Candidate: POL-2202

Maxime Bolduc

Wolfson College

Supervisor: Dr Eleanor Neyroud

Are Police Agencies in Quebec, Canada, Ready to Integrate Actuarial Forecasting Models? An Exploratory Study About the Suspects' Releasing Decision-Making Process of Sûreté du Quebec Officers

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Abstract

Background

The following research concerns the decision-making process of police officers releasing offenders from their custody in Quebec, Canada. This study aims to integrate actuarial forecasting models in the future. In Canada and, more specifically, in the province of Quebec, decisions on whether to release violent offenders pending initial prosecution proceedings in the community are made by the police. These decisions are purely clinical, with no actuarial risk assessment. Decisions for releasing suspects by officers and sergeants are experience-based and, under certain circumstances, supported by the Crown Prosecutors. The factors and considerations taken by the officers must, for the most part, be subjectively determined. This study focuses on Quebec's provincial police service, which offers the highest level of service in the province. Therefore, mapping this process is essential to understanding each body's objective and proportionate implications. This article intends to close the gap between the development of this technology in the United Kingdom and its future potential implementation in Quebec, Canada.

Research Questions

1) What is the releasing decision-making process of *Sûreté du Québec* (SQ) officers for suspects of violence?

2) How is the risk assessment currently carried out for releasing a suspect?

3) Are actuarial forecasting models an adapted solution for improving the current release decision-making?

Research Design

This research study is structured as an exploratory design using the grounded theory model (GTM) as a methodological framework. By exploring documents and conducting in-depth interviews with key individuals, mainly in policing, the aim is to produce the theory from the concepts developed from the data.

Data and Methodology

The data collection instruments selected were interviews and key document consultation. Eight individual semi-structured interviews were conducted with police staff from Quebec's provincial police service (Sûreté du Québec) and a teaching staff member of Quebec's national policing school (ÉNPQ).

Analytic Methods

The technique used for this research was based on the GTM framework. Each interview transcript was coded and subdivided into three iterative phases, during which memos were constantly produced. Coding and memoing had to be completed before conducting the interview. The methodology's analysis core is the constant comparison represented by alternating between the data and the emerging concepts.

Findings

1. This study discovered a high level of disparity in the release decision-making process of SQ officers.

2. The second finding relates to releasing responsibilities, denoting a proportional increase in the offence severity and the likelihood of asking for the Prosecutor's assistance.

3. Unequal treatment resulting from the disparity of the decision-making process could negatively affect police legitimacy.

4. Finally, the machine learning tools' complexities, barriers, and limitations of the implementation encompass the benefits, leading to the consideration of simpler alternative solutions.

Policy Implications

1. Reinforcing officers' and supervisors' training and guidance on releasing roles and responsibilities.

2. Working on developing algorithms in policing is a promising solution from a medium to long-term strategy for stabilizing decisional consistency and objectivating the process.

3. A third recommendation concerns legal and procedural shortcomings. Proportionate standardization of the decision-making process seems a reasonable approach to reducing discretion and ensuring the right balance of experience in police officers' reasoning.

4. Operationalizing the latter recommendations should start with creating and implementing a release checklist.

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Glossary

AI	Artificial Intelligence
CCC	Criminal Code of Canada
CNESST	Labour Standard, Pay Equity of Occupational Health and Safety Commission or *Commission des normes d'équité salariale et de la santé et sécurité au travail*
Charter	Canadian Charter of Rights and Freedoms
CRPQ	National Police Intelligence System or *Centre de renseignements policiers du Québec*
CVCO	Monitoring and Operational Control Centre or *Centre de vigie et de coordination opérationnelle*
DPCP	*Directeur des poursuites criminelles et pénales* or Crown Prosecution Services
DV	Domestic Violence
EBIT	Evidence-Based Investigative Tool
ÉNPQ	Quebec's National Policing College or *École Nationale de Police du Québec*
HART	Harm Assessment Risk Tool
SQ	Sûreté du Québec
TEAMS	Microsoft TEAMS Platform
TCE	Theory of Constructed Emotion
UK	United Kingdom
US	United States of America

Chapter One: Introduction

Within the last year, nine Canadian police officers were killed in the line of duty (Canadian Press, 2023). The death of Ontario Provincial Police Constable Grzegorz Pierzchala was a direct result of a repeat violent offender who had been released on bail conditions (Nickerson, 2022). The case of Sûreté du Québec Sergeant Maureen Breau, murdered in March 2023, tragically raised interrogations about mental health and risk assessment (Beaudry, 2024). These murders highlight the necessity of evidence-based practices and enhanced training for officers who make release decisions. Following Sergeant Breau's death, the Labour Standard, Pay Equity of Occupational Health and Safety Commission's (CNESST) intervention report made observations and recommendations. The report denotes an absence of risk assessment guidelines for unplanned intervention by officers. The organization should implement an effective mechanism for providing the officer with all available data to assess the risk in an unplanned intervention context. Finally, police organizations must provide appropriate training so officers can maintain and develop their abilities and required knowledge to accomplish their work securely (CNESST, 2023). The tragic murders of Canadian police officers were the driving force behind modelling this research topic.

Police officers must make potential high-impacting public safety decisions requiring risk assessment. An offender's release following their arrest is a concrete example, realized in unplanned circumstances. This decision could harm victims and the officer's legal responsibilities. In reaction to the latter report's conclusions, the following

questions are raised: How is this decision-making process structured for assessing the risk associated with a suspect? How effective is it?

Increased use of artificial intelligence (AI) regarding forecasting machine learning tools in the UK, the US and elsewhere for decision-making guidance and data-driven risk assessment in policing is denoted (Rummens et al., 2017; McKay, 2020). It offers a new perspective regarding accuracy, harm prevention, consistency, and police legitimacy, leading to questioning actual processes in policing.

Research Topic

The following research is about enhanced comprehension of the releasing decision-making process of police officers in Quebec, Canada, for evaluating future integration of actuarial forecasting models. In Canada and, more specifically, in the province of Quebec, decisions on whether to release violent offenders pending initial prosecution proceedings in the community are made by the police. These decisions are purely clinical, showing disparity, and sometimes subjective, with no actuarial risk assessment. Decisions for releasing suspects by officers and sergeants are experience-based and, under certain circumstances, supported by the Crown Prosecutors. The factors considered for decision-making and proportionate implications must be determined to establish a baseline for evaluating the quality of the process and, inherently, the relevance of using machine learning tools.

Context

This research focuses on the *Sûreté du Québec* (SQ), Quebec's provincial police service, which offers the highest level of service in the province. Their mandate is to protect and serve the population, ensure the management leadership for the provincial centralized intelligence and police database, and assist municipal police services across the territory (Police Act, 2023). Over eighty-six detachments cover the province over 1.7 million square feet (Quebec, 2023). Each geographic region has different operational realities, cultures, and population characteristics. The official and spoken French language is an essential distinction of the province of Quebec compared to the rest of the country. The composition of most police units who would be involved in release decision capacities includes a Sergeant, who is a supervisor, and Constables. These officers deal with victims of various offences and arrest suspects when grounds exist under the Criminal Code of Canada (CCC). In the case of an arrest, a constable must assess releasing modalities. An important and potentially high-impacting decision has to be made regarding the suspect's freedom: will he be released with a summons, a promise to appear without conditions, a promise to appear with conditions, or detained?

In Quebec, Canada, police officers deal with local Crown Prosecutors. Representing the State, the *Directeur des poursuites criminelles et pénales* (DPCP) mandate is to administrate justice, including independent criminal and penal prosecution of individuals (Act Respecting the Director of Criminal and Penal Prosecutions, 2023). Once a police officer proceeds with the arrest and release, the criminal case is sent to the prosecutor for review. The decision to proceed and criminally charge a suspect under the

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CCC remains in their hands (DPCP, 2022). Thus, Crown Prosecutors have a vital role in this release process.

Mandated by the Police Act (2023), the *École Nationale de Police du Québec* (ÉNPQ) was established as the official police training school. Its mission is to "*ensure the pertinence, quality and coherence of police training*" (Police Act, 2023, par. 10). It also exclusively provides initial mandatory training for candidates aspiring to be hired by police agencies. Quebec officers are educated on their powers, duties, and releasing responsibilities by the ENPQ. The implication is substantial and relevant in the context of this research.

Research Questions

This study seeks to answer three questions:

1) What is the releasing decision-making process of SQ officers for suspects of violence?

2) How is the risk assessment currently carried out for releasing a suspect?

3) Are actuarial forecasting models an adapted solution for improving the current release decision-making?

Thesis Structure

This study will describe underpinning concepts through the literature review: the Canadian legal framework and official processes, the Crown Prosecutor's implication in

the releasing process, police officers' discretionary power, consistency and treatment equality in decision-making, actuarial forecasting models characteristics and recent developments in policing, and safety checklists. Secondly, the methodology used to answer the research questions, which refers to the grounded theory model (GTM) framework, will be described. Thirdly, the findings of this research will be presented. A table will represent the conceptualization of the SQ officer's decision-making process analysis. Fourthly, the discussion section will outline the study's policy implications, strengths and limitations, internal and external validity assessment, and recommendations for future research.

To the author's knowledge, no previous Canadian research has explored the consistency of police officers' decision-making process of releasing offenders. This research will address a gap in the literature regarding police officers' decision-making processes and the implementation conditions of forecasting models in Quebec police agencies; therefore, conceptualizing and mapping the SQ officer's decision-making process is essential to understanding each body's objective and proportionate implications.

Chapter Two: Literature Review

This chapter describes the essential themes and concepts used as fundamentals for this research. The first section presents the relevant legal aspects and official processes of suspect release, actuarial forecasting models and algorithmic tools-related literature, and, finally, looks at policing implementation.

Legal Aspects and Official Processes in the Province of Quebec

Legal obligations are the subsistence of police officers. Diverse laws and guidelines oversee officers' work so they can accomplish their mandate transparently, respectfully, and professionally. Applied to the main topic of that research, suspects' release management is also subject to regulations. The Canadian Charter of Rights and Freedoms (Charter) and the CCC sections and concepts relating to police release will be listed.

Canadian Charter of Rights and Freedoms

To guarantee fairness throughout the process involving citizens, police agencies must respect and comply with the Charter principles (Constitution Act, 1982). The Charter is a supreme law in Canada, meaning that every other law must comply with it (Hogg, 1983). Its mandate ensures Canadian people's rights and freedoms deemed necessary in a democracy (Constitution Act, 1982). Under section 11(e), the legislator states (Constitution Act, 1982, par. 11), *"Any person charged with an offence has the right not to be denied reasonable release without just cause."* It supports another important

Criminal law concept of innocence presumption, giving additional procedural rights at the pre-trial stage. The Supreme Court has stated that *"in Canadian law, the release of accused persons is the cardinal rule and detention, the exception"* (R. v. St-Cloud, 2015, par. 70). Another judgment adds precision, stating that the *"release should be favoured at the earliest reasonable opportunity and… on the least onerous grounds"* (R. v Antic, 2017, par. 29) Therefore, application of section 11(e) requires the individual to be charged with an offence. Additionally, it includes two critical components. The first is the right to be released reasonably, proportional to financial and restrictive characteristics. The arrestee's risk assessment must correspond to the release conditions (R. v Zora, 2020*,* par. 88). A departure from the fundamental right to be released happens each time a release gets denied.

The second component requires a "just cause" for any denial, and two requirements would be necessary for justification: the refusal can only be justified in a narrow set of circumstances and must be imposed to promote the proper functioning of the release system and not for external reasons (R. v Antic, 2017, par. 40). This narrow set of circumstances will be further explained, stated by the CCC.

The British Columbia Prosecution Service (2022) has highlighted that remand populations and denial of release have increased since introducing these precisions. This disproportionately impacts accused people from disadvantaged and vulnerable communities, increases the risk of criminalization and exacerbates the over-

representation of Indigenous people processed by the justice system (British Columbia Prosecution Service, 2022; R. v Zora, 2020).

Criminal Code of Canada

Over the years, Canadian legislators consistently adapted the regulations with new judgments. To protect the guarantees provided by the Charter, the CCC details police officers' powers and responsibilities regarding the right to release more precisely. Once a suspect is arrested without a warrant for an offence other than the one listed in section 469, section 498(1) prescribes that the officer shall release the person from custody as soon as practicable by way of summons, appearance notice or undertaking to the peace officer (CCC, 1985). Section 469 excludes a few infractions, including murder. However, an exception is provided under section 498(1.1), stating that officers in charge or peace officers have the authority to detain in custody an individual if they have reasonable grounds to think that it is necessary for the public interest concerning certain circumstances or that the subject will fail to attend court (CCC, 1985).

The CCC (1985) enumerates four circumstances: *"(i) establish the identity of the person, (ii) secure or preserve evidence of or relating to the offence, (iii) prevent the continuation or repetition of the offence or the commission of another offence, or (iv) ensure the safety and security of any victim of or witness to the offence."* In summary, the officer must complete a global appreciation, or risk assessment, of the case in consideration of the specific circumstances and the necessity of protecting the public interest before agreeing on the release of an individual.

The CCC sets out three legal mechanisms for the pre-trial release of offenders. The *undertaking to the peace officer*, also known as the *promise to appear*, is the first. Section 501 empowers police agencies, allowing them to impose mandatory conditions related to court attendance and additional conditions (CCC, 1985). When these previous public interest criteria cannot be applied, the appearance to notice is applicable. The main differences between these remain in the imposition of conditions. This second mechanism can be delivered whether the suspect has been arrested or not. Finally, summons is the most applied method to release a person. The Crown prosecutor decides to lay criminal charges and summon someone (Lavallée, 2022).

Under reasonable public interest grounds, the officer can deny a person's release and keep them in custody. Section 503(1) requires police agencies to take the suspect before a justice to be dealt with within the next 24 hours following his arrest without unreasonable delay. If justice is unavailable, the individual must be taken "*as soon as possible*" (CCC, 1985). Additionally, section 503(1.1) introduces the obligation to re-evaluate the necessity of detention constantly before the expiry of this delay (Lavallée, 2022).

