

Criminal Expertise and Sexual Violence: An Examination of the Crime-Commission Process

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Abstract

Some criminologists have argued that offending does not require special skills and that people who commit crime are not very good at what they do. Conversely, the criminal expertise perspective suggests that some people develop offense-related competencies that allow them to make better, more intuitive decisions during a crime. Criminal expertise is argued to manifest into observable and overt actions across the pre-crime, crime, and post-crime phases, such as a higher degree of planning, a better ability to control their victim, and taking steps throughout the crime to reduce the risk of police detection. Adopting this approach, the present thesis utilized multivariate analyses to examine the crime-commission processes among a series of sexual-theft crimes. Drawing on the expertise literature on burglary, and rational decision-making studies of sexually motivated burglary, Chapter 1 hypothesized that sexual burglary would involve a more skilled or “expert” crime-commission process compared to sexual robbery. Results confirmed this hypothesis, indicating that sexual burglary involved a more sophisticated modus operandi oriented towards detection avoidance. Building off these findings, Chapter 2 used latent class analyses to examine the novice to expert continuum within each of these offense domains. Results found domain-specific experts in sexual burglary and sexual robbery, intermediate subgroups that shared similar transferable skills across the two domains (i.e., “overlapping expertise”), and novice subgroups with unskilled and opportunistic crime-commission processes. Chapter 3 and Chapter 4 addressed whether offenses associated with detection avoidance can be used as proxies for criminal expertise. Chapter 3 compared the crime-commission process of serial offenders to novices (i.e., offenders without a previous criminal history). Results indicated that compared to novices, serial offenders have a more versatile skillsets in violent offending (pre-crime and crime phases) but did not engage in a high level of detection avoidance strategies post-crime. Lastly, Chapter 4 compares the crime-commission process of offenders who were detected by police (solved) and unapprehended offenders (unsolved). Findings showed that offenders who stole fetish items, did not leave semen at the crime scene, and engaged in the fewest number of sexual acts were the most likely to remain unapprehended. Taken together, findings show support for criminal expertise in sexual offending, the expert to novice continuum, and the notion of overlapping expertise. Implications for theory, crime prevention and intervention are discussed.

Keywords: criminal behavior; modus operandi; offense competencies; dual systems; rational choice; crime-commission process

Dedication

To all the people in my life who have helped me to achieve this incredible accomplishment.

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List of Acronyms

MO	Modus Operandi
RCT	Rational Choice Theory
S1	System 1
S2	System 2

Glossary

Functional Expertise	Learning basic skills and knowledge to function well in a particular domain
Modus Operandi	The patterns of behavior that perpetrators display in the periods prior to, during, and following illicit sexual contact
Specialist	Individuals who engage in a particular crime repeatedly and frequently
Specialization	The perceived probability of repeating the same type of crime when arrested next

Chapter 1.

Introduction

The label of “expert” is typically reserved for a person who has superior skills within a specific domain (e.g., chess, medicine, or music) and the ability to consistently perform at an exceptionally high level (Bourke et al., 2012). Moreover, an expert is someone who has considerable experience as well as a large body of knowledge within their particular domain (Chi, 2006; Ericsson, 2006; Nee & Ward, 2015a). Therefore, it is generally agreed upon that becoming an expert requires the development of skills over an extended period of time (Ericsson, 2006; Nee & Ward, 2015a). On the other hand, the notion of “expertise” is a more multi-faceted concept and generally refers to the manifestation of specific characteristics, skills, and knowledge which are distinctive from those of novices or less experienced people (Ericsson, 2006). As such, expertise is arguably best represented as a continuum where it would be rare for individuals to reach the extreme end of proficiency without continual, deliberate, and challenging practice (see Nee & Ward, 2015a). Nonetheless, it is also possible for individuals to achieve “functional expertise” in specific domains, where skill acquisition is less deliberate and practiced and can occur over a shorter period. In other words, a functional expertise involves learning the necessary skills and knowledge to function well in a particular domain (Nee & Ward, 2015a). This type of expertise is particularly relevant within criminal domains, given that there is less opportunity to repeatedly refine and practice skills.

Within the criminal expertise literature, studies have predominantly focused on cognitive skills (e.g., offense schemas and heuristics) to demonstrate the automatic decision-making processes associated with the development of expertise. For instance, studies have compared cognitive skills between offenders who commit burglary to individuals in non-criminal populations, including residents, college students and police officers (see Roth & Tecki, 2015 for a review). These studies have shown that burglars utilize mental short-cuts to make target choices (Clare, 2011), possess superior memory recall of burglary relevant cues (Wright & Logie, 1988, Wright et al., 1995), have better target appraisal skills (Nee & Taylor, 2000) and engage in systematic searching, such as the selection of fewer, but higher value goods in both real and simulated residential

burglary scenarios (Nee, 2015). While the clear utility of this perspective has been well-established in burglary, much less attention has been paid to areas of competency and skilled behavioral manifestations of expertise that may facilitate the crime-commission process involved in sexual crimes. Ward (1999) argues that this is because individuals who perpetrate sexual crimes are often viewed through a deficit-based perspective. This is evidenced through etiological models of sexual offending, which have tended to stress the absence of core skills and competencies in offenders (Ward & Hudson, 1998). For instance, low self-esteem, intimacy deficits, distorted beliefs, and deviant sexual preferences have all been suggested to be causal mechanisms in sexual offending (Marshall, 1996) and treatment approaches have used these perceived deficiencies as focal point for intervention (Ward, 1999).

Nonetheless, it cannot be ignored that some sexual offenders possess a complex set of skills that enable them to carefully plan and orchestrate their offense, overcome victim resistance, and ultimately, avoid detection (Chopin et al., 2021; Fortune et al., 2015; Ward, 1999). This latter perspective is argued to reflect behavioral indicators of expertise, which has important applications for criminological research and practice and may offer a complementary perspective to traditional deficit-based treatment models (Bourke et al., 2012; Chopin et al., 2021; Fortune et al., 2015; Nee & Ward, 2015b; Ward, 1999). Thus, the purpose of the present thesis is to address several empirical gaps related to behavioral manifestations of criminal expertise in the study of sexual violence. In particular, key areas that remain unaddressed in the expertise literature is whether certain sexual offenses that have been regarded as rationally oriented and thought to involve a higher degree of skill and planning, such as sexual burglary (Pedneault et al., 2015), and those which are associated with detection avoidance, such as serial offenses (Park et al., 2008; Corovic et al., 2012) and unsolved offenses (Balemba et al., 2014; Ó Ciardha, 2015), can be distinguished through a more skilled or “expert” crime-commission process.

1.1. The Expertise Perspective

Expertise is described as a learned process that over time develops into more automatic decision-making through stored memory scripts, allowing experts to arrive at decisions quickly and accurately (Ericsson, 2006b). Compared to less skilled individuals, experts are more capable of perceiving meaningful, complex patterns within a particular

domain (e.g., sports, music, and chess). Overall, expertise research indicates that intensive practice allows for experts to form complex knowledge structures that allow for information to be sorted through rapidly by selecting relevant pieces of information, which then activates the appropriate script as a response (Ward, 1999). For example, studies have shown that both experts and novices in domains such as medicine and chess are able to make decisions fluidly and automatically (e.g., arrive at a diagnosis or decide the best chess move), aided by their years of rehearsal. Comparatively, novices approach decision-making in a more mechanical way (e.g., Ericsson & Charness, 1994; Patel & Groen, 1991; Proctor & Dutta, 1995; Schmidt & Boshuizen, 1993). Thus, an expert refers to someone who has mastered their specific domain through repeated and deliberate practice and is distinctive from less skilled individuals (Nee & Ward, 2015a).

1.1.1. Functional expertise in criminal domains

Although expertise has been traditionally examined in socially acceptable domains, Ward (1999) argues that the conditions that enable practice, frequent and rapid feedback, incentives for improving performance, and the desire to achieve mastery can apply to a broad range of human behaviors, including criminal domains. According to Ó Ciardha (2015), however, one of the greatest challenges in accepting the expertise framework among offenders is that the absolute frequency most commit their crimes, which is comparably less than that of other non-criminal domains. Consequently, Nee & Ward (2015a) argue that the notion of 'functional expertise' better represents how expertise develops within criminal domains because it involves learning the necessary skills and knowledge to function well within a particular domain. For example, someone who drives a car regularly would not be an expert compared to professional race car driver but would be distinctively more skilled compared to someone who has never driven or who has no driving experience. Thus, Nee & Ward (2015a) suggest that a more appropriate label for functional expertise within criminal domains is 'dys'functional expertise, given the potential outcome (i.e., successfully committing a crime). A benefit of this perspective is that an individual does not need to develop extensive experience and repeated practice directly within their domain to become a functional expert (Nee & Ward, 2015a). As such, it more aptly suited to explain expertise in criminal domains (herein referred to as "criminal expertise") as there is less opportunity for offenders to refine and practice their skills over long periods. Thus, a functional "expert" may not

have extensive experience but has developed skills and knowledge that are measurable and distinctive from a novice (Ó Ciardha, 2015). For example, in comparison to non-criminals (i.e., “novices”), burglars have been shown to use distinctive and systematic routes and relied on previous learning in their decision making when selecting a target (Nee & Taylor, 2000; Nee et al, 2015; Taylor & Nee, 1988). Although there has been considerable variation in the application of the expertise framework to offending populations, one aspect that is widely agreed upon offense skills and competencies should be viewed as continuum from the unskilled to skilled (e.g., Ward, 1999; Bourke et al. 2012, Chopin et al., 2021; Ouellet & Bouchard, 2016; Nee & Ward, 2015a; Sutherland, 1937). In sum, criminal expertise should be considered a multi-faceted concept that involves both the acquisition of specific skills and knowledge achieved through many years of intensive practice and competent instruction (Ericsson & Charness, 1994; Ward, 1999) as well as functional expertise requiring less deliberate practice and occurring over much shorter time periods (Nee & Ward, 2015; Ó Ciardha, 2015).

1.1.2. Mainstream criminological perspectives on skills and competency in crime

While the expertise literature first emerged in the 1980's through interview-based studies of experienced burglars (e.g., Bennet & Wright, 1984; Wright & Decker, 1994), since the early work of Sutherland's (1937) “professional thief”, studies have shown that some individuals possess criminal skillsets that differentiate them from their novice counterparts. For example, in a variety of different offending domains it has been observed that offenders may develop a set of skills designed specifically to reduce the risks of police detection (e.g., Cherbonneau & Copes, 2005; Gallupe et al., 2011; Reale et al., 2020). Although some criminologists have labelled this “criminal expertise” (e.g., Topalli, 2008), others have referred to criminal skillsets as “criminal competence” (Ouellet & Bouchard, 2016), “criminal capital” (Bouchard & Nguyen, 2010; McCarthy & Hagan, 1995; 2001; Nguyen & Bouchard, 2011) and “criminal efficiency” (Tremblay & Morselli, 2000). An important distinction between criminological studies of criminal competency and the criminal expertise perspective, however, is how skill and competency are measured. In general, criminological studies have mainly focused on differentiating more skilled individuals through their illegal earning. For example, McCarthy and Hagan (1995) argued that criminal relationships can act as training that

facilitates criminal skills and attitudes, that in turn, increases the frequency of drug selling and theft. Others have argued that efficiency in earning money from crime is indicative of a set of skills that facilitates “criminal achievement” (Moreselli & Tremblay, 2004). For instance, Ouellet and Bouchard (2016) demonstrated that the months offenders earned more per crime were also the months in which their risks of arrest were low.

Although these studies have certainly advanced our understandings of how offenders may develop skills and competencies in crimes that involve economic rewards, there is a clear lack of empirical analysis on crimes that fall outside of traditional criminological study. For example, DeLisi and Wright (2014) argue that criminological research tends to ignore the more severe forms of offending, instead opting to focus on ‘normative’ offenses (e.g., drug, property, and gangs). In consequence, current criminological theories are typically not well suited to explain the more pathological or severe forms of offending, such as sexual crimes (Beauregard, 2019). In fact, rape tends to be avoided entirely by traditional criminology, and is instead relegated to clinical and forensic fields, such as psychology and psychiatry (Delisi et al., 2011; Harris 2008; Soothill et al., 2000). This trend is evident in criminological approaches to expertise as well. For instance, Loughran et al. (2013) noted that after early ethnographic studies, such as the work of Sutherland (1937), the field shifted from explaining the process of accumulating criminal skills to explaining variations in the returns to crime through illegal earning. As a result, criminological research has yet to fully acknowledge the role that expertise may play in crimes of a sexual nature. Chopin et al. (2021) argue that this may be due, in part, to perceptions of violent criminals as impulsive, and thus not capable of expertise. Nonetheless, as Ó Ciardha (2015) highlights, this is unfortunate considering that Ward (1999) made clear connections between expertise and rape.

1.1.3. Criminal expertise and sexual violence

An important benefit of the criminal expertise perspective is its ability to include interpersonal crimes, such as sexual offending. For example, Ward ‘s (1999) theoretical paper was the first to suggest that the literature on expertise (e.g., Ericsson, 2006a; 2006b; Ericsson & Charness, 1994) could extend to sexual offenders due to the ability for some to avoid detection for many years while they continue to offend against a large number of victims. More specifically, Ward posited that this persistent child sexual

offender would have knowledge structures related to their offending that are “qualitatively different from those of late-onset offenders who have relatively few victims” (pg. 301). This hypothesis was later directly tested by Bourke and colleagues who examined variations in expertise in 47 male child sexual offenders in New Zealand. Findings revealed extreme variation of skills, techniques, and knowledge among individuals within the sample (Bourke et al., 2012). In particular, those on the expert end of the continuum were not only more sophisticated in their offense skills and victim selection strategies, but they were better able to avoid detection, and had begun engaging in deviant sexual activities much earlier, relative to novices (Bourke et al., 2012). Although not a direct test of criminal expertise, Lussier et al. (2011) showed that offenders who were older, in a relationship, employed, were non-violent, and did not show drug related problems were better at avoiding detection for sexual crimes because they purposefully selected victims who they could repeatedly offend against. This allowed them to increase sexual contact while simultaneously reducing their risks for apprehension. Indeed, these offenders were able to remain undetected for longer and received less severe sanctions compared to those with more victims (Lussier et al. 2011). Thus, both Bourke et al. (2012) and Lussier et al. (2012) support for the notion that individuals who engage in persistent sexual offending can develop offense related competencies in avoiding detection that distinguish them from less experienced or ‘novice’ offenders.

Fortune et al. (2015) also note that indicators of expertise can be observed directly in the modus operandi (MO). Modus operandi has been defined by Kaufman et al. (1996) as “the patterns of behavior that perpetrators display in the periods prior to, during, and following illicit sexual contact” (pg. 18). Thus, criminal expertise accounts for offense skills and competencies as more than just an offending outcome (e.g., avoiding detection; amount of illegal earnings) but as part of an entire process (i.e., precrime, crime, and post-crime). For example, Ward (1999) suggest that the ability to plan and successfully carrying out an offense, as well as respond to various situations, such as victim resistance are all important behavioral markers of criminal expertise. In support of this perspective, studies of rational decision-making in sexual offending have shown that modus operandi (MO) of some offenders is highly planned and sophisticated (Beauregard et al., 2012; Leclerc et al., 2009; Park et al., 2008). For example, behaviors such as preselecting a victim and selecting a deserted location demonstrate preparation

and crime anticipation, allowing an offender to be prepared for the commission of their crime, and anticipate and assess their perceived risks (Chopin et al., 2021). Despite the importance of these findings, few studies have used the expertise framework directly in sexual offending. In fact, only one study to date has explicitly measured behavioral indicators of expertise in sexual offenses. Chopin et al. (2021) were the first to examine expertise in stranger rape as well as across all phases of the crime-commission process (pre-crime, crime and post-crime). Chopin et al. (2012) found support for a continuum from novice to expert. Specifically, those classified as experts had more sophisticated modus operandi's (e.g., choosing deserted locations, use of forensic awareness, and a greater number of sexual acts). In comparison, novices were found to have a basic modus operandi and the absence of forensic awareness.

1.1.4. Criminal expertise and offense specialization

The study of criminal expertise has clear parallels with the notion of offense specialization. A "specialist" refers to individuals who engage in a particular crime repeatedly and frequently (Simon, 1997). Given that experts are thought to develop their expertise through repeated practice within a particular domain (Ericsson, 2006) it is not surprising that experts in crime and crime specialists are often considered to be overlapping concepts. Thus, the lack of evidence related to specialization in sexual crimes and the predominant deficit-based perspective to sexual offending provides insight as to why there may have been a general hesitancy to adopt to expertise framework in the field of sexual violence. In fact, Ward's (1999) application of expertise to sexual offending was introduced around the same period criminal career studies were highlighting the generality of offending patterns among persons convicted of sexual crimes (e.g., Sample & Bray, 2003; Simon, 1997, 2000). As such, it helps to explain why any influence it did have, was mainly in relation to "persistent" child sexual offending, which is characterized by specialization in sexual crimes (see Lussier, 2005 for a review) and the ability to avoiding detection for long periods of time (Ward, 1999).

Nevertheless, the distinction between "specialization" in criminal careers and "specialization" in criminal expertise is important to make, as the two are not synonymous. Specialization is generally referred to as the perceived probability of repeating the same type of crime when arrested next (Blumstein et al., 1986). On the other hand, criminal expertise refers to the possession of domain specific knowledge

and offense related skills that allows one to function well at what they do (i.e., functional expertise), and are distinctive from novices (Nee & Ward, 2015a; Ó Ciardha, 2015). Thus, the criminal expertise perspective acknowledges that some offenders will develop their expertise over time through practice, however, some offenders may also become “experts” even without continual practice (i.e., dysfunctional expertise; Nee & Ward, 2015a) or even indirectly (Ward, 1999; Ó Ciardha, 2015). In other words, criminal expertise does not assume offense “specialization” as a necessary component to the development of expertise, nor does it require that an offender has had many years or practice in their offense domain to develop expertise. For example, Logie et al. (1992) showed that even teenage-experienced burglars demonstrated more efficient and automatic memory for environmental cues compared to novices. Nonetheless, research findings indicate for property offenders in particular, specialization increases with age (e.g., Armstrong, 2008; Meenaghan et al., 2020; Nieuwebeerta et al., 2011). Thus, it seems that at least some level of specialization accrues with expertise, however, some expertise may be seen in non-specialist offenders too, as a result of more confined practice (Nee et al., 2019). Moreover, in the sexual offending literature, criminal expertise is argued to develop in many ways, even without the commission of a contact sex offense.

Ward (1999) and Ó Ciardha (2015), outline several different mechanisms for which expertise can occur indirectly for sexual offenders, including the development of offense related skills and knowledge through covert modelling and rehearsal (e.g., through sexual fantasies), through observational learning (via other offenders – e.g., online forums, pedophile groups, etc.), symbolic modelling (e.g., pornography or literature) and finally, through an offender’s own experience with sexual abuse (e.g., physical or sexual abuse as a child). Indeed, mental rehearsal can provide an arena for offenders to plan and practice their crimes as research on mental stimulation has demonstrated the more a person mentally rehearses and thinks about how to perform an action, the more likely they are to actually act on it (e.g., Taylor & Phram, 1996). For example, MacCulloch et al. (1983) found that individuals with repetitive sadistic masturbatory fantasies can become compelled to seek out opportunities to “try-out” their fantasies, leading to increasingly more dangerous behavior. Nee & Meenaghan (2006) observed similar processes in burglary offenders, who often engaged in a “mental rehearsal of the desired behaviour” and suggested that this was akin to fantasizing about

the commission of rape (p. 945). Moreover, Bourke et al. (2012) found that sexual fantasies contributed to future planning of sexual offenses. Thus, criminal expertise should be considered a multi-faceted concept that can involve offense specialization but may also occur through more limited or indirect exposure, particularly for sexual offending.

1.1.5. Structural and behavioral measures of expertise

According to Nee and Ward (2015) criminal expertise manifests through both structural (i.e., cognitive) representations of skills and knowledge as well as observable, behavioral manifestations that differ from that of a novice. Structural representations of criminal expertise have largely been examined in relation to the development of knowledge and skills in memory (e.g., heuristics and short-cuts) and offense scripts or cognitive schemas (Nee & Ward, 2015a). Behavioral manifestations of expertise, on the other hand, are observable in the crime-commission process, such as using strategies to avoid detection, planning the crime, and target appraisal for victims and locations (e.g., Ó Ciardha, 2015; Fortune et al., 2015; Ward, 1999). To date, most studies of expertise have focused almost exclusively on how expertise develops in relation to cognitive skills (e.g., heuristics) and the formation of implicit schemas (Nee & Ward, 2015a for a review). For example, studies have shown that individuals experienced in burglary undertake routine scanning of the environment for suitable targets in advance of the actual crime (Bennet & Wright, 1984) and were able to recognize environmental factors (e.g., occupancy, access to the property and security features) that influenced their decision to offend (Nee & Taylor, 2000; Taylor & Nee, 1988).

Although these studies provided empirical evidence to support the notion of criminal expertise in burglary, and specifically that expert knowledge is gained from past experience (i.e., schemas) and then applied through cognitive or behavioral skills (e.g., memory cues and target selection behaviors), there is a large gap in the literature regarding how other types of behaviors manifest over the entire crime-commission process. In other words, the focus has mainly been on measuring expertise through cognitive skills and pre-crime behaviors, paying little attention to behaviors during the crime (e.g., level of violence) or post-crime (i.e., through detection avoidance strategies, such as cleaning up the crime scene, removing evidence). This is not only empirically relevant but can also advance theoretical understandings of expertise. In particular, most

studies have conceptualized expertise as a function of automatic decision-making, typically focused on pre-conscious scanning of targets, and more limitedly, to some crime commission behaviors, such as systematic searching and allocating time to high value areas (e.g., Nee & Meenaghan et al., 2006; Nee 2015; Nee et al., 2019). Nonetheless, there are clear links between expertise and longer-term orientations towards detection avoidance and higher order decision-making processes (e.g., offense planning), which have not yet received adequate attention. Despite this, researchers have long alluded to long-term rewards and rational decision-making processes as indicators of expertise (e.g., Chopin et al., 2021; Fortune et al., 2015; Ward, 1999). Thus, by expanding empirical analysis on the behavioral indicators of expertise, it may also be possible to shed light on the role of expertise in decision-making processes that occur throughout the pre-crime, crime, and post-crime phases.

1.2. Decision-making Theories and Criminal Expertise

1.2.1. Rational choice theory (RCT) and bounded rationality

Rational Choice Theory (RCT) provides a framework to understand how decisions are made and proposes rationality and self-interest as the foundations of decision-making (Cornish & Clarke, 1986). The criminal behavioral model of RCT is based on the notion that people offend when they perceive the potential benefits of offending (e.g., monetary gains, sexual gratification, social status) to exceed the potential costs of the crime (e.g., punishment, shame, regret), and refrain when they view the costs as outweighing the gains (van Gelder & de Vries, 2014). According to this approach, criminal behavior is not entirely different from noncriminal behavior; humans act in a way that is rational and goal-oriented to satisfy commonplace needs. Although RCT argues that offender decision-making is based on a weighing of the costs and benefits of crime, it also recognizes that perfect rationality does not exist. Thus, Cornish & Clarke (1986) argue that decision-making is sometimes more rudimentary, constrained by the limits of time, ability, and the availability of information, known as “bounded rationality” (Simon, 1957).

Bounded rationality is directly related to criminal expertise because it acknowledges the use of heuristics formed through prior learning in order to maximize gain and minimize risk in their offending behaviour (Nee & Ward, 2015a). Thus, bounded

rationality is based on the belief that people are imperfect in their information gathering, storing and processing, and although they may make decisions to maximize their benefits, there are realistic limitations to these processes (Mamayek et al., 2015). A large body of empirical evidence in support of this perspective has shown that individuals use an “adaptive toolbox” based on simple rules and heuristics to make most decisions, as opposed to a strict cost-benefit analysis more commonly associated with RCT (see Gigerenzer & Selten, 2002 for a review). For example, several studies have elucidated automatic, unconscious processes during the commission of a crime (Bourke et al., 2012; Clare, 2011; Nee & Meeaghan, 2006). In relation to rational decision-making theories, Nee & Ward (2015a) also suggest that because these processes appear to be habitual and occur at the pre-conscious level, that the expertise perspective can also be directly related to other decision-making theories, including the dual-processing perspective.

1.2.2. Dual systems theories

While it has been argued that that successfully engaging in criminality does not require “special skills” (Hirshi, 1986), others have argued that this apparent “absence in decision-making” is not an indication of a lack of skills and planning, but rather, demonstrates that some offenders have developed in-depth knowledge and skills that allow them to make better and more instantaneous decisions, particularly in situations that require urgent action (Nee & Meenaghan, 2006). This perspective reflects the largely two distinct criminological schools of thought to explain why a person engages in crime: decision-based and trait-based perspectives of crime (Mamayek et al., 2015; van Gelder, 2014). On one side is decision-based theories, where crime and problem behaviors are thought to be best understood as a cost-benefit analysis of the risks and benefits, or due to breakdowns in rational decision-making such as poor judgement, discounting of delayed events, or decision-making heuristics and shortcuts. The other side is trait-based theories suggest that crime and a wide variety of other self-harming or risky behaviors are the result of relatively stable-individual differences that make people conducive to offending (Mamayek et al., 2015; van Gelder, 2014). A complimentary perspective to criminal expertise, and one that is argued to unify trait-based and decision-based models of criminological theory is dual systems theory.

Although there are different versions of dual-system theories, the common underlying argument is that decision-making involves two distinct but interrelated systems: one system that is intuitive, automatic, and unconscious; and one that is effortful, deliberate, and reasoning (Kahneman, 2003; 2011; Loewenstein et al., 2008; Mamayek et al., 2015; Stanovich, 1999; 2011; van Gelder, 2013; van Gelder & da Vries, 2014). Therefore, dual systems perspective suggests that risk-taking and criminal behavior is not due solely to impulsivity nor entirely to a calculation of risks but involves the operation of both (van Gelder & de Vries, 2014). However, in dual-systems models, low self control is not simply the presence of impulsivity. Rather, it is considered to be a lack of self-regulation or the inability to override compulsive actions through careful consideration of both the short and long-term consequences. Thus, it has been argued that dual system models can unify trait-based and decision-based models of criminological theory “because they combine intuitive, strongly affective, and impulsive inputs to behavior as well as more rational, thoughtful, and deliberate inputs” (Mamayek et al., 2015, pg. 428).

According to Kahneman (2003; 2011), System 1 (S1) is considered fast and automatic, involving conscious evaluation of the environment and is heavily managed by System 2. In contrast, (S2) is the rational component, based on the slow collection and processing of information and involves the consideration of long-term costs and gains. In other words, S1 is clearly in the “here and now” with little regard for the future, whereas S2 is future oriented and directed at longer-term objectives (Mayamek et al., 2015). It is important to note that although these are two distinct processes, they are often in competition and conflict with one another (Nee & Ward, 2015a). Similar to Kahneman’s S1 and S2 models, is van Gelder’s (2013) “hot/cool” model of criminal decision-making. As with other dual process models, Van Gelder’s model accounts for the interplay of emotions (labelled the “hot” system”) and the cognition (the “cool” system) in decision-making. According to van Gelder (2013), the cool, or cognitive, system can weigh costs against benefits while also considering the longer-term consequences of a range of actions. This mode of thinking is most similar to what is thought of as “rationality”. On the other hand, the hot mode is more responsive to situational events and avoids the weighing of cost-benefits. This mode is concerned with the present (i.e., desires and physical satisfaction) and is most influenced by various emotional states.

