant within their respective models (previous violent behaviour [H1], history of problems with treatment/supervision [H10], total number of warning behaviours, threat weapon reference, and recent substance use) was assessed. History of violent behaviour and total number of warning behaviours remained significant (both $p < .01$; Table 3.12); problems with treatment/supervision response, reference to a weapon, and substance use within the past 24 hours lost statistical significance.

Table 3.12. Multivariate logistic regression model testing the predictive ability of variables significant in prior models.

Variable	B	Odds Ratio	95% CI		p-value
H1: Violence	.14	1.15	1.05	1.27	.00**
H10: Tx or Supervision	-.01	.99	.76	1.30	.96
Warning Behaviours	.45	1.57	1.29	1.91	.00**
Weapon Reference	-.06	.94	.46	1.92	.86
Substance Use Within 24Hrs	.21	1.24	.61	2.51	.56

Note: Model $\chi^2 = 112.02$, $p < .001$, Pseudo $R^2 = .48$.

3.2.3. Motivating, Disinhibiting, and Destabilizing Mechanisms

Lastly, participants were assessed on potential factors that played a motivating, disinhibiting, or destabilizing role in their decision to perpetrate or abstain from violence after threatening it. Specifically, participants who indicated that they had committed a violent act were asked to indicate if the presence of each of the motivating, disinhibiting, and destabilizing mechanisms influenced their decision-making, while participants who were not violent were surveyed on the influence of the absence of the same mechanisms.

The frequencies of which violent and non-violent participants indicated that motivating, disinhibiting, and destabilizing mechanisms were applicable to their decision-making are summarized in Table 3.13. The presence or absence of a desire for justice, honour, and retribution was most frequently applicable to participants' decisions to perpetrate or abstain from violence following their threat. Participants who were violent most frequently endorsed possession of negative self-concept as a factor that decreased the perceived costs of violence, while non-violent participants most commonly identified the presence of insight as salient in their abstention. Impaired intellect most frequently served as destabilizing for violent participants, while the lack of memory impairment most frequently served as protective for individuals who were not violent. The mean number of motivating mechanisms endorsed by violent participants as applicable to their act was 2.19; the average of applicable disinhibiting and destabilizing mechanisms was 1.80 and 1.77, respectively. For non-violent participants, the mean number of absent motivating mechanisms was 1.55, the mean number of absent disinhibiting mechanisms was 1.56, and the mean number of absent destabilizing mechanisms was 1.47.

Table 3.13. Applicability of motivating, disinhibiting, and destabilizing mechanisms to violent and non-violent participants.

Mechanism	Violent N (%)	Non-Violent N (%)
<i>Motivating Mechanisms</i>		
Defense, distance, or protection	38 (28.6)	26 (21.1)
Justice, honour, or retribution	54 (40.6)	44 (33.1)
Gain, profit, or acquisition	49 (36.8)	27 (21.8)
Change, control, or compliance	30 (22.6)	27 (21.8)
Status, esteem, or dominance	37 (27.8)	14 (11.3)
Release, expression, or emotion	44 (33.1)	25 (20.2)
Arousal, activity, or excitement	26 (19.5)	21 (16.9)
Proximity, affiliation, or conformity	13 (9.8)	8 (6.5)
<i>Disinhibiting Mechanisms</i>		
Negative attitudes	29 (21.8)	11 (8.9)
Negative self-concept	49 (36.8)	33 (26.6)
Alienation	40 (30.1)	26 (21.1)
Nihilism	41 (30.8)	24 (19.4)
Lack of insight	28 (21.1)	38 (30.6)
Lack of guilt	26 (19.5)	28 (22.6)
Lack of anxiety	18 (13.5)	22 (17.7)
Lack of empathy	8 (6.0)	12 (9.7)
<i>Destabilizing Mechanisms</i>		
Disturbed attention and concentration	37 (27.8)	35 (28.2)
Disturbed sensation and perception	42 (31.6)	32 (25.8)
Impaired intellect	60 (45.1)	35 (28.2)
Impaired memory	41 (30.8)	37 (29.8)
Impulsive or intrusive thinking	29 (21.8)	24 (19.4)
Obsessive or perseverative thinking	26 (19.5)	19 (15.3)

Note. Participants could indicate that multiple mechanisms applied to their decision-making, therefore, percentages do not add to 100%.

Chapter 4.

Discussion

It is common for individuals to make threats to others when they are angry or otherwise upset, but it is much less common for these threats to lead to physically violent behaviour. Risk and threat assessment professionals are often tasked with determining if threats from known or unknown perpetrators carry a substantial degree of targeted violence risk (Meloy et al., 2012). However, most existing empirical research in the threat assessment domain has focused on the description of small samples of extreme violence with low base rates and the prevalence of warning behaviours within these samples. These designs are helpful during the nascent exploration of a novel research topic but result in limited generalizability of results. In particular, the absence of a control group within many of these studies makes it difficult to ascertain if the factors that occur prior to the participants' violent acts or are otherwise applicable to the participants are truly associated with individuals who are at greater risk of perpetrating violence and unassociated with individuals who may display concerning behaviours (e.g., threats) but are ultimately unlikely to violently offend.

There have been some previous efforts to examine factors that may predict if a person who threatens is at greater risk of future violent behaviour (Burnette et al., 2018; Mitchell et al., 2019; Warren et al., 2011), but these investigations have only taken place in educational and psychiatric inpatient settings. Furthermore, only a handful of potential risk factors were examined. These valuable yet limited previous research forays highlight a gap in the knowledge of threat assessment practitioners, who aim to evaluate the risk level of a threat and the perpetrator who made it but may not presently possess the empirical foundation on which to base these decisions. Indeed, the decision-making process of threat evaluation by the professionals that engage in it, including which factors are given the greatest weight, remains unknown. Considering the above, the current study added to the existing threat assessment literature by investigating if risk factors that have emerged as predictive of general violent behaviour in past risk assessment research, as well as factors previously found to be predictive of violence following a threat in specific settings, can predict future violent behaviour in a

heterogeneous sample of threateners from the general population. Specifically, three research questions were addressed:

1. Are risk factors that have been previously suggested to be predictive of general violence or targeted violence more frequently displayed by threateners who subsequently commit a physical act of violence?
2. Which risk factors that have been previously suggested to be predictive of general violence or targeted violence demonstrate the strongest ability to predict a physical act of violence following a threat of violence, when compared to other statistically predictive risk factors?
3. Are any motivating, disinhibiting, or destabilizing case formulation mechanisms more frequently applicable to individuals who perpetrate physical violence following a threat of violence?

4.1. Summary of Major Findings

4.1.1. Characteristics of Threateners' Threats and Violence

Across the entire sample of participants, it was found that most made their threat in a workplace setting that was their own or another individual's. Similarly, a co-worker was most commonly the victim of their threat. While it was not subsequently discovered that threats made within a workplace most frequently precede violent behaviour, it remains notable that threats, which are an act of non-physical violence that are a criminal offence and carry risk of psychological harm to victims in and of themselves, may not be an uncommon occurrence in employment settings. Although previous research on threat assessment in the workplace has acknowledged that serious cases of workplace violence (e.g., targeted shootings) are rare, less serious acts of workplace violence occur more frequently and can be predatory or targeted in nature (White, 2014). Prior research has also found that individuals who threaten at work and possess a history of self- or other-directed violence, weapon access, supervision violations, and difficulties with mental health or emotion dysregulation may be at heightened and/or imminent risk of violence (Kenny, 2005). This suggests that structured threat assessment instruments that have been specifically created for use in workplace

settings and displayed fair psychometric properties in past research, such as the WAVR-21 (Meloy et al., 2013) or the Cawood Assessment Grid (Cawood et al., 2020), may be useful in efforts to evaluate these threats effectively.

Threat assessment research in educational settings has demonstrated that it is beneficial to respond to a threat of violence with the degree of intervention or management that corresponds with the threat's assessed risk level (Cornell & Maeng, 2018; Maeng et al., 2020), which is also consistent with the basic risk principle of the Risk-Need-Responsivity model (Andrews, 2012). If a student makes a threat in a moment of anger but carries little to no risk of enacting it, responding with the highest severity interventions is an inefficient use of resources and can call unwarranted attention to the person (Cornell et al., 2012), which may exacerbate the situation and precipitate further negative outcomes. This extends to employees who threaten in workplace settings and illustrates the evaluative value of structured assessment instruments, which would aid in the identification of the few cases where risk of violence is real and imminent and the vast majority of others where defusion strategies or a warning is sufficient (White, 2014).

When the subsample of participants who committed violence following their threat was examined, it was found that over 75% of participants were violent towards the same individual or group they threatened. The majority of participants (57%) also committed the same violent act that they threatened, and 61% of violent participants committed violence that was of a similar degree of severity than what they threatened. These findings align with the sparse previous literature on individuals who threaten, as most participants in Warren et al. (2011)'s sample of persons who utter threats to kill also violently offended against the subject of their threat. Some mismatch between violence threatened and attempted was also observed, as a substantial number of participants in Warren et al. (2011)'s sample committed offences that were not homicide or attempted homicide. Within other threat-based research, it is common to require the same violent behaviour to be threatened and attempted against the same individual for threat-related violence to be coded as present (e.g., Mitchell et al., 2019). Issues with this approach include the fact that threateners may be unable to enact their preferred act of violence against their preferred target due to various situational factors and instead, attempt a more feasible act against a more available target.

The aforementioned approach also limits generalizability of the research findings and their applicability to risk and threat assessment practice, as assessors are tasked with evaluating their examinee's risk of any future violent behaviour and not solely behaviours similar to those the examinee has previously perpetrated. This is recognized within the scenario planning step of most SPJ risk assessment instruments, which prompts assessors to consider and plan for "twist" scenarios in which future violent act(s) occur but do not resemble past behaviour regarding victim(s) and/or nature (Hart & Logan, 2011). The fact that the presence of a history of violence has been demonstrated to be a strong predictor of future violence across diverse settings and for diverse kinds of violence (Brekke et al., 2001; Garcia-Mansilla et al., 2011; O'Shea et al., 2015; Watts et al., 2003) adds further support to this claim.

While prompts for risk assessors to consider various types of future violent offending are built in to most SPJ risk assessment tools, it has been argued that conventional risk assessment tools are often inapplicable to threat assessment practices due to differences in context and available information (e.g., less information on the threat perpetrator; Reddy et al., 2001; Mitchell & Palk, 2016), and many threat assessors use homegrown guidelines with differing amounts of empirical support (Mitchell & Palk, 2016) or unstructured professional judgment when assessing risk of threat enactment. Due to the substantial minority of participants who perpetrated different violent acts than originally threatened, or against different targets, adoption of more structured methods of threat assessment (i.e., standardized instruments) may be warranted to ensure that assessors are systematically considering all potential future violent outcomes and not merely the risk of the threat itself being enacted. Domain-specific threat assessment guidelines (e.g., the VSTAG and CSTAG; Cornell & Sheras, 2006; Cornell, 2018) have been created, with promising results (Cornell & Crowley, 2021), although these guidelines focus on risk to the target of the threat and do not explicitly prompt consideration of alternate violent acts. Therefore, empirically supported violence risk assessment tools that do contain these prompts should also be employed when the perpetrator's identity is known.

Violence perpetrated by threateners was also more common within educational or prison/correctional settings. A key strength of the current study is its examination of factors associated with threats across diverse contexts, which to the author's knowledge has not been done in prior research. This finding requires confirmation via future

replication efforts, but preliminarily suggests that the disproportionate emphasis on threat assessment in educational settings within the extant literature (Mitchell & Palk, 2016) is not unwarranted. While some threat assessment research has been conducted within psychiatric inpatient settings, threats of violence in correctional facilities is an understudied area in need of future investigation. Knowledge of the prevalence, severity, and typical outcomes of inmate threats of violence could inform risk assessment and management efforts within prison settings, where violence against staff and other inmates is a prevalent and concerning issue (Endrass et al., 2009; Wolff et al., 2007).

When characteristics of the participants' threats were examined, it was found that violent participants were more likely to directly communicate their threats to their victim, refer to a weapon when making their threat, and have a weapon at least somewhat available to them. The greater likelihood of violent participants directly communicating their threats provides support for the inclusion of this warning behaviour as the eighth in Meloy et al.'s (2012) proposed typology and suggests that assessors should take direct threats seriously, even if the content of the threat may be unfeasible or otherwise unbelievable. In fact, two recently published risk assessment screening tools, the Fordham Risk Screening Tool (FRST; Rosenfeld et al., 2017) and the Violence Risk Triage (Protect International Risk and Safety Services; in press), both include violent threats as an item that signals the need for further risk assessment. While the latter tool has not undergone validation research yet, psychiatric inpatients identified as needing further assessment by the FRST were more likely to be subsequently classified as high risk by the HCR-20^{V3} (Rosenfeld et al., 2017; Rotter & Rosenfeld, 2018).