The ÉNPQ (2019) explains the extended post-release powers of peace officers. After the release, if this person violates one of the mechanisms or is about to, section 495(1)(a) allows the officer to arrest them. Section 495(1)(b) describes the same consequences if the person commits a criminal offence in the same circumstances. These

cited effects demonstrate the importance of the officer's initial context analysis of the offence commission and their direct impact on the process.

Lavallée (2022) goes further about releasing and explains that the Code is clear; it can be executed in various places. The person could either be released at the exact location where the arrest occurred, during their transport or if the circumstances allow it, at the police station. This last precision is crucial in understanding another concept: shared responsibility. Given the law, the officer who arrests the individual is granted the power to release or detain. If the suspect is brought to the police station or a detention centre, the decision-making process for release will be shared with the officer in charge. In practice, this person is usually the team leader or the sergeant (Benoit & Tremblay, 2007).

Prosecutors' Implication in the Releasing Process

As was introduced earlier, the Crown prosecutors are partly implicated in the release process. Benoit & Tremblay (2007) outline the SQ members' involvement: the peace officer and the officer in charge are lawfully responsible for releasing an individual, with conditions or not. However, the prosecutors can be consulted for legal advice regarding any case. Outside office hours, including on weekends and holidays, the Prosecutor's Advisory Office (Bureau de service-conseil) provides officers and agencies with legal assistance and advice in executing their mandate (Benoit & Tremblay, 2007; DPCP, 2018). The decision of whether to release a suspect or deny his freedom, including

which conditions to impose in the case of release, remains strictly in the hands of the police agency (Benoit & Tremblay, 2007).

Nevertheless, the Crown Prosecution Services' guidelines bring relevant material regarding the present topic. Unlike police officers, prosecutors are provided a list of criteria used for bail by the DPCP. The last one is a judicial procedure for releasing an individual engaged by the prosecutor. These concurrent elements to consider are the following: the prosecutor weighs the various interests involved, including those of the offender, the victim, the witnesses, and the public; if applicable and depending on the offence, the prosecutor consults the peace officer in charge of the file and people involved in the case to carry out this exercise. The prosecutor must highlight to the Court any critical consideration relevant to the judicial release of the suspect (DPCP, 2018). This information aims at the personal characteristics and situation of the offender, the fact that the individual is charged with an offence committed with the use, attempt, or threat of violence against an intimate partner (al. 515(3)a) *C.cr.*) or past convictions (al. 515(3)b) *C.cr.*).

Discretionary Power

As stated by Benoit & Tremblay (2007), the provincial police service reinforces the idea that officers shall prioritize the release of the subject over detention, which is the exception where the public interest is menaced or at risk. The decision to release with or without conditions or to deny relates to discretionary power. This concept is central to

police practices and essential for the sustainability of the judiciary system (Blais et al., 2017). Traditionally, such risk assessments were outlined by the law, but clinical, led by human discretion and the officer's intuition (McKay, 2020). Most research on this topic is aimed at the results and external factors rather than the decision-making process (Nickels, 2007). Previous research aimed to predict the risk of being pulled over by an officer, putting aside the complexity of the cognitive operation (Black, 1976; Mastrofski et al., 1995; Schafer & Mastrofski, 2005). Reinforcing that aspect, Raine and Willson (1995; 1996) compared the difficulty that officers could encounter to the dilemma magistrates face in court. In the case of release, the officer must act quickly without having all the information. Considering the lack of 'hard data' in these situations, the officer or the magistrate could be expected to use their experience in the rational analysis. This compensation is part of a very intuitive and complex decision-making process (Raine & Willson, 1995).

Subjectivity may taint these decisions, such as positive and negative life experiences. Dehaghani's (2019) theorization of custody officers' decision-making reinforces the latter, emphasizing their rationale for suiting their personal and professional ends. These considerations can vary between individuals and even encompass other essential factors such as police culture, crime control, bureaucracy, or the approach of the judicial and political elites (Dehaghani, 2019). Using the Theory of Constructed Emotion (TCE) to understand police decision-making, Fridman et al. (2019) depict this process as improvisational and patterned. Policing is a profession where hunches and personal experiences are tied to discretion in daily decision-making. Fleming and Rhodes

(2018) state that 'craft experience' and 'practical wisdom' should be recognized as official knowledge, as are political and evidence-based sources. Qualifying 'craft,' the authors refer to everyday beliefs and practices shared across police forces, usually locally contextualized and underpinned by culture.

From a medical perspective, Fridman et al. (2019) demonstrate the disentanglement difficulty of experience from decision-making by highlighting a critical element enabling the brain to predict: the capacity to quickly generalize from one situation to another even if the facts or components are not similar. The stress and fear often present in police work were also confirmed to be impacting decision-making, while the pressure and anxiety resulting from the accountability and consequences of their actions add to this complexity. Providing support tools in daily decision-making is a solution for more balance (Verhage et al., 2018).

Imperceptible factors might also influence decision-making. Bublitz's (2020) work with judges demonstrates hidden layers of the process that operate psychologically. It explores the relationship between legal decisions and factors that may influence judges. Reasoning is susceptible to being influenced by implicit biases and assumptions, not automatically applying norms, concepts, or background considerations. Instead, the use of shortcuts and heuristics emerges. Imperceptible factors such as the time of the last meal, glucose levels and mental fatigue appear to affect judgment (Bublitz, 2020). The latter present novel challenges to decision failures, traditionally attributed to legal factors.

Consistency and Unequal Treatment in Decision-Making

The concept of imperceptibility also relates to legal indeterminacy. Judges must use interpretation to apply general concepts and norms to specific cases, necessitating a constant analysis between the facts and standards. The author uses the example of parole decisions, where judges assess the applicant's risk and consider subjective factors, calculations involving forecasts, probabilities, etc. It demonstrates how a simple task turns into a complex decision. The concept of unequal treatment then arises from technical limitations, biological constraints, and psychological weaknesses (Bublitz, 2020). Even acting in good faith and within the normative framework, the research found that judges render decisions with disparity and variability. Consistency and equal treatment must be values embraced to overcome this phenomenon. Recommendations are made for educational efforts to make judges aware of influences on their decisions, develop debiasing strategies, and establish more precise thresholds and standards (Bublitz, 2020).

Gauthier (2003) analyzed the decision-making process of the domestic violence (DV) investigation unit at the Montreal Municipal Police Service (*Service de Police de la Ville de Montréal* or SPVM). Conducting interviews, the research team spoke to police detectives about factors considered when they release a person arrested for a CCC offence in a DV investigation. These considerations were based on the severity of the offence, the behaviour and general attitude of the offender, the implication of the offender in similar past events, the information collected from the victim and witnesses, the clear statement offered by the victim to the suspect regarding their intention to end the

relationship, the fact that an infraction had been committed between the investigated

incident and the arrest, the willingness of the suspect to move during procedures, the fact

that the suspect and the victim became a couple again, the unwillingness of the victim not

to press charges, the number of past complaints by the victim, the number of complaints

dropped by the victim, and finally, the general credibility of the victim (Gauthier, 2003). A

report from Beattie et al. (2013) on behalf of the Canadian Department of Justice confirms

some of these elements, revealing that approximately two-thirds of the offenders are

released following arrest. The common characteristics of offenders more likely to be

detained are males, Indigenous, singles, and individuals suspected of having committed

previous offences. Moreover, the most prevalent crimes with which these offenders were

criminally charged and imprisoned are robbery, break and enter, and offences against the

administration of justice (Beattie et al., 2013).

Subjectivity in the process emphasizes the need for more consistency throughout

decision-making. Researchers have reported that police officers are more likely to impose

excessive and inappropriate restrictions while releasing someone, indicating a need for

better training regarding this important and impactful power (Williams, 1995; Raine &

Willson, 1997). McLellan (2010) argues that this power enacted in 1972 by the *Bail

Reform Act* initially aimed at tightening the discretion and clarifying the rights of an

accused but had the reverse effect of diminishing the presumption of innocence and

broadening the grounds for release to a vague concept of *public interest*.

The case of postcode lotteries in the UK's National Health Service offers a perspective on the adverse effects of governmental disparity. It refers to differences in health care services provided between geographic areas of the UK. Graley et al. (2011) analyzed the Health Checks Programme in North West London. Their analysis revealed variations in the implementation of this specific programme, as well as national policy and guidance interpretation and implementation. These variations contribute to rendering this process unfair. Compliance with more explicit operational guidelines would have helped avoid any postcode lottery effect and given the professional the best evidence available. This study raises questions about balancing national guidelines and local discretion for personalizing.

Police Legitimacy

The literature on legitimacy provides an alternate perspective on police impacts on society. Bottoms and Tankebe (2012; 2017) state that police legitimacy lies on four pillars—among these lies distributive and procedural justice. To balance under and over-policing, prioritizing the fairness of the outcome is necessary. Fairness must be applied to the process by giving people a voice, policing transparently and impartially, treating people with respect and demonstrating trustworthy motives (Tyler & Meares, 2019). The quality of the treatment and the decision-making process becomes essential so police agencies can accomplish their mission (Mazerolle et al., 2013; Reisig et al., 2007). This research addresses these issues. The following section narrows down the literature on actuarial forecasting models in policing.

In summary, the legal framework empowers officers to release suspects after arrest, stating public interest criteria for assessing risk. A documented lack of precision and guidance regarding applying these criteria potentially opens a window for subjectivity and discretion in the decision-making process for releasing the individual. Literature about psychological and physical causes provides possible explanations for how this process is carried out differently between officers. These variations in the process and outcome impact the equality of treatments and legitimacy. Reviewing literature about available solutions in the next section emerges from that need for improved consistency.

Actuarial Forecasting Models

AI is a multi-faceted subject, and its use is being broadened for various purposes. Innovation and technology constantly set new parameters and standards, which require adapting any framework. Recent incursions of AI and machine learning tools in policing are no different, mitigating the scientific community (McKay, 2020). The present section will explore solutions for improving police decision-making.

Essential Concepts

An algorithm is a set of operating rules or instructions that solves a stated problem (Larousse, 2023). Using technology, this process is computerized to transform inputs into outputs (Oswald et al., 2018). From the data given to the computerized tool, the algorithm is designed to self-adjust, constantly analyzing new data inputs in addition to previous sets. This sophisticated process allows a more effective analysis, adding rapidness,

consistency, and cost ratios (Gal, 2017). Moreover, reducing biases and cognitive overload limitations, as well as improving objectivity and consistent risk assessment, are presented as essential steps forward compared to human-made decisions (Gal, 2017; McKay, 2020). On the other hand, using such tools in policing is still in its infancy and presents societal, lawful and cybersecurity challenges (Oswald et al., 2018).

Predicting is a balance of accuracy and error rate. It is not error-free, and errors are not equally harmful (Barnes, 2022; Barnes & Hyatt, 2012; Urwin, 2016; Berk, 2012). Four types of prediction results will be outlined. The first one is the true positive when predicting a situation that occurs. Then, the actual negative confirms that something is not going to happen. False positives expect that a problem will come up but do not. Finally, predicting incorrectly with a negative classification represents a false negative. Forecasting an individual as a high risk of high harm while representing a low risk, for example, might have consequences. Pre-trial custody might mentally, socially, and physically affect that person and his family. In addition, the accused may be affected similarly when not detained or for unreasonable conditions (British Columbia Prosecution Service, 2022). Likewise, an arrestee committing a severe offence initially classified as low risk and released has significant repercussions. Emphasis must be put on their nature, and based on this last example, harm to victims will win over any other criterion regarding societal prioritization.

Now that we acknowledge that each error has a different weight in the balance, the concept of cost ratio becomes significant (Barnes & Hyatt, 2012). The consequences

of forecasting errors and the associated costs can vary excessively (Berk, 2012). Hierarchizing these values must be done by the agency's leadership interests to protect public safety and their sensitivity to the misprediction costs (Barnes & Hyatt, 2012). For these reasons, the accuracy level associated with each prediction mistake is as important as the overall offered by the model.

Over the years, many tools involving statistical models have appeared in police agencies. A need for better crime-tackling strategies and better cost-efficiency motivated institutions to develop *big data* (Barnes et al., 2018). Some will be listed and described in this section. In advance, essential parameters must be broken down to understand their impacts and demonstrate transparency through the process (Gosselin, 2019).

Algorithmic Forecasting in Policing

Berk (2012) argues that criminal justice forecasts imply different decisions to be made and datasets. Therefore, other forecasting procedures and forecasts tuned to various priorities must be considered in addition to their place in the decision-making process. Through the years, many forecasting methods have used logistic regression (Berk et al., 2009), and recent research comparing statistical approaches has emphasized machine learning advantages (Berk et al., 2005; Berk, 2012). Key characteristics indicate its capacity to deal with more complex areas and produce more than two outcome categories (Berk et al., 2009; Urwin, 2016). This research examines the decision-making process and risk assessments related to individuals. The focus is on a specific algorithmic tool developed for this category of purposes.

Harm Assessment Risk Tool

Using a random forest model, the "Harm Assessment Risk Tool" (or HART) was designed in 2016 by experts from the University of Cambridge in collaboration with the Durham Constabulary located in the United Kingdom (Oswald et al., 2018). HART was a groundbreaking strategy that was unique to the policing world. HART is an artificial intelligence-based tool used for decision-making in police custody (Barnes, Sherman & Urwin, 2018). The tool was created for police sergeants to analyze histories of people arrested and processed in Durham to make release decisions (Ibid). An evidence-based framework for assessing harm was projected to increase officer performance and provide more consistent decision-making compared to traditional techniques (Barnes & Hyatt, 2012; Berk & Hyatt., 2015; Hyatt & Barnes, 2017; Berk et al., 2009; Neyroud, 2015; Urwin, 2016). HART was initially created to be embedded in a diversion program called Checkpoint, offering specifically targeted individuals an alternative to prosecution (Oswald et al., 2018; Weir et al., 2022).