As van Gelder's model was developed specifically for application in a criminological context, there are several benefits to this perspective in relation to criminal expertise. For instance, the "cool mode" considers both short-term and long-term payoffs, thereby allowing individuals to make informed trade offs between the immediate and delayed outcomes in a decision. In a criminal context, the cool mode would be responsible for sensitive considerations such as the extralegal costs, anticipated guilt, and social disapproval. The hot mode, however, evaluates decisions in a more intuitive way, and remains largely unresponsive to probabilities and possible outcomes (e.g., risk of getting caught). When the cool system is unable to over-ride the hot mode, impulsive behavior can result (van Gelder, 2014). To date, criminal expertise literature has mainly framed expertise as a function of S1. In some ways this is counter-intuitive, as S1 is associated with impulsivity, short-sightedness, and immediate gratification. The argument being made, however, is that through experience and honing of skills, offenders can acquire superior cognitive processes and consequent behaviors in their offending domain that enable them to make better, automatic decisions in situations that require immediate action (Nee & Ward, 2015a; Ward, 1999). Thus, the expertise perspectives can offer new insights in offender decision-making by shifting the focus from social and psychological deficits to areas of competency and skill that facilitate decision-making (Fortune et al., 2015).

1.2.3. Decision-making over the crime-commission process

Most of the prior literature on criminal expertise has focused on expert decision-making related to pre-crime behaviors (e.g., target appraisal) and, more limitedly, to crime behaviors (See Roth & Trecki, 2017 for a review). Thus, there is a clear lack of attention to the relationship between criminal expertise and the entire crime-commission process. For example, the use of heuristics partially based on success and failure of previous criminal activities can also extend to detection avoidance strategies, including behaviors such as cleaning up the crime scene and destroying and removing evidence (Beauregard & Bouchard, 2010; Ward, 1999). Moreover, as suggested by Beauregard & Proulx (2017) a sophisticated modus operandi in sexual offending is associated with crime anticipation and preparation. This is thought to allow the offender to make better decisions related to the strategies they should use to decrease their chances of police detection (Chopin et al., 2021). It could therefore be argued that some elements of

expertise occur outside of S1 and involve careful and deliberate weighing of the risks of apprehension before the crime even occurs. For example, the cool mode of decision-making may allow a more expert offender to carefully plan their offense and consider the strategies that they will utilize to reduce their risks of apprehension (Chopin et al., 2021). Thus, by examining expertise across the entire crime-commission process, including post-crime behaviours, it is possible to shed light onto the rational decision-making processes associated more with system 2 or cool modes. This is especially relevant for sexual offending, because in addition to identifying the appropriate target an offender concerned with avoiding detection must not only plan for possible ways the victim could later identify them (i.e., protect their identity) but also make sure to destroy or remove forensic evidence that may be left at the crime scene and could directly lead to their identification (Beauregard & Bouchard, 2010).

1.3. Introducing Hybrid Offenses to the Study of Expertise

1.3.1. The case for sexual burglary as an expert domain

A hybrid offense refers to the literal definition of the term, meaning something that has been produced by the combination of two or more distinct elements (Beauregard & Chopin, 2020). In the criminal expertise literature, there has been a surprising lack of attention to hybrid crimes. In particular, given that burglary is considered to be a “model of rationality” (Cromwell et al., 1991) and the large body of literature on expertise in burglary (see Nee & Ward, 2015a for a review) it seems that burglaries that co-occur with sexual assault (i.e., herein referred to as sexual burglary) have been largely overlooked in the expertise literature despite the considerable overlap between the two offense domains. As both Harris et al. (2013) and Delisi et al. (2011) note, there appear to be significant commonalities between burglary and rape in terms of their rewards and reinforcements (e.g., thrill, power, control). However, despite the clear connection between the two domains, there has still been a failure to provide a complete theoretical explanation of their relation to each other — especially within the context of skill development and criminal sophistication. Applying the criminal expertise perspective to sexual burglary can therefore help to elucidate this empirical gap.

Although offenders who break into the victim’s home and steal from them after committing a rape have been included in various typologies, such as the “sexual

predator burglar” (Vaughn et al., 2008), “burglar rapist” (Davies & Dale, 1996), “home intruder” (Beauregard et al., 2010) and “sexually motivated burglar” (Pedneault et al., 2015), they have rarely been examined as a distinct offending domain. However, there is a clear need to advance the understanding of criminal expertise in this population. For example, in a study by Vaughn et al. (2008), this subtype of burglar was considered the most dangerous, as they had the earliest age of offending onset, were the most violent and had longest criminal careers, and were significantly more likely to commit multiple homicides. Moreover, most appeared to be motivated by sexual compulsions and the thrills associated with entering the victim’s residence, suggesting the risk of future sexual offending was high. Additionally, more so than other types of crimes, rape and burglary seem to involve an element of planning, purposeful target selection, and conscious steps to avoid arrest (Davies et al., 1997; Harris et al., 2013; Horning et al., 2010). Beauregard & Bouchard (2010), for instance, found that offenders who broke into the victim’s residence and undertook specific sexual acts during the crime, were also the most likely to exhibit forensic awareness. As such, there is certainly an empirical basis to explore the expertise framework on this potential expert offending domain.

1.4. The Role of “Proxies” in Criminal Expertise Research

In a thorough review of Ward’s (1999) theory of criminal expertise in sexual offending, Ó Ciardha (2015) attempted to evaluate the scant literature that could lend it support. According to Ó Ciardha, due to very little research on sexual aggression explicitly focused on comparing novices to experts or including level of expertise as a covariate or moderator, he proposed different proxies that could be indicative of expertise. Firstly, Ó Ciardha suggests that serial rapists are likely to contain more expertise compared to single rapes as a function of a longer offending career. Although not explicitly testing for expertise, the study by Park et al. (2008) found that serial and single rapists differ in their offending behaviour, with serial rapists demonstrating more criminal sophistication through behaviours such as gagging their victim, showing forensic awareness, deterring victim resistance, and completing the rape. In comparison, the single rapists were found to be more violent and display greater interpersonal involvement (e.g., persuading the victim to participate in sexual activity). The conclusiveness of these study findings as they relate to criminal expertise is hampered

however by the fact that serial offenders involved a greater number of stranger victims relative to single offenders' cases. As a result, it is unclear whether some of these differences could be due to the victim-offender relationship rather than an indicator of experience (Ó Ciardha, 2015). Nonetheless, it offers a potential avenue for future research, particularly to build off the modus operandi framework initiated by Chopin et al. (2021).

Lastly, Ó Ciardha (2015) suggested that another proxy for expertise may be to examine the offense characteristics of sexual offenses committed by apprehended offenders compared to unapprehended offenders. He posited that unapprehended offenders would arguably contain more experts than apprehended populations, as they had successfully evaded prosecution. For example, a study by LeBeau (1987) compared three groups of offenders (single, serial, and unapprehended offenders) with both acquaintance and stranger victims. Although this study did not test for expertise specifically, notably, offending patterns between unapprehended and serial offenders tended to be similar. More specifically, LeBeau indicated that there was a tendency for unapprehended offenders to travel shorter distance with their victims, perhaps indicating more confidence, planning, and greater efficiency (Ó Ciardha, 2015).

1.4.1. Overall Aim of the Thesis

In sum, several key areas remain unaddressed in the expertise literature, including whether certain sexual offenses that have been regarded as rationally oriented and thought to involve a higher degree of skill and planning, such as sexual burglary (Pedneault et al., 2015a), and those which are associated with detection avoidance, such as serial offenses (Park et al., 2008; Corovic et al., 2012) and unsolved offenses (Balemba et al., 2014; Ó Ciardha, 2015), can be distinguished through a more skilled or "expert" crime-commission processes. Moreover, hybrid crimes (i.e., involve two distinct offense elements; Chopin & Beauregard, 2020) have been underutilized in the study of criminal expertise, despite the potential to offer insight on the extent that expertise can "overlap" or "transfer" (Nee et al., 2019) across similar types of domains (e.g., interpersonally violent crimes or theft-related crimes). This thesis therefore focuses on the examination of sexual-theft offenses to better understand the behavioral manifestations of expertise and to determine whether certain types of offenses involve a more "expert" crime-commission process. As stated by Chopin et al., (2021), despite

most researchers agreeing that individuals can learn to modify their strategies to commit crimes, there is little consensus as to whether such knowledge is necessary to facilitate the offense process and enable one to avoid detection. Thus, the overarching goal is to reintroduce sexual violence back into the expertise literature by providing the most comprehensive examination to date of behavioral indicators of criminal expertise. Moreover, this will be done by expanding analyses to all phases of the crime-commission process in order address the lack of empirical evidence related to this topic. From a criminological and psychological standpoint, this is both theoretically and practically important because by better understanding the methods used by individuals to avoid detection for their crimes and the extent that these efforts can be accounted for and measured, researchers and clinicians can strive to identify areas for prevention, intervention, evaluation, and rehabilitation (Bourke et al., 2012).

1.4.2. Description of the four studies

The first study will utilize the existing literatures on expertise in burglary (e.g., Clare, 2011; Nee, 2015; Nee & Ward, 2015) and rationality in sexual motivated burglary (e.g., Pedneault et al., 2015a) to examine whether the crime-commission process of sexual burglaries involves expertise and skilled decision-making processes. Sexual burglary is a type of hybrid crime, defined as involving multiple offense elements (i.e., burglary and sexual offending) and that has rarely been examined in criminology and has never been examined through an expertise perspective. Despite this, sexual burglary has been shown to be rationally motivated and appears to involve skill and planning that are unique to sexual motivations (e.g., targeting locations with victim that are home) (Pedneault et al., 2015a). Thus, an important question is whether sexual burglary involves greater expertise when compared to an offense associated with less skill and planning. Although sexual robbery has not yet been examined through a rational decision-making perspective, studies of rationality in street-robbery describe a more short-term oriented decision-making process, focused on the immediate rewards (e.g., Deakin, et al., 2007; Piotrowski, 2011; Smith, 2003; Wright & Decker, 2002). This study will therefore contribute to a methodological limitation in the expertise literature related to the use of non-offending control groups when examining expert domains, such as burglary (see Roth & Trecki, 2017 for a review). As stated by Roth and Trecki (2017), comparing experts to non-offending groups can offer insight into differences between

experts and complete novices, but fails to address whether an offender's expertise is sufficient to distinguish them from others who may share similar offense related knowledge and experience. Thus, this study will be the first to compare the crime-commission process of sexual burglary to sexual robbery to determine whether sexual burglary is a more expert offense.

Building upon these findings, the second study use within-group analyses of sexual burglary and sexual robbery to determine the extent that an expertise falls on a novice to expert continuum among both types of offenses. This study will therefore offer the first empirical analyses of variations in expertise in two different offense domains that also share offense elements (i.e., personal theft from the victim and sexual assault). This is important because it can elucidate whether experts are distinctive in each domain, indicating the development of specialized skillsets, or whether there is overlap between subgroups suggesting that some expertise is "transferable" (Nee et al., 2019). The latter could provide insight into the notion that some individuals may not possess specialized (i.e., domain-specific) skills, but rather, have a type of general or versatile skillset that can observed more broadly across offense types (e.g., the ability to control a victim, select a location that enables lesser risk, etc.). Moreover, it would allow for a better understanding of differences in decision-making during the crime-commission process between more and less skilled offenders.

Lastly, in a review of the expertise literature on sexual offending, Ó Ciardha (2015) draws attention to the lack of empirical analysis of expertise in both serial and unsolved offenses. These two areas are particularly relevant to the study of expertise due to the associations with avoiding detection, which is argued to be an outcome that is associated with individuals who possess criminal expertise (Bourke et al., 2012; Chopin et al., 2021; Nee at al., 2015; Ward, 1999). Accordingly, Chapter 3 aims to examine whether serial offenders represent a type of "expert" in sexual crimes by providing a multivariate examination of the crime-commission process (pre-crime, crime, and post-crime) of serial stranger sexual offenses. Moreover, no study has sought to compare criminal expertise in serial offenders to "novices" (i.e., offenders without any previous convictions). As such, Chapter 3 seeks to contribute to a better understanding of the differences in criminal expertise between novice and expert offenders, as well as determine whether serial offending can be useful proxy for criminal expertise. Finally, Chapter 4 will offer the first empirical examination of the role of criminal expertise on

case solvability by comparing the crime-commission process of apprehended (solved) and undetected (unsolved) offenders. In doing so, this study also addresses the question raised by Ó Ciardha (2015) as to whether unapprehended offenders are a type of proxy for criminal expertise.

1.4.3. Data source and sample information

All data involves contact sexual crimes that co-occur with personal theft from a stranger victim. The sample was obtained from a national police database operated by the Ministry of Interior in France. Crime analysts maintain this database by using different sources of information (e.g., forensic and investigative reports, witness and offender interviews, etc.) related to the criminal case. Detailed and unique information about the crime-commission process (e.g., whether a victim was targeted, whether an offender selected a familiar or deserted location) is completed by criminal investigators assigned to the case and is recorded in investigative files that are compiled, analyzed and entered into the database by a team of crime analysts who are experts in violent crimes. Information related to forensic awareness strategies, forensic services, legal medicine, and interviews with the victims and offenders, which are then compiled and entered into this database.

All cases in the current thesis occurred between 1990-2018, with the majority (>85%) taking place after the year 2000. Although the use of DNA evidence emerged in the 1980's, it was not widely used by French Police until 1998 (Krikorian & Vailly, 2018), and as a result, some concerns with capturing "forensic awareness" variables in offenses that occurred during the 1990's is warranted. Nonetheless, the influence of DNA evidence on offender behavior was accounted for in studies even before the emergence of national police DNA databases (e.g., Davies, 1992; Davies et al., 1997). Additionally, there were no significant statistical associations found related to the date of the offense occurring more recently and the use of forensic awareness strategies (i.e., protecting identity and destroying/removing evidence). Lastly, Beauregard and Martineau (2015) found in their sample of sexual homicide, that the use of forensic awareness strategies was stable ($M = 0.4 - 0.5$) across 1991-2010. Taken together, this indicates that the use of cases from the 1990's will not constitute as a methodological concern in the present thesis.

Chapter 2.

Criminal Expertise and Sexual Violence: Comparing the Crime-Commission-Process Involved in Sexual Burglary and Sexual Robbery

2.1. Abstract

Criminal expertise relates to the notion that some individuals may develop domain-specific offending skills that differentiate them from those with less skills or experience (i.e., novices). In the expertise literature, burglary has emerged as a distinct type of “expert” offense, therefore the current study sought to extend this literature to determine whether criminal expertise is more evident in the crime-commission process of sexual burglary compared to sexual robbery. This study used binary logistic regression to compare the pre-crime, crime, and post-crime behaviors of 869 cases of hybrid sexual assault that occurred during the commission of either a burglary (N = 319) (or) robbery (N = 478), both of which involved personal theft from a stranger victim. Findings suggest that the crime commission process of sexual burglary involves a more sophisticated modus operandi and greater expertise in detection avoidance (e.g., strategies to protect their identity and destroying and removing evidence) compared to sexual robbery.

Keywords

criminal behaviour; decision making; offending; sexual violence; sexual offenders

2.2. Introduction

“Expertise” is a multi-faceted concept that generally refers to the manifestation of specific characteristics, skills, and knowledge that are distinctive from those of novices or less experienced people (Ericsson, 2006). Thus, expertise in crime is thought to develop over time; however, some individuals may become functional “experts” (i.e., functional expertise) even without continual practice through indirect means, such as covert modeling and rehearsal (e.g., sexual fantasies) or symbolic modelling (e.g., pornography) (Bourke et al., 2012; Fortune et al., 2015; Nee & Ward, 2015a; Ward, 1999). Despite Ward’s (1999) introduction of the expertise literature in relation to sexual

offending over 20 years ago, this perspective has gained little traction in the field, likely due, at least in part, to a long-standing assertion that offending does not require specific or specialized skills and that offenders are “on the whole not very good at what they do” (Hirschi, 1986; pg. 115-116). Although controversial, this is evidenced by the fact that offenders rarely premeditate their crimes (Beauregard, 2005). Moreover, the concept of expertise in sexual offending was introduced at a time when criminal career research was challenging the notion that individuals who commit sex crimes are a “specialized” group of offenders (See Lussier, 2005 for a review). Nevertheless, it cannot be ignored that some offenders develop in-depth knowledge and skills that distinguish them from more novice offenders (Nee, 2015).

In the criminal expertise literature, burglars have emerged as “expert” decision-makers (Nee, 2015) and burglary offenses have been deemed to be a “model of rationality” (Cromwell et al., 1991; Nee, 2015) and thought to involve considerable skill and planning (Pedneault et al., 2015). As such, sexual burglary (i.e., a hybrid offense involving breaking and entering as well as theft and sexual assault) provides a unique opportunity to examine the notion of criminal expertise within this potential “expert” population. In contrast, street robbery is typically described as a more “novice” or “amateur” crime, committed by a person who acts impulsively and pays little attention to the costs associated with their offense (e.g., Feeney, 1986; Piotrowski, 2011). As a result, sexual robbery (i.e., a hybrid offense involving theft by force and sexual assault) may involve a more novice or unsophisticated crime-commission process when compared to sexual burglary. Therefore, it can be hypothesized that differences in behavioral manifestations of expertise will exist between sexual robbery and sexual burglary offenses.

2.3. Literature Review

On one hand, it has been argued that successfully engaging in criminality does not require special skills (Hirschi, 1986), but others have argued that this apparent “absence in decision-making” is not an indication of a lack of skills and planning, but rather, demonstrates that some people have developed in-depth knowledge and skills that allow them to make better and more instantaneous decisions, particularly in situations that require urgent action (Nee & Meenaghan, 2006). In other words, experts are thought to have domain relevant knowledge stored in cognitive scripts, and once

activated, these scripts enable them to process information and make decisions rapidly (Ward, 1999). Consequently, offenders usually rely on heuristics partially based on the success or failure of previous criminal activities, including previously used detection avoidance strategies which did not lead to apprehension (Beauregard & Bouchard, 2010). These bounded decisions or “cognitive short-cuts” are used to evaluate available alternatives and allow individuals to make decisions that will enable satisfying results while minimizing risks (Piotrowski, 2011). Thus, criminal expertise can be directly linked to decision-making perspectives, such as RCT (Cornish & Clarke, 1986) and dual-systems perspectives (e.g., Kahnmann et al., 2003; 2011; van Gelder, 2013). Moreover, according to Ward (1999), this allows some individuals to engage in behaviors during the crime-commission process that reflect criminal sophistication and are indicative of offense related skills (e.g., planning an offense, knowing how to avoid detection, and how to respond to various contingencies such as victim resistance), which can be used to differentiate them from more those with more novice offense skill sets. Hirschi’s (1986) assertions have therefore been vulnerable to challenge, as interview-based studies and experimental studies of decision-making in offenders has revealed strong evidence of technical and interpersonal skill and knowledge relevant to specific crime opportunities (e.g., Bennet & Wright, 1983; Bourke et al., 2012; Clare, 2011; Cromwell et al., 1991; Meenaghan et al., 2020; Meenaghan & Nee, 2006; Nee, 2015; Nee et al., 2019; Wright et al., 1995).

2.3.1. Behavioural indicators of criminal expertise

Although the field of burglary has made significant advancements in the study of expertise and automatic decision-making process (See Nee & Ward, 2015 for a review), outside of Bourke et al. (2012), which examined expertise in persistent child sexual offending (e.g., grooming techniques and target selection), there has been limited evidence that directly supports expertise in sexual offending, particularly involving behavioral manifestations (Ó Ciara, 2015). However, this is largely because very few studies have directly applied Ward’s (1999) theoretical framework to explicitly examine expertise over the entire crime-commission process. This is especially true for sexual crimes that involve adult victims, nonetheless, as Ó Ciardha (2015) highlights “this is unfortunate because Ward makes some clear conclusions about expertise and rape” (pg. 27). For example, Ward (1999) proposed several plausible examples of how

criminal expertise could manifest behaviorally in those who have “expertise” in sexual offending. He suggested that these “tangible competencies” would include strategies used to avoid police detection such as taking precautions with offense locations, being able to regulate their emotional state, deceiving people close to them, and conducting constant risk appraisal. Moreover, Ward (1999) suggested that compared to novices, experts would be better at manipulating or disarming victims, deceiving authorities, and maintaining normal relationships with friends, families, and partners.

Despite the lack of research on behavioral indicators of expertise in sexual offending, several studies have provided indirect support for Ward’s (1999) hypotheses on “tangible competencies”. For example, Park et al. (2008) examined the various decisions that offenders with single and serial sexual offenses make to avoid detection and used these as an indicator of criminal sophistication. Park and colleagues determined that more criminally sophisticated offenders displayed behaviors such as forensic awareness, controlling the victim’s resistance through verbal reassurances, and using a surprise attack more frequently. Similarly, other studies have made explicit connections between the crime-commission process of sexual offenses and behaviors that are indicative of skill or experience. In particular, taking steps and adapting the MO used in a crime to hide evidence and attempt to avoid apprehension (i.e., “forensic awareness; Davies, 1992). For instance, studies have shown that destroying and removing evidence can be a marker of past criminal experience (Davies et al., 1997) or an indication of sophistication and planning (Chopin et al., 2019; Park et al., 2008; Reale et al., 2020). Additionally, Beauregard & Bouchard (2010) found that some offenders relied on strategies such as manipulating or bribing their victim to make sure they did not report the crimes.

Over two decades later, Chopin et al. (2021) were the first to apply the criminal expertise proposed by Ward (1999) to persons with rape convictions, focusing exclusively on the behavioral manifestations of criminal expertise across the crime-commission process. The authors found that a sophisticated *modus operandi* predicted the use of detection avoidance strategies, such as destroying and removing evidence or protecting their identity. Chopin et al. (2021) concluded that for adult rape, criminal expertise in sexual offending should demonstrate a strong level of crime planning, controlling its process from the pre-crime phase to the end of the crime, being able to perform varied and intrusive sexual acts, while also adopting forensic awareness.

Taken together, these studies provide a solid basis for exploring behavioral indicators of expertise in sexual crimes. Moreover, this perspective allows for empirical research on expertise to extend beyond the person's psychological processes (e.g., through the development of offense schemas) and target selection behaviors (i.e., pre-crime) to also include an examination of the entire the criminal event (i.e., including the crime and post-crime processes). In other words, the focus shifts to consider how expertise manifests in the skilled behaviors and choices made over the crime-commission process and whether this is distinguishable from more novice or less sophisticated offense processes. In using this approach, a systematic framework can be used to assess the indicators of criminal expertise, which is relevant for both theory and practice.

2.3.2. Criminal expertise in relation to hybrid offenses

Sexual burglary

Considering that burglary is considered to be “model of rationality” (Cromwell et al., 1991), as well as the large body of literature demonstrating expertise in burglary (Clare, 2011; Meenaghan et al., 2020; Nee, 2015; Nee & Meenaghan, 2006; Roth & Trecki, 2017), it is surprising that offenses that co-occur with burglary, such burglaries that involve sexual assault, have not been given more attention in the expertise literature. Similarly, Harris et al. (2013) drew attention to the fact that the typical burglar's decision-making process have been compared directly to Ward & Hudson's (2001) large body of work on the MO of sexual offenders. More recently, studies have also shown that sexual burglary is rationally oriented, involving both skills and planning (e.g., occur on lower floors, which limits efforts required for break-ins and makes it easier to flee the scene; Pedneault et al., 2015). Additionally, Beauregard and Bouchard (2010) found that individuals who committed broke into the victim's residence, and sexually assaulted them were the most likely to use of forensic awareness strategies (Beauregard & Bouchard, 2010).

Pedneault et al. (2015) also identified clear differences that may indicate that sexual burglary involves its own domain-specific type of expertise. More specifically, Pedneault et al. (2015) argued that sexually motivated burglaries should not simply be considered “bonuses” to theft (Gottfredson & Hirsh, 1990; Felson, 2006), as unlike

residential burglary, they occur when female victims were home, when they are unlikely to resist because they were sleeping, and in the absence of a capable guardian. However, the extent that this reflects a higher degree of skill or sophistication in their crime-commission process in comparison to other sexual crimes is much less understood. In particular, a key limitation of past expertise studies has been the tendency to compare burglary to non-offending populations (Nee & Ward, 2015a). As Roth & Trecki (2017) notes, although informative, this fails to differentiate whether an expert offending domain is substantially different than other offending domains. Thus, to determine the extent that sexual burglary involves greater expertise, the current study will utilize the hybrid crime of sexual robbery as a comparison group.

Sexual robbery

Although there is no research that directly applies the notion of criminal expertise to street robbery or hybrid sexual robbery, there have been several studies that have provided indirect evidence of expertise through an examination of decision-making during the crime-commission process. In doing so, these studies have positioned the typical street robbery offense as being committed by a person who engages in less sophisticated form of decision-making and tends to prioritize the immediate need for gratification (e.g., monetary, thrill, excitement) over the costs of the crime (e.g., Deakin et al., 2007). For instance, Feeney (1986) suggested that persons who commit robbery gave little thought to the act, evidenced by their general lack of planning or consideration of possible consequences. Moreover, persons who commit street robbery have been described as impulsive and opportunistic (e.g., Smith, 2003; Piotrowski, 2011) and tend to be younger and more reckless (Alarid et al., 2009; Deakin, et al., 2007; Piotrowski, 2011; Smith, 2003; Wright & Decker, 2002). On the other hand, some studies of street robbery have found evidence of more sophisticated decision-making related to target selection, although these decisions still appear to be linked closely with short-term benefits (e.g., Deakin et al., 2007). As a result, other researchers (e.g., Wright & Decker, 2002) have raised scepticism about the extent that these behaviors are indicative of “skilled” decision-making, because they appear to be limited to a few key situational factors (e.g., selecting a familiar location with good getaway exits).

Collectively these findings demonstrate that persons who commit street robbery do engage in some evaluation of cost-benefits, however, this does not appear to be

reflected in a particularly sophisticated or skilled crime-commission processes outside of target appraisal (e.g., victim and location selection). Thus, it is possible that sexual robbery will involve similar decision-making processes and therefore show less skill or sophisticated behaviors over the crime-commission process, compared to sexual burglary. Considering that target-selection behaviors have been directly tied to individual motive (Wright et al., 1995), differences in behavioral indicators of expertise between sexual burglary and sexual robbery may not only offer support for decision-making theories but also provide greater insight into motivational differences between hybrid offenses.

2.4. Current Study

Thus far, studies on criminal expertise, have mainly examined how expertise is developed through the formation of cognitive skills and offense related schemas (Nee & Ward, 2015a), or focused on pre-crime behaviors, such as target selection strategies in burglars (e.g., Nee & Taylor, 2000). As a result, there is limited empirical evidence that directly applies the expertise framework to measure overt behavioral forms of criminal expertise over the entire crime-commission process. Additionally, a key criticism of the expertise literature has been the lack of studies that have used offender comparison groups to examine variations in criminal expertise (Nee & Ward, 2015a; Roth & Trecki, 2017). The current study seeks to address these two gaps by comparing the crime-commission process of sexual burglary and sexual robbery. Based on existing literature on criminal expertise in burglary, which positions these individuals as “expert” decision makers (e.g., Nee, 2015; Nee & Meenaghan 2006; Nee & Taylor, 2000), it seems plausible that sexual burglary will also be a distinctively more skilled offense. Conversely, street robbery has frequently been described as a crime committed by individuals who are lacking criminal sophistication (e.g., Piotrowski, 2011) and limited in their skilled decision-making abilities (e.g., Wright & Decker, 2002). As such, sexual robbery may involve similar decision-making processes, thereby representing a less skilled or “amateur” type of offender who will show less overt behavioral manifestations of expertise over the crime-commission process than sexual burglary.