The association between weapon reference, weapon availability, and violence aligns with clinical wisdom in threat assessment, as availability of weapons was the fourth most common topic recommended for consideration in threat assessment across a review of threat assessment literature (Mitchell & Palk, 2016) and the CTAP includes reference to a weapon as an item (James et al., 2014). Moreover, a recently created software program aimed at identifying language indicative of future grievance-fueled violent behaviour called the Grievance Dictionary (van der Vegt et al., 2021) included a category of language related to weaponry (e.g., AK-47, ammo, firearm). When the software's external validity was tested via comparison of number of identified words within the manifestos of lone actor terrorists, neutral social media posts, right-wing forum posts (i.e., Stormfront), and negative writing towards politicians, it was discovered that

the weapon-related words within the Dictionary appeared significantly more frequently within manifestos than neutral and right-wing posts (van der Vegt et al., 2021). While the differences between violent and non-violent threateners regarding several other threat characteristics were investigated in the current study, no other significant results emerged. Similarly, Mitchell et al. (2019) found no threat characteristics were predictive of subsequent violence within their study of psychiatric inpatients, but notably, reference to a weapon was not examined. Regardless, threat assessment professionals may wish to weigh factors other than threat characteristics more heavily when evaluating risk of violence (i.e., characteristics of the threatener), although this is recognized to be difficult when assessing anonymous threats of violence.

Lastly, substance use prior to threatening and possession of a grievance were characteristics of the threateners themselves that were significantly associated with violence perpetration. History of substance use has long been recognized as a salient risk factor for general violent offending (Bonta et al., 2014) and active intoxication has been linked to heightened impulsivity (Verdejo-Garcia & Albein-Urios, 2021) and risk-taking/antisocial behaviours (Brindle et al., 2019; Ullman, 2003), which may explain why a greater number of violent participants endorsed using substances within a span of 24 hours and a single hour before making their threat. It is also possible that the subsequent effects of using substances (i.e., withdrawal, hangover) that are frequently present within the 24 hours after use could increase participants' risk of perpetrating threats and violence, as this sequence has been observed in perpetrators of intimate partner violence (Gilchrist et al., 2019) and chronic substance users attempting to avoid the unpleasant sensations associated with these states (Boles & Miotto, 2003). Although threats are typically considered within the context of targeted violence, it is possible that participants who use substances are more likely to make threats impulsively while intoxicated and commit violence while in a similar state at a later time. Substance use was also identified by Mitchell and Palk (2016) as a common recommendation for threat assessment professionals to attend to when evaluating risk of threats, which the current findings support.

Similar to previous research (i.e., Vossekuil et al., 2015), the presence and stronger intensity of grievance was also related to violent behaviour. While the term "grievance" was merely defined for participants in the current study as a feeling of resentment against a specific target, and other negative emotions that have been

associated with violence (e.g., anger; Day & Fernandez, 2020) were not surveyed, other research has found that stronger anger and resentment (Baele, 2017) as well as higher levels of emotion dysregulation (Chan et al., 2021) were associated with targeted violence. However, “grievance” also implies that anger or other negative emotions are focused on a particular target, and further study is required to determine what types of grievances (e.g., interpersonal, employment-related; Brooks & Shaw, 2022) against whom are most dangerous in terms of future violence risk. As greater strength of grievance was also indicative of violent behaviour, structured and reliable methods of assessing grievance strength that draw on sources additional to language is another important topic for future investigation.

4.1.2. Factors Predictive of Violence Following Threat

Participants who committed an act of physical violence following their threat obtained significantly higher scores in almost every composite risk domain assessed, with only one exception (C1; problems with insight into mental illness or violent behavior). Similarly, higher scores on all risk domains, except problems with insight, increased the odds of a participant perpetrating violence after threatening violence. Although evaluating the risk of future physical violence displayed by an individual who has made a threat of violence is a unique context more commonly encountered by threat assessment professionals, the results of the current study suggest that assessors should be considering the same risk factors that have been empirically demonstrated to associate with risk of general violent offending. Specifically, the risk domains surveyed by this study reflected 17 of the 20 items of the HCR-20^{V3}, one of the most widely used assessment tools for the evaluation of risk of any type of violent behaviour (Singh et al., 2013). While it has previously been argued that risk assessment instruments may be too structured to aid meaningfully in threat assessment professionals’ or teams’ evaluation of violence risk posed by a received threat (Mitchell & Palk, 2016), the current findings preliminarily support the utility of SPJ risk assessment tools within threat contexts where the perpetrator’s identity is known. Similarly, the HCR-20^{V3} demonstrated good predictive validity for violence within the only study that tested its predictive utility in a sample of individuals without justice or mental health system involvement who committed workplace violence (Cawood, 2017), a setting that is typically within the threat assessment domain.

Many threat assessment teams use their own homegrown decision-making tools (e.g., in educational settings, Jackson, 2021), and while the use of any structured tool with at least preliminary validation would be preferable to unstructured clinical judgment (Singh et al., 2014), most of these tools have undergone little to no empirical evaluation (e.g., the CTAP). Additionally, although the use of empirically supported threat assessment guidelines (e.g., the CSTAG) is becoming more frequent in certain settings, such as education, these guidelines do not provide explicit advice on how to assess the level of risk the threat carries (i.e., low, moderate, high). Instead, they provide decision-making support at the threat management stage, which is equally important, but may be less helpful if the risk a threat carries is not evaluated thoroughly beforehand.

Of note, both historical and dynamic risk factors were found to be predictive of violence following threat. Threat assessment has been described as a dynamic, constantly evolving process (Meloy et al., 2012) where the emphasis on historical factors that have been present in the past but are not necessarily applicable to a person's current status is decreased. For example, a person may have suffered from a major mental disorder in the past, but the course of the mental disorder could have improved substantially in recent years and may no longer be impacting the person's current risk state. However, these findings underscore the fact that historical risk factors have demonstrated strong empirical associations with violent behaviour in past research (Bonta et al., 2014; Douglas & Shaffer, 2021; Eisenberg et al., 2019) and the current study and should be not discounted in any assessment of violence risk. As expected, almost all dynamic risk factors investigated, including negative attitudes, current psychiatric symptoms, impulsivity, treatment responsiveness, personal support, and stress, predicted threateners' subsequent violence. The current comprehensive examination of dynamic risk factors goes beyond the variables included in previous studies of individuals who threatened (Burnette et al., 2018; Mitchell et al., 2019; Warren et al., 2011). Considering the current findings, the importance placed on dynamic risk factors by prior threat assessment literature is warranted and it is recommended that static and dynamic factors continue to be attended to simultaneously, as is the case in risk assessment practice, when any information is known about the threatener.

Participants' total number of warning behaviours was associated with greater odds of violent behaviour after threatening. Each individual warning behaviour was also endorsed more frequently by participants who were violent. This finding adds to the

burgeoning body of literature that supports the association between warning behaviours and threat-related or targeted violence (Allwin et al., 2019; Burnette et al., 2018; Meloy et al., 2014b; Meloy et al., 2019). Furthermore, this is the largest study to date that statistically compares the prevalence of individual warning behaviours displayed by violent individuals to the number displayed by a comparison group of persons who were not physically violent. Interestingly, the prevalence of each warning behaviour was remarkably similar (i.e., 31.5% to 35.4%) across violent participants, while fixation was the most frequently endorsed behaviour by non-violent participants (14.8%) and leakage was the least frequently endorsed behaviour (6.6%). This is in contrast to the small body of existing literature, which found pathway behaviour (Meloy et al., 2014a; Meloy et al., 2014b; Meloy et al., 2019), identification and leakage (Meloy et al., 2014b), and fixation (Meloy et al., 2014a) to be the most commonly displayed behaviours. Leakage (Meloy et al., 2014b) and directly communicated threat (Meloy et al., 2014b; Meloy et al., 2019), the latter of which was not investigated in the current study due to it being an inclusion criterion, were most frequently displayed by non-violent individuals in previous research. Although the current findings support all seven of the examined warning behaviours as being indicative of heightened risk of violence, warning behaviours were less prevalent in the current sample when compared to rates in previous targeted violence research (e.g., 80%-100% of participants displayed some behaviours; Allwin et al., 2019; Meloy et al., 2019). This may be explained by the fact that the current sample was drawn from the general population, while previous research has focused on individuals who perpetrated lone-actor terrorism, school shootings, and intimate partner homicides. The self-report method of assessment of warning behaviours may have also contributed to this result.

Problems with insight into violent behaviour or mental illness (C1) was the only risk domain that was not significantly associated with increased odds of violence. While it is possible that this risk domain is truly not associated with heightened risk of physical violence following a threat of violence, it has demonstrated the ability to predict general violent offending in the few studies that have performed item-level investigation into this capability (e.g., de Vogel & de Ruiter, 2006). Therefore, it may be more likely that this result is attributable to the difficulty of measuring insight via participant self-report. This risk domain comprised several questions that asked if participants believed they had difficulty acknowledging that they suffered from a mental illness and/or were at risk of violent behaviour at the time of their threat, as well as a structured self-report

questionnaire (the Mood Disorders Insight Scale; Sturman & Sproule, 2003) that has shown good test-retest reliability and construct validity in previous studies (Büchmann et al., 2019; Sturman & Sproule, 2003). However, participants would require a certain degree of self-awareness to recognize this lack of insight into their past behaviour, and the presence of this self-awareness may be even less likely if the participant only made their threat recently (i.e., a year and a half ago, as threats made more recently would have been excluded based on specified criteria). It is also possible that questions about participants' insight were too complex to be properly understood via an online survey, where participants did not have the opportunity to ask the researcher for clarification and/or may be distracted by other stimuli in their environment.

When all predictor variables found to be significant at the bivariate level were grouped into one of three multivariate regression models (static risk factors, dynamic risk factors/warning behaviours, or threat characteristics), each model was significantly associated with greater odds of violent behaviour, and the model that comprised dynamic risk factors displayed the best fit for the data. This adds further support for the importance of dynamic risk factors within threat assessment. Within the first model of historical risk factors, only history of violence and historical problems with treatment and/or supervision emerged as incrementally predictive of violence after threatening. The robustness of these associations was supported by the fact that statistical significance was maintained through exploratory analyses that included different methods of variable entry and different risk domain combinations. Consideration of an examinee's history of violence is a fundamental step in most violence risk assessment practice, demonstrated by the fact that it is included as an item on the HCR-20^{V3} and many other empirically supported risk assessment instruments (e.g., Classification of Violence Risk [Monahan et al., 2006], Sex Offender Risk Appraisal Guide [Quinsey et al., 2006], Violence Risk Scale [Wong & Gordon, 1999-2016]). While consideration of previous violent activity did not emerge as a direct recommendation for threat assessment professionals within Mitchell and Palk's (2016) review, consideration of threateners' capacity to enact their threat was a recommendation within threat assessment literature, and it is assumed that most threat assessment professionals would attend to the fact that an individual undergoing assessment who has made a threat has been violent previously.

Past problems with treatment and/or supervision may indicate the presence of criminogenic attitudes or lack of insight, which are both factors that have been associated with further violent offending (Buckley et al., 2004; Olver et al., 2014; Tangney et al., 2012). While the aforementioned factors are included as separate items on the HCR-20^{V3}, it is possible that they operate synergistically, and potentially in tandem with additional internal or external factors (e.g., dependability), to cause compliance with supervision or treatment conditions to be difficult or undesirable. The knowledge that threateners who have past treatment or supervision failures may not be helpful in threat assessment situations where the perpetrator's identity is unknown. However, as observed in the current study and previous research (McKenna et al., 2003; Stewart & Bowers, 2013), threats are often made in psychiatric inpatient and criminal justice settings where staff are aware of individuals' history of adhering to supervision conditions. This study's results suggest that threats made by individuals with a history of supervision failures should be taken more seriously. Additionally, this knowledge can be translated to other settings where threat perpetrators are frequently known, such as educational settings and workplaces. If a student or employee has struggled to abide by conditions specified by previous intervention efforts, they may need to be identified as higher risk if they utter a threat or display other aggressive behaviour.

Although nonsignificant within the original multivariate model of historical risk domains in which predictors were entered simultaneously, history of problems with employment also emerged as incrementally predictive of violence after threatening in subsequent exploratory models. This association should be interpreted with caution, but logically aligns with the fact that the greatest number of threats were made within a workplace setting. It is important to note that this risk domain is not synonymous with unemployment; problematic behaviours and interactions displayed by gainfully employed individuals who are undergoing assessment after making a threat should also be investigated. Indeed, collections of case studies of workplace violence highlight work-related personal grievances (e.g., career setbacks) as precursors to violence (White, 2014). The combination of making a threat and possessing prior problems with employment should signal a need for further threat assessment and/or management, particularly if issues with employment or other domains (e.g., anger, mental health) are ongoing (Kenny, 2005).

Within the second model of dynamic risk factors, only participants' total number of warning behaviours demonstrated the unique ability to predict violence following a threat, and statistical significance remained within the final multivariate model. While all dynamic HCR-20^{V3} risk domains excluding problems with insight were associated with violence at the bivariate level and contributed to the overall statistical significance of the multivariate model, it is possible that warning behaviours are more strongly indicative of violence that follows a threat, which is frequently targeted, intentional, or planned, especially when the threat is made substantially in advance. Although it was not required for participants to have perpetrated violence against the same individual(s) they threatened, most (75%) did. Therefore, it is likely that most of the cases of violence within the current sample were enacted with some degree of forethought. This finding further emphasizes the promise that warning behaviours show in the practice of threat assessment and the necessity of their inclusion in future research to determine their utility, comparable to traditional risk assessment measures.

Lastly, reference to a weapon and substance use 24 hours prior to the threat emerged as incrementally predictive of violence within the model that included threat characteristics that were predictive at the bivariate level. As mentioned previously, these characteristics have been found to associate with violence in past literature (Bonta et al., 2014; van der Vegt et al., 2021; White et al., 2019) and were relatively common recommendations in threat assessment practice (Mitchell & Palk, 2016); additionally, alcohol use was found to act as an acute dynamic risk factor or "immediate precursor" to violent behaviour in another study (Haggard-Grann et al., 2006). While the current study examined substance use within the day before the participant's threat, and not their act of violence, it is recommended that risk and threat assessment professionals consider the examinee's use prior to their threat if known, as this would suggest that intoxication places the examinee in a state of heightened risk of aggression.