The programme was designed to identify the risk of reoffending for each eligible offender after arrest. HART classifies offenders into three predicted risk groups: low, medium, and high. An individual classified as Low Risk was expected not to commit any offence within two years of an arrest. The second group, designated as Moderated Risk, forecasted that an offender was likely to commit non-serious crimes over the same time frame. The latter is the only group that is permissible to Checkpoint. Finally, arrestees expected to re-offend a severe crime during the next two years were classified as High

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Risk. The model defines serious offences as murder, attempted murder, aggravated violent offences, robbery, sexual crimes, and firearm offences (Oswald et al., 2018). The custody officer was instructed to use the prediction produced by the computerized tool as an output supporting their decision-making for disposal (Urwin, 2016; Barnes et al., 2018).

Nonetheless, Barnes et al. (2018) clarified that the tool's real power resides in its capacity to decide the most harmful errors to avoid. As stated earlier, the HART model deliberately favours cautious (false positives) over dangerous errors (false negatives). Research has published that the system has proven a 98% accuracy in avoiding the latter, representing the most impactful type of error (Barnes et al., 2018). To achieve this, the model used 104,000 previous histories of people arrested and processed in Durham during five years and two-year post-arrest data for each offender (Barnes et al., 2018). The algorithm contained 34 predictor variables (see Appendix A), aiming mainly at the suspect's offending history, age, gender, geographical area, and count of existing police intelligence reports (Barnes et al., 2018; Oswald et al., 2018). For future research or models, the selection can be determined by the agency responsible for implementing the tool, considering their context and sensitivity. Given the constantly changing societal and legal context, tools, unlike humans, need to be refreshed with more recent data. It implies the necessity for careful and constant tracking of the model and updating predictors data inputs corresponding to the latest prioritizations (Barnes et al., 2018).

Decision-makers must seriously contemplate the ethics and legal aspects of using algorithms in policing (Oswald et al., 2018). Computerized tools cannot record every piece

of qualitative information, factors and contexts that affect output, such as family circumstances (Oswald et al., 2018). This limitation produces uncertainty, leading the Durham Constabulary to conclude that HART is not a stand-alone technology (Durham Constabulary, 2017; Oswald et al., 2018). The ultimate decision to release an offender should involve the officer in charge, while the HART's output is for guidance (Barnes et al., 2018). As Oswald et al. (2018) highlighted, AI is too frequently compared to a perfect human decision-maker. Human decisions are inherently biased yet socially accepted. Thus far, assessing algorithm accuracy and *just right* acceptability in quantitative terms remains challenging. Standards for comparisons, measurements and tracking mainly rest in the hands of stakeholders regarding their interests and imperatives.

Another challenge is inscrutable evidence leading to opacity, referring to the *black box* concept. Even if input datasets are clearly produced, and coding lines are well explained, their interactions still need to be established. The perception of opacity might come from the complexity of the tool, which is defined by two primary components: accessibility and comprehensibility of the information (Mittelstadt et al., 2017). Finally, transformative effects could lead to challenges for autonomy and informational privacy (Mittelstadt et al., 2017). The high potential of tools such as HART to increase consistency in decision-making is promising. At the same time, the officers' use of it could become flawed, and the potential impact on their behaviour must be considered. For different reasons, some officers might be tempted to use shortcuts to make their decisions and deliberately not consider every information available. Therefore, integrating algorithms into policing processes could affect the limitation and filtering of the considered

parameters (Oswald et al., 2018). Testing and validating newer methods should enable a transparent understanding (Urwin, 2016).

Potential barriers to implementing such tools are discussed in the literature. Assessing the contextual environment of the police agency for personalizing is a crucial first step, which is currently insufficient (Willis et al., 2007; Weisburd & Neyroud, 2011). Among the implementation components figures are the officers. Perfect predictions can only be helpful if these actors use them and change their practices (Bennett Moses & Chan, 2018). The officers' trust relies heavily on their knowledge of the tool. Consequently, some decision-making components might not be captured by the tool's data, which could predispose the officer to diminish the officer's likeliness to trust the prediction (Cope, 2004; Colvin & Goh, 2005). Therefore, taking care of the staff becomes an essential success factor of the implementation. Conversely, police resistance is considered a potential barrier, and *"strong interest and enthusiasm among the staff involved"* has been proven to be an implementation success predictor (Perry et al., 2013, p.135).

In Canada, algorithmic technologies in the policing sector are still in their primary phases, and so is the legal assessment of such innovative tools in court. In the case of facial recognition, neither a law nor a policy has been elaborated to regulate this technology (Nzobonimpa, 2022).

Evidence-Based Investigative Tool

Alternate technologies have been recently developed to improve decision-making in policing. Among these, the Evidence-Base Investigative Tool (EBIT) was deployed by Kent Police (UK). Its primary function is to conduct a multi-stage review of cases to assist with allocating investigative resources. The tool uses a logistic regression model based on an actuarial solvability assessment. Afterward, the case is reviewed by someone with professional judgment, providing reliability and objectivity (McFadzien et al., 2020). Figure 1 represents the assessment flow diagram of EBIT (McFadzien et al., 2020). Implementing an evidence-based statistical model for assessing success likelihood is meant to be used as a tool for advising experienced police officers, not replacing human judgment. This strategy benefits community members by impacting procedural fairness and decision-making legitimacy.
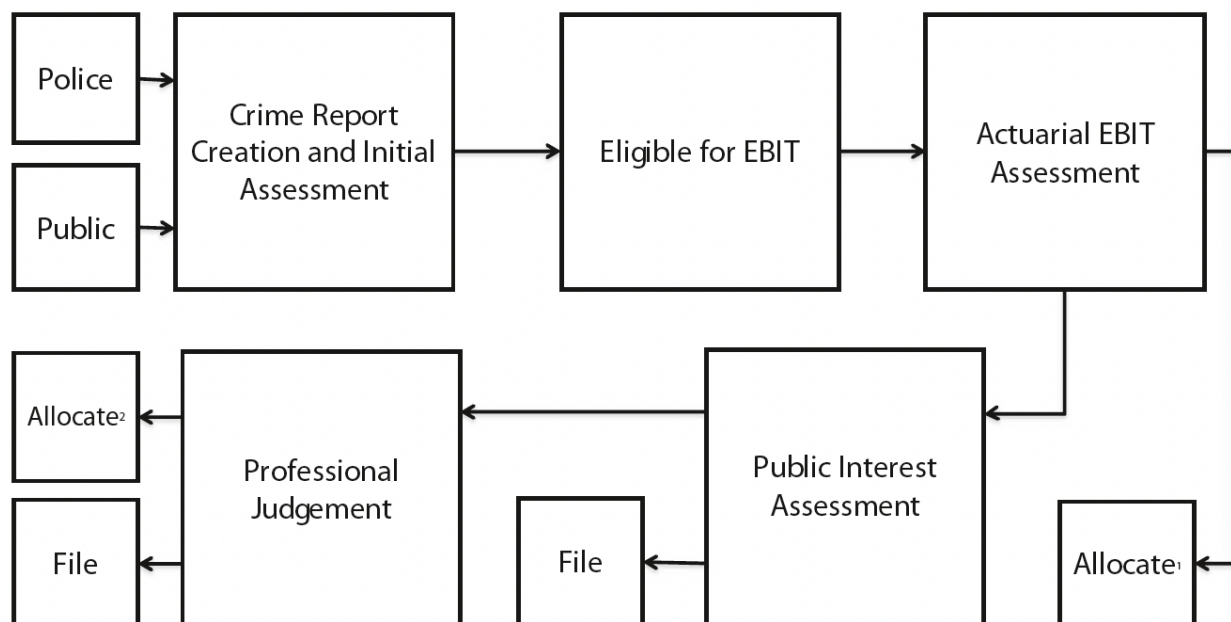

Figure 1: The Kent Police EBIT Assessment Flow Diagram

EBIT provided a fair and more consistent method than current processes while uniformizing the investigative process and review criteria (McFadzien et al., 2020). When meeting the solvability threshold, automatic allocation appeared to overcome regional and personal differences in decision-making. Analyzing similar cases, the results demonstrated that victims and suspects received similar treatments. The example of EBIT shows the positive impacts of actuarial prediction models on decision-making consistency and procedural fairness.

Actuarial computerized tools such as HART and EBIT demonstrated how technology and machine learning tools can support police decision-making. While the advantages of rendering more process consistency and accurate outcomes appear promising, a question remains about the worthiness of gain versus implementation complexity. The current accuracy, *just right* acceptability in quantitative terms, is a challenging aspect of forecasting models and involves ethical and legal concerns. Therefore, an initial assessment of the agency's contextual environment revealing the early-stage developments in decision-making improvements should lead to considering a more adapted strategy. Other ways of standardizing decision-making offer more 'simplicity' and proven effectiveness (Hale et al., 2015). Safety checklists, described in the subsection, are among these.

Safety Checklists

As highlighted in the literature, there is a necessity for better standardization of decision-making practices (Graley et al., 2011; Cohen, 1996; Bublitz, 2020). Checklists are a simple but effective tool for stabilizing complex process variations, reducing omissions, and increasing consistency and reproducibility in decision-making (Hale et al., 2015; Meader et al., 2014; NHS, 2019). The experience of the Royal College of Physicians and Royal College of Nursing (2012) in safety checklist implementation demonstrated the potential for strengthening communication between the actors, performance, and patient experience. The recommended approach for successful acceptance by the staff should focus on the safeguarding aspect, encompassing the probable clinician's perception of autonomy and competence challenge (Hale et al., 2015). Ensuring that essential components or tasks are noticed, the benefits are not exclusive to experienced employees but to juniors or less experienced staff. It eases auditing and overlooking, while the checklist sets a baseline for future evaluation (Hale et al., 2015). The World Health Organization *Surgical Safety Checklist* (2008), appearing under Appendix B, is an example of a structured and internationally recognized tool.

The last section explores potential solutions to overcome the issues and challenges in releasing decision-making of offenders' release from police custody. Consistency, objectivity, and legitimacy could be sustained by implementing new tools. Among these, actuarial forecasting models such as HART and EBIT were presented, as well as safety checklists. The next chapter will describe the methodology used to answer the research questions.

Chapter Three: Methodology

This section will explain the methodology built for the research project. The GTM acts as the blueprint of this research. The methodology cornerstone allows the concepts from the data and analysis to emerge. The rationale is to enable the system components to speak for themselves for modelling and mapping the SQ officers' release decision-making process and explaining the suspect's risk assessment. The outcome will be essential for establishing a baseline for assessing the impacts of future actuarial forecasting models. The methods section is divided into five parts: research design, sampling and selection, data collection and analysis, and finally, ethical implications and limitations.

Research Design

This research project is structured as an exploratory design using the GTM as a methodological framework. By exploring documents and conducting in-depth interviews with key individuals, mainly in policing, the intent is to produce a theory based on the concepts developed from the data. The GTM's primary objective is to explain a phenomenon by identifying its essential elements and then categorizing the relationships between the components within its context (Birks et al., 2009). It is an iterative process where data collection and analysis are conducted simultaneously, progressively increasing the data accuracy and making the analysis more theoretical (Bryant et al., 2007). Initially founded by Glaser and Strauss, GTM kept evolving and is now used in

many disciplines as a scientifically valid method. Figure 2 below pictures the GTM (Uibarui, 2017).
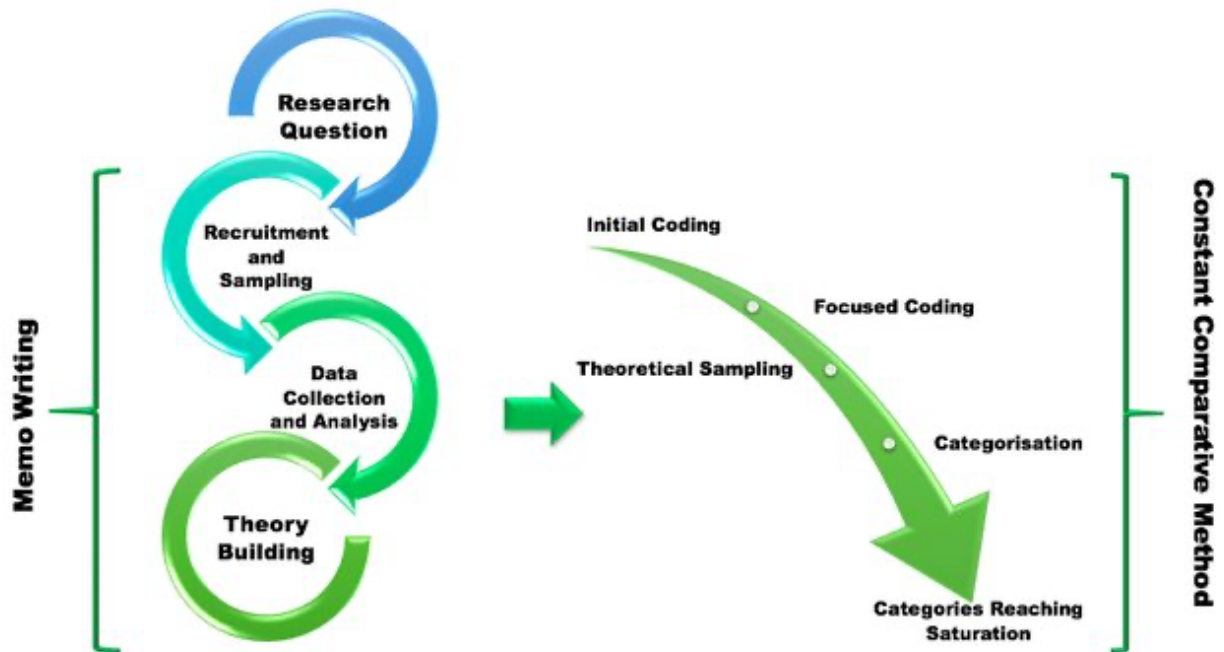
Figure 2: The Grounded Theory Process

The main components of the method are theoretical sampling, data collection using interviews and key documents, the coding process in three phases, theoretical saturation, constant comparison using memoing, and information conceptualization. The memo is a written record of the researcher's reasoning, facilitating concept achievement and continuity of data throughout the process. It can be informal, formal or conversational and has no approved structure (Glaser, 2013). This study design allowed the researcher to develop a broader and deeper understanding of the releasing decision-making process of SQ officers. This research also fills a gap in the literature regarding the implementation conditions for actuarial prediction tools and decision-making outside the UK. It is the first

study of its kind in Canadian literature and contributes to the existing studies across the globe.