The current study therefore proposes that skilled decision-making and criminal sophisticated modus operandi behaviors will be associated more with sexual burglary than with sexual robbery, particularly in the crime and post-crime phases. To test this

hypothesis, the expertise literature (e.g., Ward, 1999) as well as empirical studies on skilled decision-making and criminal sophistication in sexual offending (e.g., Beauregard & Proulx, 2017; Chopin, et al., 2019; Chopin et al., 2021; Davies et al., 1997; Park et al., 2008), burglary (e.g., Nee, 2015; Nee & Meenaghan, 2006; Nee & Taylor, 2000) and robbery (e.g., Deakin et al., 2007; Wright & Decker, 2002) are used to formulate behavioral indicators of expertise for the current study.

2.4.1. Sample

This study is based on a sample of 869 solved hybrid stranger sexual assault/theft cases (i.e., sexual robbery) and stranger sexual assault/theft and burglary (i.e., sexual burglary) cases against female victims that occurred in France between 1992 and 2018. All cases are single-incident sexual offenses (i.e., there are no detected serial sexual offenders in the sample). Only solved cases were examined in order to include the personal characteristics of the sample and because the focus is on behavioral manifestations of criminal expertise during the crime-commission process and not the actual outcome of this process (i.e., whether the case was solved or unsolved). Additionally, only stranger sexual assaults are included, not only because these cases tend to be more difficult for police to solve (e.g., Bouffard, 2000), but because acquaintance rapes have been found to have distinctive offending patterns from stranger rapes (see Bownes et al., 1991; Koss et al., 1988). Differences in victim-perpetrator relationships could therefore impact how expertise manifests behaviorally (e.g., target appraisal, victim control methods, whether a person takes steps to protect their identity, etc.).

Although missing data is possible, for the current study there are no missing data for any of the variables used. A contact sexual offense for the purposes of this study includes any vaginal/anal penetration (63.7%), rubbing penis against victim (9.3%), masturbation (19.8%), cunnilingus (6.9%), fellatio (48.5%), foreign object insertion (2.5%), digital penetration (27.2%), fondling (56.2%) and kissing (27.0%).¹

¹ Except for cunnilingus, no statistical differences were observed in sexual acts between sexual burglary and sexual robbery.

2.4.2. Measures

Dependent Variable: Sexual Robbery vs. Sexual Burglary

To be classified as sexual burglary (coded as 1), the offense involved breaking-and-entering, personal theft, as well as contact sexual assault. To be classified as sexual robbery (coded as 0), the offense involved robbery (i.e., property was forcibly taken from the victim) as well as contact sexual assault.

Independent Variables

Based on previous studies, 26 variables related to criminal expertise were examined and conceptualized under two main subcategories (1) characteristics of the victim and characteristics of the offenders, and (2) modus operandi: pre-crime, crime, and post-crime.

Characteristics of the victim and offenders

The first subcategory includes 8 variables related to offender and victim characteristics. Victim variables were selected because previous studies have shown that more criminally sophisticated persons tend to target their victims, especially those who are from a vulnerable population (e.g., Beauregard & Proulx, 2017; Chopin et al., 2021; Wright & Decker, 2002). Characteristics for offenders were included based on previous studies that suggest criminally sophisticated persons with sexual offenses will be older, socially adept, and have a history of previous offenses (e.g., Bourke et al., 2012; Ward, 1999). Alcohol and drug use prior to the crime was included as a control, as studies have found this to be a common feature of street robbery (e.g., Piotrowski, 2011) and can influence the extent an offender engages in rational decision-making (e.g., Beauregard & Bouchard, 2010). Except for the offenders and victim age (coded continuously) all variables are dichotomous (0 = no, 1 = yes). 1) Age of the (range = 16 - 71), 2) offenders used drugs or alcohol prior to the crime, 3) offenders had past criminal convictions², 4) offenders was married/living with someone at the time of the offense, 5) Age of victim (range = 14 - 94), 6) Victim used drugs or alcohol prior to crime, 7) Victim

² No other criminal history details were available for analysis

from a criminogenic environment (e.g., sex trade worker, homeless, involved in criminal activities), 8) Victim is single.

Modus Operandi (MO)

For MO, all 18 variables reflect criminal sophistication in modus operandi behavior (e.g., Beauregard & Bouchard, 2010; Beauregard & Proulx, 2017; Ceccato, 2014; Park et al., 2008) and can infer the presence of expertise in sexual (Chopin et al., 2021; Ward, 1999), burglary (Nee, 2015; Nee & Meenaghan, 2006; Nee & Ward, 2015a), and robbery crimes (Deakin et al., 2007; Wright & Decker, 2002). All variables under modus operandi were coded dichotomously (0 = no; 1 = yes) with the exception of two continuous variables (number of sexual acts; range = 1-8; and total number of detection avoidance strategies used; range 0-10). MO variables are separated into three phases to reflect the criminal process (pre-crime, crime, and post-crime).

The pre-crime phase included variables that have been found in previous literature to be indicative of planning and expertise in violent and sexual crimes (e.g., Beauregard & Proulx, 2017; Ceccato, 2014; Chopin et al., 2021; Goodwill et al., 2012; Reale et al., 2020; Ward, 1999, Wright & Decker, 2002). These included: Victim was targeted, 10) Brought weapon to offense, 11) Selected a deserted crime location (where witnesses are unlikely to hear, see, or interrupt the crime), 12) Selected a familiar crime location.

The crime phase included offense behaviors found in previous literature to be related to a sophisticated modus operandi in sexual and violent offending (Chopin et al. 2019; Chopin et al., 2021; Goodwill et al., 2012; Park et al. 2008; Reale et al., 2020; Ward, 1999). These included: 13) Types of items stolen (1 = valuable; 2 = fetish 3 = both), 14) No physical resistance from victim, 15) No non-sexual violence (i.e., no beating, stabbing, or asphyxiation); 16) Reassured victim, 17) Weapon used to threaten/displayed only, 18) Wore gloves, 19) Wore a mask, 20) Blindfolded or gagged the victim, 21) Acted on the environment³, 22) Number of sexual acts committed.

³ Acted on the environment is a label used to capture precautions taken that are specific to the offender's environment in order to reduce their likelihood of detection (i.e., disabling or darkening lighting; using an alarm system; using a look-out; disabling telephone or security systems; closing, locking, barricading windows or doors).

Lastly, the post-crime phase included behaviors that have been identified in previous literature as indicative of expertise in detection avoidance or previous experience in sexual crimes (e.g., Beauregard & Bouchard, 2010; Beauregard & Proulx, 2017; Chopin et al., 2019; Chopin et al., 2021; Davies et al., 1997; Park et al., 2008; Reale et al., 2020; Ward, 1999). These included: 23) Victim unable to escape/was not rescued 24) Threatened, bribed, or told victim not to report, 25) Destroyed or removed evidence, 26) Total number of detection avoidance strategies used (i.e., a summed total of all possible precautions taken by the offender to avoid apprehension)⁴.

2.5. Analytical Strategy

A three-step analytical process was used to analyze the data. As a first step, descriptive statistics were explored to determine the extent that criminal expertise was evident in the crime-commission process of sexual burglary and sexual robbery. The second step involved the use of bivariate analyses (i.e., chi-square and Mann-Whitney U test for non-parametric continuous variables) to examine the relationships between the dependent variable and independent variables. To determine which variables to include in the multivariate analysis, variables with p-values less than .10 were included to ensure all potentially relevant variables at the multivariate level were accounted for (Hosmer et al., 2013)⁵. Multicollinearity was also tested, and no correlations were higher than .161. For the third step, a 4-block sequential binary logistic regression was performed. Model 1 includes victim and offender characteristics associated with criminal expertise. Models 2 to 4 reflects offense characteristics associated with criminal expertise and sophisticated MO. Specifically, Model 2 adds the pre-crime factors related to planning, Model 3 adds crime factors related to a sophisticated modus operandi, and Model 4 adds post-crime factors related to detection avoidance. This was done, not only to understand the impact of each variable while accounting for the other significant

⁴ These detection avoidance strategies include variables numbered 18-21, 24-25, in addition to the following variables: drugged/gave alcohol to the victim; bound the victim; gave a false name; wore dark/concealed clothing; altered physical appearance; disguised/altered vehicle. Due to low frequencies or multicollinearity with other variables, the additional variables were not included as independent variables for analysis.

⁵ The number of detection avoidance strategies was excluded from multivariate analyses due to multicollinearity among other independent variables. The variable offender used drugs or alcohol prior to the offense ($p = .143$) was retained because of its relevance as a control variable as well as to capture any potential confounding effects at the multivariate level.

variables in the model, but also to identify whether expertise in certain stages of the crime-commission process was more important in explaining the difference between sexual burglary and sexual robbery.

2.6. Results

Table 2.1. presents the results of the bivariate analyses between the dependent and the independent variables. Table 2.1 also includes descriptive statistics for the sample as a whole, and for both sexual burglary and sexual robbery, respectively. In terms of the victim characteristics, only victim age was significantly different between sexual robbery and burglary ($U = 72305.50$, $p = < .001$, $r = .01$). More specifically, victims of sexual burglary were an average age of 35 years old ($SD = 18.4$), compared to victims of sexual robbery who were an average age of 28 years old ($SD = 12.5$). Interestingly, there were no significant differences in offender characteristics between groups, although some findings were approaching significance⁶. In the pre-crime phase, several differences were observed between sexual robbery and sexual burglary. For sexual burglary, it was more common for their victims to be targeted ($\chi^2 = 9.74$, $p = .002$) but for sexual robbery, it was more common to bring a weapon to the crime ($\chi^2 = 5.41$, $p = .020$) and choose a location that was familiar ($\chi^2 = 48.45$, $p = .000$).

In the crime phase, sexual burglary involved significantly more sexual acts compared to sexual robbery ($U = 85958.00$, $p = .032$, $r = .00$) and more precautions related to avoiding detection. More specifically, detection avoidance strategies such as wearing gloves ($\chi^2 = 10.60$, $p = .001$), using a blindfold or gagging the victim's mouth ($\chi^2 = 17.61$, $p = < .001$), and acting on the environment ($\chi^2 = 17.16$, $p = < .001$) were more common for sexual burglary compared to sexual robbery. In the post-crime phase, destroying or removing evidence was more common in sexual burglary ($\chi^2 = 30.44$, $p = < .001$) as well as having control over the crime scene so that victims were not able to escape or be rescued by a third party ($\chi^2 = 5.47$, $p = .019$). Threatening or bribing the victim not to report was also more common for sexual burglary than sexual robbery ($\chi^2 =$

⁶ Variables approaching significance were included in the tables (but not in-text) as they are theoretical relevant and important for future research considerations.

6.07, $p = .014$). Lastly, total number of detection avoidance strategies was greater for sexual burglary ($U = 71654.00$, $p = < .001$, $r = .01$) than sexual robbery.

Table 2.1. Descriptive statistics and bivariate comparison of criminal expertise in sexual burglary and sexual robbery

	Total Sample	Sexual Robbery	Sexual Burglary	Test Statistics
Variable	N = 869 N (%) / M(SD)	N = 478 N (%) / M(SD)	N = 392 N (%) / M(SD)	X ² /U
Offender Characteristics				
Age ^a	28.6 (8.3)	28.5 (8.2)	28.6 (8.2)	92757.00
Alcohol/drug use prior to crime	289 (33.2)	149 (31.8)	140 (35.8)	2.14
Past criminal convictions	206 (22.5)	98 (20.5)	99 (25.3)	2.90 [†]
Married/common-law	163 (17.8)	97 (20.3)	60 (15.5)	3.50 [†]
Victim Characteristics				
Victim age ^a	31.2 (15.8)	28.1 (12.5)	35 (18.4)	72305.50***
Alcohol/drug use prior to crime	92 (10.6)	47 (9.8)	46 (11.5)	.66
Single	313 (36.0)	180 (37.6)	133 (34.0)	1.19
From criminogenic environment	78 (9.0)	45 (9.4)	33 (8.4)	.24
Pre-crime Phase				
Victim was targeted	175 (20.1)	78 (16.3)	97 (24.8)	9.74 **
Brought weapon to offense	351 (40.3)	210 (43.8)	141 (36.1)	5.41*
Location was familiar	309 (35.5)	219 (45.7)	90 (23.0)	48.45 ***
Location was deserted	526 (60.5)	294 (61.4)	232 (59.3)	.38
Crime Phase				
Type of item stolen				4.88 [†]
Valuable	723 (83.1)	386 (80.6)	337 (86.2)	
Valuable & Fetish	47 (5.4)	29 (6.1)	18 (4.6)	
Fetish	100 (11.5)	64 (13.4)	36 (9.2)	
Victim did not physically resist	640 (73.6)	353 (73.7)	287 (73.4)	.01
Offender did not use nonsexual violence	602 (69.2)	333 (69.5)	269 (68.8)	.05
Victim was reassured	230 (26.4)	114 (23.8)	116 (29.7)	3.81 [†]
Weapon used only to threaten	247 (28.4)	131 (27.3)	116 (29.7)	.57
Offender wore a mask	147 (16.9)	79 (16.5)	68 (17.4)	.12
Offender wore gloves	90 (10.3)	35 (7.3)	55 (14.1)	10.60 **
Victim was blindfolded or gagged	262 (30.1)	116 (24.2)	146 (37.3)	17.61 ***
Offender acted on environment	191 (22.0)	80 (16.7)	111 (28.4)	17.16 ***
Total # of sexual acts ^a	2.6 (1.44)	2.50 (1.40)	2.72 (1.48)	85958.00*
Post-Crime Phase				
Victim unable to escape or be rescued	664 (76.3)	351 (73.3)	313 (80.1)	5.47*
Victim was threatened or bribed	257 (29.5)	125 (26.1)	132 (33.8)	6.07*
Destroyed/removed evidence	113 (13.0)	35 (7.3)	78 (19.9)	30.65 ***
Total # of DAS ^a	1.7 (1.9)	1.34 (1.45)	2.24 (2.17)	71654.00***

Note. a = M(SD); Mann-Whitney U Test/Statistic; † p < .10 * p < .05 ** p < .01 *** p < .001; DAS = detection avoidance strategies

Table 2.2. presents the findings of the binomial sequential regression examining differences in criminal expertise between sexual burglary (= 1) and sexual robbery (= 0). Model 1 includes victim and offender characteristics. Findings indicated that there were no significant differences in offender characteristics related to criminal expertise between sexual burglary and sexual robbery. In terms of victim characteristics, findings indicated that a one-unit increase in victim age was associated with 1.03 times greater odds of sexual burglary, compared to sexual robbery ($\beta = .03, p = < .001$). Model 2 adds pre-crime characteristics related to an offender expertise. Victim age remains significant in Model 2. Additionally, findings from Model 2 indicate when a victim was targeted, the offense was 1.74 times more likely to be a sexual burglary, than a sexual robbery ($\beta = .68, p = < .001$). On the other hand, when a familiar location was chosen ($\beta = -1.10, p = < .001$) and a weapon was brought to the crime scene ($\beta = -.30, p = .045$), the offense was respectively .34 times and .74 times less likely to be a sexual burglary, compared to a sexual robbery.

Model 3 adds crime characteristics related to an offender's expertise. All variables in Model 1 and 2 remain significant and in the expected direction, in Model 3. Additionally, findings from Model 3 indicate that during the crime phase, when an offender blindfolds or gags their victim's mouth ($\beta = .36, p = .033$) or acts on their environment ($\beta = .59, p = .002$), it was a respectively 1.44 and 1.81 times more likely to be a sexual burglary, compared to a sexual robbery. Moreover, when an offender reassures their victim, it was 1.41 times more likely to be a sexual burglary ($\beta = .34, p = .049$). Lastly, Model 4 adds the post-crime characteristics related to expertise. Apart from victim reassurance, all other variables from Model 1 to 3 remain significant, and in the expected direction. Additionally, findings from Model 4 indicate that destroying or remove evidence was 2.38 times more likely in sexual burglary compared to sexual robbery ($\beta = .87, p = < .001$).

Table 2.2. Sequential binary logistic regression of criminal expertise factors predicting sexual burglary

Variable	Model 1			Model 2			Model 3			Model 4		
	β	SE	Exp(β)	β	SE	Exp(β)	β	SE	Exp(β)	β	SE	Exp(β)
Offender Characteristics												
Alcohol/drug use prior to crime	.14	.15	1.15	.20	.16	1.22	.19	.16	1.13	.12	.17	1.13
Past criminal convictions	.25	.17	1.29	.29	.18	1.34 [†]	.30	.18	1.34	.26	.18	1.30
Married/Common-law	-.32	.19	.73 [†]	-.23	.20	.79	-.19	.20	.83	-.26	.21	.77
Victim Characteristics												
Age	.03	.01	1.03 ***	.03	.01	1.03 ***	.03	.01	1.03 ***	.03	.01	1.03 ***
Pre-crime Phase												
Victim was targeted				.68	.19	1.97 ***	.61	.19	1.84 **	.55	.20	1.74 **
Selected a familiar location				-1.10	.16	.33 ***	-1.08	.17	.34 ***	-1.06	.17	.34 ***
Brought a weapon				-.30	.15	.74 *	-.47	.16	.62 **	-.52	.16	.60 **
Crime Phase												
Type of item stolen ^a												
Valuable							.15	.25	1.16	.12	.26	1.13
Valuable & fetish							-.16	.42	.86	-.26	.43	.774
Reassured victim							.34	.18	1.41*	.32	.18	1.38 [†]
Wore gloves							.47	.26	1.63 [†]	.360	.27	1.43
Blindfolded/gagged the victim							.36	.17	1.44 *	.32	.17	1.41*
Acted on environment							.59	.18	1.81 **	.47	.19	1.60*
Number of sexual acts							.08	.06	1.08	.03	.06	1.03
Post-Crime Phase												
Victim unable to escape/rescued										.19	.18	1.21
Victim threatened/bribed										.18	.18	1.20
Offender destroyed or removed evidence										.87	.25	2.38 ***
Constant	-1.15	.17	.318 ***	-.75	.20	.47 ***	-1.45	.34	.24 ***	-1.48	.36	.23 ***
Nagelkerke R^2	.07			.16			.21			.23		
Hosmer & Lemeshow	.91			.19			.22			.07		
Classification %	60.2			61.0			66.1			66.1		

Note. Sexual Burglary = 1, Sexual Robbery = 0; N = 869; a = fetish (reference category); † p < .10 * p < .05 ** p < .01 *** p < .00

2.7. Discussion

The current study sought to contribute new insights to the criminal expertise perspective by determining the extent that behavioral manifestations of criminal expertise were evident across the entire crime-commission process and whether sexual burglary involves a more “expert” crime-commission process when compared to sexual robbery. The current study findings support the hypothesis that the modus operandi of sexual burglary is more sophisticated and skilled compared to sexual robbery. Moreover, this study is one of the first studies to provide direct empirical support for Ward (1999) regarding behavioral manifestations of expertise in sexual offending across the entire crime-commission process. This study has shown that the expertise framework extends beyond persistent child sexual offending and can be applied to other types of sexual crimes, including those that are hybrid in nature.

2.7.1. Pre-crime Phase: Sexual Burglary

In the pre-crime phase, it was anticipated that fewer distinctions could be found between sexual burglary and sexual robbery offenses, given the research on target selection skills in both burglary (e.g., Nee & Meenaghan, 2006) and street robbery (e.g., Deakin et al., 2007). However, findings indicate that sexual robbery involved more behaviors associated with planning during the pre-crime phase than sexual burglary. Although somewhat unexpected, this can be interpreted as an indication that sexual burglary motivations are primarily sexual, and as a result, led them to weigh the costs-benefits of their crime differently than a person who is motivated to commit burglary. For example, numerous studies indicated that, in general, individuals who commit burglary purposely target residences in familiar locations as a strategy to decrease risk (Nee, 2015 for a review). Although going to a location that is less familiar may not be ideal for a residential burglary, this may be the “cost” of finding a suitable victim in a sexual burglary (Pedneault et al. 2015).

Considering that in the pre-crime phase, targeting victims was more common for sexual burglary, this is an interesting possibility that may provide insight into the main motivations for those who commit sexual assault as well as steal personal items during a burglary. More specifically, targeting a victim is not a strategy that would be expected among individuals who were seeking to maximize gains (i.e., valuable items obtained

through the burglary) while minimizing the risk of detection (i.e., by selecting an unoccupied residence) if the primary motivation is theft. On the other hand, this strategy perfectly demonstrates the cost-benefit analysis that a person would make if the primary purpose of the burglary were in fact to find a vulnerable victim to sexually assault. This is important because both Gottfredson & Hirshi (1990) as well as Felson (2006) suggested that rape occurring in home invasions are in fact opportunities that arose during regular burglaries, and therefore should be considered “bonuses” to theft.

2.7.2. Pre-crime Phase: Sexual Robbery

In the pre-crime phase, selecting a familiar location and bringing a weapon to the offense was more likely in sexual robbery than in sexual burglary. These particular behaviors are thought to reflect a person who is in a “state of readiness” to commit an offense, which requires enough knowledge to perceive a criminal opportunity when it emerges in a known “awareness space” (Nee, 2015). Thus, it may be that individuals who committed sexual robbery went to a familiar location and were already in possession of a weapon when the opportunity for a violent encounter emerged. For instance, one of the easiest ways to ensure compliance during a robbery is to intimidate the victim from the outset either by using threats, physical violence or by revealing a weapon (Deakin et al., 2007). Moreover, research on street robbery shows that those who are experienced in robbery tend to target familiar locations because they are better able to find suitable victims ((Deakin et al. 2007) and prefer to have prior knowledge about the location to enable faster getaways (Deakin et al., 2007, Wright & Decker, 2002). Thus, it seems that the conditions that make an opportunistic street robbery attractive (i.e., access to victim, ability to intimidate/enforce compliance with a weapon, and familiar location that enables a faster getaway) are the same conditions that are desirable for a sexual robbery. As such, it is possible that these individuals were in a state of readiness – or exhibited premeditated opportunism (Rossmo, 2000) – for a violent encounter and chose to both sexually assault and steal from their victim because the conditions allowed for both with little increased perceived short-term risk.

2.7.3. Crime and Post-Crime Phases

Although interesting differences were observed in the pre-crime phase, the most important findings between sexual burglary and robbery occurred in the crime and post-

crime phases. More specifically, sexual burglary could be differentiated from sexual robbery based on the skilled actions taken over the crime-commission process specifically related to avoiding detection. At the bivariate level, sexual burglary not only involved more detection avoidance strategies on average, but all types of detection avoidance strategies occurred at a greater frequency than in sexual robbery. Moreover, at the multivariate level, the crime-commission process of sexual burglary indicated clear precautions taken during the crime-phase to avoid detection, such as acting on the environment (e.g., disabling alarms, blocking exits) and preventing the victim from seeing their identity or making noise (e.g., blindfolding and gagging the victim). Lastly, in the post-crime phase, the detection avoidance strategy to destroy and remove evidence remained significantly more likely in sexual burglary, even after considering all victim controls, offender characteristics, and other crime phases.

It is important to note that the nature of sexual burglary being exclusively indoors may increase the likelihood that a person will choose to act on their environment and/or be more attuned to the risk of forensic evidence being left behind. However, the nature of the location cannot be the sole factor in explaining whether an individual will be “forensically aware”, as destroying and removing evidence is typically quite rare even for sexual crimes that occur indoors (e.g., Beauregard & Bouchard, 2010). Destroying or removing evidence is also a sophisticated strategy used by those who have prior offense experience (Davies et al., 1997) and is an indication of expertise in detection avoidance (Reale et al., 2020). Further, the crime-commission process of sexual burglary in the current study closely resembles the “expert rape” identified by (Chopin et al., 2021) who had sophisticated modus operandi’s and used various forensic awareness strategies to avoid detection. Moreover, Park et al. (2008) found that forensic awareness was a strategy used by criminally sophisticated persons who committed serial sexual offenses. Thus, sexual burglary in the current study involved the use of detection avoidance strategies that are consistent with those identified in other experienced or criminally sophisticated sexual crimes, regardless of location.

Taken together, sexual burglary appears to involve greater “expertise” because of the superior detection avoidance strategies and more sophisticated modus operandi behaviors observed over the crime-commission process. It is important to reinforce that this does not equate to a “specialized” criminal career in sexual offending, as the data so not enable such conclusions to be drawn. Rather, findings support the hypothesis that

sexual burglary involves domain specific skills that are distinctively more sophisticated when compared to sexual robbery. This is especially important in the context of hybrid offending because these findings highlight the notion that even while individuals may appear “versatile” in their offending, they may still develop a set of functional, domain-specific skills to help them achieve their offense-related goals and reduce their risks of detection.

2.7.4. Theoretical Implications

Differences observed in behavioral indicators of expertise between sexual burglary and sexual robbery also sheds light on different decision-making processes that may underly these offenses. For instance, the dual-systems theory (Kahneman; 2003;2011; Stanovich, 1999) suggests that risk-taking behaviors like committing a crime are not due exclusively to impulsivity or low self-control (e.g., Gottfredson & Hirschi, 1990) nor are they due entirely to rational weighing of the costs and gains of such a risk (e.g., Clarke & Felson, 1993). Rather, this perspective suggests that it involves the operation of both (Mamayek, et al., 2015; van Gelder, 2013). In other words, dual thinking involves the operation of two distinct but interconnected systems - one of which is the immediate reward system and is focused on the “here and now” - and a second system that involves rational, deliberate, future-oriented and directed at longer term objectives (Van Gelder, 2014).

Accordingly, for sexual burglary, it appears that long-term rewards are at the forefront of decision-making, which is reflected in the various strategies to avoid detection observed across the entire crime-commission process. This speaks to the complex nature of sexual burglary, which requires one to weigh the risks of entering an occupied home and the evidence that can result from committing an offense indoors, with the benefits of the crime (e.g., sexual, monetary, thrill, power or control). Moreover, their skilled behaviors related to detection avoidance suggests that individuals who commit sexual burglary may be engaging in greater self-regulation by incorporating a more thoughtful and conscious consideration of the implications of their actions into their decision-making processes. These are similar decision-making processes that have been described in burglary (Nee & Meenaghan, 2006) and persistent child sexual offending (Ward, 1999; Bourke et al., 2012), and can be reflected in actions taken during the crime-commission process such as planning, identification of targets, conducting risk

appraisal, and taking steps to avoid detection (Nee & Ward, 2015a). Thus, perhaps the connection between burglary and sexual burglary may be that the kind of person who would engage in one of these offenses will also engage in the other. Indeed, studies have shown that a considerable proportion of individuals convicted of a sexual crime also have a history of burglary offending (e.g., Harris et al., 2013, Horning, et al., 2010). In terms of the expertise literature, this provides evidence that offenders who commit burglary (whether or not it occurs in conjunction with a sexual offense) may represent a type of “expert” decision-maker (Nee & Ward, 2015a), and thus may be capable of committing more sophisticated crimes that require planning and strategy to be successful. This is important because those who commit sexual burglary may present an increased risk to engage in future sexual offending, and perhaps escalate to even more serious type of sexual offenses, such as sexual murder or homicide (Vaughn et al., 2008; Schlesinger & Revitch, 1999).