The concept of motivating, disinhibiting, and destabilizing mechanisms holds promise as a useful approach to case formulation in violence risk assessment (Hart & Logan, 2011) but has been subjected to little empirical investigation. In the current study, the frequency with which threateners who were violent and non-violent endorsed each mechanism was unable to be statistically compared, as these mechanisms have been proposed to form an explanatory link between a perpetrator's relevant risk factors and the commission of their violent act. As half of the current sample did not commit a violent

act, these participants were queried on whether the absence of each motivating, disinhibiting, and destabilizing mechanism was influential in their decision to abstain from violence, which is qualitatively different from variables that represented violent participants' endorsement of the presence of each mechanism. Additionally, participants' motivations behind their threats could have been assessed qualitatively and motivations across those who did and did not commit violence could have subsequently been compared; this approach could be adopted by future studies on this topic. However, drawbacks of this approach include the difficulty of qualitative comparison and the fact that a participant's motivation for threatening is not necessarily the same as their motivation for committing or abstaining from violence.

In terms of frequency of mechanism endorsement, violent participants indicated that the presence of a slightly higher number of motivating mechanisms were applicable to their decision to perpetrate violence, compared to the number of motivators that non-violent participants indicated were absent and related to their decision to abstain from violence. The prevalence of applicable disinhibiting and destabilizing mechanisms were similar for violent and non-violent participants. This is in contrast to Ryan's (2020) investigation of the presence of mechanisms within case formulations of perpetrators of intimate partner violence, as certain disinhibitors (i.e., lack of insight, lack of guilt, lack of anxiety, and lack of empathy) were more frequently identified as relevant in perpetrators' formulations. However, comparison of the presence of mechanisms within violent cases and the absence of mechanisms within non-violent cases was not undertaken. These findings preliminarily suggest that each mechanism proposed by Hart (2015) is valuable, as each was endorsed by at least 6% of violent participants. Further research is needed to determine whether any additional mechanisms frequently heighten the perceived rewards of violence, decrease the perceived costs, or destabilize decision-making, and should therefore be added to the collection. Whether these mechanisms influence the decision-making of perpetrators of violence in the way they have been proposed to (i.e., as factors that create a causal pathway between risk factor(s) applicable to the perpetrator and their violent behaviour; Hart & Logan, 2011) is another area for future investigation.

4.2. Strengths and Limitations

4.2.1. Online Sample Recruited Via Amazon's Mechanical Turk

In the past decade, there has been an increased use of online crowdsourcing software to collect large amounts of self-report data from various types of participants within the behavioural sciences, with Amazon's Mechanical Turk (MTurk) being the most frequently utilized platform (Dennis et al., 2020). Despite some concerns about the reliability and validity of this method of data collection (Chandler et al., 2013; Rouse, 2015), previous research that recruited participants via MTurk has demonstrated acceptable psychometric properties for measures of personality and mental health (Buhrmester et al., 2011; Shapiro et al., 2013). Furthermore, studies have shown that psychometric concerns are decreased when validity checks are implemented (Aruguete et al., 2019; Rouse, 2015), which was done in the current study. While MTurk samples have been determined to be significantly more representative of the North American population than postsecondary samples (Schleider & Weisz, 2015), young, White, and male individuals are still overrepresented (Nadler et al., 2021), which was reflected in the demographics of the current study. Young age and male gender are factors that are well-known to increase risk of violent behaviour; therefore, it is possible that rates of physical violence following threat would be lower in a sample truly representative of the general population.

Conversely, there is a strong likelihood that the current sample perpetrated less severe threats of violence and physical violence overall than samples drawn from forensic settings (e.g., prisons, forensic psychiatric facilities). This limits the applicability of the current findings to individuals within these environments. In fact, it is possible that more risk domains would have emerged as incrementally predictive of violence following threat within a forensic sample that obtains higher scores in said domains. However, MTurk has been used to collect reliable data from self-identified offender populations successfully (Crane et al., 2022; Hanniball et al., 2019). This method of data collection also allowed for the first examination of threats and violence within the general population and across several environments, whereas previous research in this area has been confined to unique settings (i.e., educational, inpatient psychiatric; Burnette et al., Mitchell et al., 2019) or a sample of participants who have perpetrated markedly severe violent acts (i.e., mass murderers; Allwinn et al., 2019). Therefore, this research is likely

the most generalizable study to date on the topic of threats and violence, but it is imperative that future efforts are made to determine if similar factors are most indicative of high violence risk following threat in forensic settings with participants who display a diverse range of prior criminal behaviours.

There are several other limitations that result from use of a convenient online sample. The current sample was highly educated and displayed a relatively high average annual income, which is similar to what has been observed in past MTurk samples (Monjazebe, 2019; Paolacci et al., 2010). However, this may result in selection bias and overall higher levels of adaptive functioning than would be anticipated within settings applicable to the research topics (i.e., forensics) or even within the general community. Participants were also required to speak English fluently to be included in the study. Furthermore, the internal consistency of two risk domains remained low (i.e., $\alpha = .56-.57$), even following item removal, which may have been due to participant inattention and/or careless responding (Aruguete et al., 2019; Chandler et al., 2013). That being said, multiple attempts to adhere to best practices in online crowdsourcing participant recruitment were made. In addition to a validity check, participants were paid United States minimum wage, in line with ethical recommendations by Silberman et al. (2018), and eligibility criteria were not explicitly stated within the recruitment post (Kim & Hodgins, 2020). Lastly, construct validity of the data is supported by the fact that participants who were violent following their threat scored significantly higher, in the expected direction, on all but one assessed risk domain.

4.2.2. Self-Report Nature of the Data

There are strengths to using participant self-report data when investigating violent behaviour, as it is generally more comprehensive than official criminal record data. This may be particularly true for the type of behaviour necessary for inclusion within this study (i.e., threats), as it is assumed that a larger proportion of threats go unreported and unprosecuted in comparison to physical acts of violence. However, it is possible that participants' answers were influenced by recall bias, or that participants did not answer truthfully to some or all of the survey questions. Participants may not have been truthful in their identification as a threatener in order to gain compensation from the survey and/or have responded at random throughout completion of the survey to maximize their financial reward in relation to their time spent.

However, the validity check question was intended to identify and remove participants who did not report a consistent threat victim at the beginning and end of the survey. This question comprised 16 different response options, so it is statistically improbable that a participant responding randomly selected the same option at both time points. Furthermore, it is beneficial for MTurk workers to complete “tasks” accurately, as requester rejection of a worker’s completed task negatively impacts worker reputation and affects their ability to complete future tasks (Schleider & Weisz, 2015). Lastly, by compensating participants at the 2021 United States federal minimum wage (\$7.50 USD), participants were fairly remunerated for their time (Silberman et al., 2018) yet not strongly incentivized by a large sum to complete this survey if they were ineligible.

It is also important to note that participants were assessed on several risk domains that corresponded to items on a violence risk assessment instrument, the HCR-20^{V3}, which is intended to be scored by a trained evaluator. Certain risk domains (e.g., insight into mental disorder or violent conduct) are difficult to assess via self-report; this could explain why this was the only risk domain that was unassociated with violence. Overall, no conclusions regarding the direct association between the HCR-20^{V3} and violence following threat should be made. As self-report data is valuable for examining threats and factors associated with them, it may be beneficial for future research to include participant self-report, clinical interview, and file review methods of data collection to provide the most accurate assessment of the participants’ risk factors.

4.2.3. Retrospective Study Design

The retrospective design of the current study is another one of its limitations, as participants were prompted to recall an instance where they had made a threat and make risk ratings based on their status at that point in time for the dynamic risk domains. This point in time could have been up to six years in the past. Participants’ memories for these events may not have been reliable, particularly if substance use or active psychological symptoms were present. Additionally, participants were asked to consider their entire lifetime when making risk ratings for the historical risk domains. This design is clearly weaker than its alternatives (e.g., following participants who have threatened prospectively to record risk factors and violent acts) and, as noted by Monjazebe (2019) who utilized very similar methodology, does not align with how risk assessment tools are employed in clinical practice. Another concern shared by Monjazebe (2019) and the

current study is the possible conflation of certain risk domains (i.e., problems with violence, problems with other antisocial behaviour) and outcomes (i.e., physical violence), which may falsely inflate the association between the variables. However, participants were explicitly prompted to consider any violent and antisocial behaviour prior to making their threat when assessed on the risk domains and queried on violent acts following their threat when outcomes were determined. It is likely that this approach minimized risk of conflation.

Furthermore, since the risk factors and outcome were measured cross-sectionally, no definitive conclusions can be made regarding the predictive ability of the risk factors which significantly associated with violence following threat. Research on the evaluation of threats is still in its infancy and comprised almost solely of retrospective or pseudo-prospective studies (e.g., Burnette et al., 2018; Mitchell et al., 2019). It is imperative that future studies employ longitudinal, prospective designs to determine the factors that are most likely to precede threats that result in violence and assess the predictive relationship in more detail (e.g., considering fluctuations in dynamic risk state and/or temporal proximity to the violent act). This methodology aligns with best practices in risk assessment, as repeated re-evaluation of dynamic risk level is recommended to maintain predictive accuracy (Wilson et al., 2013), and may also permit detailed analysis of the situational context of the threat and act of violence, as suggested by Mulvey and Lidz (1995).

4.2.4. Other Limitations

A final limitation of this study is the fact that only participants who had threatened were recruited. Although the risk factors endorsed by participants who were not subsequently violent were compared with those endorsed by participants who were, the same risk factors were not investigated within a sample of participants who had not threatened nor been violent and a sample who had not threatened but committed violence. Therefore, whether these risk factors are associated with the unique situation in which an act of violence follows a threat of violence or with violent behaviour more generally cannot be ascertained from this study. Future researchers should seek to clarify if there are risk markers uniquely indicative of threat-related violence by including a group of participants who have perpetrated physical violence but not threatened as a control group within their study designs.

4.3. Implications

This study was the first to examine the association between a broad range of conventional risk factors for general violent offending and the unique situation in which physical violence follows a threat of violence. These risk factors were examined in addition to variables that appear frequently in threat assessment research (e.g., threat characteristics, warning behaviours), therefore making this study the most comprehensive investigation of the relationship between threats and violence to date. It was discovered that violence following threat is generally associated with the same risk factors as any other violent behaviour. Almost all the examined risk factors for general violent offending emerged as significantly related to perpetrating violence after threatening; there do not appear to be any distinct indicators of threat-related violence. There are multiple risk factors for general violent offending because no single risk factor will apply to every violent individual. Similarly, while a risk factor may be present in a person's life, this does not automatically suggest that it is relevant to the person's violent behaviour and should be given weight in case formulations and overall estimate of risk (Hart & Logan, 2011). This study illustrates that the same heterogeneity of risk is applicable to violence following threat. Additionally, a diverse range of motivating mechanisms were endorsed by participants who perpetrated violence. These results suggest that assessors of threat risk should be familiar with the current risk assessment literature and broadly consider what risk factors may place the individual at higher risk of violence in addition to evaluation of the threat the individual made.

The ultimate goal of this research is the identification of factors that can reliably indicate when a violent threat is at high risk of being enacted. As said factors appear to be very similar to those that are suggestive of high risk of general violent behaviour, classification of a threat as carrying a higher risk of violence when more of these factors are present (and relevant) is supported. As espoused by the risk principle of the Risk-Need-Responsivity model (Andrews, 2012), it is necessary to assess the risk level of a threat to determine the level of intervention that will neutralize the threat effectively while restricting the perpetrator's civil liberties the least. Burnette et al. (2018) highlight the importance of separating the severity of a threat from the severity of a disciplinary infraction within an educational setting, which can be applied in other environments where punitive action can be taken against individuals (e.g., workplaces and prisons).

Additionally, allocation of greater intervention efforts to the most serious threats will conserve the time and manpower of those providing these services, which is financially beneficial for most institutions. Structured methods of assessing the risk level of a threat could facilitate this process and minimize any conscious or unconscious biases held by the assessor (see Neal & Brodsky, 2016; Zapf & Dror, 2017).

As such, the adoption of traditional violence risk assessment instruments to aid in the assessment of risk carried by a threat is recommended, when the perpetrator's identity is known. Research has consistently demonstrated the superiority of structured decision-making aids in risk and threat assessment processes (Cornell & Crowley, 2021; Neal & Grisso, 2014); there is currently no excuse for professionals to be utilizing unstructured methods. Conversely, when an individual makes a threat in a setting where risk assessments are routinely conducted (i.e., prisons, inpatient psychiatric facilities), their current estimated level of risk should be strongly considered when evaluating the likelihood of enactment of their violent threat. When the threatener's identity is unknown, the results of this study indicate that some characteristics of the threat itself (reference to a weapon) and the threatener's interactions with the victim (threat directly communicated to victim) may signify higher risk. However, the substantial number of risk factors that were associated with threat-related violence and require the perpetrator's identity to be known to be evaluated suggests that determining the identity of the threatener is of utmost importance for a comprehensive threat assessment to be performed.