Positionality Statement

Positionality refers to a person's relationship with various social identities that underpin the researcher's beliefs and opinions (Alcoff, 1988). The researcher who led the data collection and analysis is an active male Caucasian Canadian-born police officer working as a constable with proactive investigation experience. The researcher is also bilingual in French and English, allowing the study to be conducted in Quebec, Canada. Identifying himself with the constructivist and interpretive leading to the pragmatism paradigm, the author believes there is more than one reality. This reality needs to be interpreted to discover the underlying meaning of things. The methodology reflects the researcher's decision to explain a phenomenon using the GTM framework and data collection methods such as interviews and coding theme identification. However, the third research question about AI integration demonstrates the author's propensity for common sense and willingness to find the best problem-solving methods.

Sampling and Selection

The sample frame is comprised of eight individuals. These people have been selected from precise categories of the different contributors to the decision-making process for releasing a suspect. The number of participants was determined considering the timeframe given for realizing the research and the capacity of the researcher to

conduct every stage of the data collection and analysis by himself. From the SQ, three police constables, three sergeants and one executive were selected. An ÉNPQ staff member was also chosen. A convenience sampling selection was chosen to maximize participants' experiences and contexts. Advantages and disadvantages are considered but moderated by using the GTM framework. Among the benefits, a convenient selection accelerates data collection, lowers the costs, and makes readily available samples.

On the other hand, it represents disadvantages like being highly vulnerable to selection bias and external factors, being subject to a high sampling error, and having little credibility related to these last two characteristics. Police executives were selected from the SQ to act as facilitators for a question of accessibility and feasibility. It is important to note that the researcher is an employee of this same police agency, and using these external facilitators diminished the biases' likelihood related to the participants' selection. The idea of implicating different police agencies around the province was initially considered. The researcher decided to work on and with the SQ organization for the listed factors.

The police organization used for the sampling is in a vast territory with stark differences between the regions. These contrasts include culture, human behaviours, geography, and organizational administration. The territory is split into four districts: North, South, East and West. Each district is comprised of approximately 20 different detachments. The call-for-service volume varies between rural and urban detachments. These factors were considered when selecting participants, considering the potential

influence on their positionality and decision-making. The composition of police staff sampling is broken down as follows: an Officer from an urban detachment of the West District, an Officer from a rural detachment of the East District, a third Officer from an urban detachment of the South District, a Sergeant from an urban detachment of the South District, a second Sergeant from a rural detachment of the North District, a third Sergeant from a rural detachment of the South District and finally, an Inspector in charge of an administrative region.

Criteria were established and communicated to the executive facilitators for their staff targeting. First, a minimum of five years of service threshold has been fixed, presupposing that the officer acquired enough knowledge related to the system, the processes, the guidelines, and the culture to maximize the interview quality. Second, the officers must have positive references from their colleagues, qualifying them as competent. They should also embody leadership qualities that make them credible research sources. The researcher acknowledges a limitation related to the subjective interpretation of these traits that might vary between the executives. Thirdly, participation in the study is voluntary. Once the staff member is targeted, they can choose whether to accept.

Data Collection

As detailed previously, the instruments selected for collecting data were interviews and key document consultation, using the GTM framework for analysis. The individual

interviews were semi-structured and individually lasted approximately 45 minutes. The questionnaire appears under Appendix C. The researcher conducted all the interviews. Hiring an external collaborator was considered but was not feasible for financial and administrative reasons. New elements could arise between each participant's interview, and using the GTM, the researcher made conscious decisions about what he considered exploring further. Theoretically, the researcher would continue the data collection until he reaches a saturation point characterized by the non-emergence of new concepts. This study's lower number of participants restricts that potential saturation. However, the researcher may want to approach different angles as the data collection and constant analysis progress; the following questionnaires were minorly modified to cover other areas and contribute to the emergence of new concepts.

The interviews were divided into two main themes. The first is related to the decision-making process factors, the tools used by implicated parties or resources available to support their decision-making, and the component's involvement and accountability to the process. The idea was to deconstruct the mental process of officers and emphasize the bridge between the status quo and theoretical requirements. A better understanding of the process was expected from the conceptualization. The second concerned actuarial prediction models and algorithms knowledge of the participant and potential impacts and barriers in policing. This research project's nature is exploratory, and introducing AI in the reflection widens the possibilities for developing tools to assist policing in the decision-making process to release a suspect. It opens the discussion about the desired improvements by the system components themselves.

The interviews were conducted virtually using the Microsoft Teams platform. This decision was grounded in providing the most consistent framework to every participant. Quebec is a vast territory, and leveraging an online platform allowed for optimal planning for the researcher and participant. Conducting virtual interviews facilitated the transcription and translation process.

Confidentiality is an essential characteristic of the interview process. The researcher guaranteed the participants that every measure necessary was taken to ensure anonymity. Information that jeopardized releasing the participant's identity was not used. The only data kept for the study was related to describing the sampling to establish an optimal convenience selection among the population targeted. More specifically, it detailed the district and type of detachment the participant was for – whether it was rural or urban, his seniority using brackets, his gender, and his rank.

Protecting the participants and ensuring confidentiality is a priority for the researcher. As specified on the information and consent form, every interview was audio and video recorded with the TEAMS platform to facilitate future transcription and translation. The participant's permission was needed to allow restricted access to information collected about them during the project. All information collected about the participants remained confidential. All data was identified only by a code, with personal details saved in a secure computer with access only by the researcher. Information was not used or made available for purposes other than the research project. The material

was saved on a secured file on the researcher's computer and an encrypted media drive as a backup. Finally, the recordings were translated and transcribed and will be destroyed after publication.

The second source of data collected was the official documents produced by the concerned authorities. The reason for using this data was to increase the accuracy of the analysis. To compensate for the small number of participants, the corroboration of the concepts developed during the interviews increased their robustness and the study's scientific value. Analyzing these guidelines from the DPCP, the SQ, the ÉNPQ and documents from federal law authorities (CCC and Charter) will be central to the constant theorization process. The main themes that guided their collection are the same as those listed for the interviews and part of the literature review about the current legal context. It is also important to stress that once the study results are obtained, the report will be handed to the SQ and the ÉNPQ for approval.

For assessing various parameters, the interview was piloted with an SQ officer who fit the selection criteria. The interviewer evaluated the questionnaire regarding length, tone, biases, and objectivity. It led to minor clarifications on the wording. Considering that the interviews were conducted virtually, it was essential for the researcher to test the platform. The main concerns were related to the functional web link sent to the participants, the recording mode, the software's transcription and accuracy, and the data conservation. A protocol was created to ensure stability in the chain of actions, identical outcomes in its format, and reduce error rate.

An information sheet was sent to each participant before the interview. The document contained essential aspects about the researcher's motivation, procedure and conduct of the study, confidentiality, data protection, and a signed consent agreement. It provided explicit details that allowed the participant to make an informed decision about the research process. The Participants Information Sheet is available under Appendix D. Being transparent helps build trust between the interviewer and the respondent, essential for creating rich interactions.

Data Analysis

Data preparation is the first step before reviewing the analysis. A preliminary version of the interview transcripts was produced using the Microsoft TEAMS platform. An essential characteristic of the study's settings is the official bilingualism in Canada, which consists of English and French. Most interactions between SQ officers and citizens in Quebec are communicated in French. Quebec residents primarily speak French, unlike other provinces where most speak English. The interview was conducted in French to respect spontaneity and promote a deeper understanding of the participant's perspective. Linguistic particularities will be further discussed in the limitations section. After reviewing the automated transcripts, the software translated into English. The researcher manually examined the scrutiny of the translation, highlighting the language nuances for more precise future analysis.

The next stage involved the data being clean and ready for analysis. The technique used for this research was based on the GTM framework. Each transcript was coded in English and subdivided into three iterative phases where memos were constantly produced. Coding and memoing had to be completed before conducting the interview. The initial coding looked for similarities, comparisons, and reoccurrences between the codes (Chun Tie et al., 2019). Words and groups were then identified as social or psychological processes and actions. As highlighted, positionality has a significant impact on perception. The transcripts were read three times to explore different angles. First, a reading was done with the researcher's positionality. Second, a reading with the participant's positionality. Finally, a third reading will be conducted from an overall view with objective elements related to the research questions. The next phase was the intermediate coding, aiming at connections and relationships between categories stressed in the initial coding. Emerging theories and more complex concepts began to emerge. Finally, the researcher closed the loop with the third phase, titled advanced coding. Focusing on conceptualizing the information, the objective was to integrate and synthesize derived categories and sub-categories with previous data analyses. The latter included the interviews, official guidelines, and documents. Ultimately, the desired outcome was represented by mapping the decision-making releasing process of SQ officers.

The constant analysis of the latest data is a common thread through these steps and a fundamental concept of GTM. The researcher's mental process documentation through memoing becomes essential to the process. These informal memos record his

thinking and support the findings, ensuring constant comparison (Charmaz, 2012). One of the main characteristics of this tool is that it enriches the quality of the analysis, enriching its content from initially descriptive to richer and multivariate concepts. It helps understand how the researcher sampled, clustered, categorized, or identified relationships (Birks & Mills, 2015). Every interview required a memo to be produced before conducting the next one. While coding the transcripts, the researcher had to repeat that process.

Ethical Implications

The confidentiality and anonymity of participants are central to the researcher's preoccupations throughout this study. As mentioned, all efforts were made to ensure personal information remained confidential. Consent was explicitly detailed and obtained in the early stages of the process before the interview. Moreover, the researcher believes that participation in this study represents no potential harm or benefits to the officer. Each officer will remain anonymous with no chance of identification. Both risk and ethics assessments were completed, and no issue was identified.

Limitations

This section will identify limitations that might impact the interpretation of the results. The first limitation is related to the selection of participants. The researcher used a convenient sampling method, offering lower scientific value. Charmaz (2006), in a

summary of GTM's critical components, highlights that sampling does not aim for population representativeness but toward theory construction.

Consequently, the model developed it as a strength combined with the researcher's involvement with the data. The initial sampling moved toward more focused forms, coding and selection to demonstrate an idealistic saturation (Bryant et al., 2007). The rationale behind this choice is also related to the study's exploratory nature. The researcher had a limited timeframe, no research budget, and support from his professional organization limited to the participants' selection. This resulted in using the combined advantages of GTM and its' iterative analysis process. The latter characteristics explain why the generalization of the data and low external validity are not central preoccupations for the researcher. The objective of providing a profile summary of potential candidates was to avoid participants being directly targeted by the researcher.

The DPCP initially declined to collaborate on this research. They were targeted as a component of the decision-making process for releasing a suspect. As a result, the researcher modified the sampling, and two additional police officers were added to the group of participants. Losing a vital category of the population interviewed is a trade-off to enrich the quality and quantity of data collected with officers.

Another significant limitation is related to positivity biases. As mentioned earlier, the researcher is a member of the studied organization in this project and an active component of the population. In addition, the researcher conducted the interviews for

financial and technical reasons. During the data collection process, some participants appeared to know the researcher. This proximity could impact the participants' motivation to please the researcher. Subsequently, an essential factor to focus on is the participants' volunteering, which could unconsciously influence their behaviour. It refers to the acknowledged openness and willingness, to be honest in their responses.

A fourth limitation of the methods concerns the adequate sample size to achieve saturation, a fundamental component of GTM. The concept refers to a point where no additional data emerges, and all conceptual categories are identified (Glaser & Strauss, 2017). Hennink et al. (2017) differentiate two types of data saturation: *code* and *meaning* saturation. Their research suggests nine interviews could allow *code* saturation, compared to the meaning saturation value established between 16 and 24. For this study and its exploratory nature, the researcher recognizes *meaning* saturation cannot be reached. Despite that, the total of 8 interviews carried out by the researcher tended to get closer to data saturation. Using official publications documenting the decision-making process of releasing suspects might provide further validity to the analysis.

The last limitation refers to linguistic challenges. The police agency studied in this research is in Quebec, Canada. English and French are Canada's official languages, but most of Quebec's population is strictly French-speaking. This impacts governmental organizations such as the SQ, where employees' interactions and policies follow the same pattern. The researcher conducted the interviews in French and immediately translated the transcripts into English to minimize linguistic distortions before going through coding.

Language nuances and contextual perceptions could potentially affect the meaning of the data. The researcher is bilingual himself and scrupulously achieved it.

Summary

The framework of this research project is based on the GTM. The methodology's core is the constant comparison represented by moving back and forth between the data and the emerging concepts from the analysis. Progressively, the data becomes more precise, and the analysis consequently more theoretical (Bryant et al., 2007). The researcher conducted seven interviews with actively deployed SQ members and a last interview with a police teaching staff member of the ÉNPQ. Each interview was recorded in French; a transcript was produced and translated into English. As the interviews were completed, the researcher started coding by constantly comparing previous data and key official publications by the SQ and ÉNPQ supporting the research questions. Coding is subdivided into initial, selective, and advanced coding. The memoing technique links all this information and describes the researcher's thinking. The concepts and theory produced by the coding process led to mapping the decision-making process. Under contextual considerations and notified limitations, the selected method appears appropriate to the researcher.

Chapter Four: Results and Findings

This section presents the results of the research project. After setting out the methodology to answer the research questions, a GTM was constructed from the data collected and analyzed. The present chapter is divided into three parts, aiming at the releasing decision-making process of SQ officers, risk assessment, and potential actuarial forecasting models impacts on this decision-making process. Each develops the concepts related to the research questions.