On the other hand, when a person prioritizes the immediate “benefits” (e.g., monetary, sexual, power, or thrill) of the crime, this can be reflected in a more impulsive and opportunistic crime-commission process that lacks skill (e.g., Deakin et al., 2007). This is consistent with the type of short-term decision-making that has been observed in studies of street robbery (e.g., Alarid et al., 2009; Deakin et al., 2007; Piotrowski, 2011; Wright & Decker, 2002). Consequently, it may be that street robbery and sexual robbery are more likely to be committed by persons who are more impulsive or opportunistic and are less capable of the type of self-regulation that favours long-term benefits. For example, although sexual robbery in the current study involved some degree of skill in the pre-crime behaviors, when accounting for the entire crime-commission process, there is little evidence to suggest that these offenses involved the type of skilled decision-making that would be particularly relevant for a person who is prioritizing long-term rewards like detection avoidance. Rather, skilled behaviors were most evident in actions that provide immediate benefits (e.g., bringing a weapon to ensure victim compliance and selecting a familiar location for accessibility to victims and a quick get-away).

2.7.5. Practical Implications

In terms of practical implications, these findings may have relevance for police investigations, especially considering that these offenses involve stranger victims, which

are often more difficult, costly, and time-consuming cases for police to solve (Davies, 1991). More specifically, findings suggest that when an offense includes a robbery and sexual assault against a stranger victim, it may be more efficient for investigators to prioritize suspects to known street robbers who operate in the area of the crime scene. For sexual burglary, on the other hand, investigators may need to expand their search for a suspect to areas outside the victim's neighbourhood and may improve suspect prioritization efforts by narrowing the pool to known persons convicted of a sexual offense who also have a history of property crimes.

Lastly, the current study findings also have relevance for assessment and treatment. RCT suggests that individuals develop skills to assess and respond to crime opportunities through practice (Nee & Ward, 2015a). Research has shown that experienced individuals in various types of crimes may develop a set of skills designed specifically to reduce the risks of police detection (e.g., Cherbonneau & Copes, 2005; Gallupe, et al., 2011). Moreover, it is those who demonstrate expertise in detection avoidance, who are also thought to be the most coercive and controlling subset of interpersonally violent individuals, have better emotional regulation, and the most entrenched and embedded schemes (Fortune et al., 2015). Thus, due to the accumulated "expertise", those who are more criminally experienced or more sophisticated in their offending behavior may be more difficult to treat (Bourke et al., 2012). This is especially important because burglary, whether sexual or not, has been linked with dangerousness and covaried with future violence in samples involving persons who have been convicted of a sexual crime (Thornton et al., 2003).

Differences between people's decision-making processes (e.g., prioritization of short term vs. long-term benefits) and offense related skills also has relevance for treatment. As both Ó Ciardha (2015) and Bourke et al. (2012) note, persons convicted of a sexual offense are often viewed as being "deficit-based", and as a result, risk factors and treatment needs are largely framed around their inabilities (e.g., the inability to emotionally regulate or inhibit behaviors). Thus, one of the benefits of using the expertise framework is the fact that it examines their competencies, rather than just focusing on their social and psychological deficits (Fortune et al., 2015). As stated by Bourke et al. (2012), by examining the offense as a series of micro decisions and their consequences, this could aid clinicians in identifying poor coping strategies and areas where poor coping responses may prompt engagement in future offending. Moreover, by

gaining a better understanding the area of an individual's relative strengths (e.g., self-regulation) it is easier to engage them in treatment, which may also aid in developing more constructive and personally motivating intervention strategies (Fortune et al., 2015). Thus, by attempting to understand the methods used by individuals to avoid detection for their crimes and the extent that these efforts can be accounted for and measured, researchers and clinicians strive to identify areas for prevention, intervention, evaluation, and rehabilitation (Bourke et al., 2012).

2.8. Limitations and Future Research

There are some limitations to this study that must be noted. First, data used in the current study includes cases that occurred between 1992 and 2018. Over the course of more than 30 years, investigative and forensic techniques have evolved, and as such, this could have implications for the detection of forensic awareness strategies. This possibility is limited, however, given the fact that a large proportion of the cases (86.6%) occurred since the year 2000. Second, there are some methodological biases and issues that are inherent to police data (for examples see Chopin & Aebi, 2019). Third, all solved cases in the current sample were single incidents (i.e., non-serial rapes), however, there are some cases where investigators may fail to identify links between cases. As a result, it is not possible to determine what role undetected serial offenses may play in expertise. It is also possible that some expertise behaviors included in the current study are associated more with a specific type of crime (e.g., sexual offending), and may not be as generalizable to other types of crimes. Future studies should therefore explore offense-specific behaviors as they relate to expertise on other populations. Similarly, studies should examine the role of criminal expertise in other types of sexual crimes, such as in serial rape or sexual homicide, which constitute the most serious forms of sexual offending. Studies should also test whether behavioral manifestations of expertise are more evident in those who have successfully evaded detection by examining unsolved sexual crimes. Future research on these areas may provide unique insight into the role that expertise may play on the types of strategies used by experts to avoid police detection.

Lastly, because access to detailed criminal histories were not available, it was not possible to determine which stage individuals are in their criminal career, whether they had a history of property or burglary offenses, and how this may have influenced

their development of expertise. It is important to note, however, that criminal history is less relevant for the current study because the main goal was to capture objective behavioral indicators of expertise that manifest in the crime-commission process and not how expertise develops over time (e.g., through structural representations). Although there were no differences between sexual burglary and sexual robbery in terms of whether they had a history of previous convictions, reliance on official data (e.g., convictions) to inform the development of expertise comes with its own set of limitations, such as sexual burglary offenses being pled down (Harris et al., 2013). Therefore, future research should strive to include data from using both official (e.g., charges and convictions) and unofficial (e.g., offender interviews) sources to build a more complete picture of the role that prior offending plays in the development of expertise. In doing so, practitioners would be in a better position to understand the vulnerabilities or cues that may delay, or prevent, the reoccurrence of offending behavior (Bourke et al., 2012). Moreover, the inclusion of more detailed offense histories would allow for a better assessment of how structural and behavioral indicators of expertise are related to individuals who are specialized compared to versatile in their offense histories, which may have relevance for treatment and practice.

Chapter 3.

Expert vs. Novice: Criminal Expertise in Sexual Burglary and Sexual Robbery

3.1. Abstract

Although there has been considerable variation in the application of expertise to offending populations, one aspect that is widely agreed upon is that expertise is best represented on a continuum from novice to expert. The present study therefore investigated criminal expertise in 869 hybrid offenses that involve sexual assault and robbery (i.e., “sexual robbery”) or burglary (i.e., sexual burglary). The crime-commission processes of both these offenses were analyzed using latent class analyses to determine the heterogeneity of latent subgroups of expertise. Results showed an expert to novice continuum in both offenses, including a “domain-specific” expert sexual burglary subgroup who was characterized by a high degree of offense-related competencies relevant to sexual burglary. Moreover, there were expertise subgroups in both sexual robbery and sexual burglary who appeared to have more general skills (i.e., overlapping expertise) relevant to violent offending. Implications for offender decision-making, treatment and practice are discussed.

Keywords

offense behavior; crime-commission process; offense skills; sexual offending

3.2. Introduction

Although most research to date has examined “experts” in socially acceptable domains, such as sports or academia, in more recent years, researchers have become interested in the application of functional expertise (i.e., “criminal expertise”) to offender groups (See Nee & Ward, 2015a for a review). Functional expertise is much appropriate for criminal domains because it can be developed over much shorter periods of time, or through indirect means such as covert and symbolic modelling and mental rehearsal (Ó Ciardha, 2015; Ward, 1999). Thus, criminal expertise does not necessarily mean that a person has an extensive or “specialized” criminal career, but rather, captures an expert

offender's offense related competency relative to that of a novice (e.g., Chopin et al., 2021; Bourke et al., 2012, Nee & Ward, 2015a; Ward, 1999). In support of this perspective, studies have found that some offenders develop expertise in their specific offense domain, enabling them to become quicker and better at acting on offense-related cues than more novice offenders (Nee, 2015). As such, Nee and Ward (2015a) proposed that a more appropriate label for functional expertise within criminal domains is dysfunctional expertise, given the potential outcome (i.e., successfully committing a crime).

While several advancements to the expertise literature have been made through an examination of burglary (See Nee, 2015 for a review), and more recently in sexual offending (Bourke et al., 2012; Chopin et al., 2021), more complex crimes such as those that combine two specific types of offenses (i.e., a hybrid offense) have been largely over-looked in both the criminal expertise literature and in criminological studies more generally (Beauregard & Chopin, 2020). Chapter 1 of this thesis represents the first study of criminal expertise on hybrid offenders. Findings showed that the crime-commission process of sexual burglary (i.e., break-and entering, theft, and sexual assault offense) involved more "domain-specific" expertise in detection avoidance, compared to sexual robbery (i.e., personal theft and sexual assault offense), but also found similar skills related to target appraisal between these two offenses, suggesting these offenses may also share an "overlapping expertise" or "transferable" expertise (Nee et al., 2019) related to interpersonally violent offending.

One key area that from the expertise literature that is lacking is the examination of a novice to expertise continuum within offense domains. This is important because understanding differences in expertise, whether great or small, is crucial for offender assessment, treatment, and crime prevention (Nee, 2015). For instance, the extent that sexual burglary is an "expert" offense has important practical implications as sexual burglary can represent an important "steppingstone" to the development of a sexual criminal career (e.g., Schlesinger & Revitch, 1999) and may even be indicator for even more serious homicide offending (Vaughn et al., 2008). Conversely, empirical examination of sexual robbery as a distinct domain is extremely limited. As a result, there is little insight into variations in offense related competencies within the sexual robbery domain, which may also shed light onto primary motivations (i.e., sexual or theft). By examining the expertise continuum in two types of hybrid crimes, the aim of

Chapter 2 is to contribute not just to the criminal expertise literature but also address the need for more criminological research that focuses on these complex crimes (Beauregard & Chopin, 2020). Accordingly, the present study seeks to explore latent subgroups of criminal expertise in both sexual burglary and sexual robbery.

3.3. Literature Review

3.3.1. Expertise as a continuum

One of the core arguments of the criminal expertise perspective is that individuals who have obtained offense related skills and competencies should be measurably distinctive from novices. More specifically, it has been suggested that like the traditional expertise framework (Ericsson, 1996), criminal expertise is best conceptualized as a continuum from unskilled to skilled (Ward, 1999; Bourke et al. 2012, Fortune et al., 2015; Nee & Ward, 2015a; Chopin et al., 2021). Some of the earliest studies on expertise in burglary emerged from interview-based studies on experienced burglars, which revealed strong evidence of interpersonal skills and knowledge relevant to specific crime opportunities (e.g., Bennet & Wright, 1984; Wright & Decker, 1994). Since then, Nee and colleagues have undergone several studies that have shown support for a continuum of expertise. For example, in comparison to non-criminals (i.e., “novices”), burglars have been shown to use distinctive and systematic routes and relied on previous learning in their decision making when selecting a target (Nee & Taylor, 2000; Nee et al, 2015; Taylor & Nee, 1988). Additionally, within the burglary domain variations in expertise have also been observed. Clare (2011) identified 53 expert burglars and 53 novices based on the frequency of offending, burglary related income, burglary charges, and the duration of their burglary career. He found that expert burglars used burglary-specific cognitive scripts and demonstrated perceptual and procedural skills superior to those of the novice burglars. Moreover, a study by Nee and Meenaghan (2006) showed evidence of a continuum of expertise among burglars, including a small number of more opportunistic offenders at the less experienced end, as well as more proficient and skilled burglars deemed “searchers”, and those who plan extensively towards the end of the spectrum.

Although substantially less developed than the study of expertise in burglary, in the field of sexual offending, a continuum of expertise has been observed directly in

sexual offending domains (Bourke et al., 2012; Chopin et al., 2021) as well indirectly (e.g., Beaugard et al., 2012). For example, Ward 's (1999) theoretical paper was the first to suggest that the literature on expertise (e.g., Ericsson, 2006; Ericsson & Charness, 1994) could extend to sexual offenders due to the ability for some to avoid detection for many years while they continue to offend against a large number of victims. Therefore, he hypothesized that persistent child sexual offenders would be quicker, more intuitive decision makers, and more efficient at avoiding detection, compared to those with fewer victims and a late onset of offending. Bourke et al. (2012) for instance, found that compared to novices, expert child sexual offenders exhibited enhanced abilities to detect emotional vulnerability in their potential victims, were better at avoiding detection for offenses committed, were better able to effectively regulate and manage their emotional arousal, and had better problem-solving skills.

The expertise continuum has also been evidenced through studies of offender's modus operandi (Fortune et al., 2015). For example, Beaugard et al. (2012) examined decision making of serial sexual offenders and identified that the degree of offense planning fell on a continuum. Additionally, offenders with child victims were found to use tactics during the commission of their crime to control the situation and avoid victim resistance. Most recently, Chopin et al. (2021) examined expertise in rape and found that experts and novices could be differentiated based on the level of sophistication in their offense process as well as their use of forensic awareness. These studies have found support for a novice to expert continuum, showing that more "expert" offenders possessed superior offense skills and knowledge, especially pertaining to detection avoidance, and gaining victim compliance and control (Beaugard et al., 2012; Bourke et al., 2012; Chopin et al., 2021).

In chapter 1, findings showed that sexual burglary involved domain-specific expertise because of the skilled behaviors observed across the pre-crime, crime and post-crime phases, including superior detection avoidance skills (e.g., destroying and removing evidence) relevant to the high-risk nature of the offense. Nonetheless, the heterogeneity of contact sexual burglary (i.e., a "hybrid" offense, involving break-and-entering, theft, and sexual assault) and its varying degrees of skill and offense-related competencies has never been fully examined. As a result, it remains unclear whether there are "novice" types in sexual burglary who may have less skills developed, or whether sexual burglary comprises of a large group of skilled offenders or "experts", as

observed in burglary (e.g., Nee & Meenaghan, 2006). Variations in the degree of expertise are especially important to examine with this population, given that sexually motivated burglaries are associated with sexual dangerousness (Vaughn et al., 2008), escalation in offending (Harris et al., 2013; Pedneault et al., 2015b), and even sexual homicide (e.g., Sheslinger & Revitch, 1999).

In comparison to sexual burglary, sexual robbery has received much less empirical attention and the extent that these offenses are opportunistic “bonuses” (Gottfredson & Hirshi, 1990; Felson, 2006) to theft or sexually motivated is currently unknown. For instance, Chapter 1 findings demonstrated that sexual robbery involved similar offense related competencies (e.g., planning of targets and victim compliance methods) that have been found among more experienced robbery offenders (Deakin et al., 2007; Smith, 2003) and opportunistic sexual offenders (Rossmo, 2000). Importantly, however, Chapter 1 was unable to establish whether there is a subgroup of “expert” sexual robbery offenders who share similar skills in detection avoidance that has been observed in other “expert” rapists (Bourke et al., 2012; Chopin et al., 2021). Accounting for whether criminal expertise varies (i.e., on a continuum from novice to expert) could provide further insight into the heterogeneity of expertise as well as determine differences in individual characteristics and decision-making processes between more and less skilled offenders.

3.3.2. “Specialized” and “transferable” skills

There is ongoing debate as to whether offenders specialize in one type of crime or whether they are best seen as generalists (e.g., Delisi et al., 2016; Fox & Farrington, 2015; Monahan & Piquero, 2009). This extends to the field of sexual violence, as studies have shown that although some sexual offenders do specialize, for most, sexual offending is part of a broader, versatile criminal career (see Lussier, 2005 for a review). Although there is evidence that specialization can allow expertise to accrue, particularly in burglary, (see Nee et al., 2019 for a review), the absence of extensive offending within a particular domain does not necessarily mean that an individual cannot develop expertise. For example, pornography or frequent masturbation to deviant fantasies may also facilitate the development of extensive knowledge structures and the elaboration of strategies to detect and subdue victims (Bourke et al., 2012; O’ Ciarda, 2015; Ward, 1999). Criminal expertise research has nonetheless focused on identifying “domain-

specific” or specialized skills. Yet, in addition to domain-specific expertise, Nee et al. (2019) also proposed the notion that some types of offending may also require similar skillsets, allowing a type of “transferrable” or “overlapping” expertise. For example, Chapter 1 findings provide evidence that sexual burglary involved domain-specific skills, however, both sexual burglary and robbery shared similar skills in the pre-crime phase (e.g., victim and location selection) related to the interpersonal nature (i.e., high level of victim-offender interaction) of these offenses as well. Despite Nee et al.’s (2019) suggestion of this possibility, this yet to be an area directly tested in the expertise literature. Thus, findings from Chapter 1 provide another key motivation for this second study. More specifically, examining within group variations of expertise in both domains can help to clarify the extent that expertise is domain-specific (i.e., possessing unique skills that differentiate them from other domains) or whether there are overlapping expertise subgroups that are similar skills across domains (i.e., transferable expertise) or a lack skills entirely (i.e., novices). In doing so, the expertise perspective can contribute to new perspectives on the specialization and generalization debate through an examination of offense skills and competencies behaviors.

3.4. The Current Study

The current study therefore aims to build upon Chapter 1 by exploring differences in latent subgroups of criminal expertise (i.e., between novices to expert) in both sexual burglary and sexual robbery. As with Chapter 1, this study will focus on capturing criminal expertise through the crime-commission process because it provides an objective and systematic way to measure behavioural indicators of expertise that allows for comparisons between studies. The expertise literature (e.g., Bourke et al., 2012; Nee & Ward, 2015a; Ó Ciardha, 2015; Ward, 1999;) as well as empirical studies on skilled decision-making and criminal sophistication in sexual offending (e.g., Beauregard & Proulx, 2017; Chopin et al., 2019; Davies, et al., 1997; Park et al., 2008), burglary (e.g., Nee, 2015; Nee & Meenaghan, 2006; Nee & Taylor, 2000) and robbery (e.g., Deakin et al., 2007; Wright & Decker, 2002) are utilized to formulate behavioral indicators of expertise.

3.5. Method

3.5.1. Sample

This study is based on a sample of 869 solved (i.e., a suspect has been charged and apprehended by police) hybrid stranger sexual assault and forcible theft/burglary cases against female victims in France between 1992 and 2018. Cases included in the present study must include a sexual assault (i.e., a contact sexual offense) and involve either a (1) burglary (break-and-enter + theft) or (2) robbery (forcible theft only). All cases are single-incident sexual offenses (i.e., there are no detected serial sexual offenders in the sample). Only solved cases were examined in order to include the personal characteristics of the sample and because the focus is on behavioral manifestations of criminal expertise during the crime-commission process and not the actual outcome of this process (i.e., whether the case was solved or unsolved). Additionally, only stranger sexual assaults are included, not only because these cases tend to be more difficult for police to solve (e.g., Bouffard, 2000), but because acquaintance rapes have been found to have distinctive offending patterns from stranger rapes (see Bownes et al., 1991; Koss et al., 1988). Differences in victim-perpetrator relationships could therefore impact how expertise manifests behaviorally (e.g., target appraisal, victim control methods, whether a person takes steps to protect their identity, etc.).

It is also important to note that there were no significant statistical association related to the date of the offense occurring more recently and the use of forensic awareness strategies (i.e., protecting identity and destroying/removing evidence)⁷. Although missing data is possible, for the current study there are no missing data for any of the variables used.

3.5.2. Analytical Strategy

The analytical strategy included a two-step process. First, to determine the extent that criminal expertise behaviors vary for both sexual burglary and sexual robbery, latent

⁷ The date of the offense against each of the subgroups identified through latent class were also examined. None of the latent subgroups of criminal expertise were significantly associated with the date of the offense, with the exception of the group 1 and group 2 in sexual robbery offenses. In these cases, group 1 was significantly associated with a later offense date ($M = 2007.60$, $SD = 2.93$) compared to group 2 ($M = 2005.39$, $SD = 6.60$).

class analysis (LCA) using Latent Gold V5.1 software package was employed. LCA is a statistical procedure used to identify heterogeneity that is not directly observable or measurable and therefore can be used to detect patterns in a set of data or subgroups based on shared behavioral characteristics (Collins & Lanza, 2010). More specifically, LCA is to identify mutually exclusive cases (i.e., with no overlap) on the basis of dichotomous indicator variables (Lanza et al., 2003; 2007). LCA is similar to cluster analysis but provides stronger models because it attributes class membership probabilities to each individual case. One-to-seven class solutions were computed and analyzed for both samples separately (see table 1 and 2). The Bayesian Information Criterion (BIC) was used to evaluate the model fit and determine the number of classes to use in LCA. Schwartz (1978) mentioned that a lower BIC value indicates an improvement in the fit of models. Other fit measures were also used: log likelihood, likelihood ratio L^2 , degrees of freedom, Akaike Information Criterion (AIC) and entropy. In the second step, additional variables were added to improve the depth of the present models. Bivariate analysis (i.e., Chi-square analysis and Kruskal Wallis Test) and post-hoc testing was then used to identify significant differences between the subgroups.

Indicator Variables

On the basis of previous studies, 11 dichotomous variables (0 = no, 1 = yes) were selected related to criminal expertise and sophisticated modus operandi in sexual offending in order to identify underlying patterns or subgroups of individuals (Beauregard et al., 2012; Bourke et al., 2012; Chopin et al., 2021; Park et al., 2008; Ward, 1999). Apart from (1) whether the offender has a previous criminal history (i.e., had a previous charge or conviction), these behaviors have been grouped into 6 behavioral themes directly related to the crime-commission process. The *Planning* theme includes, (2) victim was targeted (i.e., selected based on specific characteristics); (3) offender brought a weapon to the offense. The *Precautions* theme includes, (4) offender acted on environment (i.e., offender took precautions specific to their surroundings, such as disabled the alarm/phone, blocked exits, etc.); (5) acted on victim (i.e., took precautions specific to the victim, such as blindfolding or gagging the victim, threatening not to report, using restraints, etc.); (6) protected identity (e.g., wore a mask, disguise, or gloves). The *Sexual Acts* theme includes, (7) vaginal/anal intercourse. The *Violence* theme includes, (8) non-sexual manual violence (e.g., beating, choking, crushing); (9) weapon used (e.g., knife, gun, blunt object). The *Control* theme includes (10) victim was

intentionally released by offender. And lastly, the *Forensic Awareness* theme includes (11) destroyed or removed forensic evidence.

Additional Variables

To provide a more comprehensive understanding of the different subgroups of criminal expertise, as well as to provide external validity to the subgroups, additional variables focused on victim, offender, and location characteristics were also examined.

Victim Characteristics

Victim characteristics included one continuous variable: (1) Age of victim ($M = 35.04$, $SD = 18.38$, range = 14-94) and two dichotomous variables (0 = no, 1 = yes): (2) single (3) used drugs or alcohol prior to crime. Studies have shown that more criminally sophisticated offenders tend to target their victims, especially those who are vulnerable (e.g., Beauregard & Proulx, 2017; Wright & Decker, 2002).

Offender characteristics

Offender characteristics included one continuous variable: (1) age of offender ($M = 28.59$, $SD = 8.43$, range = 16-71) and four dichotomous variables (0 = no, 1 = yes): (2) married/common-law; (3) has a sexual dysfunction; (4) has paraphilic behaviors (5) possessed a pornography collection. Variables 1 to 2 were based on previous studies that suggest criminally sophisticated sexual offenders will be older and socially adept (e.g., Bourke et al., 2012; Ward, 1999). Variables 3 to 5 were included to provide greater insight into the offender's sexual history and the role this may play in the development of skilled behaviors during the crime-commission process. For instance, studies have suggested that different mechanisms (e.g., sexual fantasies; pornography consumption) allow for the development of offense related skills and knowledge as they can serve as way to practice, plan, or mentally rehearse offenses (Bourke et al., 2012; Ó Ciardha, 2015; Ward, 1999).

Location Characteristics

Location included two dichotomous variables (0 = no, 1 = yes): (1) location was familiar to offender; (2) offender selected a deserted location (i.e., where witnesses are unlikely to hear, see, or interrupt the crime). These variables were included based on previous studies which have suggested that offenders with greater expertise tend to

target locations where there is a lower risk of detection and that are familiar to them to enable quicker getaways (Nee, 2015).

3.6. Results

A four-class solution provided the best overall fit for both the sexual burglary and sexual robbery data (see table 3.1. and table 3.2.). The Bayesian information criterion (BIC; Schwartz, 1978) is a penalized log-likelihood model information criteria that can be used to compare competing model fit to the same data (i.e., models with different numbers of latent classes). For sexual burglary and robbery, the BIC decreases up to 4-classes, and the addition of more classes provides no improvement to model fit. AIC values decreased slightly after model 4 for both samples, however, parsimony was favoured to improve interpretability of the models. Moreover, the final 4-class models selected for both samples presented high classification accuracy (entropy) based on posterior probabilities, confirming its stability and relevance. Table 3 and table 4 shows, for each latent subgroup, the assigned probability of membership as well as the item-response probabilities for each subgroup. The item-response probabilities vary for 0 to 1.00; item-response probabilities closer to 1.00 indicates the presence of the item for the class. Item-response probabilities falling between .45 to .63 were interpreted as somewhat arbitrary presence of the items (Deslauriers-Varin & Beauregard, 2010). Additional bivariate analyses were computed for dichotomous (Chi Square test) and continuous (Kruskal-Wallis test) variables, to test for differences between latent class subgroups for both sexual burglary (Table 3.5.) and sexual robbery (Table 3.6.). Finally, post hoc testing was conducted using z tests to compare subgroups for statistically significant differences (see Table 3.5. and 3.6.). Bonferroni correction method was used for each row to control for Type 1 error (Sharpe, 2015).

Table 3.1. Fit indices for latent classes: sexual burglary

Nb of classes	Log Likelihood	L ²	df	BIC	AIC	Entropy
1	-2599.75	1178.38	380	5221.50	5265.16	1.00
2	-2414.66	808.19	368	4966.59	4875.31	0.91
3	-2362.58	704.04	356	4934.07	4795.16	0.83
4	-2326.13	631.13	344	4932.78	4746.26	0.81
5	-2309.70	598.28	332	4971.55	4737.40	0.82
6	-2297.73	574.34	320	5019.24	4737.46	0.84
7	-2289.29	557.45	308	5073.97	4744.57	0.81

Table 3.2. Fit indices for latent classes: sexual robbery

Nb of classes	Log Likelihood	L ²	df	BIC	AIC	Entropy
1	-2979.62	1297.14	467	6027.12	5981.25	1.00
2	- 2691.62	721.12	455	5525.14	5429.24	0.96
3	- 2635.07	608.02	443	5486.08	5340.14	0.89
4	- 2597.08	532.04	431	5484.13	5288.16	0.87
5	-2580.33	598.53	419	5524.67	5278.66	0.86
6	-2572.25	482.38	407	5582.55	5286.51	0.88
7	-1972.75	464.25	395	5638.44	5292.37	0.84

3.6.1. Latent Criminal Expertise Subgroups

Novices

Sexual Burglary – Class 1 (29.4%). This subgroup was classified as “novice” due to the lack of planning, precautions, and sexually intrusive acts associated with this group (see table 3.3 for details). This subgroup also had the lowest likelihood of previous convictions (0.19) compared to the other sexual burglary subgroups. They were also characterized by not bringing a weapon to the offense (0.05), and they were the least likely subgroup to have intentionally released their victim (0.63) or to have destroyed or removed evidence (0.06). This subgroup was also the youngest ($M = 27.0$, $SD = 7.1$) relative to other subgroups, although this association was only approaching significance ($\chi^2(3) = 7.68$, $p = .053$). Additionally, bivariate analysis (see table 5) indicated that this subgroup was most likely to have victims who used drugs or alcohol prior to the offense (20.0%) compared to Class 3 and 4 ($\chi^2(3) = 14.34$, $p = .002$, $\phi = .192$). Offenders in this

subgroup also selected a deserted location at the lowest frequency (47.8%), compared to class 4 ($\chi^2 (3) = 11.79, p = .008, \phi = .174$).