In addition to the traditional risk factors that comprise violence risk assessment instruments, the total number of warning behaviours a participant demonstrated prior to their threat displayed the strongest association with perpetration of violence. This provides compelling support for the inclusion of warning behaviours in any risk assessment battery intended for the assessment of threats (e.g., Burnette et al., 2018). Furthermore, a distinction can be drawn between historical and dynamic risk factors, which are states that are currently or historically applicable to an individual, and warning behaviours, which are actions the individual is engaging in. As warning behaviours, making a threat, and perpetrating violence are all actions with varying benefits and costs associated with them, theoretical frameworks (i.e., Situational Action Theory) can explain the stronger association between warning behaviours and violence: the behaviours may act as stepping stones that lower the perceived cost of violence and/or posit violence as a more viable action alternative (Wikström & Treiber, 2009). In this way, instead of

merely existing in an active risk state, a person who has engaged in warning behaviours and/or threatened has moved farther along the pathway to perpetration of physical violence.

4.4. Future Directions

Future studies could overcome several of the aforementioned limitations by examining this topic within a forensic population. Prospective or pseudo-prospective designs informed by clinical interviews with participants and supplemented by detailed file review could be employed to ascertain the temporal order of applicable risk factors, warning behaviours, threats, and violence. A detailed picture of the acute dynamic risk factors present immediately prior to the threat and violent action may also be captured via this methodology. It may be that general and threat-related violent offending share the same historical and dynamic risk factors when assessed over a broad period, but factors unique to threat-related violence emerge in the day or hours before the threat. Furthermore, the synergistic effect of multiple risk factors should be investigated, as this topic has been theorized to be meaningful (Douglas & Skeem, 2005) but has received little attention thus far. Access to a forensic population would likely result in identification of a sample of individuals who have made verifiably more severe threats, which may provide different results, as it is possible that participants in this study perceived a relatively inconsequential threat as sufficient for inclusion purposes. Generalizability of findings would also be preserved if threats did not need to occur within the institution participants were currently under the supervision of.

Motivations for threatening and choosing to perpetrate or abstain from subsequent violence also require further study, as echoed by authors of previous literature (Mitchell et al., 2019). This may be done qualitatively and/or via proposed typologies of threat motivation (e.g., Warren et al., 2014). Additionally, as in the current study, the motivating, disinhibiting, and destabilizing mechanisms used throughout SPJ risk assessment (Hart & Logan, 2011) could be used to understand what increases the benefits and decreases the costs of threatening and violence for its perpetrators. However, these mechanisms need empirical validation, and it is recommended that their accuracy and comprehensiveness are evaluated within samples of general violent offenders prior to or concurrently with their use in research concerning violence under certain conditions.

Furthermore, the field validity of traditional violence risk assessment instruments in threat assessment settings requires examination. While the results of the current study and past research (Mitchell et al., 2019) support the potential utility of these instruments for the evaluation of threat risk level, other researchers with practical experience classify the risk assessment of threats as a distinct context that should not be approached like a traditional risk assessment (Warren et al., 2014). Considering this disagreement, it is recommended that future research on this topic moves outside the ivory tower and determines what methods of threat evaluation professionals find most accurate and useful. To start, I am conducting a secondary study that investigates which risk factors, threat characteristics, and warning behaviours are considered most indicative of high-risk threats by professionals. A risk assessment tool like the HCR-20^{V3} should also be piloted in a sample of real threat evaluation cases to preliminarily assess its performance prior to routine adoption by any organization that engages in threat assessment. Due to the inapplicability of traditional risk assessment instruments in situations where the perpetrator's identity is unknown, more research is also required concerning the evaluation of anonymous threats of violence. Although content of the threat itself has been found to have a weaker association with violence than characteristics of the perpetrator (Mitchell et al., 2019), more sophisticated efforts (i.e., the Grievance Dictionary) have since been undertaken to understand how threat content can inform risk level with promising results (van der Vegt et al., 2021). Future studies should continue to test evaluation procedures in diverse samples of anonymous threats.

Lastly, the actual process of implementing traditional risk assessment tools and/or other empirically supported decision-making aids within threat evaluation settings is an important area of future research. While an excess of literature exists regarding the creation and psychometric validation of these instruments, implementation is one domain in which research with strong methodology is sorely lacking (Levin et al., 2016). As evidence exists that quality of implementation can affect judgement of risk level, disposition decisions, and the subsequent risk management process (Viljoen & Vincent, 2020; Vincent et al., 2016), researchers who hope to determine if it is viable to use traditional risk assessment tools to evaluate threat risk will need to ensure that recommended practices in implementation literature (e.g., Damschroder et al., 2009; Proctor et al., 2011) are adhered to. Organizations who choose to adopt these tools may

record the implementation process, and any barriers faced throughout, as a roadmap to facilitate others' subsequent implementation efforts.

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Appendix A.

Study Survey Protocol

Inclusion Criteria (Screening Questions)

1. In what country do you currently reside?
2. What is your age?
3. Are you fluent in English?
4. Have you threatened another person, identifiable pair or group of people, or specific organization with violence within the last six years (2015-2020) but NOT within the last year (NOT 2021)?

Please think of a threat as at least one instance of communication that implicitly or explicitly states a wish or intent to damage, injure or kill a specific person, identifiable group of people, or organization (Meloy et al., 2001).

- a. Was this threat made within the same situation as a violent act or immediately before a violent act? An example of this would be making a threat to a victim of a robbery moments before you committed the robbery or making a threat to a person you are angry at immediately before punching them (EXCLUDE).

Threat Characteristics

You will be asked some questions about the time you made the threat that made you eligible to participate in this study. Remember, this threat needed to have been made between 2015 and 2020, but **not** in 2021.

If you have made multiple threats within this timeframe and “followed through” or committed violence after at least one of the threats, please think back to this instance and answer **all questions** based on that instance.

If you have made multiple threats within this timeframe but have not “followed through” or committed violence after any of them, please think back to the most recent one and answer **all questions** based on that instance.

5. What context or setting did you make the threat within?
 - a. Educational (school, college, university)
 - b. Your own current or past workplace
 - c. Another workplace
 - d. Prison/correctional setting
 - e. Psychiatric institution or hospital
 - f. Online
 - g. Other (Specify)
6. What type of violence did the threat contain?
 - a. Homicide
 - b. Physical assault (with weapon)

- c. Physical assault (without weapon)
 - d. Sexual assault
 - e. Robbery
 - f. Kidnapping (e.g., unlawful confinement, abduction)
 - g. Hijacking
 - h. Arson
 - i. Human trafficking
 - j. Other violent activity
7. How did you make the threat?
- a. Directly to the victim (target)
 - i. (If Directly) How did you communicate the threat directly to the target?
 - a. In person
 - b. Via telephone
 - c. Via paper letter
 - d. Via online format (e.g., email, direct message)
 - e. Other
 - b. Indirectly, to a third person or to no specific recipient (e.g., posted on an online forum)
 - i. (If Indirectly) How did you communicate the threat indirectly?
 - a. In person to a third party (e.g., friend of target)
 - b. Via telephone to a third party
 - c. Via paper letter to a third party
 - d. Via online format directly to a third party (e.g., email)
 - e. Via online format, to no specific recipient (e.g., post on forum, post on social media)
 - f. Not online, to no specific recipient (e.g., posted flyers on telephone poles)
 - g. Other
8. Who was the victim (target) of your threat?
- a. Romantic partner or ex-romantic partner
 - b. Family member(s)
 - c. Roommate(s)
 - d. Friend or acquaintance(s)
 - e. Boss/supervisor(s)
 - f. Co-worker(s)
 - g. Neighbour(s)
 - h. Law enforcement
 - i. Other professional (e.g., doctor, teacher/instructor, clerk at local grocery store)
 - j. Public figure(s)
 - k. Co-patient(s)
 - l. Stranger(s)
 - m. Government
 - n. Private organization (e.g., Walmart, the SPCA)

- o. Identifiable group of people (e.g., a specific race, ethnicity, or religious group)
 - p. Other
9. Did the threat include reference to a weapon?
- a. Yes
 - b. No
 - i. (If yes) What type of weapon?
 - a. Firearm
 - b. Knife
 - c. Blunt object
10. How available was a weapon prior to making the threat?
- a. Not available
 - b. Available, but difficult to get
 - c. Fairly available (e.g., had to go to store and purposefully purchase firearm)
 - d. Extremely available (e.g., had firearm at home)
11. Do you consider your threat to be realistic? Would it have been possible to carry out the threat in real life [for those who did not perpetrate violence]? Was it fairly simple to carry out the threat in real life [for those who did perpetrate violence]?
- a. Yes
 - b. Somewhat
 - c. No
12. Did you make the threat in response to perceived violent or threatening behaviour displayed by the victim (target)?
- a. Yes
 - b. No
13. Did you interact with the victim (target) prior to the threat?
- a. Yes
 - b. No
 - i. (If yes) Was the interaction indirect (e.g., online, via telephone)?
 - a. Yes
 - b. No
 - ii. (If yes) Was the interaction direct (e.g., in person)?
 - a. Yes
 - b. No
 - iii. (If yes) Did you begin a romantic relationship with the victim prior to the threat?
 - a. Yes
 - b. No
 - iv. (If yes) Were you in conflict with the victim prior to the threat?
 - a. Yes
 - b. No
 - v. (If yes) Did you experience rejection by the victim prior to the threat?
 - a. Yes
 - b. No

- vi. (If yes) Did you feel victimized by the victim prior to the threat?
 - a. Yes
 - b. No
- 14. Did you use any legal or illegal substances in the 24 hours preceding the threat?
 - a. Yes
 - b. No
- 15. Did you use any legal or illegal substances an hour before making the threat?
 - a. Yes
 - b. No
 - i. (If Yes) How impaired were you by this substance use at the time of the threat?
 - a. [Likert scale from 1-9, with 1 being “not at all,” 3 being “mildly impaired,” 5 being “moderately impaired,” 7 being “significantly impaired,” 9 being “extremely impaired”]
 - ii. (If Yes) Which of the following substances were you using at the time? [Check all that apply]
 - a. Cannabis (marijuana, pot, grass, hash, etc.)
 - b. Cocaine (coke, crack, etc.)
 - c. Prescription stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)
 - d. Methamphetamine (speed, crystal meth, ice, etc.)
 - e. Inhalants (nitrous oxide, glue, gas, paint thinner, etc.)
 - f. Sedatives or sleeping pills (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.)
 - g. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)
 - h. Street opioids (heroin, opium, etc.)
 - i. Prescription opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.)
 - j. Other (specify)

Violent Activity

For the purpose of this survey, please think of **a physical act of violence** as actual or attempted unwanted physical contact with another person.

Examples include:

- Violent physical contact, such as pushing, shoving, slapping, punching, throwing objects, or using weapons.
- Other unwanted physical contact, such as touching of a sexual or nonsexual nature, spitting, throwing bodily fluids, or finger poking.

- 16. Did you commit any physical act of violence following this threat?
 - a. Yes
 - b. No

- i. (If Yes) Was this physical act of violence against the victim or target of the threat or against another person or group of people?
 - a. Victim
 - b. Other person/people
- ii. (If yes) What type of violence did you commit?
 - a. Murder
 - b. Manslaughter
 - c. Attempted murder
 - d. Physical assault
 - e. Sexual assault
 - f. Robbery
 - g. Weapons offence (e.g., possession of a weapon, dangerous use of firearm)
 - h. Kidnapping (e.g., unlawful confinement, abduction)
 - i. Hijacking
 - j. Arson
 - k. Human trafficking
 - l. Other violent activity
- iii. (If yes) How much time passed between threat and the violent activity?
 - a. A few hours to a day before violent activity
 - b. At least a day but less than a week before violent activity
 - c. At least a week but less than two weeks before violent activity
 - d. At least two weeks but less than a month before violent activity
 - e. At least a month but less than six months before violent activity
 - f. Six months or more before violent activity
- iv. (If yes) did this act of physical violence involve throwing an object at someone, pushing, grabbing, or shoving someone?
 - a. Where did this happen?
 - b. Was anyone else involved in this incident?
 - c. Was anyone else physically hurt during this incident?
 - d. Was there a weapon involved in this incident?
 - a. Yes
 - b. No
 - i. (If yes) what type of weapon?
 1. Firearm
 2. Knife
 3. Blunt object
- v. (If yes) did this act of physical violence involve slapping, kicking, or hitting anyone with a fist or object, or beating anyone up, or trying to physically force anyone to have sex with you?
 - a. Where did this happen?
 - b. Was anyone else involved in this incident?