Releasing Decision-Making Process of SQ Officers for Suspects of Violence

In this research, the core category obtained through the data analysis is *Risk assessment's disparity in the SQ officers' suspects of violence releasing decision-making process.* When police officers arrest a suspect of violence without a warrant, they must release this individual with the appropriate mechanism. Based on Corbin & Strauss's (2015) GTM, the decision-making process has been divided into eight main components: the causal conditions, the analyzed phenomenon, the strategies used by the officers, the factors influencing the decision, the context, the interactions with the other actors, the action, and the consequences. Figure 3 represents a flow chart of the decision-making process.

Paradigms Model of the Risk Assessment's Disparity in the SQ Officers' Suspects of Violence Releasing Decision-Making Process
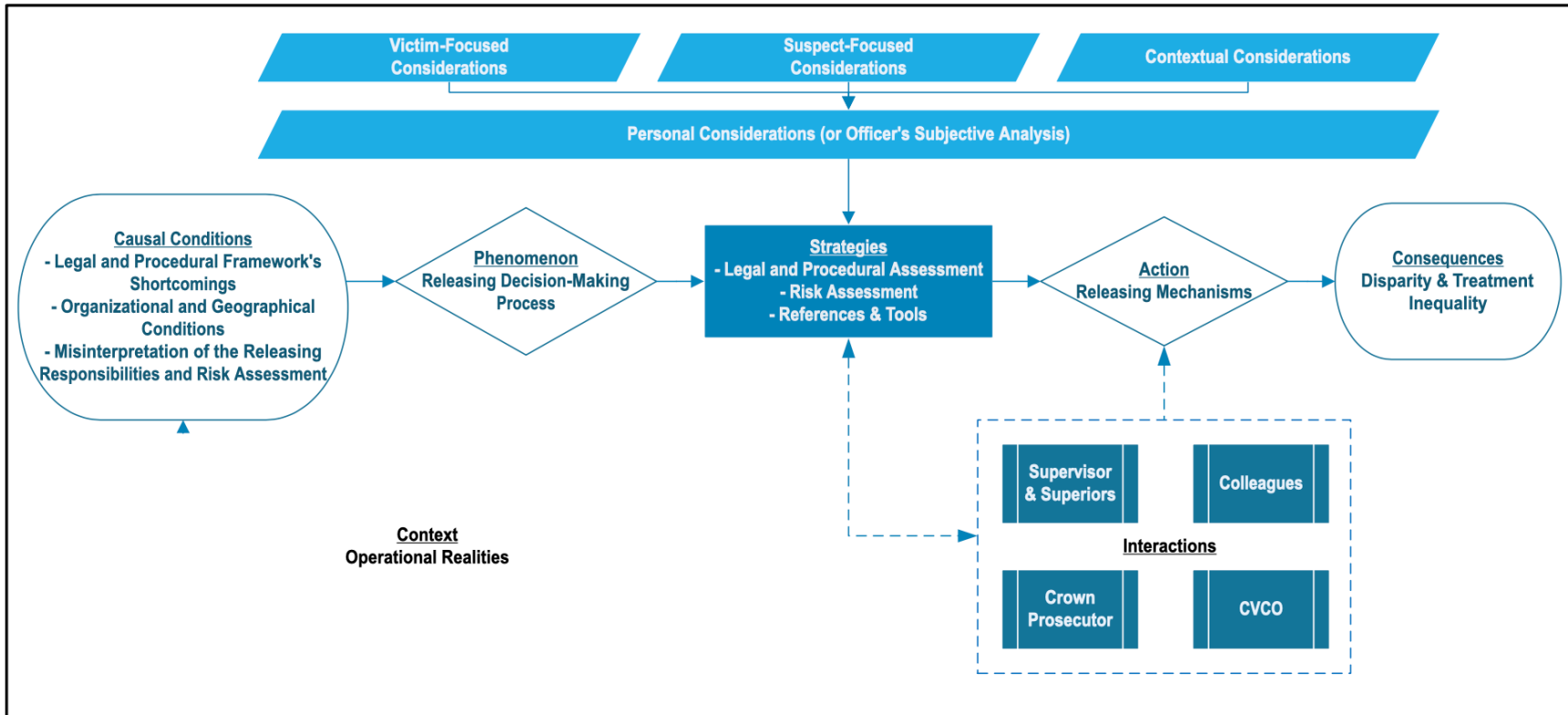

Figure 3: Paradigms Model of the Risk Assessment's Disparity in the SQ Officers' Suspects of Violence Releasing Decision-Making Process

Causal conditions

The causal conditions represent the occurrences in the analysis that might influence the development of the phenomenon. These conditions, which are primarily external, predispose the leading actor and potentially other policing actors. Firstly, the legal framework presents a need for more precision regarding analyzing the public interest criteria established by the CCC. Even if expressly cited, police officers appear to interpret the risk of reoffending in various ways. The absence of specific considerations defining its assessment emerges from the analysis as a possible explanation.

The absence of releasing and risk assessment guidelines is central to the latter. Organizational policies and nationalized police practices regulate the arrest process and police officers' powers and duties. Like the CCC, these references do not offer specific parameters for guiding the officer in operationalizing the public interest criteria in the decision-making process other than listing them.

A second condition points toward the organizational and geographical conditions of the SQ. Serving the population spread across the whole territory of Quebec's province might impact the standardization of practices. The cultural differences and the wide range of seniority between the different regions appeared to affect officers' decision-making.

Finally, the analysis showed a misinterpretation of the police staff's releasing responsibilities and risk assessment. Data revealed disparity when asking for assistance

from Crown Prosecutors and irregularity in selecting and weighing the factors in decision-making.

Phenomenon

The following component of the model is the phenomenon. Once the officers have arrested a suspect, they must decide which mechanism to release that person. A whole mental process underpins that decision. The phenomenon is induced by the police action and influenced by the causal conditions. Empowered by the CCC, officers and supervisors base their decision-making on the latter-described legal requirements.

Strategies

Consequently, the officers use conscious and unconscious strategies to make this potentially high-impacting decision. The first strategy is the legal and procedural assessment. The officers analyze the situation regarding the public interest criteria provided by law. Referring to the restraint principle, he shall release this person if possible (R v. Zora, 2020; ÉNPQ, 2019); certain circumstances could threaten the public interest, forcing the officers to act and detain the suspect. These criteria are to establish the suspect's identity, to secure or preserve evidence related to the case, to prevent the continuation or reoffending, or to ensure the safety of a victim or a witness (CCC, 1985).

Simultaneously, the officers assess the suspect's risk. The data revealed that even if they can't name that second strategy, they naturally consider various elements to justify their decision-making. These considerations are split into three categories; the first is

victim-focused, which refers, for example, to the victim's degree of fear of the suspect, willingness to file a complaint and a statement, credibility, relationship with the suspect, etc. The second category is suspect-focused. Among that list, for instance, are the suspect's intoxication, criminal record and history of violence, pending charges, level of understanding and collaboration with the officers, mental-health status and prior mental-health-related interventions, prior convictions, etc. A third group appeared to be part of the officers' reflection: the contextual considerations. This category refers to more factual elements such as the nature and severity of the offence and, if applicable, injuries, additional violations committed by the suspect, the use of a firearm or a weapon in the case and the type of location where the crime was committed. The coding and its analysis show that each officer considers different elements in numbers and weighting.

This selection of factors is then processed through personal considerations. Referring to a subjective analysis, the officer assesses every aspect according to his experience, perception, or opinion. Intrinsically, evaluating the situation and weighing the public interest criteria using past experiences appeared to be central in the officer's thinking. Disparity in the choice of considerations between the constables in this subprocess is also denoted. The risk assessment will be further detailed.

Finally, the officers might use references or tools made available to support their decision-making. These references can be documents such as the CCC or internal publications. It can also be databases they have access to, like the centralized police database (CRPQ), intelligence, and call-for-service management system. Assistance

services offered to police officers in an operational context are another option; for instance, outside the organization with the Prosecutor's Advisory Office and internally with the CVCO. Ultimately, the constable could consult colleagues, the suspect's family and friends, health and social services professionals, etc. The analysis shows a high variability in the selection of participants.

To summarize, the officers use strategies to make release decisions. A legal and procedural assessment operates regarding the public interest criteria and internal guidelines. Simultaneously, the officer will carry out the risk assessment. To do that, they select pieces of information split into three categories: victim-focused categories, suspect-focused and contextual. The selection of factors is then processed through the officers' subjective analysis. They use personal considerations to underpin their assessment. Tools and references are available for assistance and support. A high variability in the selection, weighting, and count of each component of the strategies characterizes this subprocess.

Context

The next component of the paradigms' model is the context. More precisely, the phenomenon appears to be embedded in characteristics specific to policing decision-making called *operational realities*. The participants represent these as staffing and call dispatch, the availability of on-call custody agents, the day the suspect was arrested, whether it's a workweek, a holiday, or a weekend, or major ongoing policing events and

exceptional situations. Throughout the process, the context might influence one or more components to different extents.

Interactions

Other actors are implicated in the decision-making process. For their proximity, colleagues are the first sources who can be consulted to collect extra information while managing a case or gaining external insight. After that, the supervisor is an active component in the analysis process. Even if the officers' releasing responsibility is individual, it appears to be, in practice, shared between the officers and their supervisor; the latter is accountable for decisions taken by their staff. They will oversee the constables' decision-making, meeting the requirements of legal references and policy guidelines. Perceived as a reference and a coach, the supervisor also broadens the officers' perspective of an event for preventing tunnel vision and refers them to the best tools available and applicable.

Crown prosecutors are another essential element in the process. Depending on the officers' evaluation, the Crown may intervene on demand. Local prosecutors during the day and the Prosecutor's Advisory Office outside office hours are available to guide police staff through their releasing decision-making. Their first mandate is to counsel officers and provide court data they cannot access. Consequently, if the officers decide to detain a suspect, the Prosecutor's Advisory Office must initiate court proceedings through a remote video appearance when a judge cannot be available within 24 hours. This hybrid function of the Advisory Office appears challenging to dissociate from its

primary counselling role. Recurrently, constables would automatically inform a prosecutor to justify their actions even if legal requirements are met for releasing and not detaining a suspect. The decision-making process tends to rely on the Crown Prosecutor's recommendations as the gravity of the offence increases.

The last actor embedded in the process is the CVCO. Responsible for monitoring and coordinating law enforcement activities, this service offers 24/7 operational support, including guidance for releasing decision-making. The officers or their supervisor can call the police manager in charge. It is important to stress that each actor's assessment of the case relies on the officers' complex legal, procedural and risk evaluation of the situation and the information they decided to report.

Action

After considering the strategies and, if applicable, performed interactions with actors, the officers will release the suspect of violence. Three mechanisms exist: releasing by summons, with a promise to appear (or undertaking) with or without conditions, and detention for appearance to court.

Consequences

The analysis shows disparities in the outcomes of that decision-making process. It relates to the variability of the officers' criteria and the latitude the law and policing procedures give them. The subjectivity associated with the *experience-based* nature underpinning the strategies used by the officers to make their decisions appears to be

closely linked to the disparity. The impact of public opinion on the officers' decision-making emerging from the coding demonstrates the direct proximity existing with police legitimacy.

Risk Assessment

The officers use a couple of strategies to guide them through their decision-making. One of the main components is the suspect's risk assessment. Releasing an individual starts with listing the victim-focused, suspect-focused, and contextual factors. Subsequently, the grounded model demonstrated that personal analysis is the core mechanism of the officers' mental process. Experience-based, the officers filter each consideration based on subjective experience. Beyond this criterion, the concept of *experience* is a common thread throughout each participant's decision-making that includes several aspects, such as values, perception of a situation, previous court experiences and fear of potential consequences and sanctions related to the decision. Each officer's unique background offers a different interpretation of the situation. The data also shows that officers characterize this decision-making process as complex, and using *experience* to overcome this complexity is considered a fundamental solution. Emerging from the coding, another subjective disparity is denoted: as the crime and injury severity increases, the officers' risk analysis will be more profound, especially in the number of criteria they will consider.

Therefore, the concept of *risk assessment* appears to be difficult to dissociate from the decision-making process. The analysis showed that risk assessment is a component

of that process, which is then declined in subprocesses. As explained, officers use three strategies to make a release decision. Using available tools, the officers must analyze the public interest criteria as part of the releasing legal requirements. They will then shift from an objective and specific mechanism to another involving subjectivity and discretion – the suspect's risk assessment regarding reoffending and the victim's safety. The complexity of differentiating these and recognizing their limits appears to impact the officers' rationale and justification for action.

Potential impacts of integrating actuarial forecasting models

The data produced by the participants' interviews focuses on their perception of the potential impacts of introducing actuarial forecasting models in the SQ officers' suspects of violence releasing decision-making process. The nature of this study is exploratory; the analysis highlighted five categories of core components for measuring potential impacts on the process: the context, benefits, disadvantages, barriers, and implementation conditions.

Context

The data analysis revealed limited knowledge of AI and actuarial forecasting models. Even if the participants acknowledge the existence of algorithms in their lives, a generalized feeling of absence in policing exists. The research also shows that police officers are keen to use data-based guidelines for decision-making. On the other hand, the actual model uses the centralized policing database (CRPQ) as the primary source of data officers can rely on. Recognizing human limitations, different agencies'

experiences, like probation services, have already tested and now use actuarial forecasting tools to assess inmates' risk (Quirion & D'Addese, 2011; Savard, 2021). A concept of emergency for taking care of AI in policing also emerged from the data. The coding revealed an active presence of AI in the participants' lives but an insufficient understanding of the "basics" and related issues to the latter. A constant increase in the use of algorithms and the cases officers deal with induced that perception of falling behind and the need for improving knowledge.

Benefits

Various advantages related to using algorithms in the releasing decision-making process emerged from the coding. Officers positively perceive AI as an assistance or facilitating function in the decision-making process. The participants acknowledge that the key characteristics of these tools aim to increase decision-making performance. The data also shows that introducing AI could lead to positive outcomes regarding victim protection, consistency and objectivity of the process, and police accountability. Finally, improved fairness around decision-making would favour police legitimacy with stakeholders and the community.