Sexual Robbery – Class 1 (37.9%). This is the largest subgroup observed among sexual robbery and is classified as “novice” due to the lack of planning, precautions, and sexually intrusive acts associated with this group (see table 3.4. for details). They were also characterized by never bringing a weapon to the offense (0.00), and they are the least likely subgroup to have intentionally released their victim (0.65) and never destroyed or removed evidence (0.02). This subgroup also has a low likelihood of previous convictions (.20) although this is comparable to the average odds for the sample of sexual robbers (0.20). Bivariate analysis (see table 5) indicated that offenders in this subgroup were significantly less likely to have a sexual dysfunction (5.0%) compared to other classes ($\chi^2 (3) = 21.01, p < .001, \phi = .210$). This subgroup was most likely to have victim who used drugs or alcohol prior to the offense (15.5%), compared to Class 2 ($\chi^2 (3) = 15.04, p = .002, \phi = .177$). Offenders in this subgroup selected a deserted location at the lowest frequency (48.1%) compared to Class 3 and 4 ($\chi^2 (3) = 24.37, p = < .001, \phi = .226$).

Intermediate – manual violence

Sexual Robbery – Class 2 (17.2%). This represents the smallest subgroup in sexual robbery and is characterized as “intermediate” due to their precautions taken related to acting on the victim (0.99) and the high likelihood of sexually intrusive acts (0.75). This subgroup is labelled as “manual violence” because they never brought a weapon to the offense (0.00) but had the highest odds of non-sexual violence against the victim (0.41). The likelihood of offenders in this subgroup to have previous convictions (0.13) was the lowest among subgroups (see table 4 for more details).

Sexual Burglary – Class 2 (30.9%). This is the largest subgroup for sexual burglary and is characterized as “intermediate” due to their precautions related to acting on their victim (0.99) and the high likelihood of sexually intrusive acts (0.77). This subgroup was labelled as “manual violence” because they never brought a weapon to the offense (0.00) and the highest odds of non-sexual violence (0.42), relative to other subgroups. This subgroup was very likely to intentionally release their victim (0.87) and although unlikely, they destroy or remove evidence (0.23) at the second highest rate

among sexual burglary subgroups (see table 3 for more details). The likelihood of offenders in this subgroup to have previous convictions (0.23) was lower than both class 3 and 4 (see table 3 for more details).

Intermediate – weapon related

Sexual Robbery – Class 3 (19.0%). This subgroup is characterized as “intermediate- weapon related” due to the weapon use and some planning/precautions (see table 4 for more details). This group lacked precautions (see table 3.4. for details), but sometimes protect their identity (0.41). They are very likely to have brought a weapon (0.94) and to have used it (0.99) during their crime. Sexually intrusive acts only sometimes occurred (0.57), and they never destroyed or removed evidence (0.02).

Sexual Burglary – Class 3 (22.3%). This subgroup was characterized as “intermediate- weapon related” by their weapon use and some planning and precautions (see table 3.3. for more details). This subgroup was the most likely among sexual burglary to have a history of previous convictions (0.35). They were very likely to have brought a weapon (0.88) and to have used it (0.99) during their crime. They were likely to commit sexually intrusive acts (0.69) although this is the lowest odds for all sexual burglary subgroups. They were also unlikely to have destroyed or removed evidence (0.12).

Expert

Sexual Robbery – Class 4 (25.9%). This subgroup is labelled as “expert” as they were the most likely subgroup in sexual robbery to take precautions (see table 4 for details) and always brought a weapon with them to their offense (0.99). This group was the most likely to commit sexually intrusive acts (0.75) and to intentionally release their victim (0.85). Lastly, although odds remain low, this subgroup were the most likely among sexual robbery to have destroyed or removed evidence (0.17). This subgroup is also the most likely to have a history of previous convictions (0.26) compared to other subgroups. This subgroup is also associated with offenders who selected deserted locations (75.0%), compared to the “novice” sexual robbery subgroup (class 1) ($\chi^2(3) = 24.37, p = <.001, \phi = .226$).

Sexual Burglary – Class 4 (17.4%). This was the smallest subgroup in sexual burglary but is characterized as “expert” as they are the most likely subgroup to show

evidence of expertise across the pre-crime, crime, and post-crime phases. Planning is evident in that they have a high probability of having taken all forms of precautions (see table 3 for details). They were likely to have engaged in intrusive sexual acts (0.75) but unlikely to have used non-sexual violence (0.18). This subgroup was most likely to intentionally release their victims (0.87) and to destroy and remove evidence (0.47). This subgroup was the second most likely to have a history of previous convictions (0.27) compared to other sexual burglary subgroups. In terms of bivariate findings, offenders in class 4 were the oldest ($M = 30.8$, $SD = 9.3$), although this association is only approaching significance: $\chi^2(3) = 7.68$, $p = .053$. Offenders in this subgroup were also associated with having a sexual dysfunction (42.6%) compared to the other classes ($\chi^2(3) = 27.73$, $p = <.001$, $\phi = .226$) and a pornography collection (26.5%) compared to other classes ($\chi^2(3) = 34.72$, $p = <.001$, $\phi = .298$). This subgroup was also associated with offenders who selected a deserted crime location (72.1%) compared to Class 1-novice ($\chi^2(3) = 11.79$, $p = .008$, $\phi = .174$).

Table 3.3. Profile of four latent sexual burglary classes: Mean probabilities of criminal expertise characteristics based on class membership

		Novice	Intermediate	Intermediate	Expert	
		Class 1	Class 2	Class 3	Class 4	Overall
		0.31	0.28	0.22	0.19	1.00
		N = 115	N = 121	N = 87	N = 68	391
Criminal Expertise	Indicator Variables					
Criminal history	Previous convictions	0.19	0.23	0.35	0.27	0.25
Planning	Victim targeted	0.19	0.23	0.21	0.40	0.25
	Weapon brought	0.01	0.00	0.88	0.83	0.36
Precautions	Acted on environment	0.00	0.46	0.00	0.80	0.28
	Acted on victim	0.22	0.99	0.62	0.99	0.68
	Protected identity	0.21	0.40	0.37	0.68	0.39
Sexual acts	Vaginal/Anal intercourse	0.51	0.77	0.69	0.75	0.67
Violence	Non-sexual (manual) violence	0.30	0.42	0.30	0.18	0.31
	Weapon used	0.05	0.19	0.99	0.99	0.48
Control	Victim intentionally released	0.63	0.87	0.79	0.87	0.78
FAS	Destroyed or removed evidence	0.06	0.23	0.12	0.47	0.20

Table 3.4. Profile for four latent sexual robbery classes: Mean probabilities of criminal expertise characteristics based on class membership

		Novice	Intermediate	Intermediate	Expert	Overall
		Class 1	Class 2	Class 3	Class 4	
		0.39	0.16	0.22	0.23	1.00
		N = 181	N = 82	N = 91	N = 124	478
Criminal Expertise	Indicator Variables					
Criminal history	Previous convictions	0.20	0.13	0.19	0.26	0.20
Planning	Victim targeted	0.12	0.16	0.19	0.21	0.16
	Weapon brought	0.00	0.00	0.94	0.99	0.44
Precautions	Acted on environment	0.00	0.53	0.00	0.35	0.17
	Acted on victim	0.19	0.99	0.14	0.99	0.50
	Protecting identity	0.18	0.27	0.41	0.51	0.32
Sexual acts	Vaginal/Anal intercourse	0.49	0.75	0.57	0.75	0.61
Violence	Non-sexual (manual) violence	0.31	0.41	0.30	0.22	0.30
	Weapon used	0.01	0.21	0.99	0.99	0.49
Control	Victim intentionally released	0.65	0.75	0.67	0.85	0.72
FAS	Destroyed or removed evidence	0.02	0.11	0.02	0.17	0.07

Table 3.5. Bivariate associations between offender, victim, and location characteristics and sexual burglary latent classes

	Class 1	Class 2	Class 3	Class 4	
	29.4%	30.9%	22.3%	17.4%	
	115	121	87	68	
	N (%)	N (%)	N (%)	N (%)	Test Statistic
Offender characteristics					
Age ^{ab}	29.1 (9.9)	28.0 (6.9)	27.0 (7.1) ⁴	30.8 (9.3) ³	7.68 [†]
Married/common-law	17 (14.8)	15 (12.4)	20 (23.0)	8 (11.8)	5.42
Any sexual dysfunction	12 (10.4) ⁴	26 (21.5) ⁴	15 (17.2) ⁴	29 (42.6) ^{1,2,3}	27.73 ***
Any paraphilias	25 (21.7)	18 (14.9)	12 (14.9)	16 (23.5)	3.74
Pornography collection	6 (5.2) ⁴	5 (4.1) ⁴	4 (4.6) ⁴	18 (26.5) ^{1,2,3}	34.72 ***
Victim characteristics					
Age ^{ab}	37.7 (19.4) ³	37.6 (20.8) ³	30.2 (12.8) ^{1,2}	32.2 (16.5)	6.53 [†]
Single/unmarried	29 (25.2)	44 (36.4)	33 (37.9)	27 (39.7)	5.84
Used drugs/alcohol prior to offense ^c	23 (20.0) ^{3,4}	14 (11.6)	5 (5.7) ¹	3 (4.4) ¹	14.34 **
Location					
Location was familiar to offender	31 (27.0)	26 (21.5)	15 (17.2)	18 (26.5)	3.26
Offender selected a deserted location	55 (47.8) ⁴	72 (59.5)	56 (64.4)	49 (72.1) ¹	11.79 **

Note [†] = 0.10; p = <.05 *, <.01 ***, <.001 ****; a = Mean (SD); b = Kruskal Wallis Test; c = Fisher's Exact Test.; ¹ = indicates significant difference with Class 1; ² = significant difference with Class 2; ³ = significant difference with Class 3; ⁴ = significant difference with Class 4

Table 3.6. Bivariate associations between offender, victim, and location characteristics and sexual robbery latent classes

	Class 1	Class 2	Class 3	Class 4	
	37.8%	26.1%	19.0%	17.1%	
	181	125	91	82	
	N (%)	N (%)	N (%)	N (%)	Test Statistic
Offender characteristics					
Age ^{ab}	28.7 (8.9)	28.6 (7.8)	28.4 (7.8)	28.29 (7.3)	0.05
Married/common-law	38 (21.0)	24 (20.0)	18 (19.8)	16 (19.5)	0.16
Any sexual dysfunction	9 (5.0) ^{1,2,3}	27 (21.8) ¹	17 (18.7) ¹	15 (18.3) ¹	21.01 ***
Any paraphilias	30 (16.6)	21 (16.9)	17 (18.7)	15 (18.3)	0.13
Pornography collection ^c	7 (3.9)	12 (9.7)	8 (8.8)	3 (3.7)	6.16
Victim characteristics					
Age ^{ab}	28.9 (13.7)	27.9 (11.3)	27.3 (11.8)	27.8 (12.2)	0.44
Single/unmarried	68 (37.6)	48 (38.7)	38 (41.8)	25 (30.5)	2.50
Used drugs/alcohol prior to offense ^c	28 (15.5) ²	4 (3.2) ¹	5 (5.5)	10 (12.2)	15.04 ***
Location					
Location was familiar to offender	88 (48.6)	51 (41.1)	49 (53.8)	30 (36.6)	6.85 [†]
Offender selected a deserted location	87 (48.1) ^{2,4}	93 (75.0) ¹	59 (64.8)	54 (65.9) ¹	24.38 ***

Note [†] = 0.10; p = <.05 *, <.01 ***, <.001 ***; a = Mean (SD); b = Kruskal Wallis Test/F statistic; c = Fisher's Exact Test. ¹ = indicates significant difference with Class 1; ² = significant difference with Class 2; ³ = significant difference with Class 3; ⁴ = significant difference with Class 4

3.7. Discussion

The current study examined latent subgroups of criminal expertise in both sexual burglary and sexual robbery. The current findings supported existing research indicating that criminal expertise varies from novice to expert between offenders within the same domain (Bourke et al., 2012; Chopin et al., 2021; Clare, 2011; Nee & Meenaghan, 2006). More specifically, findings revealed “expert” subgroups for both domains whose offense related competencies were distinctive from “novice” and “intermediate” subgroups. By examining the heterogeneity of criminal expertise in both samples, it was also possible to expand on Chapter 1 findings to offer more insight into differences into motivation of these hybrid offenses (i.e., primarily sexual or theft related motives) as well as highlight the differences in decision-making along the expertise continuum (i.e., from novice to expert). Moreover, by examining two hybrid offending domains that shared overlapping characteristics (i.e., theft and sexual offense elements), this offered insight into whether there was “transferrable expertise” (Nee et al., 2019) related to the interpersonal violent nature of these crimes (i.e., a high level of victim-offender interaction) as well as whether there are domain-specific “experts” in sexual burglary and sexual robbery. Each of the latent criminal expertise subgroups and their theoretical and practical implications are discussed in the following subsections.

3.7.1. Continuum of Expertise

Novices

Findings revealed a novice subgroup for both sexual burglars (29.4%) and sexual robbers (37.8%) that were best characterized by their lack of skill, planning, and the absence of sophisticated behaviors over the entire crime-commission process. The fact that novices also did not bring a weapon to their offense suggests a lack of planning and preparedness for an offense that requires a high level of victim-offender interaction. Thus, it appears that offenders in the novice subgroups were either not concerned with, or did not yet possess the necessary skills, to reduce their risk of apprehension.

These findings are similar to the novice rapist found by Chopin et al. (2021) who was described as having a basic modus operandi and the absence of forensic awareness strategies. For both sexual burglary and sexual robbery, novice subgroups

were the least likely to have selected a deserted crime scene location (where there is less risk of being seen or heard) or target their victims, suggesting that they lack target appraisal skills that are found in more experienced burglary (e.g., Nee & Meenaghan, 2006; Wright et al., 1995) and robbery offenders (e.g., Deakin et al., 2007, Wright & Decker, 2002) and even sexual offenders (e.g., Rossmo, 2000). Moreover, victims of novice subgroups were more likely to be under the influence of alcohol, suggesting that “novice” offenders simply acted on an opportunity to victimize a vulnerable victim with little thought to the long-term consequences (i.e., apprehension). As a whole, it is the novice subgroup that closely align with the assertion made by Hirschi (1986) that offenders are “not very good at what they do” (pg. 115-116). Taken with their novice skill set, these findings suggest novice offenders may lack experience in both domains (i.e., sexual offending and/or burglary/robbery).

Intermediates

Robbery Subgroup (19.0%)- Weapon Related. Offenders in this subgroup always brought and used a weapon but only sometimes took precautions to protect their identity and they never destroyed or removed evidence. As such, it is possible that these offenders were in a “state of readiness” (Nee, 2015) – or exhibited “premeditated opportunism” (Rossmo, 2000) – for a violent encounter and chose to both sexually assault and steal from their victim because the conditions allowed for both with little increased risk. Taken together with the lower likelihood of sexually intrusive acts occurring (relative to other subgroups) and the lack of precautions taken to control the victim, this suggests that robbery may have been the primary motivation and the sexual assault occurred as an afterthought or “bonus” to the robbery.

Burglary Subgroup (22.3%)– Weapon Related. Offenders in this subgroup always brought and used a weapon, suggesting that they are expecting to encounter a victim during the burglary, yet they only sometimes take precautions to reduce the risks associated with offending. This represents an interesting subgroup of sexual burglary because weapon use among sexual offenders is typically rare (Beauregard & Leclerc, 2007). Considering that this subgroup was the most likely among sexual burglary to have a history of previous conviction, these findings may be indicative of previous experience with violent offending. For instance, weapon use among sexual burglars has been linked with more serious and violent criminal careers (Delisi, et al., 2017; Vaughn

et al., 2008). This subgroup is consistent with the “versatile” contact sexual burglaries subgroup found in Pedneault et al. (2012), which were similarly characterized by theft, violence, and weapon-use.

Robbery Subgroup (17.2%)- Manual Violence. This is the smallest sexual robbery subgroup, who are best characterized by their manual acts of violence and precautions related to acting on the victim (e.g., blindfolding, gagging), presumably as a way to control their victim. The fact that they never brought or used a weapon during their offense is an important finding as this contrasts the typical “robbery” offender with theft motivations (e.g., Smith, 2003). Beauregard and Leclerc (2007) have shown that only a minority of sexual offenders use a weapon to commit their crime, because it is either not necessary, the crime was not planned, or the use a weapon was not compatible with their fantasies. Thus, it is possible that this subgroup’s primary motivation was sexual, and the theft occurred out of opportunity. For instance, this group bears similarities to the “angry rapist”, whose goal is to express contempt for their victim through physical violence and typically acts to overpower the victim and achieve penetration (Groth, 1979).

Burglary Subgroup (30.9%)- Manual Violence. This subgroup is the largest in the present sample of sexual burglary offenses. Offenders in this subgroup are best characterized by their skilled behaviors, particularly related to maintaining control of their victim as well as a greater likelihood of both nonviolent and sexually intrusive acts (i.e., vaginal/anal penetration). Offenders in this subgroup do not engage in a high-level of planning (i.e., never bring a weapon and rarely target victims) but always take precautions that are specific to acting on the victim (e.g., blindfolding/gagging the victim). Outside of the expert sexual burglary subgroup, this subgroup is the most likely to protect their identity and act on their environment. Thus, it appears that offenders this subgroup were fully expecting to break-and-enter a location where a victim was present. Thus, it appears that offenders in this subgroup were highly likely to be sexually motivated and took the opportunity to steal from the victim because of opportunity, which is consistent with sexually motivated burglaries in Pedneault et al. (2015a).

Experts

Sexual Robbery (25.9%). This subgroup is labelled as sexual robbery “experts” as they are distinctive from both novices and intermediate sexual robbery subgroups in

terms of offense related competencies over the crime-commission process. More specifically, this subgroup is best characterized by violence related to weapon-use, and skilled behavior needed for the commission of a violent offense, including the ability to maintain control of the victim and selecting a low-risk location. Interestingly, skills related to the pre-crime phase (i.e., victim and location selection) have been observed in burglary offenders (see Nee, 2015 for a review), sexual offenders (Rossmo, 2000), and experienced street robbers (e.g., Deakin et al., 2007; Smith, 2003; Wright & Decker, 2002), suggesting a type of “overlapping” expertise (Nee et al., 2019). Thus, although these offenders may be “experts” in sexual robbery relative to novice and intermediates, they do not appear to have “domain-specific” expertise related to sexual offending. In other words, they do not possess the same level of detection avoidance competencies found in adult rape (Chopin et al., 2021), serial sex offenders (Park et al., 2008) or the “expert” sexual burglary offenders in the current study. Rather, they appear to have expertise in violent offending – this allows their skills to “overlap” or “transfer” across domains - enabling them to offend with “dysfunctional expertise” in domains that involve a high degree of victim-offender interaction.

Sexual Burglary (17.4%). This subgroup, although the smallest, is arguably the most clinically relevant because it is the subgroup that is most closely aligned with conceptualizations of an “expert” offender who possess “domain-specific” or “specialized” skills and knowledge in their domain. According to Ward (1999), an expert in sex offending will strategize for how to select a victim, how to plan and successfully carry out an offense, how to avoid detection, and how to respond to various contingencies, such as victim resistance. Thus, findings support the notion of behavioral manifestations of expertise across the crime-commission process for this sexual burglary subgroup. Moreover, the experts in sexual burglary closely resemble the findings of Chopin et al. (2021) who found that “experts” in adult rape had both a sophisticated modus operandi and the use of specific strategies to increase their odds of eluding police detection. In particular, the act of destroying and removing evidence is associated with of a more experienced and sophisticated sexual offender (Park et al., 2008) and was most likely among the “expert” sexual burglary subgroup. Taken with other behaviours indicative of an offender who is expected to encounter a victim, this suggests that “experts” in sexual burglary are likely to be sexually motivated and thus committed theft as a “bonus” to the burglary (Pedneault et al., 2015a).

Additionally, several findings help to shed light onto the development of expertise in this subgroup. Although odds of prior convictions were relatively low (although second most among sexual burglary subgroups) these offenders were considerably older than novice sexual burglary offenders. According to Ward (1999) expert offenders will be older, as they will have learned strategies to avoid detection over the course of their criminal career. Thus, presence of detection avoidance skills therefore provides an indication that these offenders have learned from prior offense experience and may prior undetected sexual offenses (Ward, 1999). For instance, the fact that “expert” sexual burglary offenders all stole items from their victim may also be an indication that those who become “experts” in sexual burglary may start with burglary, or even fetish break-ins. Indeed, burglary has been suggested as a “gateway” towards sexual offending, and studies have found a link between burglary and escalation in dangerous offending (e.g., Delisi et al., 2017; Harris et al., 2013; Pedneault et al., 2015b).

Interestingly, it is also observed that offenders in this subgroup were the most likely to possess a pornography collection and have a sexual dysfunction. Frequent masturbation to deviant sexual fantasies has been argued to provide a form of emotional reinforcement and practice through mental rehearsal (Nee & Ward, 2015a). This is consistent with Bourke et al. (2012), which found that this process allowed expert child sexual offenders to refine their modus operandi tactics before implementing them. Specifically, reinforcement of sexual fantasies through masturbation was associated with heightened sexual desire in general, and also strengthened desires for specific victims as well (Bourke et al., 2012). As such, the sexual burglary subgroup may have obtained “specialist” knowledge and skills relevant to sexual offending as a function of both direct and indirect learning and experience.

3.7.2. Theoretical Implications

By examining differences in the heterogeneity of expertise in both sexual burglary and sexual robbery the current study revealed important differences in decision-making processes between “novice” and “expert” subgroups. In other words, it is possible to extend decision-making theoretical perspectives by providing better understanding the psychological mechanism involved in the commission of a crime (Nee et al., 2019). For instance, dual-systems perspectives (e.g., Kahneman, 2011) suggests that risk-taking behaviors like committing a crime involves the operation of two distinct

but interconnected systems - one of which is the immediate reward system and is focused on the “here and now” - and a second system that involves rational, deliberate, future-oriented and directed at longer term objectives (Kahneman, 2011). In terms of criminal decision-making, these processes are often described as “hot” and “cool” modes (Van Gelder, 2013).

Interestingly, both sexual robbery and sexual burglary had a subgroup of “novices” who presented a more impulsive and opportunistic crime-commission process, indicative of a person whose decision to offend operates primarily on “short-term” rewards or “hot” modes. Thus, it appears that decision-making processes involved in “novice” subgroups was more affected by the “here and now”, as evidenced by opportunism and lack of precautions and detection avoidance strategies. Similarly, findings revealed subgroups of intermediate offenders, who appeared to be engaging in “myopic” decision-making processes (e.g., Pedneault et al., 2017). More specifically, the crime-commission process of intermediate offenders in both domains were characterized by only taking some precautions to avoid detection in crime phase (e.g., protecting their identity or acting on the victim) and not engaging in more long-term reward strategies (e.g., destroying and removing evidence). Similar to other studies of rationality in sexual crimes (e.g., Pedneault et al., 2017) this suggests that offenders were moderately concerned with detection avoidance, but likely prioritized the need for immediate material gain (i.e., monetary or sexual) over the risks of being detected.

Conversely, “expert” subgroups appear to be oriented towards longer term objectives that are more in line with “cool” modes of decision-making (Kahneman, 2011; Van Gelder, 2013). For example, the pre-crime and crime phases of the “expert” sexual robbery subgroup was characterized by more rational and deliberate decision-making (i.e., “target appraisal” skills). This type of decision-making is characterized as more automatic and instantaneous (e.g., Kahneman, 2011) and thus may enable them to “function well” even in domains where they may not have extensive experience (i.e., committing a sexual assault against a stranger). Thus, although sexual robbery “experts” did not show strong evidence of “domain-specific” expertise in sexual offending, some clearly have developed specific violent offense related skills oriented around their desire to maximize rewards (i.e., monetary, sexual) while minimizing risks of detection.

Lastly, the “experts” in sexual burglary represent a unique subgroup who most closely resembles a domain-specific “expert” (i.e., someone who has developed specialized skills in sexual burglary specifically). These are similar decision-making processes that have been described in burglary (Nee & Meenaghan, 2006) and persistent child sexual offending (Ward, 1999; Bourke et al., 2012), and can be reflected in actions taken during the crime-commission process such as planning, identification of targets, conducting risk appraisal, and taking steps to avoid detection throughout the crime-commission process (Nee & Ward, 2015a; Ward, 1999). This provides important insight into the underlying decision-making processes involved for “experts” in sexual burglary, which appears to be more future-oriented, deliberate, and directed towards the longer-term objective of avoiding detection for a sexually motivated crime. Nonetheless, all “experts” in the study were eventually caught by the police. It is important to note that this does not necessarily mean that unapprehended offenders would show evidence of greater expertise than the “expert” subgroups, but more so, indicates that offenders are not solely capable of relying on their abilities and skills to avoid detection. Factors such as cognitive biases (Dror, 1999), errors in judgement (Chi, 2006), risky decision-making (Weinborn et al. 2013) and even the offender’s affect prior to the crime (Van Gelder et al., 2013) may all impact the decision-making process during the commission of the crime.

3.7.3. Practical Implications

In terms of practical implications findings highlight the importance of accounting for offense related competencies to better understand the heterogeneity of offenders. As mentioned by Ward (1999), expertise can facilitate offending behaviours, thus a better understanding of expertise and its cognitive, behavioural, and affective mechanisms are important for understanding the commission of an offense, as well as how future offenses can be prevented. For instance, Bourke et al. (2012) suggest that late onset or less experienced offenders may be easier to treat because their offense-related knowledge, skills, and interpretation of their offense are not as well established compared to more expert offenders, and thus may be easier to disrupt. This is important to consider in the context of the current findings, as a large proportion of sexual robbery was classified as “novice” (37.8%). Similarly, for sexual burglary, the identification of “novice” subgroup (29.4%) is important because detecting offenders at early stages of

their criminal career may be able to encourage desistance before expertise accrues (Nee, 2015). This stresses the importance of breaking down the offence process to micro decisions and their consequences, as this could aid clinicians in identifying maladaptive coping strategies and areas where poor coping responses may trigger future offending (Bourke et al. 2012).

On the other hand, “experts” in sexual burglary comprise of nearly 20% of the overall sexual burglary sample. Although stranger sexual burglary offenses are rare, offenders who demonstrate expertise in detection avoidance, like the “experts” in sexual burglary, are also thought to be among the most coercive and controlling subset of interpersonally violent offenders, have better emotional regulation, and the most entrenched and embedded schemes (Fortune et al. 2015). Thus, due to the accumulated expertise, this subgroup may be the most difficult to treat (Ward, 1999). As noted by Ward (1999), “the tendency for some sexual offenders to progress to more violent, intrusive, and severe forms of sexual violence may be partially a function of their increased ability to do so” (pg. 303). Considering the association that sexual burglary has with escalation in sexual dangerous, to even more violent forms of offending, such as sexual homicide (e.g., Sheslinger & Revitch, 1999; Vaughn et al., 2008) these offenders may represent a significant group for clinical intervention and rehabilitation. Lastly, findings could also help to improve assessment and treatment for sexual crimes that are hybrid in nature. For example, both sexual robbery and sexual burglary had a subgroup that appeared to be primarily sexually motivated and may require different treatment and management needs than opportunistic “novices”. Moreover, sexual robbery experts, and intermediate subgroups characterized by weapon-use may be high-risk for chronic violent offending. For example, armed burglary has been associated with severe forms of violent offending, such as kidnapping, armed rape, armed, robbery, and first-degree murder (Delisi et al., 2017). Thus, by examining an offender’s “expertise” practitioners may be in a better position to understand the vulnerabilities or cues that may delay, or prevent, the reoccurrence of offending behavior (Bourke et al. 2012).