- c. Was anyone else physically hurt during this incident?
- d. Was there a weapon involved in this incident?
 - a. Yes
 - b. No
 - i. (If yes) what type of weapon?
 - 1. Firearm
 - 2. Knife
 - 3. Blunt object
- vi. (If yes) did this act of physical violence involve using a knife or gun on anyone?
 - a. Where did this happen?
 - b. Was anyone else involved in this incident?
 - c. Was anyone else physically hurt during this incident?
 - d. Was there a weapon involved in this incident?
 - a. Yes
 - b. No
 - i. (If yes) what type of weapon?
 - 1. Firearm
 - 2. Knife
 - 3. Blunt object
 - vii. (If yes) were you arrested for this physical act of violence?
 - a. Yes
 - b. No
 - a. (If yes) were you charged with a criminal offence for this physical act of violence?
 - i. Yes
 - ii. No
 - b. (If yes) were you convicted with a criminal offence for this physical act of violence?
 - i. Yes
 - ii. No
 - c. (If yes) what sentence did you receive?
 - i. Probation
 - ii. Less than 1 year in prison
 - iii. 1-5 years in prison
 - iv. Over 5 years in prison

Demographics

- 17. What is your gender?
 - a. Male
 - b. Female
 - c. Non-binary
 - d. Prefer not to say
- 18. What is your ethnicity?
 - a. White

- b. Indigenous
 - c. Black or African American
 - d. Hispanic or Latinx
 - e. Asian/Pacific Islander
 - f. Other
19. What is your country of origin?
20. What is your country of residence?
- a. Canada
 - b. United States of America
 - i. (If Canada) What is your province of residence?
 - ii. (If USA) What is your state of residence?
21. How many years of education had you completed, at the time of the threat?
- a. No high school
 - b. Some high school
 - c. Completed high school
 - d. Some college/university
 - e. Completed college diploma
 - f. Completed university Bachelor's degree
 - g. Some graduate education
 - h. Completed postbaccalaureate or professional training
 - i. Completed Master's degree
 - j. Completed PhD/doctoral degree
22. What was your current relationship status at the time of the threat?
- a. Single
 - b. In a relationship
 - c. Married
 - d. Divorced
 - e. Widowed

Historical Risk Factors (adapted from Monjazeb, 2019)

H1. History of Problems with Violence

23. Had you ever had problems with violence before the threat, defined as any actual, attempted, or threatened physical harm of another person? For example, had you ever physically assaulted, raped, or murdered someone?
- a. Yes
 - b. No
24. Had people ever told you that you have problems with violence?
- a. Yes
 - b. Somewhat
 - c. No
25. How many times have you been arrested in your lifetime before the threat?
- a. 0
 - b. 1
 - c. 2

- d. 3 or more
26. How many prior convictions did you have before the threat?
- a. 0
 - b. 1
 - c. 2
 - d. 3 or more
27. How many times had you been incarcerated in a jail or prison before the threat?
- a. 0
 - b. 1
 - c. 2
 - d. 3 or more
28. How many times had you threatened someone with violence in your lifetime, before and including the threat?
- a. 1
 - b. 2
 - c. 3 or more

H2. History of Problems with Other Antisocial Behaviour

29. Had you ever had problems with other antisocial behavior, defined as behavior that was illegal but not violent, before the threat? For example, had you ever engaged in fraud, vandalism, or theft?
- a. Yes
 - b. No
30. Had people ever told you that you have problems with other antisocial behaviour before the threat?
- a. Yes
 - b. Somewhat
 - c. No
31. How many times had you threatened someone with non-violent, antisocial behaviour in your lifetime (e.g., threatened to steal something) before you made the violent threat?
- a. 0
 - b. 1
 - c. 2
 - d. 3 or more

H3. History of Problems with Relationships

The next set of questions will ask about your history of relationships, both intimate and non-intimate, including romantic partners, family members, and friends.

32. Had you ever had problems creating or maintaining stable personal relationships with other people, such as romantic partners or friends, before the threat? For example, had you ever cheated on or been cheated on by a romantic partner, engaged

in spousal violence, or been friends with people who have a negative influence on you?

- a. Yes
- b. Somewhat
- c. No

33. Had people ever told you that you have problems with stable personal relationships before the threat?

- a. Yes
- b. Somewhat
- c. No

Relationship Assessment Scale

Please think back what was going on in your romantic relationship at the time of the threat, if applicable, and answer the questions based on this.

34. How often does/did your partner meet your needs? (*Reverse scored*)

- a. Never
- b. Not very often
- c. Sometimes
- d. Most of the time
- e. All of the time

35. In general, how satisfied are/were you with your relationship? (*Reverse scored*)

- a. Very unsatisfied
- b. Unsatisfied
- c. Neither satisfied nor unsatisfied
- d. Satisfied
- e. Very satisfied

36. How much do/did you love your partner? (*Reverse scored*)

- a. Not at all
- b. Not very much
- c. Somewhat
- d. A lot
- e. Very much

37. How many problems are/were there in your relationship?

- a. None
- b. A few
- c. Some
- d. Many
- e. Very many

Pathways Characteristics of Family Measure

Please think back what was going on in your familial relationships at the time of the threat and answer the questions based on this.

38. Has anyone in your family ever been involved in criminal activity?
- a. Yes
 - b. No
 - i. (If yes to above) What is the relationship to you of the family member(s) who was/were involved in criminal activity? (Select all that apply)
 - Biological father
 - Biological mother
 - Biological sister
 - Biological brother
 - Stepfather
 - Stepmother
 - Stepsister
 - Stepbrother
 - Other relative (specify)
 - ii. (If yes to above) Were any of these family member(s) arrested or jailed?
 - a. Yes
 - b. No

For the next two measures, please think back what was going on in your friendships at the time of the threat, if applicable, and answer the questions based on this.

Pathways Characteristics of Friendship Quality Measure

39. How much can you count on your close friend(s) for help with a problem?
(Reverse scored)
- a. Not at all
 - b. A little
 - c. Quite a bit
 - d. Very much
 - e. N/A
40. How much has your close friend(s) tried to influence you to do something most people would think is wrong?
- a. Not at all
 - b. A little
 - c. Quite a bit
 - d. Very much

- e. N/A

Pathways Peer Delinquency-Antisocial Influence Measure

41. How many of your friends have suggested or claimed that you have to get drunk or high to have a good time?
- a. None of them
 - b. Very few of them
 - c. Some of them
 - d. Most of them
 - e. All of them
42. How many of your friends have suggested that you should sell drugs?
- a. None of them
 - b. Very few of them
 - c. Some of them
 - d. Most of them
 - e. All of them
43. How many of your friends have suggested that you should steal something?
- a. None of them
 - b. Very few of them
 - c. Some of them
 - d. Most of them
 - e. All of them
44. How many of your friends have suggested that you should hit or beat someone up?
- a. a. None of them
 - b. Very few of them
 - c. Some of them
 - d. Most of them
 - e. All of them
45. How many of your friends have suggested that you should carry a weapon?
- a. None of them
 - b. Very few of them
 - c. Some of them
 - d. Most of them
 - e. All of them

H4. History of Problems with Employment

46. Had you ever had problems finding, maintaining, or following the rules of legal employment or educational/training programs before the threat? For example, had you ever had long or frequent periods of unemployment, or financial difficulties?
- a. Yes
 - b. Somewhat
 - c. No

47. Had people ever told you that you have problems with employment or finances before the threat?

- a. Yes
- b. Somewhat
- c. No

48. Which best describes your current annual household income at the time of the threat?

- a. Under \$10,000
- b. \$10,000 to \$14,999
- c. \$15,000 to \$19,999
- d. \$20,000 to \$24,999
- e. \$25,000 to \$29,999
- f. \$30,000 to \$34,999
- g. \$35,000 to \$39,999
- h. \$40,000 to \$44,999
- i. \$45,000 to \$49,999
- j. \$50,000 to \$59,999
- k. \$60,000 to \$74,999
- l. \$75,000 to \$84,999
- m. \$85,000 to \$99,999
- n. \$100,000 to \$149,999
- o. \$150,000 to \$199,999
- p. \$200,000 to \$249,999
- q. \$250,000 and above

Pathways Employment Measure

49. Were you currently employed at the time of the threat?

- a. Yes
- b. No

50. What was the longest period you have ever held one job before the threat? (including current job if applicable)

- a. ___ Days
- b. ___ Weeks
- c. ___ Months
- d. ___ Years
- e. N/A

51. How many different jobs had you had before the threat?

- a. 0
- b. 1
- c. 2-3
- d. 4-6
- e. 7 or more

52. Did/do you miss work or come in late a lot?

- a. Yes
- b. No

- c. N/A
- 53. Had you ever been fired before the threat?
 - a. Yes
 - b. No
 - c. N/A
 - i. (If indicated being fired) How many times had you been fired before the threat?
 - a. 1 time
 - b. 2 times
 - c. 3 times
 - d. 4 or more times
- 54. Had you ever left one job without another one lined up before the threat?
 - a. Yes
 - b. No
 - c. N/A
- 55. Had you ever made money any other way, including activities that are illegal before the threat?
 - a. Yes
 - b. No
 - c. N/A
- 56. Had you ever failed to pay bills like rent, telephone, or electricity on time before the threat?
 - a. Yes
 - b. No
 - c. N/A
- 57. Had you parents or friends ever helped you out financially before the threat?
 - a. Yes
 - b. No
 - c. N/A
- 58. Had you ever had problems with employment due to long-term jailing or imprisonment before the threat?
 - a. Yes
 - b. No
 - c. N/A

H5. History of Problems with Substance Use

The following questions are about your history of substance use, abuse, or dependence that may have caused problems in your mental or physical health.

- 59. Had you ever had problems with using, abusing, or depending on mind- or mood-altering substances, including alcohol, illicit drugs, prescription drugs, over-the-counter drugs, etc. before the threat? For example, had drugs or alcohol ever affected your physical or mental health, or interfered with your employment?
 - a. Yes
 - b. Somewhat

- c. No
60. Had people ever told you that you have problems with substance use before the threat?
- a. Yes
 - b. Somewhat
 - c. No

NIDA Quick Screen V1.0/NIDA-Modified ASSIST V2.0

Please think back to the time of the threat and answer the following questions based this period of time.

61. In the past year, how often have you used the following?
- a. Alcohol (5 or more drinks a day)
 - i. Never
 - ii. Once or Twice
 - iii. Monthly
 - iv. Weekly
 - v. Daily or Almost Daily
 - b. Tobacco Products
 - i. Never
 - ii. Once or Twice
 - iii. Monthly
 - iv. Weekly
 - v. Daily or Almost Daily
 - c. Prescription Drugs for Non-Medical Reasons
 - i. Never
 - ii. Once or Twice
 - iii. Monthly
 - iv. Weekly
 - v. Daily or Almost Daily
 - d. Illegal Drugs
 - i. Never
 - ii. Once or Twice
 - iii. Monthly
 - iv. Weekly
 - v. Daily or Almost Daily
62. In your *LIFETIME*, up until the threat, which of the following substances have you ever used? (Select all that apply)
- a. Cannabis (marijuana, pot, grass, hash, etc.)
 - b. Cocaine (coke, crack, etc.)

- c. Prescription stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)
- d. Methamphetamine (speed, crystal meth, ice, etc.)
- e. Inhalants (nitrous oxide, glue, gas, paint thinner, etc.)
- f. Sedatives or sleeping pills (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.)
- g. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)
- h. Street opioids (heroin, opium, etc.)
- i. Prescription opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.)
- j. Other (specify: ___)
 - i. (If indicated using at least one substance) In the past three months, how often have you used the drug(s) you mentioned?
 - a. Never
 - b. Once or Twice
 - c. Monthly
 - d. Weekly
 - e. Daily or Almost Daily
 - ii. (If indicated using at least one substance) In the past three months, how often have you had a strong desire or urge to use the drug(s) you mentioned?
 - a. Never
 - b. Once or Twice
 - c. Monthly
 - d. Weekly
 - e. Daily or Almost Daily
 - iii. (If indicated using at least one substance) During the past three months, how often has your use of drug(s) led to health, social, legal, or financial problems?
 - a. Never
 - b. Once or Twice
 - c. Monthly
 - d. Weekly
 - e. Daily or Almost Daily
 - iv. (If indicated using at least one substance) During the past three months, how often have you failed to do what was normally expected of you because of your use of drug(s)?
 - a. Never
 - b. Once or Twice
 - c. Monthly
 - d. Weekly
 - e. Daily or Almost Daily

63. (If indicated using alcohol) At what age did you first start using alcohol?
- As a child (12 and under)
 - As an adolescent (13-17)
 - As an adult (18 and over)
64. (If indicated using at least one substance) At what age did you first start using drugs?
- As a child (12 and under)
 - As an adolescent (13-17)
 - As an adult (18 and over)

H6. History of Problems with Major Mental Disorder

The following questions are about your history of mental health problems that may have caused difficulties in your thinking or emotions, and/or interfered with your functioning in areas like work, family, health, or finances.

65. Had you ever had problems with your mental/psychological health before the threat? For example, had you ever suffered from intense feelings of sadness or experienced things (sounds, sights) that were not really there?
- Yes
 - Somewhat
 - No
66. Had people ever told you that you have problems with your mental/psychological health before the threat?
- Yes
 - Somewhat
 - No
67. Had you ever been officially diagnosed with a major mental disorder before the threat?
- Yes
 - No
- (If indicated official diagnosis) What type of disorder were you diagnosed with? (Select all that apply)
 - Psychotic disorder (e.g., schizophrenia or other psychotic disorders with symptoms such as perceiving things that are not really there, strongly believing that someone is out to get you or controlling your thoughts/actions, having disorganized thoughts, producing unusual movements)
 - Major mood disorder (e.g., depression, bipolar disorder, or other major mood disorders with symptoms such as intense sadness or hopelessness, intense happiness or excitement, rapid shifts in mood, agitated movements like fidgeting/pacing, slowed movements and speech, thoughts about hurting or killing yourself)

- c. Neurodevelopmental disorder (e.g., intellectual disability, Autism spectrum disorder, or other neurodevelopmental disorders with symptoms such as deficiencies in mental/intellectual abilities, difficulties in social interactions, difficulties in speech/language, repetitive patterns of behavior)
 - d. Major neurocognitive disorder (e.g., Alzheimer’s disease, traumatic brain injury, Parkinson’s disease, or other major neurocognitive disorders with symptoms such as declines in memory or cognition, disturbed emotional functioning, or significant personality changes)
 - e. Posttraumatic stress disorder (e.g., exposure to a traumatic event that causes symptoms such as repeated upsetting memories, negative emotions like fear/anger/guilt, problems with sleep or concentration)
 - f. Other major mental disorder (specify)
- ii. (If indicated official diagnosis) Did this disorder cause significant problems in your social, familial, financial, or occupational functioning?
- a. Yes
 - b. Somewhat
 - c. No

68. Had you ever in your lifetime been admitted for an overnight stay in a hospital or other facility to receive help for problems with your emotions, nerves, mental health, or your use of alcohol or drugs before the threat?