Disadvantages

Weaknesses have been identified during coding. These frailties include the officers' responsibility, power and duties. The general fear of using AI as a unique decision-maker and replacing policing judgment emerges from the study. Officers demonstrated concerns about relying strictly on the tool and excluding external factors.

Interestingly, the errors produced by forecasting model algorithms are perceived as beneficial in potential outcome improvement but challenging to interpret, referring to the tool's opacity. That same characteristic directly relates to another finding; the data analysis shows a fear of the unknown, also known as the *black box* concept. It refers to the algorithm opacity of internal workings. Putting their confidence and judgment in a tool that they barely understand the basics, functions, and limitations compromises their trust in the tool. Ultimately, the research revealed that combining the last elements could alter the relationship with the population and directly affect police legitimacy.

Barriers

The implementation of an actuarial computerized tool could result in future challenges. Potential obstacles were first identified with the data analysis, starting with administrative issues referring to financial matters, continuous education and training, and staff selection for supporting the implementation. Second, technology-related problems were targeted, such as compatibility between the systems and databases, effectiveness, fluidity, and constant tool updates. Potential technological flaws appear to directly impact the officers' confidence in the instrument. A third category emerged from coding – conceptual issues. This is represented by fears of losing police judgement, of change, of humans being replaced by AI, of deprogramming actual learning by experience process, and of sanctions for non-compliance with AI decisions. In addition, the analysis suggests that the general societal acceptability of AI in decision-making might also be a barrier. At the same time, officers' trust in AI can rely on out-of-context assumptions. Fourthly, procedural obstacles were raised by the grounded model. These include organizational

requirements and consolidated partnerships with external agencies like the Crown Prosecution Services. Finally, confidentiality issues are denoted as potential ethical barriers.

Implementation conditions

Four main concepts characterize types of implementation conditions of actuarial forecasting models in policing decision-making. Firstly, *communication* must be a priority for successful operationalization. The tool's *functionality* is also crucial; it must be user-friendly to facilitate embedment into officers' practices. Closely related, *accessibility and availability* are challenges that need to be addressed, considering the policing context. Working around the clock and intervening in different environments, a tool is more likely to be used by the officers if available 24/7 and offers adaptability in terms of physical access. Lastly, the analysis demonstrated that combining experience through guided discretion with an evidence-based strategy would favour the integration of AI into the decision-making process.

Chapter Summary

The previous section presented the findings. Answering the first research question, the grounded model constructed a theory about the decision-making process of SQ officers for suspects of violence release. The conceptualization is divided into seven components to help understand how the causal conditions, the phenomenon, the strategies, the action, the actors, the context, and the consequences interact. Disparity in decision-making emerged from the analysis as a core data category. The risk assessment

made by the officers is a central element influencing the latter characteristic. The high

involvement of experience in the officers' analysis of the case and misunderstandings

around the mechanism provide possible explanations. Finally, the coding produced a

potential range of solutions for increasing knowledge around the impacts of introducing

the actuarial forecasting model, focusing on the benefits and disadvantages, barriers,

conditions of implementation, and current context.

Chapter Five: Discussion

This research aimed to conceptualize the SQ officers' decision-making process for releasing suspects of violence from police custody, using the GTM as an analysis framework. A research priority was to examine how officers' risk assessments are made and the potential impacts of integrating actuarial forecasting tools. Until now, no research has centred on deconstructing the process rather than measuring the outcomes. This specifically applies to the context of the Canadian province of Quebec.

This chapter presents the key findings of this research endeavour. The first section aims to highlight the high level of disparity in the release decision-making process of SQ officers. The second section relates to releasing responsibilities, denoting a proportional increase in the offence severity and the likelihood of asking for a Prosecutor's assistance. Then, unequal treatment resulting from the disparity of the decision-making process might negatively affect police legitimacy. Finally, complexities, barriers, and limitations related to machine learning tools may encompass the benefits, leading to the consideration of simpler alternative solutions.

Main Findings

Disparity

The first key finding of this research is that SQ officers' decisions show disparity when they release violent offenders from their custody. Reinforcing Gauthier's (2003) work with the SPVM, criteria considered when assessing a suspect's risk vary

substantially in numbers and weighting between officers. While a first officer could include four factors, another in similar circumstances will make a different selection. The following will demonstrate example disparities created by officers: an officer could refer to various factors, such as geographic proximity between the homes of the suspect and the victim, the suspect's mental health status or the victim's level of collaboration, but include the same criteria weighted differently. The victim's fear of the suspect counts more in the risk calculation than the officers' quality assessment of the suspect's statement, resulting in different outcomes for each officer. Another subjective disparity is denoted: the officer's risk analysis will be more profound as the crime and injury severity increases. Interestingly, the same double standard emerged with the selection and use of tools and references. It fluctuates from one officer to another, adding to the demonstrated process's disparity.

According to Bublitz (2020), imperceptible factors seem to influence the results of officers' decision-making in this research, supporting their findings about experience and subjectivity. In this research, if norms, concepts, and background considerations were explicitly stated, implicit knowledge and biases naturally emerged. Using shortcuts and heuristics, such as basing a release decision solely on criminal records or a simple correlation between two factors, is a good representation of how officers may manifest these biases. Hidden in individual psychology, they might not be officially expressed, but there is reasonable doubt that they influence and shape the outcomes (Bublitz, 2020). It is also reinforced by medical literature regarding the existing disentanglement difficulty of experience from decision-making (Fridman et al. 2019). The analysis showed the active

role of personal considerations and analysis. Influenced by positive and negative experiences, discretion becomes a central part of the officer's assessment of the case (Dehaghani, 2009; Fridman et al., 2019).

Raines & Willson (1995) compared the decision-making difficulties of officers to magistrates. Involving many subprocesses and micro-decisions leading to releasing a suspect, the complexity of the decision-making process emerged from the analysis. It requires the officers to apply broad concepts and norms to an actual situation, adapted to the circumstances and context through interpretation. Like Bublitz's (2020) analysis of the judge's decision-making process for granting parole, assessing a suspect's risk becomes a complex calculation and comparison between normative thresholds related to the likelihood of reoffending. Establishing the latter involves weighting different factual parameters, such as suspect-related, victim-related, and contextual, concerning the public criteria interest, the interactions with other actors and operational realities. It implies that many reasonable decision paths exist. According to Bublitz (2020), this is where psychological and physical biases become more likely to influence legal reasoning, inducing potential mental fatigue. Initial thresholds and standards might shift reasonably within the norms without rendering incorrect decisions. Using Bublitz's (2020) terminology, an *unequal treatment* emerges, characterizing the outcome.

These consequences on the suspect are not solely engendered by human factors, based on subjective assumptions by the officer. The results showed that legal and procedural framework insufficiency are causal conditions in decision-making. Neither the

CCC nor the internal procedures offer specific parameters for guiding the officers through the process. As stated by Bublitz (2020), the treatment the suspect receives arises from legal shortcomings to provide a framework meant to render consistent and uniform decisions. The decision is correct if it respects the indeterminate legal requirements.

Conversely, contravening the concept of equal treatment should lead to justification (Bublitz, 2020). Legal and procedural *grey zones* denoted in the analysis tend to give more space to subjectivity and discretion, a natural human reasoning mechanism (Fridman et al., 2019). Finding the right balance necessitates that the organization supports its police officers' daily decision-making to help them execute effectively while offering organizational support to promote self-confidence when deciding to release a suspect (Verhage, 2018).

The results obtained by the data analysis are parallel to postcode lotteries in the National Health Service in the UK. Referring to essential differences in health care services offered between geographic areas in North West London, the variations rendered an unfair process (Graley et al. 2011). Variations were highlighted in the releasing decision-making around the province regarding the number of criteria used by the officers and their relative weighting, tools and references employed, actors implicated, organizational and geographical conditions, and operational realities. Graley et al. (2011) emphasize that implementing operational guidelines may help overcome the postcode lottery effect and offer the officers the best tools and evidence for accomplishing their mission in the context of that research. However, the authors raise an unavoidable trade-

off: the pros and cons of complete standardized practices versus local discretion and flexibility (Graley et al., 2011). In other words, what is the place and weight of police experience and discretion in the releasing decision-making? Further research on the topic is required to answer this question.

However, this research demonstrates that a better legal and procedural framework should underpin the decision to ensure the right balance. On the other hand, Cohen's (1996) work showed that in some situations, when guidelines are stricter, the use of personal judgment is more likely to be successful. Concurrently, combining experience and guidelines will be essential for maximizing the effectiveness of elaborating a potential new tool or framework. The latter effectivity's legal and procedural framework improvement is conditional to appropriate supervision, training, and support. Just modifying the legal framework will not fundamentally change behaviour. It requires an evidence-based training-tracking-feedback implementation strategy (Slothower et al., 2015).

Notwithstanding, this research demonstrates that even if police officers make correct release decisions and act in good faith, biological and psychological factors might influence their reasoning about the law through indeterminacy and imperceptibility (Bublitz, 2020). Issues emerging from that process would not be normative but related to the disparity between time and intervention. From there on, this situation raises equal treatment issues that deserve to be addressed.

Releasing responsibilities

The misconceptions around the releasing responsibilities are another crucial finding. The literature is clear about a suspect's release: it remains strictly in the hands of the police agency (Lavallée, 2022; ÉNPQ, 2015). Section 498(1.1) states that officers in charge have the authority to detain in custody an individual if they have reasonable grounds to think that it is necessary for the public interest (CCC, 1985). For any inquiry or assistance, local Crown Prosecutors or from the Advisory Office can be consulted for legal advice. However, the analysis showed that officers rely on the Crown Prosecutor's advice or professional opinion to take action. More importantly, as the severity of the offence increased, the officers were more likely to ask for Prosecutor's assistance. The *risk averseness* mechanism furnishes a possible and most likely explanation for this phenomenon (Garland, 2003; Heaton, 2011). As the officers process the strategies available, they could measure their exposition to danger and likelihood of loss. The latter is represented by shifting the decision burden to the Crown Prosecutor, an established mechanism for lowering their exposition. In the case of releasing decision-making, automatically referring to a Crown Prosecutor or setting pre-conceived thresholds would represent that *exposition-minimization* strategy.

Contradictorily, the data analysis revealed a fear of the consequences and a lack of confidence from the officers in their decision-making. The participants in the coding phase stated verbalizations, hesitations, and conceptual mistakes. These results support the idea that the misconceptions derive from a training and knowledge deficiency about the role and responsibilities of implicated actors in the process. Unfortunately, few studies

examined the impacts of fear on policing decision-making (Verhage et al., 2018). This raises several crucial questions. Are the officers scared of being sanctioned because of a lack of confidence or the opposite? What is the implication of their shortcomings in training and knowledge in this calculation? Is it a matter of misconception or poor work ethic? Additional research could help develop these concepts.

Impacts on police legitimacy

Referring to Bottoms and Tankebe (2012; 2017), distributive and procedural justice are central concepts for accomplishing a policing mission legitimately. The questions of disparity and unequal treatment resulting from the decision-making process, as experienced by the NHS with postcode lotteries, relate directly to an essential characteristic of police legitimacy: fairness. Contradictorily to Tyler and Meares's (2019) statement, policing transparently and impartially involves offering citizens a structured and explainable reasoning when it comes to being released from custody. The fact that subjectivity is present through discretion during the process isn't an issue, but its proportion among the strategies used by the police officers' analysis is problematic. This confirms Mastrofski's (2004) theory that officers' discretion will vary and be broadened for some tasks and narrowed for others.

Moreover, the coding revealed that the thought process of an officer's decision impacts citizens in terms of credibility, coherence, and legitimacy. This reinforces Bublitz's (2020) research, where he states that the decision-makers present good faith and positive intentions when acting. The analysis showed that the SQ officers unintentionally gave

signs of subjectivity when assessing the case, potentially compensating for legal and procedural shortcomings. There is no guarantee for an offender that, in comparable circumstances, officers will consider similar criteria and weight when assessing a suspect's risks. As cited earlier, the quality of the treatment delivered to citizens and the decision-making process is vital for police legitimacy (Mazerolle et al., 2013; Reisig et al., 2007). More justification would counteract the latent opacity of the officer's reasoning.

The last section exposed the limitations of the current releasing decision-making. The disparities highlighted demonstrate the direct impact of equality of treatment and fairness between the suspects and, inherently, on police legitimacy.

Actuarial Forecasting Models

The findings of this research support the available literature surrounding the benefits, issues and barriers that machine learning forecasting tools currently represent (Berk, 2021; Urwin, 2016; Oswald et al., 2018). Machine learning tools are promising solutions for police organizations regarding accuracy and consistency (Barnes et al., 2018). In the context of this research, the negative aspects and barriers might encompass the latter. The officers' judgment and experience issues were central concepts. Considering the demonstrated embedment of experience and subjectivity in the current release decision-making, police resistance can be expected for the future implementation of AI (Ratcliffe et al., 2020). Moreover, the intense fear of losing their judgment appeared to negatively affect the officers' likeliness of trusting the tool (Cope, 2004). Proven to be a barrier to implementing predictive policing, resistance must be considered when

assessing potential solutions for overcoming the current decision-making limitations (Perry et al., 2013).

Per Moses and Chan (2018), perfect predictions are only helpful if police officers use them and adjust police practices. The analysis showed that early-stage decision-making support creates a substantial gap between the current situation and actuarial forecasting tools. Decision makers must consider the constables' perceptions of these tools emerging from the analysis to develop appropriate solutions. To stimulate officers' willingness to embed new practices in police operations, they must acknowledge and understand the relative potential gain.

The analysis demonstrated that officers put their confidence in a tool or technology interpreted as effective (Colvin & Goh, 2015). Conversely, this research found that the officers supported implementing actuarial forecasting models but challenged *how* it would be completed. The participants were optimistic about using new tools for decision-making support but manifested a requirement for improved comprehension of internal workings. Consequently, it confirms their apprehensions about the opacity of algorithms and reinforces literature about the *black box* concept. Officers should better recognize and understand the benefits and limitations of such tools.