3.7.4. Limitations and Future Research

Although the current study has important implications, some limitations to this study must be noted. The first pertains to the nature of the data. Police data has

considerable strengths in that it offers extensive and detailed information pertaining to the victim, offender, and offense. On the other hand, it is limited in its information related to an offender's developmental and criminal history as well as psychological profiles. In particular, future research may benefit from examining the associations between criminal expertise and psychopathy, particularly among more expert and intermediate-violent subgroups given its association with serious criminal offending (e.g., Delisi, 2016). As mentioned by Chopin and Aebi (2018), it is also important to note there are some cases where investigators may fail to identify links between cases. As a result, it was not possible to determine what role undetected serial offenses may play in expertise. For instance, Park et al. (2008) found that behaviours such as forensic awareness, deterring victim resistance, and completion of a rape were more often found in serial offenders. Of particular interest for future research might be the role that criminal expertise plays in undetected sexual offense, or in sexual murders or serial rapes, which constitute the most serious forms of sexual offending.

Lastly, the database is exclusively on sexual crimes, and as a result, access to complete criminal histories was unavailable (unless they have a history of prior sexual violence). Thus, it was only possible to determine whether an offender had been charged or convicted for previous offense, but there are no details pertaining to whether sexual burglary offenders had a history of robbery, or vice versa. As a result, it could not be determined what stage offenders are in their criminal career, or the full extent that prior offending played in the development of expertise. It is important to note, however, that criminal histories are less relevant for the current study because the aim was focused on understanding differences in offense related competencies and not how expertise developed for each subgroup. Moreover, the inclusion of criminal histories can be problematic, especially for capturing expertise, given the assumption that more expert offenders will be more likely to have undetected offenses (Ó Ciardha, 2015). Similarly, both burglary and robbery offenses have low clearance rates (e.g., Nee, 2015; Smith, 2003) and so the benefits of criminal history data for the study of expertise also comes with its own limitations. Thus, future studies should strive to include data that includes both official (i.e., charges and convictions) as well as unofficial (e.g., self-reported data) sources to build a more complete picture of the role that prior offending plays in criminal expertise.

Chapter 4.

The Role of Criminal Expertise in Serial Sexual Offending: A Comparison to “Novices”

4.1. Abstract

Serial offenders have been described as more forensically aware, better able to control their victim, and ultimately, more adept at eluding detection. Despite these assertions, there is a lack of research examining differences in “criminal expertise” (i.e., offense-related skills and competencies) between serial and non-serial offenders. Therefore, the current study uses binary logistic regression to examine a sample of 83 serial offenses and 322 offenses involving “novices” (i.e., offenders without a previous criminal history) to determine whether criminal expertise is a distinctive feature of the crime-commission process of serial offenders, compared to novices. Binary logistic regression findings indicated that offenders who did not verbally reassure their victim, who brought a weapon to the offense and who selected a victim who was walking were more likely to be serial. Taken together, these behaviors do not suggest that serial offenders are “experts” at avoiding detection, but rather, indicate some general offense competencies and skills related to violent offending. Implications for theory and practice are discussed.

Keywords

detection avoidance; offense skills; crime-commission process; offense behavior; sexual violence

4.2. Introduction

Risk factors and treatment needs of persons convicted of sexual crimes are frequently focused on the perceived deficits and inabilities, such as the inability to self-regulate one’s emotions, inhibit behaviors, or suppress deviant fantasies (Ó Ciardha, 2015). Nonetheless, it cannot be ignored that some offenders possess more complex skill sets that are utilized to plan and orchestrate an attack, overcome victim resistance, and ultimately, elude detection. Ward (1999) first introduced the concept of “criminal expertise” in sexual offending, proposing that while offenders do display deficits in many

areas of their lives, they also appear to exhibit competencies and skills related to their offending. This “criminal expertise”, Ward (1999) argues, may offer a complementary view to deficit-based models by shifting the focus to better understanding the role of competence and skill that facilitate deviant sexual activity. Considering that serial offenders have been described as being more capable of avoiding detection, more forensically aware, and better at controlling the victim (e.g., Corovic et al., 2012; Graney & Arrigio, 2002; Hazelwood & Burgess, 2001, Park et al., 2008) it seems likely that they would possess more criminal expertise. Despite this clear connection, surprisingly no study has examined criminal expertise in serial rape involving adult victims.

Although there is no universal definition, serial rape is most commonly defined as a series of two offenses against different victims (e.g., Beauregard et al., 2007; Park et al., 2008; Slater et al., 2014). Graney and Arrigio (2002) suggest that the main differences between single-victim and serial rape is the serial rapists’ proficiency in eluding police detection. Despite the important investigative and clinical implications of offender’s who are more adept at evading detection, only a few empirical attempts have been made to study differences between single incident and serial offenders. Though methodologically limited, these studies have found support for the notion that individuals who commit serial rape may be more criminally sophisticated (i.e., better at thwarting police investigative efforts) (Park et al., 2008; Corovic et al., 2012), although others have noted difficulties replicating these finding (Slater et al., 2014). Considering that expert offenders may be more difficult to treat (Bourke et al., 2012; Ward, 1999) alongside the significant burden that serial sexual offending can have on victims and society, determining whether these individuals possess offense related competencies that enable them to avoid detection has important implications for clinical and investigative practices. The purpose of the present study is to better understand the role of criminal expertise in serial sexual offending with the intent to provide recommendations for clinical prevention and intervention as well as police investigations.

4.3. Literature Review

4.3.1. Conceptualizing criminal expertise in sexual offending

Criminal expertise was first introduced to the sexual offending literature by Ward (1999). He argued that the ability for some individuals (e.g., those with persistent sexual

offenses against children) to avoid detection was the result of refined offending skills, such as how to select and groom victims, plan and carry out an offense, respond to victim resistance, and ultimately, the ability to avoid detection (Ward, 1999). He suggested that criminal expertise could accrue through experience (e.g., previous offending) as well as indirectly, such as through covert rehearsal or modelling (e.g., by repeated masturbation to deviant sexual fantasies). Thus, it is important to note that criminal expertise differs from traditional conceptualizations of expertise given the lack of opportunity to consistently practice and refine skills in comparison to more socially acceptable domains such as chess, music, or sports (Bourke et al., 2012). In these more traditional domains, an “expert” is typically referred to as a person who has superior skills and the ability to perform at exceptionally high levels (Ericsson, 2006). Conversely, Nee and Ward (2015) note that “functional” or “dysfunctional expertise” in reference to criminal domains, is more aptly suited to describe criminal expertise. Functional expertise refers to the notion that a person can develop the necessary skills to function well at what they do (Nee and Ward, 2015). As such, it acknowledges the lack of opportunity for extensive practice in criminal domains and is therefore more consistent with the notion that the more a person gains experience in their domain (directly or indirectly), the more likely they are to have skills that are distinctive from novice offenders.

Several studies have demonstrated the utility of the dysfunctional (i.e., “criminal”) expertise perspective for better understanding the role of competency and skill in the crime-commission process of sexual crimes. For example, in the child sexual offending domain, Bourke et al. (2012) observed that compared to novices, experts had better emotional regulation and memory for offense related cues, used more sophisticated grooming strategies, and were better at avoiding detection. Chopin et al. (2021) identified a group of experts in the commission of rape, who planned the offense, were better able to control the crime-commission process, committed more sexually intrusive acts, and were more likely to destroy or remove forensic evidence, compared to novices. Lastly, findings from Chapter 3 indicated that novices from both sexual burglary and sexual robbery domains were characterized by a lack of skill, planning, and the absence of sophisticated behavior over the crime-commission process. In comparison, experts in sexual burglary possessed specialized skills related to avoiding detection (e.g., forensic awareness, protecting their identity). Interestingly, both domains had “intermediate”

subgroups who shared similar skilled behaviors that were not “specialized” or “domain-specific”, but rather, were broadly relevant for interpersonally violent offenses (e.g., bringing a weapon and controlling the victim). Thus, “hybrid” offenses (i.e., offenses that involve two distinct elements; Beauregard and Chopin, 2020) may allow for a broader range of behavioral indicators of expertise to be observed across the continuum of novice to expert. On one hand, they can capture specialized skillsets and domain-specific experts, and on the other hand, they can capture more versatile or “transferable skills” (Nee et al., 2019) that have utility across similar style domains. The current study will therefore seek to apply the criminal expertise perspective to hybrid serial crimes that involve both sexual assault and personal theft from the victim. The main aim will be to determine whether serial offenses involve a greater degree of offense related skills and competencies compared to novices within the same offending domain.

4.3.2. Criminal sophistication in serial offending

Despite Ward’s (1999) clear hypotheses related to expertise and persistent offending, no study to date has used the criminal expertise perspective to examine serial offenses involving adult victims. In fact, in a review of criminal expertise and sexual offending, Ó Ciardha (2015) expressly called for empirical insight on this topic, noting the surprising lack of extant literature. To date, there is only indirect evidence of expertise from a few studies that compared the crime scene behaviors of single and serial offenders with adult victims. For example, Park et al. (2008) used a sample provided by the FBI and compared the crime scene behaviors of serial ($n = 22$) and single offenders ($n = 22$) across three major behavioral themes: violence (e.g., weapon use, vaginal and anal penetration), interpersonal involvement (e.g., making sexual comments, inducing the victim to participate), and criminal sophistication (e.g., forensic awareness, deterring resistance). Bivariate comparisons revealed that single victims were more likely to be interpersonally involved with their victim, whereas serial offenders were more likely to show behaviours such as forensic awareness, using a surprise attack, and controlling the victim’s resistance. Park and colleagues concluded that serial rapists showed a higher level of criminal sophistication and “adeptness at eluding detection”. Although these findings are important evidence of expertise in serial offending, the limitations of bivariate analyses are evident, and more recent studies seeking to replicate Park et al. (2008) have had equivocal findings.

Using Park et al. (2008) as a model, Corovic et al. (2012) also examined differences in crime scene behaviors between single-victim (n = 36) and serial rapists (n = 35) across similar behavioral themes. As with Park et al., (2008), few differences between serial and single offenders were observed regarding sexual and violent behavior. Nonetheless, findings indicated that compared to single offenses, serial offenses were more likely to have involved controlling behavior (e.g., blinding, gagging, or blindfolding the victim, or intimidating the victim with a weapon), forensic awareness, and theft from their victims. In comparison, single incident offenders were more likely use interpersonal behaviors (e.g., kissed their victim) and to have drunk alcohol prior to the offense. A logistic regression was also performed, which indicated that offenders who kissed their victim, controlled their victim, and drank alcohol before the offense all predicted whether an offender was single-victim or serial. Although this study shares similar methodological limitations to Park et al. (2008) related to small sample size, the findings of Corovic et al. (2012) were broadly in line, indicating that serial rapists appeared to be more criminally sophisticated in their crime-commission process.

Lastly, Slater et al. (2014) used bivariate analyses to examine 38 serial and 50 single offenses that involved stranger rapes against a female victim. As with earlier studies, the authors found that the majority of behaviors did not differ significantly between serial and single rapists. Interestingly, the only significant difference between groups was that a con approach was less common for serial rapists. Slater et al. (2014) suggested that such an approach helps to facilitate or complete a rape but may also indirectly aid in the apprehension of the offender (e.g., may help the victim offer a more detailed description of the perpetrator). Ultimately, however, they concluded that there was limited support to suggest that serial and single offenders differ in crime scene behaviors and did not find any support to conclude that they are more criminally sophisticated. Taken together, it remains unclear whether behavioral indicators of criminal expertise can be a distinctive feature of serial sexual offending.

4.4. Current Study

Despite the innate connection between criminal expertise and serial offending, there is an absence of research on this topic apart from a limited number of studies that have examined the notion of “criminal sophistication” in serial sexual offending through predominantly bivariate analyses. In their review, Ó Ciardha (2015) highlighted the lack

of direct evidence examining whether serial offenders were a type of “expert” in sexual crimes and called for empirical analyses to shed light on whether serial offenses can be utilized as a type of “proxy” for expertise. Accordingly, the current study aims to explore this research question by providing a multivariate examination of the crime-commission process (pre-crime, crime, and post-crime) of serial stranger sexual offenses involving a hybrid theft element. By breaking down the offense into stages, it is possible to build on prior research by determining whether differences in criminal expertise exist at each different phase of the crime-commission process.

The present study focuses exclusively on hybrid sexual offenses with theft. As past studies have had limited success differentiating criminal sophistication between serial and single-incident offenders, a focus on sexual theft offenses may provide a better avenue to capture criminal expertise. For example, there is some evidence to suggest that sexual offenses involving theft involve a more criminally sophisticated offender (e.g., Corovic et al., 2012). Moreover, previous findings indicate that hybrid sexual theft offenses involve both “specialized” domain-specific skills as well as more “general” skills related to violent offending. Thus, hybrid offenses can offer a wider range of behavioural indicators of criminal expertise across the crime-commission process. The lack of research on hybrid crimes is also a limitation in the sexual offending literature, and differences between serial and novice hybrid who sexually assault and steal from their victim can offer important insights for the investigation of these crimes. Lastly, although studies have used comparison groups of non-serial sexual offenders, no study has sought to compare criminal expertise in serial offenders to “novices” (i.e., offenders without any previous convictions). As such, the purpose of this study is to contribute to a better understanding of the differences in criminal expertise between novice and expert offenders, as well as determine whether serial offending can be useful proxy for criminal expertise.

4.5. Method

4.5.1. Sample

The sample included 405 cases of contact sexual assault ($n = 83$ serial, $n = 322$ non-serial) where the index offense involved personal theft (either fetish items, valuable items, or both were stolen from the victim in all cases) from a victim who was a stranger

to the offender (i.e., knew the victim for 24 hours or less prior to the sexual assault). The sample was obtained from a national police database operated by the Ministry of Interior in France. All cases occurred between 1991 to 2017. This study focuses on stranger victims exclusively to remain consistent with the literature on serial offending (e.g., Corovic et al., 2012; Slater et al., 2014) and because studies have shown that there are important differences in the crime-commission process between acquaintance and stranger sexual assaults (see Bownes et al., 1991; Koss et al., 1988). As such, both the victim-perpetrator relationship as well as the nature of the offense (i.e., hybrid or not) could impact how expertise manifests behaviorally (e.g., target appraisal, victim control methods, whether a person takes steps to protect their identity, etc.) and were therefore important to control across the sample.

In order to examine criminal expertise in serial offenders, 83 cases that involved a sexual assault with personal theft as the most recent serial offense (i.e., the last offense in their series) were included in the current sample. Similar approaches have been utilized in other studies, for example, choosing the two most recent offenses (e.g., Woodhams & Toye, 2007); choosing the first, last, and a randomly selected offense in sexual assault series (e.g., Slater et al., 2014) or randomly selecting cases (Park et al., 2008). Although the selection process for serial cases has varied somewhat between studies, the current approach was chosen as it is most consistent with the notion of capturing criminal expertise. More specifically, expertise is expected to accrue over time and with experience (Ward, 1999), and thus selecting the last known offense within a series should provide the best opportunity to capture behavioural indicators of criminal expertise. In general, most serial offenders had only been detected for two sexual offenses ($M = 2.25$, $SD = .64$), although the number of serial cases within a series ranged from 2 to 5. Lastly, to compare the serial cases, 322 cases where offenders had no known prior criminal history other than their index stranger sexual assault/personal theft offense were randomly selected among a total of 666 cases. This group represents the “novices” for the current study, in that they have no known prior offense history. Descriptive statistics for the sample and for serial and “novice” subgroups are available in Table 1. Although missing data is possible, for the current study there are no missing data for any of the variables used.

Measures

Dependent variable: Novices vs. Serial offenders

The dependent variable was coding dichotomously, serial = 1 and novice = 0.

Independent variables

Based on previous studies on criminal expertise and criminal sophistication in sexual offending (Beauregard and Proulx, 2017; Ceccato, 2014; Chopin et al., 2021) and serial offending (Corovic et al., 2012; Park et al., 2008; Slater et al., 2014) 36 variables were examined and conceptualized under two main subcategories (1) characteristics of the offender and victim, and (2) behavioral indicators of criminal expertise across the crime-commission process (pre-crime, crime, and post-crime).

The first subcategory includes 6 variables related to offender and victim characteristics. Characteristics for offenders were included based on previous studies that suggested that experts in sexual offending will be older (Bourke et al., 2012; Ward, 1999), and that alcohol and drug use would be less prevalent among serial offenders (e.g., Corovic et al., 2012). Lastly, whether an offender possessed a sexual collection (i.e., pornography) was included as it can provide insight onto the development of offense related skills as pornography has been suggested to be mechanism in which offenders can develop their expertise by practice, planning, and mental rehearsal (O'Ciardha, 2015; Ward, 1999). Except for the offender's age (coded continuously) all variables are dichotomous (0 = no, 1 = yes). The offender characteristics included are: (1) age of the offender (range = 15 - 71), (2) offender used drugs or alcohol prior to the crime, and (3) offender possessed a sexual collection (i.e., pornography). Characteristics for victims were included based on previous studies that suggested that criminally sophisticated offenders are more likely to select victims who are vulnerable and less likely to resist (e.g., Bourke et al., 2012; Chopin et al., 2021; Corovic et al., 2012; Park et al., 2008; Ward, 1999). The victim characteristics included are (4) victim was intoxicated at time of offense, (5) victim was walking at time of offense, and (6) victim was sleeping at time of offense.

Behavioral indicators of criminal expertise (pre-crime, crime, and post-crime phases). The current study included 28 variables that reflect criminal sophistication in modus operandi behavior (e.g., Beauregard & Proulx, 2017; Ceccato, 2014; Chopin et

al., 2021; Corovic et al., 2012; Park et al., 2008, Slater et al., 2014) and can infer the presence of expertise in sexual and hybrid sexual-theft crimes (Chopin et al., 2021; Ward, 1999). All variables reflective of criminal expertise were coded dichotomously (0 = no; 1 = yes). These indicators were separated into three phases to reflect the criminal process (pre-crime, crime, and post-crime).

The pre-crime phase included variables that have been found in previous literature to be indicative of planning and criminal sophistication or expertise (e.g., Beauregard & Proulx, 2017; Ceccato, 2014; Chopin et al., 2021; Park et al., 2008; Slater et al., 2014; Ward, 1999). These included: (1) Offender used a surprise approach, (2) Offender brought a weapon to the offense, and (3) Offender targeted the victim (i.e., chose the victim for specific characteristics).

The crime phase included offense behaviors found in previous literature to be related to a criminally sophisticated modus operandi or can infer the presence of criminal expertise (Chopin et al., 2019; Chopin et al., 2021; Corovic et al., 2012; Park et al., 2008; Slater et al., 2014; Ward, 1999). These included: (4) Offender selected a deserted crime scene location (i.e., no risk of being seen or heard) (5) Offense occurred at night, (6) Offense occurred outdoors, (7) Offender forced entry (i.e., broke into a locked residence or building), (8) Offender acted on the environment (i.e., took steps to secure their crime scene, such as barricading windows and doors or disabling alarms, used a look-out) (9) Offender wore a mask to protect their identity, (10) Offender used non-sexual violence (i.e., beating, stabbing, or asphyxiation) (11) Offender blindfolded or gagged the victim, (12) Offender used restraints; (13) Offender used a weapon, (14) Offender verbally reassured victim, (15) Offender wore a condom, (16) Offender threatened/bribed/told victim not to report, (17) Any physical resistance from victim, (18) Any vaginal penetration, (19) Any anal penetration, (20), And oral intercourse, (21) Any digital penetration, (22) Offender kissed the victim, (23) Offender fondled victim, and (24) Offender engaged in masturbation.

Lastly, the post-crime phase included behaviors that have been identified in previous literature to be related to criminal sophistication and expertise in detection avoidance (e.g., Beauregard & Proulx, 2017; Chopin et al., 2019; Chopin et al., 2021; Corovic et al., 2014; Davies et al., 1997; Park et al., 2008; Ward, 1999). With the exception of types of items stolen, all variables are coded dichotomously (0 = no, 1 =

yes). These included: (25) Types of items stolen (1 = valuable; 2 = fetish 3 = both), (26) Victim was intentionally released, (27) Offender destroyed or removed forensic evidence, and (28) Any semen found on victim/crime scene.

4.5.2. Analytical Strategy

A three-step analytical process was used to analyze the data. The first step involved the use of bivariate analyses (i.e., chi-square and Mann-Whitney U test for non-parametric continuous variables) to examine the relationships between the dependent variable and independent variables. To determine which variables to include in the multivariate analysis, it was decided to retain variables with p-values less than .150 to ensure all potentially relevant variables at the multivariate level were accounted for (Hosmer et al., 2013). Multicollinearity was also tested, and no correlations were higher than .236. For the third step, a 4-block sequential binary logistic regression was performed using all significant variables identified at the bivariate level. A sequential method was selected for the logistic regression to examine the potential effects of each stage of the crime-commission process as well as all potentially relevant effects in the final model. Model 1 includes the victim characteristics. Model 2 includes victim characteristics as well as the pre-crime characteristics. Model 3 includes victim characteristics, as well as both the pre-crime and crime phases.

4.6. Results

Table 4.1. presents the results of the bivariate analyses (Chi-Square and Mann-Whitney U Test) between the outcome (serial = 1, novices = 0) and the predictor (offender, victim, and pre-crime, crime, and post-crime phases) variables. Table 1 also includes the descriptive statistics for the sample as a whole. The following section presents the bivariate findings of all variables that were significant at $p < .150$ and retained for multivariate analyses.

In terms of offender characteristics, no differences were observed between serial and novice offenders. For victim characteristics, findings indicated a victim who was walking at the time of the offense was significantly associated with serial offenders, compared to novices ($\chi^2 = 5.15, p = .023$). During the pre-crime phase, bivariate analyses indicated that a surprise approach was more common for serial offenders,

compared to novices ($\chi^2 = 2.91, p = .088$). Lastly, bringing a weapon to the offense was more common for serial offenders, compared to novices ($\chi^2 = 2.49, p = .114$). During the crime phase, verbal reassurances to the victim was significantly associated with serial offenders, compared to novices ($\chi^2 = 9.26, p = .002$). Additionally, kissing a victim was significantly associated with novices, compared to serial offenders ($\chi^2 = 6.21, p = .013$). Lastly, offenders who wore a mask to protect their identity ($\chi^2 = 3.33, p = .068$) and forced entry into a residence or building ($\chi^2 = 3.50, p = .061$) were more common for serial offenders, compared to novices. There were no differences observed between novices and serial offenders in the post-crime phase.

Table 4.1. Bivariate associations of the independent variables vs. serial and novices

Variable	Total Sample N = 405 N (%) / M(SD)	Serial N = 83 N (%) / M(SD)	Novices N = 322 N (%) / M(SD)	X ² /Mann Whitney U Test	
				X ² /U Statistics	Phi/Z
Offender Characteristics					
Age ^a	28.49 (8.8)	27.5 (8.7)	28.7 (8.8)	12082.50	
Alcohol/drug use prior to crime	127 (31.6)	26 (31.3)	101 (31.7)	.003	
Possessed a sexual collection	36 (8.9)	9 (10.8)	27 (8.4)	.483	
Victim Characteristics					
Victim was walking at time of crime	199 (49.1)	149 (46.3)	50 (60.2)	5.15 *	.113
Victim was sleeping at time of crime	52 (12.8)	8 (9.6)	44 (13.7)	.956	
Victim intoxicated at time of crime	46 (11.4)	7 (8.3)	39 (12.1)	.887	
Pre-Crime Phase					
Offender selected a deserted crime location	240 (59.3)	44 (53.0)	196 (60.9)	1.69	
Offense occurred at night	253 (63.5)	51 (61.4)	202 (62.7)	.047	
Offense occurred outdoors	126 (31.1)	31 (37.3)	95 (29.5)	1.90	
Offender forced entry into residence/building	45 (11.1)	14 (16.9)	31 (9.6)	3.50 †	.093
Offender used a surprise approach on victim	148 (36.5)	37 (44.6)	111 (34.5)	2.91 †	.085
Offender brought weapon to crime	155 (38.3)	38 (45.8)	117 (36.3)	2.49 †	.078
Offender targeted victim	85 (21.0)	14 (16.9)	71 (22.0)	1.07	
Crime Phase					
Offender acted on the environment	99 (24.2)	21 (25.3)	78 (24.2)	.041	
Offender wore a mask	66 (16.3)	19 (22.9)	47 (14.6)	3.33 †	.091
Offender used non-sexual violence	137 (33.8)	25 (30.1)	112 (34.8)	.641	
Offender blindfolded/gagged the victim	114 (28.1)	24 (28.9)	90 (28.0)	.030	
Offender used restraints	58 (14.3)	10 (12.0)	48 (14.9)	.439	
Offender used a weapon	195 (48.1)	43 (51.8)	152 (47.2)	.560	
Offender reassured victim	101 (24.9)	10 (12.0)	91 (28.3)	9.26 **	.151
Offender wore a condom	44 (10.9)	10 (12.0)	34 (10.6)	.151	

Variable	Total Sample N = 405	Serial N = 83	Novices N = 322	X ² /Mann Whitney U Test	
	N (%) / M(SD)	N (%) / M(SD)	N (%) / M(SD)	X ² /U Statistics	Phi/Z
Offender threatened/told victim not to report	107 (26.6)	24 (28.9)	93 (28.9)	.000	
Any physical resistance from victim	102 (25.2)	25 (30.1)	77 (23.9)	1.35	
Any vaginal penetration	227 (56.0)	44 (53.0)	183 (56.8)	.391	
Any anal penetration	95 (23.6)	17 (20.5)	78 (24.5)	.575	
Any oral intercourse	182 (44.9)	41 (49.4)	141 (43.8)	.839	
Any digital penetration	105 (25.9)	23 (27.7)	82 (25.7)	.173	
Kissing	107 (26.4)	13 (15.7)	84 (29.2)	6.21 *	.124
Fondling	219 (54.1)	44 (53.0)	175 (54.3)	.047	
Masturbation	75 (18.5)	13 (15.7)	62 (19.3)	.564	
Post-Crime Phase					
Type of item stolen from victim ^b				.609	.
Valuable	339 (83.7)	70 (84.3)	273 (85.6)		
Fetish	51 (12.6)	9 (10.8)	42 (13.0)		
Both	15 (3.7)	4 (4.8)	11 (3.4)		
Victim was intentionally released	283 (69.9)	60 (72.3)	223 (69.3)	.289	
Destroyed/removed forensic evidence	50 (12.3)	10 (12.0)	40 (12.4)	.009	
Any semen found on victim/crime scene	180 (44.8)	34 (41.0)	140 (43.5)	.170	

Note. ^a = M/SD and Mann Whitney U test; b = fisher's exact test. [†] $p < .150$ * $p < .05$ ** $p < .01$

Table 4.2. presents the findings of the sequential binary logistic regression between serial and novice groups. Model 1 findings indicated that when the victim was walking at the time of the offense the offender was more likely to be serial than novice ($\beta = .565, p = .024$). Model 2 includes the victim characteristics as well as the pre-crime phase. Model 2 findings indicated that offender's who selected victims who were walking remains significant more likely with serial offenders and in the same direction ($\beta = .631, p = .013$), however, no added crime characteristics were significant in this model. Model 3 includes victim characteristics, pre-crime, and crime phases. As with Model 1 and Model 3, victims who were walking remains significantly more likely for serial offenders, compared to novices ($\beta = .626, p = .015$). With the consideration of crime phase variables, some pre-crime phase variables emerged as significant. More specifically, when a weapon was brought to the offense ($\beta = .538, p = .046$) it was more likely to be a serial offender than a novice. Lastly, in Model 3 it was found in the crime phase that when an offender used verbally reassurances ($\beta = -1.09, p = .004$) they were more likely to be novices than serial offenders.