- a. Yes
- b. No

69. Had you ever taken any type of prescription medicine for problems with your emotions, substance use, energy, concentration, sleep, or ability to cope with stress before the threat? Include medicines even if you took them only once.

- a. Yes
- b. No

Psychosis Screening Questionnaire

70. Had you ever felt that your thoughts were directly interfered with or controlled by some outside force or person before the threat?

- a. Yes
- b. No

71. Had there ever been times when you felt that people were against you before the threat?

- a. Yes
- b. No

72. Had there ever been times when you felt that something strange was going on before the threat?

- a. Yes

- b. No
73. Had there ever been times when you heard or saw things that other people couldn't before the threat?
- a. Yes
 - b. No
74. (If indicated any psychotic symptoms) How much of a problem did any of these cause you – like being unable to work; having family, money, or legal troubles; getting into arguments or fights; or interfering with your health?
- a. No problems
 - b. Minor problem
 - c. Moderate problem
 - d. Serious problem
75. (If indicated any psychotic symptoms) At what age did you first experience these symptoms?
- a. As a child (12 and under)
 - b. As an adolescent (13-17)
 - c. As an adult (18 and over)
76. Had you ever in your life had a period of time lasting two weeks or longer when most of the day you felt sad, empty or depressed before the threat?
- a. Yes
 - b. No

Mood Disorder Questionnaire

77. Has there ever been a period of time before the threat when you were not your usual self and...
- a. ...you felt so good or so hyper that other people thought you were not your normal self or you were so hyper that you got into trouble?
 - i. Yes
 - ii. No
 - b. ...you were so irritable that you shouted at people or started fights or arguments?
 - i. Yes
 - ii. No
 - c. ...you felt much more self-confident than usual?
 - i. Yes
 - ii. No
 - d. ...you got much less sleep than usual and found you didn't really miss it?
 - i. Yes
 - ii. No
 - e. ...you were much more talkative or spoke faster than usual?
 - i. Yes
 - ii. No
 - f. ...thoughts raced through your head or you couldn't slow your mind down?
 - i. Yes

- ii. No
- g. ...you were so easily distracted by things around you that you had trouble concentrating or staying on track?
 - i. Yes
 - ii. No
- h. ...you had more energy than usual?
 - i. Yes
 - ii. No
- i. ...you were much more active or did many more things than usual?
 - i. Yes
 - ii. No
- j. ...you were much more social or outgoing than usual, for example, you telephoned friends in the middle of the night?
 - i. Yes
 - ii. No
- k. ...you were much more interested in sex than usual?
 - i. Yes
 - ii. No
- l. ...you did things that were unusual for you or that other people might have thought were excessive, foolish, or risky?
 - i. Yes
 - ii. No
- m. ...spending money got you or your family in trouble?
 - i. Yes
 - ii. No

78. If you checked YES to more than one of the above, have several of these ever happened during the same period of time?

- a. Yes
- b. No

79. If you checked YES to more than one of the above, how much of a problem did any of these cause you – like being unable to work; having family, money, or legal troubles; or getting into arguments or fights?

- a. No problems
- b. Minor problem
- c. Moderate problem
- d. Serious problem

80. (If indicated any manic/hypomanic symptoms) At what age did you first experience these symptoms?

- a. As a child (12 and under)
- b. As an adolescent (13-17)
- c. As an adult (18 and over)

H7. History of Problems with Personality Disorder

The following questions are about your history of difficulties getting along with other people and/or taking advantage of other people since adolescence. This may have caused problems with your interpersonal relationships or problems with the law.

81. Since the age of 15, but before the threat, have you ever had problems following the law, taking advantage of others, or being very impulsive, aggressive, or irresponsible? For example, do you have a history of doing illegal things (e.g., destroying property, stealing), being manipulative to get what you want, making decisions on the spur of the moment, or getting into physical fights with others?

- a. Yes
- b. Somewhat
- c. No

82. Had people ever told you that you have problems with following the law, taking advantage of others, or being very impulsive, aggressive, or irresponsible before the threat?

- a. Yes
- b. Somewhat
- c. No

Structured Clinical Interview for DSM-IV Personality Disorders

83. Before you were 15, did you...

- a. Bully or threaten other kids?
 - i. Yes
 - ii. No
- b. Start fights?
 - i. Yes
 - ii. No
- c. Hurt or threaten someone with a weapon, like a bat, brick, broken bottle, knife, or gun?
 - i. Yes
 - ii. No
- d. Deliberately torture someone or cause someone physical pain and suffering?
 - i. Yes
 - ii. No
- e. Torture or hurt animals on purpose?
 - i. Yes
 - ii. No
- f. Rob, mug, or forcibly take something from someone by threatening him or her?
 - i. Yes
 - ii. No
- g. Force someone to have sex with you, to get undressed in front of you, or touch you sexually?
 - i. Yes

- ii. No
- h. Set fires?
 - i. Yes
 - ii. No
- i. Deliberately destroy things that weren't yours?
 - i. Yes
 - ii. No
- j. Break into houses, other buildings, or cars?
 - i. Yes
 - ii. No
- k. Lie a lot or "con" other people?
 - i. Yes
 - ii. No
- l. Sometimes steal or shoplift things, or forge someone's signature?
 - i. Yes
 - ii. No
- m. Run away from home and stay away overnight?
 - i. Yes
 - ii. No
- n. Often stay out very late, long after the time you were supposed to be home?
 - i. Yes
 - ii. No
- o. Often skip school?
 - i. Yes
 - ii. No

TriPM Short Version (15 items; Međedović & Damjanović, 2018)

- 84. I sympathize with others' problems. (RS)
 - a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
- 85. I'm a born leader.
 - a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
- 86. I have had problems at work because I was irresponsible.
 - a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
- 87. I don't have much sympathy for people.
 - a. Always true

- b. Somewhat true
 - c. Somewhat false
 - d. Always false
88. I can convince people to do what I want.
- a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
89. I have lost a friend because of irresponsible things I've done.
- a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
90. It doesn't bother me to see someone else in pain.
- a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
91. I function well in new situations, even when unprepared.
- a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
92. Others have told me they are concerned about my lack of self-control.
- a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
93. I don't see any point in worrying if what I do hurts someone else.
- a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
94. I don't like to take the lead in groups. (RS)
- a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
95. I jump into things without thinking.
- a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
96. I am sensitive to the feelings of others. (RS)
- a. Always true
 - b. Somewhat true

- c. Somewhat false
 - d. Always false
97. I'm not very good at influencing people. (RS)
- a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false
98. My impulsive decisions have caused problems with loved ones.
- a. Always true
 - b. Somewhat true
 - c. Somewhat false
 - d. Always false

H8. History of Problems with Traumatic Experiences

The following questions are about your history of experiencing harmful or traumatic events as a child that may have caused problems for you later in life.

99. Had you ever had problems with traumatic or adverse childrearing experiences before the threat? For example, as a child did you ever experience domestic violence, physical or sexual abuse, parental substance use problems, or an unstable home environment (i.e., frequent moving, crowded housing)?
- a. Yes
 - b. Somewhat
 - c. No
100. Had people ever told you that you have had problems with traumatic or adverse childrearing experiences before the threat?
- a. Yes
 - b. Somewhat
 - c. No

Adverse Childhood Experiences Questionnaire

101. When you were growing up, did a parent or adult in the household...
- a. Often or very often swear at, insult, or put you down?
 - i. Yes
 - ii. No
 - b. Often or very often act in a way that made you afraid you would be physically hurt?
 - i. Yes
 - ii. No
 - c. Often or very often push, grab, shove, or slap you?
 - i. Yes
 - ii. No
 - d. Often or very often hit you so hard that you had marks or were injured?
 - i. Yes

- ii. No
- 102. When you were growing up, did an adult or person at least 5 years older ever...
 - a. Touch or fondle you in a sexual way?
 - i. Yes
 - ii. No
 - b. Attempt sexual intercourse with you?
 - i. Yes
 - ii. No
- 103. When you were growing up...
 - a. Did you ever live with anyone who was a problem drinker or alcoholic?
 - i. Yes
 - ii. No
 - b. Did you ever live with anyone who used street drugs?
 - i. Yes
 - ii. No
 - c. Was a household member depressed or mentally ill?
 - i. Yes
 - ii. No
 - d. Did a household member ever attempt suicide?
 - i. Yes
 - ii. No
 - e. Did a household member ever go to prison?
 - i. Yes
 - ii. No
- 104. When you were growing up, was your mother or stepmother...
 - a. Sometimes, often, or very often pushed, grabbed, slapped, or had something thrown at her?
 - i. Yes
 - ii. No
 - b. Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard?
 - i. Yes
 - ii. No
 - c. Ever repeatedly hit over at least a few minutes?
 - i. Yes
 - ii. No
 - d. Ever threatened with, or hurt by, a knife or gun?
 - i. Yes
 - ii. No
- 105. As a child, were you ever placed in a foster home, or in the care of a non-relative adult?
 - a. Yes
 - b. No

H9. History of Problems with Violent Attitudes

The following questions are about your history of attitudes, beliefs, and values that are supportive of violence.

106. Had you ever had problems with violent attitudes before the threat? For example, have you ever believed that the use of violent behavior is justified in order to gain status, respect, or financial benefit?

- a. Yes
- b. Somewhat
- c. No

107. Had people ever told you that you have problems with violent attitudes before the threat?

- a. Yes
- b. Somewhat
- c. No

Criminal Sentiments Scale-Modified

Read each statement carefully and decide how you feel about it. Mark Agree if you agree with the statement or Disagree if you disagree with the statement. If you are undecided or cannot make up your mind about the statement, mark Undecided. Remember – there are no right or wrong answers.

108. The police are as crooked as the people they arrest.

- a. Disagree
- b. Undecided
- c. Agree

109. Society would be better off if there were more police. (Reverse scored)

- a. Disagree
- b. Undecided
- c. Agree

110. Sometimes a person like me has to break the law to get ahead in life.

- a. Disagree
- b. Undecided
- c. Agree

111. It's OK to break the law as long as you don't get caught.

- a. Disagree
- b. Undecided
- c. Agree

112. A hungry man has the right to steal.

- a. Disagree
- b. Undecided
- c. Agree

113. People who have broken the law have the same sorts of ideas about life as me.

- a. Disagree
- b. Undecided
- c. Agree

114. I prefer to be with people who obey the law rather than people who break the law. (Reverse scored)

- a. Disagree
- b. Undecided
- c. Agree

115. People who have been in trouble with the law are more like me than people who don't have trouble with the law.

- a. Disagree
- b. Undecided
- c. Agree

Schedule of Imagined Violence

116. Did you ever have daydreams or thoughts about physically hurting or injuring some other persons before the threat?

- a. Yes
- b. No
 - i. (If indicated daydreams above) Since the first time you started having these thoughts, have the injuries that you think about gotten more serious, less serious, or have they always been about the same?
 - a. Less Serious
 - b. Same
 - c. More Serious

H10. History of Problems with Treatment or Supervision Response

The following questions are about your history of problems complying with treatment or supervision meant to improve your mental health or reduce your chances of violence. This supervision may have occurred in institutional settings, such as prisons/jails, or in the community, such as parole/probation officers and/or court-mandated treatment programs.

117. Had you ever been mandated to institutional or community supervision, such as being imprisoned in a correctional facility, placed under probation or parole, or court-ordered to attend a drug treatment program before the threat?

- a. Yes
- b. No

118. (If indicated being mandated to supervision) Had you ever had problems complying with or responding to the demands of supervision in these types of environments before the threat? For example, have you ever failed to attend treatment as directed, or violated the conditions of your probation or parole?

- a. Yes
- b. Somewhat
- c. No

119. (If indicated being mandated to supervision) Had people ever told you that you have problems complying with treatment or supervision (e.g., correctional officers, therapists, etc.) before the threat?

- a. Yes
- b. Somewhat
- c. No

120. (If indicated problems with supervision compliance) Listed below are various examples of failing to abide by forensic, mental health, or correctional treatment or supervision. Please check each box that relates to the problem(s) you have experienced.

- a. Refusal to attend treatment/therapy programs in prison (due to poor motivation, unwillingness, etc.)
- b. Failure to attend court-ordered psychiatric or substance use treatment in community
- c. Failure to take prescribed psychiatric medications
- d. Negative/uncooperative attitudes toward treatment or therapists
- e. Failure to appear for scheduled court dates
- f. Serious violation of parole/probation conditions, leading to re-arrest or re-institutionalization (e.g., re-offending during probation)
- g. Less serious violation of parole/probation conditions, leading to reprimand, loss of privileges, or other minor disciplinary action (e.g., missing curfew, using alcohol or drugs while prohibited)
- h. Escape/attempted escape from a prison, hospital, or other secure facility
- i. Other (specify)

Perceived Grievance

121. At the time of the threat, or in the hours/days leading up to the threat, did you experience a feeling of resentment over something you felt/feel to be wrong or unfair?