While contextualizing the assessment for personalizing implementation in police agencies is essential, the current decision-making limitations and actuarial forecasting

models' complexities should lead to considering alternative solutions (Willis et al., 2007; Weisburd & Neyroud, 2011).

Practical and Policy Implications

Using algorithms and AI is a sensitive and vital topic for police agencies (Oswald & Grace, 2016). This research aimed to understand the police decision-making process of releasing offenders in Quebec. It identified the issues and limitations and considered what could create a more legitimate decision-making process. This research intends to narrow the gap between the development of the technology in the UK and its potential future implementation in Quebec, Canada. This analysis revealed the context's inaptitude for implementing predictive computerized tools like *HART*. Since a baseline is necessary for measuring, conceptualizing the process is a first step in establishing similar comparatives and answering this fundamental question: how are officers assessing risk?

The next question should be: how accurate is this assessment? Unfortunately, the qualitative nature of the research design is not built to assess the quality of the outcomes in terms of the predictions' accuracy. It focuses on how the decision is rendered, offering an overview of the process. However, an interesting characteristic of the officers' decision-making emerged from the analysis: disparity. Improvements are possible and further detailed to narrow the gap.

Training

Policing staff should receive updated, standardized, consistent training on offender release responsibilities. Training will solidify that all the required processes and components are understood and implemented with quality. Each stakeholder must fathom their role and duties regarding other internal and external actors. In addition, cultural, experience-based decision-making is embedded in officers' practices. This is supported by literature as Gibson (2021) highlighted the importance of understanding and internalizing the benefits of releasing suspects. Ensuring consistent feedback would also improve the likeliness of officer compliance and treatment quality improvement (Slothower et al., 2015).

Additionally, force-wide training allows the administration to answer questions, dispel myths, and engage in open communications. There is a need for better training regarding the police releasing power (Williams, 1995; Raine & Willson, 1997). Future tracking depends on this standard for comparison. As stated by Bublitz (2020), reasonable attempts are required from organizations to approximate the ideal of subjective justifications to overcome disparities. Even if the disparities stay within the legal framework, consistency and equal treatment are objective principles to embrace and aspire to reach.

Actuarial forecasting models

The existing research on algorithms and their utilization in policing has previously been described in the literature review. AI is a promising solution for tackling disparity

(Urwin, 2016; Barnes et al., 2018). A question remains: is the *black box* worth it? The concerned organizations must analyze and consider many parameters from a medium and long-term perspective.

Potential challenges for procedural, legal, ethical, logistical, and inter-agencies are listed in the literature review and have been reinforced by this research, requiring a systemic implication of the organization in charge. Especially in the case of SQ officers' releasing decision-making process, more fundamental groundwork appears to improve the quality of the process potentially. Given the current issues of implementing actuarial forecasting and the early stage of releasing decision-making support, smaller and less complex tools should be considered.

Guidelines and Policies

The experience of the postcode lottery case analysis has shown that an improved legal and procedural framework should underpin the decision to ensure the right balance of *experience* in police officers' reasoning (Graley et al., 2011). Police organizations and their judicial systems are independent of one another, therefore having different missions and imperatives. From a judicial perspective, more precision about the public interest criteria and the assessment required by the officer would likely diminish the proportion of discretion. Given the separation from the court, police agencies must instruct their staff with more explicit guidelines and policies regarding releasing suspects. Based on the evidence, the criteria ideally considered by the constable when applying strategies, the tools available, and interactions with the other actors must be detailed. Again, this

research and literature showed the proportionate need for standardization in the decision-making process (Graley et al., 2011; Cohen, 1996). In this context and from a short-term perspective, these improvements represent a more gradual and feasible solution towards consistency over actuarial forecasting models. Moreover, it reduces related legal and ethical issues.

Checklists

An appropriate tool for supporting the strategy for increasing consistency of decision-making and the extent of operationalizing guidelines and policies would be the creation of a release checklist. As research conducted in the UK's health system demonstrated, safety checklists can diminish omissions and variations in practice (Hale et al., 2015; Royal College of Physicians and Royal College of Nursing, 2012). This tool's development and use were proven effective in complex clinical processes where significant variability in the conduct was problematic. Using a checklist could help standardize releasing practices and, additionally, has the potential to strengthen communication with other actors, such as Crown Prosecutors and supervisors, increase performance, and act on police legitimacy by improving the suspect's experience. Providing crucial aspects of decision-making could be beneficial for inexperienced recruits to guide their actions and facilitate overlooking (Hale et al., 2015). The idea is to structure a sequence of considerations and steps to ensure critical steps and components of the officers' analysis originating from the guidelines for every release act done. From there, the data produced provides the organization with a baseline for prediction assessments and compliance tracking. The Surgical Safety Checklist launched by the

World Health Organization in 2008 (Appendix B) is an evidence-based example of how simple innovation has profound safety benefits, including avoiding harmful incidents and creating a safety culture in the NHS (NHS, 2019).

This research identified potential barriers regarding the implementation of actuarial forecasting tools. Developing a checklist appears to be a trade-off regarding accessibility, acceptance, and feasibility. However, a safe-guarding approach with the staff should be favoured to ensure "basic" aspects of the decision-making process are not missed to reduce the potential perception of contesting their autonomy and competence. Nonetheless, a future implementation should be embedded in a programme that includes communication, education and training, and a cultural change vision (Hale et al., 2015). Considering this research context, this solution appears reasonable and realistic, offering evidence-based advantages for tackling disparity, increasing policing legitimacy and creating a solid foundation for tracking. However, the successful implementation of any of these recommendations will be conditional on an evidence-based, training-tracking-feedback strategy (Slothower et al., 2015).

Recommendations for Future Research

This study has determined that further quantitative research is required to statistically establish the accuracy of the SQ officers' decision-making. Developing common ground for measurement could also be a step toward actuarial forecasting tools and future implementation. Risk assessment is about prediction. It is essential to remember that evaluating the accuracy is not based on the results but rather on the gain

it represents compared to the standard. Considering the barriers and conditions for implementations associated with machine learning tools, this baseline is essential for justifying its use in policing.

Focused on the decision-making process, practical implications were listed by the researcher to improve its consistency. Among these, developing a checklist was recommended. Elaborating on an experimental design would be a relevant option for tracking variability in the decisions taken by the officers, their compliance with the protocol, the effect on officers' confidence, the correlation with the Crown Prosecutor's assistance, and the consequences on the suspect's perception of police legitimacy. Finally, replicating and testing in other police agencies would also be beneficial for a better understanding of the phenomenon analyzed in this research.

Strengths and Limitations of the Study and Findings

Internal Validity

Participants selection

The design chosen for this project posed threats to internal validity, the first of which was the participants' selection. Convenience sampling is an appropriate technique for maximizing experiences and contexts when using the GTM. However, it needs more scientific validity. Even if facilitators partially encompassed selection biases, they are still present. Introducing randomization into the process could diminish subjectivity in the selection.

Instrumentation

Consistency in the method used for collecting data is critical to reducing biases and improving the outcome's objectivity. The GTM necessitates modifications in the questionnaires to reach theoretical saturation. During the process, minimal changes were made for clarification. Even after having piloted the interview, some questions arose from the participants, leading to clarification modifications.

Additionally, new questions were added as the interviews were completed to increase precision and develop concepts emerging from the constant analysis. The instrument might impact the internal validity, but it is balanced with the theory construction process. Moving towards more focused forms, coding, and selection is part of idealistic saturation (Bryant et al., 2007).

Researcher's involvement

Being a member of the studied organization, the researcher brought another potential bias and ethical issue related to proximity with the participants. In some cases, they appeared to know each other. The idea of using an external interviewer was considered, but due to funding and support reasons, the researcher conducted it by himself.

Social Desirability

Known as the tendency for some participants to present themselves or answer the questions favourably, the social desirability bias might threaten the study's internal validity

(King and Bruner, 2000). In the context of this study, officers could respond differently than average regarding social norms and standards. For example, for this constable, colleagues acknowledge that getting assistance from a Crown Prosecutor should be automatic. This constable might answer regarding that norm, which is not representative of his actions. To reduce this bias, every participant was informed that his volunteer participation was made anonymously, and confidentiality measures were explained. Additionally, the questionnaire was built non-suggestively.

Inductive reasoning

The GTM requires the research design to utilize inductive reasoning to create a theory. Indeed, this technique is not entirely objective and is embedded in the instrument's selection, coding, and operationalization (Gasson, 2004). The researcher must then implement precise and repeatable procedures and reflect on their position to encompass subjectivity and present dependable and authentic findings. Being transparent about their acknowledgement of subjectivity aims at minimizing the effects on internal validity. The researcher must understand and define their data selection, analysis, and synthesis in their theoretical constructs. As previously highlighted, constant comparison is central to avoiding superficial conclusions. One of the solutions adopted by the researcher was to make their processes of reflexivity explicit. It does not remove inductive bias, but writing these distortions down and justifying them reinforces transparency and coherence. For example, a positionality statement was added in the methods section, changes in the coding scheme and the need to collect new data for emerging concepts and new areas

of literature were listed in the memos. The rationale described demonstrates self-awareness (Charmaz & Thornberg, 2021).

Internal consistency

The concept of internal consistency refers to how the different components of the emerging theory relate to significant elements in the research context (Strauss and Corbin, 1998). Concepts were developed through coding, which appeared constantly during the interviews' analysis. This research demonstrates credibility while literature reinforces and influences the findings.

External validity

Nature of the Design

Being inductive, the grounded theory approach represents some challenges in terms of generalizability. This method differs from deductive designs and needs to be revised regarding how widely it can be applied elsewhere (Gasson, 2004). The researcher understands this generalizability limitation.

Sampling

Sampling biases could jeopardize internal and external validity. The small number of participants is core to the question. In this exploratory research, eight participants were selected and interviewed. This number represents a trade-off between obtaining enough data for key concepts to emerge from the coding and the heavy time and effort ratio for collection and analysis. More significant numbers of samples could improve transferability

but would mean months of "labour-intensive" work. Given the project's context and time frame, it was impossible. Therefore, theoretical sampling and representative sampling are two different concepts that must be differentiated, the latter frequently mistaken with *representative population sampling* in quantitative studies. With GTM, Glaser & Strauss (2017) aim to reach the theoretical saturation of the emerging concepts. The non-emergence of new properties or characteristics represents this saturation. The theoretical saturation depends on theoretical sampling, adapted from the iterative process of constant data analysis. Consequently, if the same questions are asked to the participants, similar data might arise from their output after only some interviews, gradually strengthening the analysis and building the "trustworthiness' of the research (Morrow, 2005; Williams & Morrow, 2009). Further interviews could have led to more precision and improvement in external validity.

Place and settings

This study was conducted on specific subsets—the research aimed to understand the decision-making process of SQ officers when releasing suspects of violence. Emphasis on a single organization and type of offence limits the transferability of the results. Replicating the design in other police agencies or focusing on different infractions could help assess this model and strengthen external validity.

Coding Assessment

As explained in the methodology section, the technique used for data analysis is coding. Only the researcher coded the transcripts obtained with the interviews. Using a

second coder to improve transferability was considered but abandoned for financial and human resources considerations. Countercoding enhances the theory's validity and the concepts' strength. That latter represents another solution for improvement.

Chapter Summary

The research findings aimed at a central concept: disparity. Supported by the literature, the data analysis revealed significant variabilities in the decision-making process of SQ officers of violence suspects' release. This disparity is represented by a high proportion of experience and subjectivity encompassing decision fatigue and the insufficiencies of legal and procedural frameworks. It also revealed the emergence of legal but unequal treatments offered to the suspects, supported by the example of the UK's postcode lotteries issue. A closer look at the causal conditions also demonstrated releasing responsibilities misconceptions of SQ officers, a fear of the consequences coming from their personal analysis and a lack of confidence in their powers and duties that might lead to affecting officer's analysis with discernment. Referring to the quality of the treatment offered to the population, these notions of inequality and disparity have an impact on police legitimacy as well. Policy implications were listed to improve the quality of the decision-making process. Among them are increasing the training around releasing roles and responsibilities of the actors, improving current guidelines and procedures, including risk assessment, and creating and operationalizing checklists. After establishing a baseline and datasets for tracking, the agency should plan and develop a future implementation of actuarial forecasting tools. Finally, internal and external validities were assessed, highlighting the study's limitations related to participants' selection,

instrumentation, researcher's involvement, social desirability, inductive reasoning, internal consistency, nature of the design, sampling, places and setting, and coding assessment.

Chapter Six: Conclusion

Overview

Releasing a suspect after arrest for a violent offence is a standard action of response police officers in Canada. Daily, officers must decide whether individuals should be detained in custody for an appearance in court or released back into the community. This is a high-impacting responsibility in legal and public safety terms. To make these decisions, officers must assess the suspect risk. As highlighted by the CNESST (2023) recommendations report in Maureen Breau's case, unplanned intervention risk assessment guidelines are absent, and these officers should be given all the available data to assess the risk in this context. Currently, little evidence exists around the quality of the officers' decision-making process for releasing suspects, risk assessments, and using actuarial forecasting tools in a Canadian context. This all led to modelling this thesis topic.

This study answered three questions:

1) What is the releasing decision-making process of *SQ* officers for suspects of violence?

2) How is the risk assessment currently carried out for releasing a suspect?

3) How could actuarial forecasting models potentially impact the decision-making process?

Research Findings Summary and Conclusions

This research was focused on an improved understanding of the decision-making process behind releasing offenders of police officers in Quebec, Canada. The purpose was to evaluate the potential integration of actuarial forecasting models in the future. Using the GTM framework, the first aim was to conceptualize this complex process, deconstructing these officers' mental analysis and risk assessment to establish a comparative baseline. The rigorous methods led to exploring artificial intelligence's potential impacts and barriers to police decision-making.