Table 4.2. Sequential binary logistic regression predicting serial offenses

	Model 1			Model 2			Model 3		
	β	S.E.	Exp(β)	β	S.E.	Exp(β)	β	S.E.	Exp(β)
Victim Characteristics									
Walking at time of offense	.565	.251	1.76 *	.632	.255	1.88 *	.64	.262	1.89 *
Pre-crime Phase									
Offender used a surprise approach				.420	.258	1.52	.434	.273	1.54
Offender brought a weapon				.413	.253	1.51	.538	.270	1.71 *
Offender forced entry				.546	.359	1.73	.584	.380	1.79
Crime Phase									
Offender wore a mask							.207	.351	1.23
Offender reassured victim							-.1.09	.378	.335 **
Kissing							-.624	.340	.536 †
Constant	-1.66	.190	.191 ***	-2.08	.259	.123 ***	-1.85	.272	.157 ***
Nagelkerke R ²	.020			.052			.116		
Hosmer & Lemeshow				.768			.113		
Classification %	79.5			79.5			80.7		

Note. Serial = 1, novices = 0; † p < .10 * p < .05 ** p < .01

4.7. Discussion

This study sought to contribute to a better understanding of the differences in criminal expertise between novice and expert offenders, as well as determine whether serial offending can be a useful proxy for criminal expertise. Similar to other studies (Corovic et al., 2012; Park et al., 2008; Slater et al., 2014), few differences between “novices” and serial offenders in terms of sexual and violent behaviors were observed. Ultimately, it was not possible to confirm the findings of Park et al. (2008) or Corovic et al. (2012) that serial offenders are more adept at eluding detection. Despite this, some important differences in behavioral indicators of expertise were found that are worthy of further consideration and may provide some insight into whether serial offenders are more sophisticated in their decision-making abilities and behaviors during the commission of their crime.

In the current study, serial offenders were more likely to bring a weapon to the offense and to select a victim who was walking outdoors. As Ward (1999) highlighted, the ability to interpret cues indicating vulnerability as well as to control the victim and the crime process suggests the possibility of offense-related competencies. For example, the choice to bring a weapon to a sexual offense can be an indication of prior experience with interpersonally violent crimes, such as armed burglary (e.g., Delisi et al., 2017) and also suggests some degree of planning on behalf of the offender (e.g., Beauregard & Proulx; 2017; Chopin et al., 2019; Chopin et al., 2021). In Chapter 3, latent class analyses revealed intermediate sexual burglary and robbery subgroups who always brought a weapon to the offense and showed some skills related to controlling the victim but lacking higher level skills related to avoiding detection (e.g., destroying and removing evidence). This seems to be comparable to the serial offenders in the current study, who do not appear to be specialized “experts” in avoiding detection for sexual crimes, but rather, possess limited skills that are broadly relevant for interpersonally violent offending. This is consistent with findings that many, if not most, individuals who are convicted of rape can be considered generalist rather than specialist offenders (Lussier & Cale, 2013).

Selecting a victim who is walking can also be interpreted as an offense related competency. In this situation, victims are typically alone, outdoors, usually without witnesses. Moreover, outdoor locations afford greater protection from forensic evidence

collection as it can degrade quicker and increases the likelihood that results are unusable after analysis (Martin et al., 2019). This is relevant because it suggests that serial offenders may be better able to detect offense opportunities where there is less risk of detection. This is especially important to consider in the context of serial rape, as studies have shown that sexual offenses that involve a victim who was walking at the time of the offense are more difficult to solve (e.g., Chopin et al., 2019). In relation to police investigations, it may be useful for investigators to prioritize suspects with known previous sexual or assault convictions, if the stranger rape occurred when the victim was walking.

It was also found that offenders who used verbal reassurances during the commission of their crime were less likely to be serial. As highlighted by Slater et al. (2014) verbal interactions with the victim may increase an offender's risk of being identified. Interestingly, both Park et al. (2008) and Corovic et al. (2012) found that single offenders were more likely to interact through verbal reassurances with a stranger victim. A more experienced offender may therefore purposely minimize their verbal interactions with the victim to reduce information that witnesses could use to later identify them. Alternatively, they may opt for more controlling methods (e.g., threatening or bribing their victims) as a detection avoidance strategy (Beauregard & Bouchard, 2010). As such, the use of verbal reassurances may be a useful indicator for investigators to consider when assessing whether a stranger rape was likely committed by a novice or serial offender. Taken together, these findings provide some insight into the learned behaviors and experience that a serial offender may use to help facilitate the commission of their crime.

The finding that serial offenders in the current sample may have more "generalist" skillsets compared to novices has relevance for treatment given the commonly held belief that serial sexual offenders represent a particularly sexually deviant subgroup of offender (e.g., Shipley & Arrigo, 2008). It may therefore be useful for clinicians to consider whether individuals who commit repeat sexual crimes (whether or not in conjunction with theft) show evidence of general or broadly applicable offense related competencies during their crime-commission process, which could indicate a more versatile offending background. As Ward (1999) suggested, examining the level of sophistication, planning, an adaptability of one's criminal behaviour- alongside their case history- may aid clinicians in formulating treatment and management plans, even if they deny or minimize their criminal histories.

4.8. Limitations

Although this study contributes to new insights on the role of criminal expertise in serial offending, it is not without limitations. Firstly, and most importantly, there are limitations to the data that must be acknowledged. Data used in the current study included cases that occurred between 1991 and 2017. Over the course of more than 30 years, investigative and forensic techniques have evolved, and as such, this could have implications for the detection of forensic awareness strategies. This possibility is limited, however, as 87.4% of cases occurred after the year 2000. Moreover, there were no significant differences in the date of the offense between serial and novice offenders or between the date of the offense and the use of forensic awareness strategies. Although police data provides rich information pertaining to the crime scene, victims, and offenders, there are some methodological biases and issues that are inherent to this type of data (see Chopin & Aebi, 2019 for a review). Additionally, only the last offense series was examined, which for the majority of the sample, was only their second offense. It could be that there was not enough time for them to accrue skills or expertise between offenses. Lastly, there is also the possibility that the most skilled and expert offenders have remained undetected or that there are serial offenders who were classified as novices due to cases where investigators may have failed to identify links. Lastly, it is important to note that psychopathy is disproportionately associated with all types of offending, including a propensity towards violent offending (DeLisi, 2016). Unfortunately, due to limitations in the data it is not possible to account for the role of personality characteristics in the current sample of serial offenders.

4.9. Conclusion

Ultimately, there was not strong evidence to support the conclusion that criminal expertise is a distinctive feature of serial offender's crime-commission process. Thus, serial offending does not appear to be a "proxy" for expertise. Interestingly, some past studies (e.g., Slater et al., 2014) have also found limited support that serial offenders are more capable of eluding detection, and there has been a lack of evidence that serial sexual offenders are substantially different from single-incident sexual offenders (Corovic et al., 2014; Park et al., 2008; Slater et al., 2014). This study finds that the choices and actions taken during the commission of a crime for a serial offender is

differentiated by only a few important behaviors that highlight the more general offense-related knowledge and skills these offenders may possess relative to novices. In other words, the skills of serial offenders are not indicative of higher-level decision-making processes (e.g., taking precautions and destroying or removing evidence) that has been observed in other expert sexual offenses such as adult rape (Chopin et al., 2021) and sexual burglary. Instead, their crime-commission process reflects general offense related competencies that aid in assessing criminal opportunity and controlling the victim. These findings highlight the benefit of breaking down the crime-commission process, as the most important differences between serial offenders and novices occur in the pre-crime phase and victim selection processes. Future research should consider examining criminal expertise among a sample of the most prolific serial sexual offenders who have avoided detection for long periods of time. Moreover, criminal expertise should be explored in psychopathic offenders, given their associations with violence and chronic offending (DeLisi, 2016). Lastly, ideally data would involve both self-reported and official offending, and although difficult to obtain, would provide valuable information regarding the development of expertise and how this emerges as generalized or specific skill sets depending on the offender's prior experience.

Chapter 5.

Is Criminal Expertise a Feature of Unsolved Sexual Assault?

5.1. Abstract

Past studies examining criminal expertise showed that some sexual offenders possess skills related to avoiding detection. An important question unaddressed in the literature, however, is whether unsolved cases can be used as a “proxy” for expertise. The present study sought to provide the first empirical examination of criminal expertise in a sample of solved ($n = 732$) and unsolved ($n = 309$) sexual assault cases. Binary logistic regression was used to determine whether behavioral indicators of criminal expertise predicted case status. Findings showed that the most relevant factors related to case solvability were not the detection avoidance strategies used by the offender, but rather, whether semen evidence was found at the scene of the crime and the number of sexual acts against the victim. Additionally, cases involving fetish theft were also more likely to remain unsolved. Implications for theory and practice are discussed.

Keywords

case solvability, detection avoidance, forensic awareness, offender behavior, modus operandi

5.2. Introduction

Sexual assault is one of the most common violent offenses, while also being one of the most under-reported crimes (Du Mont et al., 2003). Even when sexual assault cases are reported, prosecution rates for sexual crimes are among the lowest compared to other violent crimes (Sommers & Baskin, 2011). In fact, studies have shown for only a minority of sexual crimes are suspects likely to be arrested, charged, and convicted (e.g., Spohn et al., 2014). Despite these issues, there has been little empirical insight regarding which factors influence solvability in sexual assault, as most studies have focused exclusively on homicide solvability factors (see Braga & Dusseault, 2018; Rogoeczi, et al., 2018) and data for unsolved sexual assault is often difficult to obtain.

According to the criminal expertise perspective, however, some offenders develop domain specific skills or “expertise”, which enables them to be better, more intuitive decision-makers during the offense and more capable of avoiding detection (Ward, 1999).

Several studies using the criminal expertise framework on sexual offenders have shown that some have developed in-depth knowledge and skills oriented around detection avoidance that differentiate them from more novice or less sophisticated offenders (e.g., Bourke, et al., 2012; Chopin, et al., 2021). Although interesting and informative, these studies do not examine whether expertise is related to case solvability. Indirect evidence of criminal expertise has been examined in other studies, although these studies have provided mixed evidence as to whether an offender’s actions to avoid detection negatively impact case solvability (e.g., Balemba et al., 2014; Chopin et al., 2019). Nonetheless, past samples (e.g., Chopin et al., 2019) may not adequately capture criminal expertise and no studies have directly used this framework to explore the role of expertise on solvability over the entire crime-commission process (pre-crime, crime, and post-crime). As such, the present study seeks to offer the first empirical examination of the role of criminal expertise on case solvability using a sample of stranger sexual assault cases.

5.3. Literature Review

Although most of the research on crime solvability has focused on homicide, there are two competing perspectives from this literature that can offer insight as to why sexual assault may remain unsolved. According to the discretionary perspective (Riedel, 2008), victimology (e.g., age, gender) is most influential in how vigorously and diligently police will work to investigate and solve a crime. For example, studies have shown that sexual crimes involving younger victims tend to be solved more by police (e.g., Chopin et al., 2019). Contrasting the discretionary perspective, is the non-discretionary perspective (Riedel, 2008), which suggests it is the characteristics of the offense itself (e.g., weapon use, forensic trace evidence) that are most important to solvability. As such, the non-discretionary perspective argues that police are motivated to solve all crimes but are not able to do so in some cases due to external situational factors. For instance, Chiu and Leclerc (2020) found that sexual assaults involving higher criminal effectiveness (e.g., fewer witnesses, less forensic evidence) and lower levels of victim

interaction (e.g., less engagement/interaction with victim verbally and minimal force used) were associated with unsolved cases.

In line with a non-discretionary perspective, is the notion of “criminal expertise”. In sexual offending, criminal expertise refers an offender who has developed offense related skills and uses a sophisticated modus operandi involving detection avoidance strategies (Chopin et al., 2019). It was Ward (1999), however, who was the first to propose that the literature on expertise (e.g., Ericson, 2006) could be applied to the field of sexual offending. In particular, he suggested that some sexual offenders who have multiple child victims but have remained undetected for long periods of time will develop a type of “functional” (i.e., criminal) expertise, which involves learning the necessary skills and knowledge to function well in a particular domain (i.e., continue to offend while eluding detection). Accordingly, this perspective does not necessitate offenders develop extensive experience and repeated practice directly within their domain to become an expert (Ó Ciardha, 2015). Moreover, expertise can be developed in many ways, even without the commission of a contact sex offense. For example, the development of offense related skills and knowledge through covert modelling and rehearsal (e.g., through sexual fantasies), through observational learning (via other offenders – e.g., online forums, pedophile groups, etc.), symbolic modelling (e.g., pornography or literature) and finally, through an offender’s own experience with sexual abuse (e.g., physical or sexual abuse as a child) (Bourke et al., 2012; Ó Ciardha, 2015; Ward, 1999).

Criminal expertise is an important concept for case solvability because this perspective suggests that offenders who possess criminal expertise will be more successful at offending and avoiding detection. In particular, Ward (1999) suggested that expertise in these offenders would manifest into “tangible competencies” that can be observed directly in their offense behaviour, such as better risk appraisal skills, taking precautions with the offense location, being able to regulate their emotional state, more capable of manipulating and disarming victims, deceiving authorities, and maintaining normal relationships with friends, families, and partners. More recently, a study by Chopin et al. (2021) applied the criminal expertise framework to examine the behaviours of offenders before, during, and after the commission of their crime. They demonstrated that the crime-commission process involved in sexual offending differs in skills and sophistication, and some offenders have developed specific skills related to detection avoidance (Chopin et al., 2021). Although interesting and informative, this study did not

provide any insight into the role of criminal expertise (i.e., sophisticated MO and detection avoidance strategies) on case solvability.

As Ó Ciardha (2015) has noted, however, unapprehended offenders would arguably contain more experts compared to apprehended offenders as they have successfully evaded detection. Thus, an important question that remains unaddressed in the literature on criminal expertise and sexual offending is whether unsolved cases can be used as a “proxy” for expertise (Ó Ciardha, 2015). To date, studies in sexual offending have only indirectly examined criminal expertise in terms of solvability. For instance, in a study of solved and unsolved sexual homicide, Balemba et al. (2014) identified a “forensically aware” theme, which included offenders who were most likely to use sophisticated and controlled behaviours during the commission of their crime. A key feature of the forensically aware type was also the lack of both intrusive sexual acts (i.e., vaginal or anal intercourse) and semen evidence found at the crime scene. Although this type was the most likely to remain undetected, in some circumstances, forensically aware offenders were still apprehended.

Additionally, Chopin et al. (2019) examined factors related to solvability in stranger and acquaintance sexual assault and accounted for victim, crime characteristics, and forensic awareness strategies (e.g., precautions taken to protect their identity and destroying and removing evidence). They found that unsolved cases were more likely to have older, single, or stranger victims, victims who were attacked while they were walking or jogging, and offenders who wore condoms. Similar to Balemba et al. (2014), they also found that some forensic awareness strategies (e.g., threatening the victim not to report) were positively associated with case status. Although this study did not find strong support that an offender’s actions to avoid detection enable them to successfully evade detection, it has limited applicability to understanding whether criminal expertise is related to case solvability because it did not examine all relevant behavioural indicators of criminal expertise over the crime commission process. Moreover, the nature of these offenses (e.g., single-offense, acquaintance victims) may not be well suited for capturing criminal expertise variables in sexual offending.

5.4. Current Study

Although past studies have shown that some sexual offenders possess more sophisticated modus operandi and skills in detection avoidance, whether unapprehended offenders” can be used as a “proxy” for expertise (Ó Ciardha, 2015) has yet to be adequately examined. The present study therefore seeks to provide the first empirical exploration of criminal expertise in a large sample of solved and unsolved sexual assault cases. The present sample is also unique in that all cases of sexual assault involve stranger victims who also had personal items (valuable, fetish, or both) stolen from them. Sexual assaults with a “hybrid” theft element were selected because of its potential relevance for capturing criminal expertise in unsolved cases. For example, studies have found that sexual offenders who also steal from their victims (i.e., “hybrid offenders”) are more likely to have a history of criminal behaviour (e.g., Davies et al., 1997; Harris, et al., 2012; Scheslinger & Revitch, 1999). Theft of fetish items, in particular, can also be a marker of a paraphilic offender and sexual dangerousness and is also associated and with escalation in sexual offending (Brankley et al. 2014; Scheslinger & Revitch, 1999). Thus, hybrid sexual offenses involving theft may offer a better opportunity to examine the role of criminal expertise in case solvability than single-offense sexual assault. The present study therefore aims to explore whether behavioural indicators of criminal expertise are a feature of unsolved stranger sexual assaults involving a hybrid theft element.

5.5. Method

5.5.1. Sample

The sample was obtained from a national police database operated by the Ministry of Interior in France, with offenses that range from 1992-2018. The sample included a total of 1041 cases of single incident contact sexual offenses, that also involved theft of personal property (i.e., valuable, fetish, or both items) from a victim. Of these 1041 cases, 732 are solved and 309 are unsolved. Solved cases in this database are those in which the police identified and apprehended a known suspect, whereas unsolved cases are those in which the offender is unknown to authorities. Solved cases do not account for following legal procedures, as legal convictions depend on may circumstances that many not pertain to the crime itself (e.g., victim does not wish to

press charges). Contact sexual act for the purposes of this study included any of the following: vaginal (59.5%), anal (23.1%), simulated (1.1%) and digital (27.8%) penetration; fellatio (43.3%), cunnilingus (6.4%), anilingus (0.7%), fondling/rubbing against victim (55.9%); kissing (26.4%), licking (6.2%), sucking (3.7%) body parts; inanimate object insertion (3.4%); and vaginal/anal fisting (0.5%). All victims are female and strangers to the offender (i.e., who did not know each other).

5.5.2. Measures

Dependent variable: Case status (Solved vs. Unsolved)

To be classified as solved (coded as 1), the case had a suspect who was identified and apprehended by police. To be classified as unsolved (coded as 0), the case had no suspect apprehended and the offender is unknown to authorities.

Independent variables

Offender MO (Criminal Expertise)

For MO, all 13 variables reflect criminal sophistication in modus operandi behavior and can infer the presence of expertise in sexual crimes (e.g., Beauregard et al., 2012; Beauregard & Proulx, 2017; Ceccato, 2014; Chopin et al., 2021; Davies, 1992; Davies et al., 1997; Park et al., 2008). All variables under MO were coded dichotomously (0 = no; 1 = yes) with the exception of one continuous variable, the number of sexual acts (range = 1-11). These MO variables were separated into three phases to reflect the crime-commission process (pre-crime, crime, and post-crime phases).

The pre-crime phase included variables that have been found in previous literature to be indicative of planning and expertise in sexual crimes (e.g., Beauregard & Proulx, 2017; Ceccato, 2014; Chopin et al., 2021; Davies, 1992; Davies et al., 1997; Ward, 1999). 1) victim was targeted by offender, 2) offender brought weapon to offense, 3) offender selected a deserted crime location (where witnesses are unlikely to hear, see, or interrupt the crime), 4) offender used a con approach (e.g., befriended the victim, posed as a person of authority, offered assistance, etc.).

The crime phase included offense behaviors found in previous literature to be related to a sophisticated modus operandi in sexual offending (Chiu & Leclerc, 2020;

Chopin et al. 2019; Chopin et al., 2021; Davies, 1992; Davies et al., 1997; Park et al. 2008; Ward, 1999). These included: 5) precautions taken to protect identity (e.g., wearing a mask, gloves, or disguise,), 6) acted on the victim (i.e., precautions taken to control the victim- e.g., using restraints, blindfolding or gagging the victim; threatening, bribing, or asking the victim not to report), 7) acted on the environment (i.e., precautions taken to control the environment- e.g., barricading windows or doors, using a look-out, disabling alarms or telephone, sabotaging victim's vehicle), 8) types of items stolen (1 = valuable; 2 = fetish 3 = both), 9) physical/verbal resistance from victim, 10) non-sexual violence (i.e., no beating, stabbing, or asphyxiation). 11) offender verbally reassured victim, 12) sexually intrusive acts (vaginal/anal penetration), 13) number of sexual acts committed (range 1 -11).

The post-crime phase included behaviors that have been identified in previous literature as indicative of expertise in detection avoidance or previous experience in sexual crimes (e.g., Beauregard & Bouchard, 2010; Beauregard & Proulx, 2017; Chopin et al., 2019; Chopin et al., 2021; Davies, 1992; Davies et al., 1997; Park et al., 2008; Ward, 1999). These included: 14) victim was intentionally released by the offender (i.e., as opposed to escaping or being rescued), 15) destroyed or removed forensic evidence, 16) semen found on victim or at crime scene.

Control Variables

On the basis of both discretionary and non-discretionary perspectives of crime solvability (Riedel, 2008), the following victimology (demographic and lifestyle characteristics) as well as crime characteristics (i.e., location and time of day) were used as controls related to case status.

Victimology

In line with a discretionary perspective, certain victim demographics (e.g., age) are relevant for crime solvability. For example, it has been hypothesized that younger victims are more vulnerable, therefore more pressure is put on police to solve these crimes quickly (Du Mont et al., 2003). It has also been hypothesized that certain lifestyle characteristics of the victim, such as whether the victim consumed alcohol prior to being raped, may influence the extent that police work to solve the crime (e.g., Du Mont & Parnis, 2000). Other studies have shown that certain lifestyle characteristics (e.g., being

single, Chopin et al., 2019) and routine activities (e.g., walking or hitchhiking; Chiu, & Leclerc, 2020; Chopin et al., 2019; Reale & Beauregard, 2018) can be associated with case solvability in sexual crimes due to the increased likelihood of the victim being alone with no witnesses present. Accordingly, the following victimology variables are included in the present study: 17) victim age (range = 15 - 95), 18) victim was single (at time of the offense), 19) victim used drugs or alcohol, 20) victim was engaged in domestic activities (e.g., watching television), 21) victim was sleeping, 22) victim was walking, 23) victim was engaged in a social activity (e.g., out to eat, at a bar, visiting a friend, on a date), 24) victim was in a vehicle or in a parking lot, 25) victim was travelling to or from somewhere. All variables are coded dichotomously (yes = 1, no = 0) and are reflective of circumstances that occurred prior to the offense.

Crime Characteristics

The crime scene location are other non-discretionary factors that can impact case solvability (Chopin et al., 2019; Coupe & Blake, 2006). For example, Chopin et al. (2019) found that sexual assaults that occur outdoors were more likely to remain unsolved, whereas rapes occurring in residences were more likely to be solved. This is likely because when crimes occur outdoors, traces of forensic evidence are more likely to degrade, making their detection and collection difficult, which lowers the chances of obtaining a useable profile (Martin, et al., 2019). This is particularly relevant to consider in stranger victim sexual crimes where the collection of forensic and trace evidence is needed to help identify a potential suspect. As such, the following crime characteristics related to location 26) crime occurred in a residential location (e.g., victim or offender's home), 27) crime occurred in an outdoor location (e.g., park, woods).

5.5.3. Analytical strategy

A three-step analytical process was used to analyze the data. As a first step, bivariate analyses (i.e., chi-square and Kruskal-Wallis for non-parametric continuous variables) were conducted comparing solved and unsolved cases using victimology (demographic and lifestyle characteristics) and crime characteristics (location and MO-criminal expertise). To determine which variables to include in the multivariate analyses, it was decided retain variables with p-values less than .150 to ensure all potentially relevant variables at the multivariate level were accounted for (Hosmer, et al., 2013).

This is especially important due to the exploratory nature of the analyses because more traditional levels, such as .005, can fail to identify variables known to be theoretically important (Bendel & Afifi, 1997; Mickey & Greenland, 1989). Multicollinearity was also tested for, and no correlations were higher than .298 (available upon request). For the second step, a four-block sequential binary logistic regression predicting solved cases was performed. The first model included victimology and crime characteristics related to the location/time of day and were used as control variables. The second model included the control variables and introduced criminal expertise variables related to the pre-crime phase. The second third model retains variables from model one and two and introduced criminal expertise variables related to the crime phase. Lastly the fourth model included all variables from Models one to three, as well as introduced criminal expertise variables in the post-crime phase. This was approach was chosen for the present analyses as offers the ability to understand the impact of each variable while accounting for other significant variables in the model. Additionally, it also provides the ability to identify whether expertise in certain stages of the crime-commission process was more important in explaining the difference between solved and unsolved cases. Finally, based on the findings from the multivariate analyses, a supplementary chi-square analysis was conducted on one of the variables in the final model. The rationale for this is decision is discussed in the following section.

5.6. Results

Table 5.1. presents the results of the bivariate analyses between case status (unsolved and solved) and the independent variables. Interestingly, most victimology variables are not associated with case status. There were, however, some notable exceptions. More specifically, in terms of the victim characteristics, it was more common for cases to be solved when the victim was single at the time of the offense ($\chi^2 = 2.86$, $p = .091$). For the victim's routine activities, it was less common for cases to be solved when the victim was walking prior to the offense ($\chi^2 = 11.05$, $p = .001$). Next, bivariate associations between case solvability and crime characteristics related to the crime scene location and time of day were examined, as well as MO related to criminal expertise. In terms of the location, cases involving residential locations were more often solved ($\chi^2 = 3.50$, $p = .061$), whereas cases involving outdoor locations were more often unsolved ($\chi^2 = 11.78$, $p = .001$). In terms of criminal expertise, all three phases of the

crime-commission process were examined. Findings revealed that in the pre-crime phase, cases were more often solved when the victim was targeted ($\chi^2 = 5.89, p = .015$) and when the offender used a con approach on the victim ($\chi^2 = 6.30, p = .012$). In the crime phase, it was observed that cases were more often solved when the offender took precautions related to acting on the victim ($\chi^2 = 2.37, p = .123$) and the environment ($\chi^2 = 6.51, p = .011$) and when the offender reassured the victim ($\chi^2 = 11.46, p = <.001$). A greater number of contact sexual acts ($\chi^2 = 15.23, p = <.001$) was also found to be associated with cases that are solved ($M = 2.81, SD = 1.69$), compared to unsolved ($M = 2.37, SD = 1.45$). Additionally, in the crime phase, it was observed that the type of item stolen (valuable, fetish, or both) is associated with case status ($\chi^2 = 4.17, p = .124$). Lastly, in the post-crime phase, it was observed that cases were more often solved when semen was found on the victim or crime scene ($\chi^2 = 25.88, p = <.001$).