- a. Yes
- b. No
 - i. (If yes) Was this feeling of resentment against a specific person?
 - a. Yes
 - b. No
 - ii. (If yes) Was this feeling of resentment against a specific group of people (e.g., friend group, family members)?
 - a. Yes
 - b. No
 - iii. (If yes) Was this feeling of resentment against a specific organization?
 - a. Yes
 - b. No
 - iv. (If yes) Was this feeling of resentment against a specific category of people (e.g., religion, sexual orientation, ethnicity)?
 - a. Yes
 - b. No

- v. (If yes) Was this feeling of resentment against the victim of your threat?
 - a. Yes
 - b. No
- vi. (If yes) How long before making the threat did you develop this resentment?
 - a. Hours
 - b. A day
 - c. A week
 - d. Two weeks
 - e. A month
 - f. Two months
 - g. Four months
 - h. Six months or more
- vii. (If yes) Rate the intensity of this feeling of resentment from 1 [very weak feelings] to 9 [very strong feelings].
 - a. Likert scale 1 to 9

Dynamic Risk Factors

C1. Insight

122. At the time of the threat, or in the hours/days leading up to the threat, did you have problems acknowledging that you were suffering from a mental, substance use, or personality disorder (for example, did you deny or minimize the presence of symptoms or the effect or consequences your disorder had on your life or the lives of family or friends)? [If not suffering from a mental, substance use, or personality disorder at the time, respond NO].

- a. Yes
- b. Somewhat
- c. No

123. At the time of the threat, or in the hours/days leading up to the threat, did people tell you that you had problems acknowledging you were suffering from a mental, substance use, or personality disorder (for example, did you deny or minimize the presence of symptoms or the effect or consequences your disorder had on your life or the lives of family or friends)? [If not suffering from a mental, substance use, or personality disorder at the time, respond NO].

- a. Yes
- b. Somewhat
- c. No

124. At the time of the threat, or in the hours/days leading up to the threat, did you have problems acknowledging that you were at risk for committing violent behaviour towards another person or other people (for example, were you able to identify what things could make you more likely to commit violence)?

- a. Yes
- b. Somewhat

c. No

125. At the time of the threat, or in the hours/days leading up to the threat, did people tell you that you had problems acknowledging that you were at risk for committing violent behaviour towards another person or other people (for example, were you able to identify what things could make you more likely to commit violence)?

- a. Yes
- b. Somewhat
- c. No

Mood Disorders Insight Scale

Please try your best to rate this scale as if it was at the time of the threat or in the hours/days leading up to the threat.

126. I am mentally well.

- a. Yes
- b. Unsure
- c. No
 - i. If agrees or unsure: I have always been mentally well.
 - a. Yes
 - b. Unsure
 - c. No

127. I am experiencing symptoms or problems associated with mood.

- a. Yes
- b. Unsure
- c. No
 - i. If disagrees or unsure: I have experienced symptoms or problems with mood.
 - a. Yes
 - b. Unsure
 - c. No

128. Some of my mood symptoms are due to how my mind or brain functions.

- a. Yes
- b. Unsure
- c. No

129. My mood symptoms or problems are due to a mental health disorder.

- a. Yes
- b. Unsure
- c. No

130. Have you ever had any unusual experiences (e.g., hearing voices, hallucinations, delusions, fixed beliefs that others tell you are not true)?

- a. Yes
- b. Unsure
- c. No
 - i. If yes: The unusual things I experience, or have experienced, are due to a mental health disorder.

- a. Yes
- b. Unsure
- c. No

131. I need to be seen by a psychiatrist (or doctor) (for my mood symptoms or problems).

- a. Yes
- b. Unsure
- c. No
 - i. If disagrees or unsure: There was a time when I needed to be seen by a psychiatrist (or doctor) (for my mood symptoms or problems).
 - a. Yes
 - b. Unsure
 - c. No

132. I need medication to help me (with my mood symptoms or problems).

- a. Yes
- b. Unsure
- c. No
 - i. If disagrees or unsure: There was a time when I needed medication to help me (with my mood symptoms or problems).
 - a. Yes
 - b. Unsure
 - c. No

133. Have you ever been hospitalized (for these mood symptoms or problems)?

- a. Yes
- b. Unsure
- c. No
 - i. If yes: My stay in hospital is/was necessary.
 - a. Yes
 - b. Unsure
 - c. No

C2. Violent Ideation or Intent

134. At the time of the threat, or in the hours/days leading up to the threat, did you experience frequent or persistent thoughts of harming others?

- a. Yes
- b. Somewhat
- c. No
 - i. (If Yes) Were these thoughts detailed, realistic, and feasible?
 - a. Yes
 - b. Somewhat
 - c. No
 - ii. (If Yes) Was there an escalation in the frequency or intensity of these thoughts around the time of the threat?
 - a. Yes
 - b. Somewhat

- c. No

Schedule of Imagined Violence

135. At the time of the threat, or in the hours/days leading up to the threat, did you ever have daydreams or thoughts about physically hurting or injuring some other persons?

- a. Yes
- b. No

- i. (If indicated daydreams above) Since the first time you started having these thoughts, did the injuries that you think about get more serious or less serious at the time of the threat, or have they stayed the same?
 - a. Less Serious
 - b. Same
 - c. More Serious
- ii. (If indicated daydreams) When you had these daydreams or thoughts, were they usually about the same each time you had them, or did you imagine all kinds of different ways of hurting someone?
 - a. Same
 - b. Different
- iii. (If indicated daydreams) Were they usually about the same person, or were they about many different people?
 - a. Same person
 - b. Different people
- iv. (If indicated daydreams) Since the first time you started having these thoughts, were the injuries that you thought about at the time of the threat more serious, less serious, or have they stayed the same?
 - a. Less serious
 - b. Same
 - c. More serious
- v. (If indicated daydreams) In the past two months before the threat, did you ever have these thoughts while actually being with or watching the person whom you imagined hurting?
 - a. Yes
 - b. No

C3. Active Symptoms of a Major Mental Illness

Some of the following questions may appear similar to previous ones, but please answer all in the next section based on what you were experiencing at the time you made the threat.

136. Were you concurrently having problems with your mental/psychological health at the time of the threat, or in the hours/days leading up to the threat? For example, were you suffering from intense feelings of sadness or experienced things (sounds, sights) that were not really there?

- a. Yes
- b. Somewhat
- c. No
 - i. (If yes or somewhat) At the time when you made the threat, were these problems with your mental/psychological health serious in nature?
 - a. Yes
 - b. Somewhat
 - c. No
 - ii. (If yes or somewhat) At the time when you made the threat, were these problems with your mental/psychological health escalating? In other words, were they more severe than what they were a week, a month, a couple months, or a year ago?
 - a. Yes
 - b. Somewhat
 - c. No

137. At the time of the threat, or in the hours/days leading up to the threat, were people telling you that you have problems with your mental/psychological health?

- a. Yes
- b. Somewhat
- c. No

138. At the time of the threat, or in the hours/days leading up to the threat, were you admitted for an overnight stay in a hospital or other facility to receive help for problems with your emotions, nerves, mental health, or your use of alcohol or drugs?

- a. Yes
- b. No

139. At the time of the threat, or in the hours/days leading up to the threat, were you taking any type of prescription medicine for problems with your emotions, substance use, energy, concentration, sleep, or ability to cope with stress? Include medicines even if you took them only once.

- a. Yes
- b. No

140. Were you concurrently having problems with your physical health, at the time of the threat or in the hours/days leading up to the threat? For example, were you suffering from a physical injury, an illness, or an infection?

- d. Yes
- e. Somewhat
- f. No
 - i. (If yes or somewhat) At the time when you made the threat, were these problems with your physical health serious in nature?
 - a. Yes
 - b. Somewhat

- c. No
- ii. (If yes or somewhat) At the time when you made the threat, were these problems with your physical health escalating? In other words, were they more severe than what they were a week, a month, a couple months, or a year ago?
 - a. Yes
 - b. Somewhat
 - c. No

Psychosis Screening Questionnaire

141. At the time of the threat, or in the hours/days leading up to the threat, did you feel that your thoughts were directly interfered with or controlled by some outside force or person?

- a. Yes
- b. No

142. At the time of the threat, or in the hours/days leading up to the threat, did you feel that people were against you?

- a. Yes
- b. No

143. At the time of the threat, or in the hours/days leading up to the threat, did you feel that something strange was going on?

- a. Yes
- b. No

144. At the time of the threat, or in the hours/days leading up to the threat, did you hear or see things that other people couldn't?

- a. Yes
- b. No

145. (If indicated any psychotic symptoms) How much of a problem did any of these cause you at the time you made the threat – like being unable to work; having family, money, or legal troubles; getting into arguments or fights; or interfering with your health?

- a. No problems
- b. Minor problems
- c. Moderate problems
- d. Serious problems

146. At the time of the threat, or in the hours/days leading up to the threat, were you experiencing a period of time lasting two weeks or longer when most of the day you felt sad, empty or depressed?

- a. Yes
- b. No

Mood Disorder Questionnaire

147. At the time of the threat, or in the hours/days leading up to the threat, did you feel that you were not your usual self and...

- a. ...you felt so good or so hyper that other people thought you were not your normal self or you were so hyper that you got into trouble?
 - iii. Yes
 - iv. No
- b. ...you were so irritable that you shouted at people or started fights or arguments?
 - v. Yes
 - vi. No
- c. ...you felt much more self-confident than usual?
 - vii. Yes
 - viii. No
- d. ...you got much less sleep than usual and found you didn't really miss it?
 - ix. Yes
 - x. No
- e. ...you were much more talkative or spoke faster than usual?
 - xi. Yes
 - xii. No
- f. ...thoughts raced through your head or you couldn't slow your mind down?
 - xiii. Yes
 - xiv. No
- g. ...you were so easily distracted by things around you that you had trouble concentrating or staying on track?
 - xv. Yes
 - xvi. No
- h. ...you had more energy than usual?
 - xvii. Yes
 - xviii. No
- i. ...you were much more active or did many more things than usual?
 - xix. Yes
 - xx. No
- j. ...you were much more social or outgoing than usual, for example, you telephoned friends in the middle of the night?
 - xxi. Yes
 - xxii. No
- k. ...you were much more interested in sex than usual?
 - xxiii. Yes
 - xxiv. No
- l. ...you did things that were unusual for you or that other people might have thought were excessive, foolish, or risky?
 - xxv. Yes
 - xxvi. No
- m. ...spending money got you or your family in trouble?
 - xxvii. Yes
 - xxviii. No

148. If you checked YES to more than one of the above, how much of a problem did any of these cause you at the time you made the threat – like being unable to work; having family, money, or legal troubles; or getting into arguments or fights?

- a. No problems
- b. Minor problem
- c. Moderate problem
- d. Serious problem

TCO Measure

Please answer the following questions based on what you were thinking and feeling at the time of the threat or in the hours/days leading up to the threat.

1. How often have you felt that your mind was dominated by forces beyond your control?

1 week prior to making threat	Never					Very Often
	0	1	2	3		4
2 months prior to making threat	Never					Very Often
	0	1	2	3		4

2. How often have you felt that thoughts were put into your head that were not your own?

1 week prior to making threat	Never					Very Often
	0	1	2	3		4
2 months prior to making threat	Never					Very Often
	0	1	2	3		4

3. How often have you felt that there were people who wished to do you harm?

1 week prior to making threat	Never					Very Often
	0	1	2	3		4
2 months prior to making threat	Never					Very Often
	0	1	2	3		4

C4. Impulsivity/Instability

149. At the time of the threat, or in the hours/days leading up to the threat, were you feeling hopeless, dejected, seriously distressed or anxious, or seriously irritable or angry?

- a. Yes

- b. Sometimes
- c. No
 - i. (If yes or somewhat) At the time when you made the threat, were these feelings serious or intense in nature?
 - a. Yes
 - b. Somewhat
 - c. No
 - ii. (If yes or somewhat) At the time when you made the threat, were these feelings escalating? In other words, were they more severe than what they were a week, a month, a couple months, or a year ago?
 - a. Yes
 - b. Somewhat
 - c. No

150. At the time of the threat, or in the hours/days leading up to the threat, did other people tell you that you seemed hopeless, dejected, seriously distressed or anxious, or seriously irritable or angry?

- a. Yes
- b. Sometimes
- c. No

151. At the time of the threat, or in the hours/days leading up to the threat, were you feeling restless or hyperactive, were you acting in an impulsive, irresponsible, reckless or disruptive manner, or did you experience sudden outbursts of anger or aggression?

- a. Yes
- b. Sometimes
- c. No

152. At the time of the threat, or in the hours/days leading up to the threat, did other people tell you that you seemed restless or hyperactive, that you were acting in an impulsive, irresponsible, reckless or disruptive manner, or that you were showing sudden outbursts of anger or aggression?

- a. Yes
- b. Sometimes
- c. No

153. At the time of the threat, or in the hours/days leading up to the threat, did you view yourself as bad or evil, did you possess no consistent sense of self, were you distractable or couldn't concentrate, or did you blame all your problems on yourself or others?

- a. Yes
- b. Sometimes
- c. No

154. At the time of the threat, or in the hours/days leading up to the threat, did other people tell you that you seemed to view yourself as bad or evil, that you seemed to possess no consistent sense of self, that you distractable or couldn't concentrate, or that you blamed all your problems on yourself or others?

- a. Yes

- b. Sometimes
- c. No

Barratt Impulsiveness Scale-11

Please answer the following questions based on how you were thinking, feeling, and acting at the time of the threat, or in the hours/days leading up the threat.