The first key finding of this research is that SQ officers' releasing decision-making process presents a high level of disparity. The analysis demonstrated substantial variability in the number and weighting of the criteria considered for the suspect's risk assessment. The officers' risk analysis will be more profound as the crime and injury severity increases. It relates to several factors. Following the same pattern, the officers' selection and use of tools and references subjectively fluctuate. Reinforced by the literature, a disentanglement difficulty of experience from decision-making is represented by the central role of positive and negative experiences, personal considerations and discretion. Confronted with complex micro-decisions, psychological and physical biases come into play, influencing officers' judgement. Decisions taken by the officers might shift from initial standards and thresholds within the norms established. Without rendering the decision incorrect, it induces unequal treatment. The shortcomings of the current legal and procedural framework underpin the disparity, while grey zones related to the precision of guidelines give more space to subjectivity and discretion.

The second key finding relates to releasing responsibilities. Even if the literature is clear about the police's responsibility for the suspect's release, the analysis demonstrated that officers rely on the Crown Prosecutor's counsel or professional opinion to take action. More importantly, as the severity of the offence increased, the officers were more likely to ask for Prosecutor's assistance. The *risk averseness* mechanism furnishes a possible and most likely explanation for this phenomenon. As the officers process the strategies available, they might measure their exposition to danger and likelihood of loss. Interestingly, the data analysis revealed a fear of the consequences and a lack of confidence from the officers in their decision-making. The latter reinforces a need for training and updated knowledge about implicated actors' roles and responsibilities.

Thirdly, the disparity characterizing the violent suspect releasing decision-making process impacts police legitimacy. Fairness issues emerge from the analysis, represented by unequal treatment between the suspects. The problem is not targeted toward discretion but rather its proportion throughout the process. Although decision-makers present good faith and positive intentions, subjectivity can affect the quality of the treatment offered to citizens, a vital concept of police legitimacy. More justification could overcome the opacity of the officers' reasoning.

The fourth key finding strengthens the literature on implementation conditions of actuarial forecasting models in policing. Officers' compliance is essential to a successful implementation, meaning their fears and misconceptions must be addressed. The place

of experience-based knowledge, also qualified as a craft used by officers in decision-making, is a vital component of the officers' trust in the tool, mainly related to the knowledge of internal workings. In the context of this research, the negative aspects and barriers might encompass the latter. This leads to considering more straightforward alternative solutions for improving current decision-making consistency and treatment equality.

Recommendations

Improvements will be necessary to overcome the main issue that emerged from this research: disparity. Reinforcing officers' and supervisors' training and guidance on releasing roles and responsibilities is a first step forward. Then, working on developing algorithms in policing is a promising solution from a medium to long-term strategy for stabilizing the consistency of the decision and objectivating the process. A third recommendation concerns legal and procedural shortcomings. A proportionate standardization of the decision-making process seems to present itself as a reasonable approach for reducing the amount of discretion and ensuring the right balance of experience in police officers' reasoning. Finally, operationalizing the latter recommendations should start with creating a release checklist. Used in the medical field, it is a simple innovation that can potentially avoid harmful incidents, ensuring the fundamental aspects of decision-making are not missed. This solution appears feasible and realistic, offering evidence-based benefits for tackling disparity, increasing policing legitimacy and creating a solid foundation for tracking.

Contribution to Knowledge

This thesis does not intend to solve the implementation issues of actuarial forecasting tools but provides solid grounds for future related research in Canada. Especially in the province of Quebec, evidence-based policing is still in its infancy. The conceptualization of the officers' decision-making process for releasing violent suspects has now established a new baseline for measuring, comparing, and assessing the quality of the current procedures. The disparity of the process from this research justifies the need for better tools for police officers. It is also the first research on disparity in Canadian policing decision-making and risk assessment, demonstrating the relevance of using the GTM in evidence-based policing.

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R v. St. Cloud [2015] SCC 27

R v. Antic [2017] SCC 27

R v. Zora [2020] SCC 14

Appendices

Appendix A: Predictor Variables Used in HART

Offender Demographics (2):
- Current age
- Gender

Residential Postcode (2):
- Outward postcode (categorical)
- Mosaic code (categorical)

Local Age of Onset (6):
- First offence (any)
- First violent offence
- First sexual offence
- First weapon offence
- First drug offence
- First property offence

Presenting Offence (3):
- Total offence count
- Violence indicator (yes/no)
- Property indicator (yes/no)

Local Custody History (1):
- Total custody events

Local Offending History (11):
- Total offences (any)
- Murderous offences
- Serious offences
- Violent offences

- Sexual offences
- Sex offender registration offences
- Weapon offences
- Firearm offences
- Drug offences
- Drug distribution offences
- Property offences

Time elapsed Since Most Recent (8):
- Custody event
- Any offence
- Serious offence
- Violence offence
- Sexual offence
- Weapon offence
- Drug offence
- Property offence

Intelligence History (1):
- Report count

Appendix B: Surgical Safety Checklist

Surgical Safety Checklist

World Health Organization | **Patient Safety**
A World Alliance for Safer Health Care

Before induction of anaesthesia ➤	**Before skin incision** ➤	**Before patient leaves operating room**
(with at least nurse and anaesthetist)	(with nurse, anaesthetist and surgeon)	(with nurse, anaesthetist and surgeon)

Before induction of anaesthesia

Has the patient confirmed his/her identity, site, procedure, and consent?
☐ Yes

Is the site marked?
☐ Yes
☐ Not applicable

Is the anaesthesia machine and medication check complete?
☐ Yes

Is the pulse oximeter on the patient and functioning?
☐ Yes

Does the patient have a:

Known allergy?
☐ No
☐ Yes

Difficult airway or aspiration risk?
☐ No
☐ Yes, and equipment/assistance available

Risk of >500ml blood loss (7ml/kg in children)?
☐ No
☐ Yes, and two IVs/central access and fluids planned

Before skin incision

☐ **Confirm all team members have introduced themselves by name and role.**

☐ **Confirm the patient's name, procedure, and where the incision will be made.**

Has antibiotic prophylaxis been given within the last 60 minutes?
☐ Yes
☐ Not applicable

Anticipated Critical Events

To Surgeon:
☐ What are the critical or non-routine steps?
☐ How long will the case take?
☐ What is the anticipated blood loss?

To Anaesthetist:
☐ Are there any patient-specific concerns?

To Nursing Team:
☐ Has sterility (including indicator results) been confirmed?
☐ Are there equipment issues or any concerns?

Is essential imaging displayed?
☐ Yes
☐ Not applicable

Before patient leaves operating room

Nurse Verbally Confirms:
☐ The name of the procedure
☐ Completion of instrument, sponge and needle counts
☐ Specimen labelling (read specimen labels aloud, including patient name)
☐ Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:
☐ What are the key concerns for recovery and management of this patient?

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.   Revised 1 / 2009   © WHO, 2009

Appendix C: Interview Questionnaire

Interview Plan

Introduction

The interview will last approximately 45 minutes, and you can withdraw anytime. The use of the masculine is to lighten the questions. Feel free to ask if you have any questions. Is that the case? There are no right or wrong answers.

What is your rank?   _____

How many years of experience do you have?   _____

Your gender?   _____

I'm now going to start <u>recording</u>.

Start Recording -> Select Transcription Language + Start

Question 1

You receive a call for service about common assault in a non-domestic violence context, and you arrest the suspect. From now on, can you tell me how you do it?

1.   What options do you have for the release of the suspect?
2.   How do you assess the risk posed by the suspect?
3.   What factors do you consider when making this decision?

Question 2

You are now arresting an individual for assault causing bodily harm, again in a non-domestic violence context. How do you proceed with the release?

1.   What options do you have for the release of the suspect?
2.   How do you assess the risk posed by this suspect?
3.   What factors do you consider when making this decision?

Question 3

You are now arresting an individual for attempted murder. How do you proceed with the release?

     1.   What options do you have for the release of the suspect?

     2.   How do you assess the risk posed by this suspect?

     3.   What factors do you consider when making this decision?

Question 4

What is the role of the Crown attorney in this pre-judicial release process?

Question 5

What references, tools or mechanisms are available to you as police officers to support your decision to release a suspect?

Question 6

What is the place of discretion in the police decision-making for releasing a suspect?

     6.1 If present, how does it manifest itself?

Question 7

What do you know about the role and responsibilities of the relief supervisor in this suspect management and release process?

Question 7.1

In your experience, what tools, references or mechanisms could assist the work of police officers in their decision-making regarding release?

Question 8

More broadly, what risk assessment tools are used in police work? This risk may be different than the one involving incidents of violence used earlier.

     6.1 If so, can you describe them to me?

Question 9

Artificial intelligence is now present in many aspects of our lives. Social media or transactional platforms are examples of how they are used daily. Among the various functions of these, these algorithms or actuarial tools can precisely target the needs and interests of users. New tools using similar technology are being developed to help police make better decisions in various circumstances. For example, Durham's HART model is a computerized tool to release an arrested person. It is integrated as a decision-making aid and uses combinations of behavioural predictors drawn from a suspect's criminal history, age, geographic data, and police intelligence reports. HART then classifies the person into one of three categories: low-risk (predicting that no new offences would be committed in the next two years), medium-risk (indicating the commission of new non-serious offences in the same period) and high-risk (predicting the commission of new serious offences in the next two years). This model facilitates the decision-making process of responsible officers and officials to increase the accuracy of the risk assessment and the likelihood of recidivism of subjects.

9.1 What do you know about algorithms, the use of artificial intelligence in your daily life and the issues they represent?

9.2 What do you know about the use of algorithms and artificial intelligence in policing?

Question 10

In your experience, what might be the advantages and disadvantages of using algorithms in police work?

Question 11

In your experience, what could be the possible obstacles to implementing such predictive tools in a police environment?

End Recording

Conclusion

This completes the recorded portion of the meeting.

Do you have any questions? Yes / No

Would you like to be informed of the final results of the research project? Yes / No

Thank you once again for your participation.

UNIVERSITY OF CAMBRIDGE

PARTICIPANT INFORMATION AND CONSENT

"Suspects' Releasing Decision-Making Process of *Sûreté du Québec* Officers and Actuarial Forecasting Models"

Researcher:	Maxime Bolduc, MSt Candidate, Institute of Criminology, University of Cambridge
Supervisor:	Eleanor Neyroud, Ph.D., Institute of Criminology, University of Cambridge

Before deciding to participate in this study, you need to understand why the research is being done and what it will involve. Please take time to read the following information carefully. A member of the team can be contacted if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part or not.

A) PARTICIPANT INFORMATION

Purpose of the study
This project aims at 1) understanding the decision-making process of *Sûreté du Québec* officers at the suspect of violence point of release, 2) determining how is the risk assessment done for suspect release, and 3) targeting an optimal actuarial forecasting model to be integrated. The study will be completed in January 2024.

Do I have to take part?
Taking part is entirely voluntary, and refusal or withdrawal will involve no penalty or loss, now or in the future.

What will happen to me if I take part?
The participation consists of taking part in an interview with the researcher about your knowledge related to the process of release following the arrest of a suspect. The interview would last approximately 45 minutes and be audio recorded with the participant's authorization to facilitate future translation and transcription. The interview will be carried out remotely, using the platform TEAMS. The interviewer will determine the moment according to the participant's availability.

Are there possible disadvantages and/or risks in taking part?
There is no particular disadvantage associated with participation in this study. The participant can withdraw at any time without giving a reason.

What are the possible benefits of taking part?
There is no benefit to participating in this study. However, the participant contributes to developing police sciences and evidence-based policing.

Will my taking part in this project be kept confidential?
The participant's permission will be needed to allow restricted access to information collected about them in the course of the project. All information collected about the participants will be kept strictly confidential. All data will be identified only

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by a code, with personal details kept in a secure computer with access only by the researcher. Information will not be used or made available for purposes other than the research project. The recordings will be translated, transcribed, then destroyed after the publication.

For any question or inquiry regarding confidentiality and data protection, the participant can refer to the Information Compliance section of the University of Cambridge under the following link: https://www.information-compliance.admin.cam.ac.uk/data-protection/research-participant-data.

What will happen to the results of the research project?
Results could be presented at conferences and written up in journals. Results are normally presented in terms of groups of individuals. If any individual data are presented, the data will be totally anonymous, without any means of identifying the individuals involved.

Who is organizing and funding the research?
This research is supported by the Institute of Criminology of the University of Cambridge.

Ethical review of the study
The project has been reviewed by the University of Cambridge Criminology Research Ethics Committee.

Contact for further information
For any question or inquiry regarding any part of this study, the participant can contact Maxime Bolduc by phone at +1 (438) 495-7003 or by email at mb2332@cam.ac.uk.

B) CONSENT

Participant statement
- I confirm that I have read and understand the Participant Information Sheet.
- I have had the opportunity to ask questions and had them answered.
- I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified (except as might be required by law).
- I agree that data gathered in this study may be stored anonymously and securely and may be used for future research.
- I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason.
- I agree to take part in this study.

_____
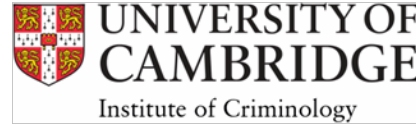**Participant's signature**   **Date:**   **/**   **/**

_____
Researcher's signature
Maxime Bolduc   **Date:**   **/**   **/**

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Appendix E: Ethics Assessment Approval

Dr Barak Ariel
Professor of Experimental Criminology

UNIVERSITY OF CAMBRIDGE
Institute of Criminology

Maxime Bolduc

Institute of Criminology
University of Cambridge
Sidgwick Avenue
Cambridge, CB3 9DA

mb2332@cam.ac.uk

15 July 2023

Dear Maxime,

I write to confirm that your research proposal entitled

> Are Police Agencies in the Province of Quebec Ready to Integrate
> Actuarial Forecasting Models? An Exploratory Study About the
> Suspects' Releasing Decision-Making Process of Sûreté du
> Québec Officers

has been reviewed and formally approved by the Institute of
Criminology's Ethics Committee.

Yours sincerely,

Dr Barak Ariel
Chair, Ethics Committee
Institute of Criminology