- 155. I do things without thinking.
 - a. Rarely/Never
 - b. Occasionally
 - c. Often
 - d. Almost Always/Always
- 156. I don't "pay attention."
 - a. Rarely/Never
 - b. Occasionally
 - c. Often
 - d. Almost Always/Always
- 157. I plan trips well ahead of time. (RS)
 - a. Rarely/Never
 - b. Occasionally
 - c. Often
 - d. Almost Always/Always
- 158. I concentrate easily. (RS)
 - a. Rarely/Never
 - b. Occasionally
 - c. Often
 - d. Almost Always/Always
- 159. I save regularly. (RS)
 - a. Rarely/Never
 - b. Occasionally
 - c. Often
 - d. Almost Always/Always
- 160. I am a careful thinker. (RS)
 - a. Rarely/Never
 - b. Occasionally
 - c. Often
 - d. Almost Always/Always
- 161. I act on the spur of the moment.
 - a. Rarely/Never
 - b. Occasionally
 - c. Often
 - d. Almost Always/Always
- 162. I buy things on impulse.
 - a. Rarely/Never
 - b. Occasionally

- c. Often
 - d. Almost Always/Always
163. I am more interested in the present than the future.
- a. Rarely/Never
 - b. Occasionally
 - c. Often
 - d. Almost Always/Always

Anger Reaction Scale [COVR]

Please answer the following questions based on how you were thinking, feeling, and acting at the time of the threat, or in the hours/days leading up to the threat.

164. My temper is quick and hot.
- a. Never true
 - b. Sometimes true
 - c. Always true
165. When I get mad, I can easily hit someone.
- a. Never true
 - b. Sometimes true
 - c. Always true
166. I have a fiery temper that arises in an instant.
- a. Never true
 - b. Sometimes true
 - c. Always true
167. When I get angry, I fly off the handle before I know it.
- a. Never true
 - b. Sometimes true
 - c. Always true

C5. Recent Problems with Treatment or Supervision Response

168. At the time of the threat, or in the hours/days leading up to the threat, were you mandated to institutional or community supervision, such as being imprisoned in a correctional facility, placed under probation or parole, or court-ordered to attend a drug treatment program?

- a. Yes
- b. No

169. (If indicated being mandated to supervision) At the time of the threat, or in the hours/days leading up to the threat, did you have problems complying with or responding to the demands of supervision in these types of environments? For example, did you fail to attend treatment as directed, or violate the conditions of your probation or parole?

- a. Yes
- b. Somewhat
- c. No

170. (If indicated being mandated to supervision) At the time of the threat, or in the hours/days leading up to the threat, did people tell you that you have problems complying with treatment or supervision (e.g., correctional officers, therapists, etc.)?

- a. Yes
- b. Somewhat
- c. No

171. (If indicated problems with supervision compliance) Listed below are various examples of failing to abide by forensic, mental health, or correctional treatment or supervision. Please check each box that relates to the problem(s) you were experiencing at the time of the threat.

- a. Refusal to attend treatment/therapy programs in prison (due to poor motivation, unwillingness, etc.)
- b. Failure to attend court-ordered psychiatric or substance use treatment in community
- c. Failure to take prescribed psychiatric medications
- d. Negative/uncooperative attitudes toward treatment or therapists
- e. Failure to appear for scheduled court dates
- f. Serious violation of parole/probation conditions, leading to re-arrest or re-institutionalization (e.g., re-offending during probation)
- g. Less serious violation of parole/probation conditions, leading to reprimand, loss of privileges, or other minor disciplinary action (e.g., missing curfew, using alcohol or drugs while prohibited)
- h. Escape/attempted escape from a prison, hospital, or other secure facility
- i. Other (specify)

R3. Problems with Personal Support

172. At the time of the threat, or in the hours/days leading up to the threat, did you have problems creating or maintaining stable personal relationships with other people, such as romantic partners or friends? For example, were you cheated on or had you been cheated on by a romantic partner, engaged in spousal violence, or been friends with people who have a negative influence on you?

- a. Yes
- b. Somewhat
- c. No

173. At the time of the threat, or in the hours/days leading up to the threat, did people tell you that you had problems with stable personal relationships?

- a. Yes
- b. Somewhat
- c. No

Social Support Questionnaire

Please answer the following questions based on how you were thinking, feeling, and acting at the time of the threat, or in the hours/days leading up the threat.

174. I feel that there is no one I can share my most private worries and fears with.
- Definitely false
 - Probably false
 - Probably true
 - Definitely true
175. If I were sick, I could easily find someone to help me with my daily chores. (RS)
- Definitely false
 - Probably false
 - Probably true
 - Definitely true
176. There is someone I can turn to for advice about handling problems with my family. (RS)
- Definitely false
 - Probably false
 - Probably true
 - Definitely true
177. When I need suggestions on how to deal with a personal problem, I know someone I can turn to. (RS)
- Definitely false
 - Probably false
 - Probably true
 - Definitely true
178. I don't often get invited to do things with others.
- Definitely false
 - Probably false
 - Probably true
 - Definitely true
179. If I was stranded 10 miles from home, there is someone I could call who could come and get me. (RS)
- Definitely false
 - Probably false
 - Probably true
 - Definitely true
180. If a family crisis arose, it would be difficult to find someone who could give me good advice about how to handle it.
- Definitely false
 - Probably false
 - Probably true
 - Definitely true
181. If I needed some help in moving to a new house or apartment, I would have a hard time finding someone to help me.
- Definitely false
 - Probably false
 - Probably true
 - Definitely true

R5. Stress or Coping

182. At the time of the threat, or in the hours/days leading up to the threat, were your living circumstances very stressful or were you experiencing stressful life events (e.g., a break-up, a death, or financial difficulties)?

- a. Yes
 - b. Somewhat
 - c. No
- i. (If yes or somewhat) At the time when you made the threat, were these feelings of stress serious in nature?
 - a. Yes
 - b. Somewhat
 - c. No
 - ii. (If yes or somewhat) At the time when you made the threat, were these feelings of stress escalating? In other words, were they more severe than what they were a week, a month, a couple months, or a year ago?
 - a. Yes
 - b. Somewhat
 - c. No

183. At the time of the threat, or in the hours/days leading up to the threat, were you unlikely to use coping strategies to avoid stressors, were you likely to use inappropriate coping strategies (e.g., drugs, alcohol), or were you having difficulty coping with minor or common frustrations and problems?

- a. Yes
- b. Somewhat
- c. No

184. At the time of the threat, or in the hours/days leading up to the threat, did people tell you that you were experiencing stressful situations or that you were not coping very well?

- a. Yes
- b. Somewhat
- c. No

Perceived Stress Scale

Please answer the following questions based on how you were thinking, feeling, and acting at the time of the threat, or in the hours/days leading up the threat.

185. Prior to making the threat, how often did you feel that you were unable to control the important things in your life?

- a. Never
- b. Almost never
- c. Sometimes
- d. Fairly often
- e. Very often

186. Prior to making the threat, how often did you feel nervous and “stressed”?
- Never
 - Almost never
 - Sometimes
 - Fairly often
 - Very often
187. Prior to making the threat, how often did you feel confident about your ability to handle your personal problems? (RS)
- Never
 - Almost never
 - Sometimes
 - Fairly often
 - Very often
188. Prior to making the threat, how often did you find that you could not cope with all the things that you had to do?
- Never
 - Almost never
 - Sometimes
 - Fairly often
 - Very often
189. Prior to making the threat, how often were you able to control irritations in your life? (RS)
- Never
 - Almost never
 - Sometimes
 - Fairly often
 - Very often
190. Prior to making the threat, how often were you angered because of things that were outside of your control?
- Never
 - Almost never
 - Sometimes
 - Fairly often
 - Very often
191. Prior to making the threat, did you experience a moderate or severe life stressor (e.g., a significant life event that caused you stress, worry, or sadness)?
- Yes
 - No
 - (If yes) What, generally, was this life stressor?
 - Death of a loved one
 - Termination of employment
 - End of significant relationship
 - Other
 - (If yes) How soon did you make the threat after experiencing the life stressor?

- a. Hours
- b. A day
- c. A week
- d. Two weeks
- e. A month
- f. Two months
- g. Four months
- h. Six months or more

Warning Behaviours [Meloy et al., 2012]

192. Prior to making the threat, did you do any research, planning, or other types of preparation for carrying out the threat?

- a. Yes
- b. No
 - i. (If yes) How much time passed between the beginning of this behaviour and making the threat?
 - a. Hours
 - b. A day or days
 - c. A week or weeks
 - d. A month or more

193. Prior to making the threat, were you strongly interested in the victim (target) of your threat and found yourself often occupied with thoughts of them and/or talking about them frequently?

- a. Yes
- b. No
 - i. (If yes) How much time passed between the beginning of this behaviour and making the threat?
 - a. Hours
 - b. A day or days
 - c. A week or weeks
 - d. A month or more

194. Prior to making the threat, did you find yourself identifying with other people who have committed violence, experiencing a “warrior mentality,” or identifying with groups like law enforcement, the military, or assassins/hitmen?

- a. Yes
- b. No
 - i. (If yes) How much time passed between the beginning of this behaviour and making the threat?
 - a. Hours
 - b. A day or days
 - c. A week or weeks
 - d. A month or more

195. Prior to making the threat, did you commit any aggressive or violent behaviours unrelated to the threat for the first time (e.g., you have engaged in minimal violence or no violence beforehand)?

- a. Yes
- b. No
 - i. (If yes) How much time passed between the beginning of this behaviour and making the threat?
 - a. Hours
 - b. A day or days
 - c. A week or weeks
 - d. A month or more

196. Prior to making the threat, did you feel more energetic? Did you increase the frequency of violent or non-violent behaviour, or any behaviour that was related to the victim (target) in any way?

- a. Yes
- b. No
 - i. (If yes) How much time passed between the beginning of this behaviour and making the threat?
 - a. Hours
 - b. A day or days
 - c. A week or weeks
 - d. A month or more

197. Prior to making the threat, did you tell anyone about your intent to make the threat or commit violence in any fashion (e.g., in person, via the telephone or the internet) or post your intent to make the threat or commit violence on any public internet forum or other public place?

- a. Yes
- b. No
 - i. (If yes) How much time passed between the beginning of this behaviour and making the threat?
 - a. Hours
 - b. A day or days
 - c. A week or weeks
 - d. A month or more

198. Prior to making the threat, did you feel like nothing mattered anymore and experienced increasing desperation or distress? Did you feel trapped, like there is no alternative other than violence, and that the consequences of violence were justified?

- a. Yes
- b. No
 - i. (If yes) How much time passed between the beginning of this behaviour and making the threat?
 - a. Hours
 - b. A day or days
 - c. A week or weeks
 - d. A month or more

199. Did you make the threat directly to the target (victim) of the threat?

- a. Yes
- b. No

Motivating, Disinhibiting, and Destabilizing Mechanisms

Please read the questions below and consider the reasons why you chose to [commit/not commit] violence after making the threat. For each section, check all reasons that apply.

Did the [presence/absence] of any of the below factors motivate you to [commit/not commit] violence after making the threat?

- 200. Defense from, distance from, or protection from something
- 201. Justice, honour, or revenge
- 202. Gain, profit, or getting something you want
- 203. Change, control over something, or gaining compliance from something
- 204. Achieving status, esteem, or dominance over something or someone
- 205. Achieving an emotional release or expressing yourself or your emotions
- 206. Activity, excitement, or thrill-seeking
- 207. Achieving proximity to, affiliation with, or conformity with something or someone you like

Did the [presence/absence] of any of the below factors serve as disinhibitory in your decision to [commit/not commit] violence after making the threat? In other words, did the [absence/presence] of any of the factors [take away/strengthen] any barriers associated with committing violence?

- 208. Negative attitudes
- 209. Negative opinion of yourself
- 210. Alienation or distance from people and things you care about
- 211. Belief that life has no purpose or meaning
- 212. Lack of insight
- 213. Lack of guilt
- 214. Lack of stress or anxiety or fear
- 215. Lack of empathy or caring for others

Did the [presence/absence] of any of the below factors serve as destabilizing in your decision to [commit/not commit] violence after making the threat? In other words, did the [presence/absence] of any of the factors [disrupt/strengthen] your ability to think clearly and weigh the costs and benefits of committing violence following the threat?

- 216. Inability to pay attention or concentrate well
- 217. Inability to sense or perceive things going on around you
- 218. Problems or issues with learning new things, reasoning about things, problem solving, and making decisions
- 219. Inability to remember things or other memory issues
- 220. Impulsive thoughts or thoughts that you don't want in your mind
- 221. Thinking about the same thing over and over, or an inability to get the same thoughts out of your head

Validation/Attention-Check Questions: Victim (Target) of Threat

222. Who was the victim (target) of your threat?
- a. Romantic partner or ex-romantic partner
 - b. Family member(s)
 - c. Roommate(s)
 - d. Friend or acquaintance(s)
 - e. Boss/supervisor(s)
 - f. Co-worker(s)
 - g. Neighbour(s)
 - h. Law enforcement
 - i. Other professional (e.g., doctor, teacher/instructor, clerk at local grocery store)
 - j. Public figure(s)
 - k. Co-patient(s)
 - l. Stranger(s)
 - m. Government
 - n. Private organization (e.g., Walmart, the SPCA)
 - o. Identifiable group of people (e.g., a specific race, ethnicity, or religious group)
 - p. Other