Table 5.1. Bivariate associations between victimology, crime characteristics, and solved and unsolved case status

	Unsolved	Solved	X2 Statistics
	N = 309	N = 732	
Victimology	N (%)	N (%)	Phi
Age ^a	32.51 (16.89)	31.10 (15.74)	.605
Marital status- single	95 (30.7)	265 (36.2)	.052 †
Victim's Routine Activities			
Domestic	29 (9.4)	73 (10.0)	.009
Sleeping	35 (11.3)	83 (11.3)	.000
Walking	172 (55.7)	325 (44.4)	.103**
Social activity	32 (10.4)	68 (9.3)	.017
In a vehicle/parking lot	30 (9.7)	82 (11.2)	.022
Traveling to or from somewhere	25 (8.1)	57 (7.8)	.005
Crime Characteristics			
Location			
Residential	137 (44.3)	371 (50.7)	.058†
Outdoors	111 (35.9)	186 (25.4)	.106**
Modus Operandi- Criminal Expertise			
Pre-crime			
Victim was targeted	45 (14.6)	154 (21.0)	5.89*
Weapon brought to scene by offender	124 (40.1)	284 (38.8)	.012
Crime location was deserted	191 (61.8)	447 (61.1)	.007
Offender used a con approach	110 (35.6)	322 (44.0)	.078*
Crime			
Precautions to protect identity	113 (36.6)	252 (34.4)	.021
Acted on victim	135 (43.7)	358 (48.9)	.048 †
Acted on environment	40 (12.9)	143 (19.5)	.079 *
Offender reassured victim	58 (18.8)	211 (28.8)	.105 **
Any non-sexually violent acts	94 (30.4)	226 (30.9)	.004
Any physical/verbal victim resistance	188 (60.8)	448 (61.2)	.003
# Contact sexual acts ^a	2.37 (1.45)	2.81 (1.69)	15.30 ***
Vaginal/Anal penetration	187 (60.5)	476 (65.0)	1.91
Items stolen from victim			.063†
Valuable	258 (83.5)	4.0)	
Valuable & Fetish	23 (7.4)	34 (4.6)	
Fetish	28 (9.1)	83 (11.3)	
Post-Crime			
Destroyed or removed evidence	32 (10.4)	94 (12.8)	.035
Intentionally released victim	225 (72.8)	547 (74.7)	.020
Weapon removed from the crime scene	107 (34.6)	266 (36.3)	.016
Semen found	29.4 (91)	340 (46.4)	.158 ***

Note. †<.10 p*<.05 p**<.01 p***<.001; ^a M/SD, Kruskal-Wallis nonparametric test/ Chi square statistic

Table 5.2. presents the findings of the binomial sequential regression between solved (= 1) and unsolved (= 0) cases. Model 1 includes victimology and crime characteristics related to location and time of day as control variables. Findings from Model 1 indicated that when the victim was walking prior to the offense, the case was less likely to be solved ($\beta = -.321, p = .029$). Additionally, when a victim was single at the time of the offense, the case is more likely to be solved ($\beta = .243, p = .097$) and when the offense is outdoors, the case is less likely to be solved ($\beta = -.368, p = .056$), however both variables are only approaching significance.

Model 2 adds pre-crime characteristics related to an offender's expertise. In this model, control variables related to the victim walking ($\beta = -.287, p = .053$) are no longer statistically significant when accounting for the pre-crime variables in Model 2. In terms of pre-crime variables, when an offender used a con method of approach on their victim the case was more likely to be solved ($\beta = .341, p = .20$).

Model 3 adds crime characteristics related to an offender's expertise. Whether the victim uses a con approach remains significant ($\beta = .314, p = .035$) once accounting for the crime characteristics, in Model 3. Additionally, findings from Model 3 indicate that during the crime phase, a one-unit increase in contact sexual acts committed against the victim was associated with 1.12 greater odds of the case being solved, compared to unsolved ($\beta = .150, p = <.003$). Moreover, when the offender steals fetish items, compared to valuable items, the case was less likely to be solved ($\beta = -.727, p = .046$). Lastly, although only approaching significance, when the offender verbally reassured their victim, the case was more likely to be solved ($\beta = .334, p = .059$).

Lastly, Model 4 adds post-crime characteristics related to an offender's expertise. With the exception of con approach, all variables from prior models remained significant. Additionally, in the post-crime phase, when semen is found on the victim or at the crime scene, there is more likely to be solved ($\beta = .62, p = <.001$).

Table 5.2. Sequential binary logistic regression using situational crime characteristics and criminal expertise to predict solved case status

Variables	Model 1			Model 2			Model 3			Model 4		
	β	S.E.	Exp(β)	β	S.E.	Exp(β)	β	S.E.	Exp(β)	β	S.E.	Exp(β)
Victimology												
Marital status (single)	.243	.147	1.275 [†]	.224	.149	1.251	.138	.153	1.148	.107	.155	1.113
Routine activity: Walking	-.321	.147	.725 *	-.287	.148	.751	-.251	.150	.778 [†]	-.253	.152	.776 [†]
Location												
Residential	-.019	.181	.982	.055	.186	1.056	.039	.190	.962	-.058	.191	.944
Outdoors	-.368	.202	.680 [†]	-.316	.204	.729	-.311	.207	.733	-.303	.209	.739
Pre-crime												
Victim targeted				.289	.192	1.335	.260	.196	1.297	.243	.197	1.275
Con approach				.341	.146	1.406 *	.314	.149	1.369 *	.265	.151	1.303 [†]
Crime												
Acted on victim							.099	.147	1.104	.066	.149	1.069
Acted on environment							.314	.203	1.368	.320	.205	1.377
# of sexual acts							.150	.050	1.162 **	.116	.050	1.123 *
Reassured victim							.334	.177	1.396 [†]	.344	.178	1.410 [†]
Items stolen- valuable/fetish ^a							-.146	.244	.864	-.193	.246	.825
Items stolen - Fetish only ^a							-.727	.364	.484 *	-.773	.366	.461 *
Post Crime												
Semen found										.621	.152	1.860 ***
Nagelkerke R ²	.029			.040			.074			.096		
Hosmer & Lemeshow	.748			.345			.273			.843		
Overall % predicted	70.3			70.3			71.3			71.7		

Note. ^a = valuable item is the reference category; [†]<.10 p*<.05 p**<.01 p***<.001

After conducting the binary logistic regression analyses, the only variable significantly associated with unsolved case status was when fetish items are stolen from the victim, compared to valuable items. This is an interesting finding that was necessary to explore further to better understand its relationship to criminal expertise. Given that all offenders in the sample committed a contact sexual offense in addition to theft, it was important to better understanding whether offenders who steal fetish items also commit less intrusive sexual acts. Accordingly, a supplementary chi-square analysis was conducted between the type of items stolen and whether the offender committed vaginal or anal penetration. Findings revealed that when the offenders stole only fetish items ($n = 53$, 47.7%), compared to both valuable and fetish ($n = 43$, 75.4%) or valuable items only ($n = 567$, 64.9%), it was significantly less common for the offender to commit vaginal or anal penetration against the victim ($\chi^2 = 16.20$, $p = <.001$).

5.7. Discussion

A key area that has yet to be addressed in the criminal expertise literature is whether certain proxies can be used to determine criminal expertise in sexual offenses. In particular, Ó Ciardha (2015) suggested that unapprehended offenders should be compared to apprehended offenders, in order to determine whether there are more experts in unsolved sexual crimes given that these offenders in these cases had successfully evaded prosecution. Accordingly, the present study aimed to determine whether unsolved stranger sexual offenses would show evidence of a more sophisticated and skilled crime-commission process, specifically oriented around detection avoidance. To examine behavioural indicators of criminal expertise, all three stages of the crime-commission process were accounted for. Findings suggested that behavioural indicators of expertise are not a distinctive feature of unsolved stranger sexual offenses in the current sample. In other words, it does not appear that undetected cases of sexual assault can be used as a “proxy” for criminal expertise (Ó Ciardha, 2015). Nonetheless, the analysis revealed several important findings that are relevant not only for criminal expertise literature, but also provide greater insight into which factors are most relevant in the solvability of stranger sexual crimes. Although there was little evidence to suggest that unapprehended offenders are more sophisticated or skilled at avoiding detection the present study did, however, find that both the number of sexual acts committed by the offender and semen found at the crime scene were significantly

associated with case solvability. Locard's exchange principle (Locard, 1920) suggests whenever two objects come into contact, an exchange of materials occurs between them. This exchange may allow investigators to form connections between a suspect and a crime scene, or a suspect and a victim, based on the transfer of materials. Thus, findings from the current study suggest that the more contact an offender has with their victim, the greater likelihood they have of being apprehended. This is similar to what was found in the "sloppy/reckless" theme from Balemba et al.'s (2014) thematic examination of solved/unsolved sexual homicide. Cases that fell into the sloppy/reckless theme were the most likely to be solved by law enforcement and were also the most likely to contain semen evidence. Similarly, Chiu and LeClerc (2020) found that for stranger sexual assault, solved crimes generally occurred with more severe sexual outcomes and the presence of forensic evidence. Thus, perhaps what makes more of an impact on the solvability of a stranger sexual assault is not skills or expertise in detection avoidance, but rather, when the offender does not show concern for forensic evidence despite engaging in high-risk behaviours. In particular, engaging in sexual acts with the victim and stealing their valuable items may lead investigators to the most important evidence that can be used to identify a suspect in stranger victim cases. It is also interesting to note that certain behaviours associated with criminal expertise (e.g., using a con approach and verbal reassurances) may increase one's likelihood of detection. This finding is similar to both Chiu and Leclerc (2020) and Chopin et al. (2019), who also found strategies that involve a greater level of victim-offender interaction were positively associated with case solvability as they may increase the chance of identifying offender (i.e., better able to describe their assailant), particularly if they are stranger to the victim.

Considering that cases involving stranger victims are more difficult for police to solve (e.g., Bouffard, 2000), it is possible that cases where semen evidence was collected received greater priority for forensic analysis. This appears to be somewhat contradictory from previous studies on the role of semen evidence to rape solvability. Evidence from rape conviction studies have suggested that forensic evidence tends to play a minor role in solvability in comparison to witness testimony (e.g., Ingemann-Hansen et al., 2008; Sommers & Baskin, 2011). For instance, Chopin et al. (2019) found that crime characteristics appeared to have more importance to rape solvability than forensic traces. Similarly, LaFree (1981) found that the best predictor of sexual offender arrest was when the victim was able to identify and describe the suspect. However,

LaFree (1981) study occurred before the use of DNA analysis in sexual crimes, and both LaFree (1981) and Chopin et al. (2019) do not focus exclusively on stranger sexual crimes. Thus, perhaps this finding is indicative of a shift towards forensic evidence as a superior means of identifying suspects in stranger sexual crimes. As Chopin et al. (2019) note, the limited contribution of forensic evidence to rape solvability may be especially apparent for cases where the victim and potential suspect are known to one another as there is usually no need to prove the identity of the suspected offender (e.g., DNA or bodily fluid testing), but rather, whether the victim consented or not (Hazelwood & Burgess, 2016). Thus, it is possible that police prioritize the submission of DNA analysis in rape cases with perpetrators who are strangers to the victims.

Importantly, the only variable significantly associated with unsolved case status was when fetish items are stolen from the victim, compared to valuable items. This is an interesting finding that felt necessary to explore further to better understand its relationship to criminal expertise. For instance, there is a possibility that this may simply relate to valuable items (e.g., stolen credit cards, cellphone) being more traceable, and thus offering an alternative means for police to identify the suspect when there is an absence of other evidence. Nonetheless, it is also possible to hypothesize that fetish items are stolen by offenders who spend less time and/or commit less intrusive sexual acts with their victim, and as a result, leave less forensic evidence behind. This is similar to the “forensically aware” theme identified in both solved and unsolved cases of sexual homicide in Balemba et al. (2014). In Balemba and colleagues (2014) study, “forensically aware” offenders were the least likely to commit intrusive sexual acts and semen was rarely found at the crime scene.

To explore this possibility, a supplementary analysis of the variable items stolen compared to sexually penetrative acts (i.e., vaginal/anal insertion with a penis) was conducted. The analysis showed that offenders who steal fetish items from their victims less frequently commit sexually penetrative acts against the victim. Thus, it may be that offenders who steal fetish items are also those who are most “forensically aware” because they prioritize theft of fetish items over sexually intrusive acts that are at a greater risk for semen evidence being left behind. For example, offenders who have stolen fetish items may use these items as a way to “re-live” the offense or achieve sexual gratification post-offense in replacement of engaging in more high-risk sexual acts (e.g., vaginal/anal penetration) during the offense (e.g., Brankley, et al., 2014).

Moreover, given that there is a link between fetish theft and escalation in sexual offending, this may reflect a particularly important subgroup of undetected offenders. More specifically, progressively violent behaviours that develop from paraphilias can manifest into criminal activity, such as burglary, assault, rape and murder, and may even develop into sadistic sexual activity (Burgess et al., 1986). For example, MacCulloch et al. (1983) found that individuals with repetitive sadistic masturbatory fantasies can become compelled to seek out opportunities to “try-out” their fantasies, leading to increasingly more dangerous behaviour. These fantasies are also thought to serve as a platform for which offenders develop their expertise (Bourke et al., 2012; Ward, 1999). Thus, it is possible that some unsolved cases include offenders who have escalated from sadistic fantasies to fetish theft and contact sexual offending while remaining undetected.

The notion that expertise could be related to offenders with paraphilias is an important consideration, as paraphilias are more common in sexual offenders who commit homicide than sexual offenders who do not (Koch et al., 2011). For instance, Shlesinger and Revitch (1999) found that over a third of sexual murders had prior convictions for burglary. In particular theft of fetish objects was found to be directly related to escalation, and in some cases, escalated to sexual assault or murder. Unfortunately, given the nature of the data, it was not possible to adequately address this possibility. However, future research should consider whether fetish theft during a sexual assault—in the absence of more intrusive sexual behaviours—could be an indication of a sophisticated or expert type of sexual offender who is at risk of escalating to more serious crimes.

Lastly, although the present study did not find strong evidence to support the notion that criminal expertise is related to case solvability, it is important to acknowledge that it was not possible to account for all extraneous factors that could be related to solvability. For instance, studies have also shown that the skills of the investigators can play a role in case solvability (James & Beauregard, 2018), and others have suggested that it may not be because of the offender or the police, but some cases are not solved simply due to circumstances and bad luck (Rossmo, 2009). For example, Balemba et al. (2014) found a subset of sexual homicide offenders who were sloppy and reckless in their crime-commission process but remained undetected, likely due to situational circumstances that worked in their favor. Moreover, it remains possible that offender

expertise may impede or delay the investigation, but ultimately not impact the ability to solve the case. Future research should therefore consider the impacts of criminal expertise on other aspects of the investigation, such as the length of time to case clearance.

The present study provides important insights for the criminal expertise literature on sexual offending, nonetheless, this study is not without limitations. The first and most obvious is due to the nature of the data. Unsolved cases were explored as a type of proxy for criminal expertise, and although there was not strong support for its utility as an indicator of expertise, it is important to note that police databases are limited to crimes that have been reported and investigated by police. Thus, the present study could not control for the possibility that some serial sexual offenders were misclassified as single-incident offenders, which could impact the ability to capture criminal expertise between solved and unsolved cases. Second, the present study involved sexual assaults that also involved a secondary offense of personal theft, which may not be generalizable to other types of sexual assault. Moreover, criminal expertise was examined in stranger rape exclusively. Therefore, it is possible that the findings are not generalizable to cases where the victim is known to the offender. Additionally, the sample is from France, and thus may not be generalizable to other countries. Future research should attempt to replicate these findings on other sexual crimes (e.g., sexual homicide, cases involving child victims) and include more detailed qualitative information pertaining to an offender's expertise. Despite these limitations, these findings have important theoretical and practical implications.

5.7.1. Implications and Conclusion

The purpose of the current study was to investigate whether criminal expertise is a feature of unsolved sexual assault. More specifically, accounting for both victimology and crime characteristics on solvability, a key aim was to determine whether the crime-commission process of unsolved cases involved more criminal expertise. The findings suggested that the demographic and lifestyle characteristics of the victim have a limited impact on solvability. Rather, in-line with previous research on case solvability in sexual crimes (e.g., Chui & Leclerc, 2020), it was observed that offenses with the least semen evidence and lowest levels of victims-offender interaction that appear to have the most impact on solvability. In particular, it was found that the extent of the sexual acts

committed and the presence of semen evidence at the crime scene were the most important factors. From a criminal expertise perspective, an “expert” sexual offender has been conceptualized as one who offends with a high-level of sexual intrusiveness (Chopin et al., 2021) although present findings suggest this would lead to a greater risk of detection. Nonetheless, it was also observed that cases with offenders who stole fetish items from their victims were more likely to remain unsolved. This could be a strategy used to replace high-risk contact sexual behaviours during the offense, as the fetish items can be used post-offense as a mechanism to achieve sexual gratification (Brankley et al., 2014) or an indication of an offender who is “trying out” their fantasies and is in the beginning stages of a series of increasingly more dangerous sexual crimes (e.g., MacCulloch et al., 1984; Sheslinger & Revitch, 1999). Moreover, this process of using deviant fantasies as a platform for practice has been found to directly related to the develop of criminal expertise (Bourke et al., 2012).

These findings also have practical implications, as they provide insight into which cases should be harder to solve. More specifically, these findings can be used by police to aid in determining which cases require more resources from the start of the investigation to ensure that best chances of solving the case. Moreover, the present results emphasize the importance of collecting forensic and trace evidence in cases of sexual assaults that involve stranger victims. This is especially important to consider as even the presence of DNA taken from a rape kit, even when police do not have a suspect, can contribute to case clearance and prosecution (Alderden, 2008). Importantly, this study showed that the absence of semen evidence in cases of sexual assault involving fetish theft should not be over-looked. In fact, these cases may represent a subset of paraphilic offenders, who are especially at risk of escalation, and who may be more skilled and avoiding detection. This finding also stresses the importance of examining expertise on different samples of sexual offenders, future research should consider examining the role of expertise on case solvability in other types of crimes, such as sadistic sexual homicide.

Chapter 6.

Conclusion

6.1. Summary of Findings

Despite most researchers agreeing that individuals can learn to modify their strategies to commit crimes, there is little consensus as to whether such knowledge is necessary to facilitate the offense process and enable one to avoid detection (Chopin et al., 2021). Drawing on decision-making theories of crime as well as previous research on criminal expertise, the present thesis contributes new theoretical and practical insights to this question. This was achieved through an examination of the crime-commission process of a series of sexual crimes hypothesized to involve a greater degree of skill and offense related competencies or directly related to the ability to avoid detection. First, by bridging the literatures on rational decision-making in sexual offending and criminal expertise in burglary, Chapter 2 was able to demonstrate that like burglary, sexual burglary involves domain-specific expertise. Importantly, however, this expertise was shown to be distinctive from sexual robbery, and thus not simply a function of comparing expertise in offenders to non-offending domains. Chapter 3 findings then built on Chapter 2 by examining the heterogeneity of criminal expertise in both samples. In doing so, this study offered insight into differences in decision-making along the expertise continuum (i.e., from novice to expert). Moreover, findings revealed that intermediate offenders were characterized by a general expertise, relative to novices (i.e., unskilled) and experts (i.e., domain-specific skillsets). This challenges the view that individuals who commit sexual crimes are a homogenous group. In fact, these studies showed, even those who commit sexual-theft are not homogenous; neither within their domain or across different types of sexual-theft domains.

Relatedly, another important finding that emerged from Chapter 3 was the “experts” in sexual burglary. These findings suggest that some offenders who possess specialized knowledge in sexual offending may actually be hidden within a criminal career that involves versatility. In other words, versatility in sexual offending does not necessarily equate to the absence of specialized skill. This mirrors the conclusions made by Soothill et al. (2000) that a “plague of criminology is the insistence that offenders

either specialize *or* are versatile. We need to recognize that they can do both” (pg. 56). Thus, findings showed that individuals who commit sexual burglary may represent a more sexually deviant and skilled offender, as well as offer greater insight as why this specific crime has been associated with persistence and escalation in sexual offending (e.g., Brankley et al., 2014; Horning et al., 2010) and even sexual homicide (Brankley et al., 2014; Schlesinger & Ressler, 1999). Taken together, this thesis emphasizes the need for more attention to be paid to hybrid crimes as they can offer new ways of thinking about the development of specialized and general skills in versatile criminal careers. With further refinement, behavioral indicators of criminal expertise could be a valuable tool for practitioners to help determine the extent of specialization and versatility within a broader criminal career. In turn, this could help to tailor treatment and intervention approaches who are at the most risk of future sexual violence.

Finally, Chapters 4 and 5, investigated a key area yet to be addressed in the literature on criminal expertise in sexual offending regarding whether serial and unsolved offenses can be a type of proxy for expertise. Chapter 5 found that the most important behaviors for remaining unapprehended were stealing fetish items, reducing sexual contact and not leave semen evidence, suggesting that some offenders consider the longer-term risks of avoiding detection over immediate rewards (i.e., sexual gratification). Chapter 4 findings showed that even within a criminal career that involves some degree of persistence in sexual offending (i.e., serial offenders), general criminal competencies were more likely to be observed in this group, rather than specialized knowledge in sexual offending. As Simon (1997) highlighted, once an offender commits a sexual crime, they are treated as specialists by the legal and mental health care systems. Nonetheless, sexual offending— even when there is evidence of persistence— has continuously been shown to be a broader pattern of criminal behavior (e.g., Sothill et al., 2000). Thus, by applying an expertise perspective to sexual crimes, findings can also push traditional conceptualization of offense generalization and specialization by accounting for differences in offense skills and competencies through an examination of crime-commission behaviors.

In sum, findings from the four chapters reinforce Ward’s (1999) argument on the importance of not only considering sex offending through a “deficit-based” perspective and that acknowledging the ability for some offenders to develop skills that enable them to overcome victim resistance, maintain control of the crime, and decrease their risks of

detection, can be indicative of offense related skills and competencies. In doing so, this thesis firmly brings sexual offending back into the expertise conversation and demonstrates the utility of examining behavioral indicators of expertise. Moreover, the results obtained from these four studies provide new insights for treatment, management and crime prevention.

6.2. Implications

6.2.1. Decision-making processes and criminal expertise

Much of the criminal expertise research to date has utilized different decision-making perspectives, including “bounded” notions of rationality (Simon, 1957) and dual-systems perspectives (Kahneman 2003; 2011; Stanovich, 1999; van Gelder, 2014). The underlying premise of these perspectives is that expert offenders will engage in pre-conscious, pre-attentive scanning and interpretation of environmental and offense-relevant cues that will eventually result in a more deliberate process to undertake crime (Nee & Ward, 2015a). In general, these perspectives argue that expertise is largely undertaken at the unconscious level, and is characterized as heuristic-based, requiring little or no cognitive effort. Studies of experienced burglars, for instance, have demonstrated their superior ability to identify burglary relevant cues (e.g., in appraising targets) as well as their engagement in automatic, and unconscious decision-making processes during the commission of the crime (Bourke et al., 2012; Clare, 2011; Meenaghan et al., 2020; Nee & Meenaghan, 2006).

Although these studies have offered new ways of examining criminal decision-making and clearly demonstrated that the act of offending seems strongly governed by habitual and largely unconscious decision-making processes, there has been a lack of attention to the longer-term orientations of some offending behavior. Perhaps, this is because the “cool mode” of decision-making is largely associated with effortful, rational, and decision-making processes that weigh the “costs” of crime, including shame, guilt, and the risk of apprehension (e.g., van Gelder, 2014). In this sense, it has been common to view this system with the decision *not* to engage in crime, as it is associated with self-regulation and control. However, because the present study was one of the first to examine the entire crime-commission process (i.e., pre-crime, crime, and post-crime), an area neglected by previous research, it provides insight the longer-term decision-making

processes involved in expertise as well. In particular, offenders classified as “intermediates” and who engaged in more “transferable” or generalist skills appeared to make skilled pre-crime and crime decisions that relate to the ability to successfully commit the offense (e.g., location selection, bringing a weapon to the offense, controlling the victim). However, the domain specific expert in sexual burglary, appeared to make decisions throughout the crime-commission process that were indicative of forensic awareness and the desire to not only successfully commission their offense, but reduce their risks of apprehension. In this sense, there is a clear interplay between the desire to commit the crime as well as a consideration of the long-term consequences. Although the “cool mode” doesn’t override the more impulsive actions of the “hot-mode” as a crime is still being committed, it does appear to affect the amount of planning and strategy that is involved in attempting to avoid detection. This is arguably more indicative of the type of rational decision-making and self-regulation associated with “cool modes” or S2. Thus, a key contribution of the current thesis is its encouragement of new theoretical conversations on the extent that skill facilitates decision making and behaviors during the crime.

6.2.2. Expertise and motivations for continued offending

One of the benefits of the expertise perspective is its ability to measure criminal skills and competencies throughout the entire offense process, and not just as an outcome measure (e.g., illegal earnings, or remaining undetected). For example, Ouellet & Bouchard (2016) have suggested that the best measures of criminal competencies would not be self-assessed, but instead, reflect something relatively objective in terms of the way that offenders “do crime”. Although this is certainly a valid assertion, there is also something to be said about expertise as a function of self-belief, particularly when considering motivations for continued offending. As stated by Brezina & Topalli (2002), an offender’s perceptions about their own competency may provide indirect evidence of skill acquisition, although biased by self-assessment. In relation to the current thesis, it was found that criminal competencies and skill occur across crime phases, including the precrime phase (e.g., targeting a victim and selecting a location) and crime phase (e.g., victim control and compliance) and post-crime phase (e.g., destroying and removing evidence). In other words, when seeking to understand motivation for offending, it may be just as important to consider the offense process as it is to consider the actual

outcome of that process, particularly for sexual offending. For some, the ability to plan the offense, commit the crime itself with little victim resistance and in a location where they were not disrupted (e.g., outdoors without witnesses' present) may allow one to feel that they are skilled at what they do. This may be just as intrinsically motivating for the next offense as the offender who is objectively successful at avoiding detection. Thus, by examining the offense related competencies and skills within an offender's *modus operandi*, practitioners may have an additional window into the motivations for continued offending.

6.2.3. Crime intervention and prevention

Criminologists have long acknowledged that although the empirical support for the relationship between the threat of (objective) sanctions and crime is relatively weak (see Nagin, 1998), the association between perceived rewards and crime is consistently positive and strong, regardless of offense or offender type (Loughran et al., 2013). This suggests that individuals are highly responsive to rewards from crime. In other words, criminal expertise may have an affect on offending frequency and over all career length. This is especially problematic if it becomes the only available source of such reinforcement, as individuals may be unwilling to give up an offending lifestyle (Fortune et al., 2015). As Nee et al. (2019) highlights, "expertise in offenders is unique in the sense that it has a dual normative status: it is both a risk factor for persisting in a criminal career and potentially a protective factor in desisting from it" (pg.24). For example, Shover and Thompson (1992) and Sommers et al. (1994) found that the probability of desistance increases when offender's expectations for achieving rewards from criminal activity decline. Thus, those who can be classified as domain-specific experts, such as the sexual burglary subgroup in the present sample, may have a higher probability of continuation in offending. This is relevant for criminal justice policy, as it would be possible to better allocate resources and monitoring to those who are the most at-risk of sexual reoffending. For example, strict monitoring policies (e.g., electronic monitoring, community notification, and registration), particularly in the US, but also in Canada, the UK, and New Zealand (Pratt, 2000) treat all individuals convicted for a sexual offense as a homogenous group. Clearly, there are important differences between individuals, and identifying indicators of expertise in sexual offending would be

a valuable tool in ensuring those who are most at need of monitoring and intervention are prioritized.

One consequence of adopting the criminal expertise perspective to the individuals who perpetrate sexual crimes is the undoubtable challenge this poses to the practitioners who work with them. The propensity for some sexual offenders to escalate to more violent, and severe forms of sexual violence may be in part, due to their increased ability to do so (Ward, 1999). According to the expertise perspective, because experts have more deeply entrenched offense scripts, they would be more difficult to treat, even if they are motivated to do so (Bourke et al., 2012; Ward, 1999). Moreover, these offenders represent a challenge from a prevention standpoint, as their motivation to offend may begin well before the criminal event. For example, in Chapter 3 experts in sexual burglary were also those who were most likely to possess a pornography collection and have sexual dysfunction. Masturbation to deviant sexual fantasies has been argued to provide a form of emotional reinforcement and practice through mental rehearsal (Nee & Ward, 2015a). This is consistent with Bourke et al. (2012), which found that this process allowed expert child sexual offenders to refine their modus operandi tactics before implementing them. This perspective stresses the importance of rehabilitative professionals to think beyond deficit-based perspectives and acknowledge that entrenched, dysfunctional, and automatic schemas will compete forcefully with attempts by an individual to change existing ways of thinking (Bourke et al., 2012; Nee & Ward, 2015a; Ward, 1999). Nonetheless, one of the benefits of the expertise perspective is that it offers an alternative to deficit-based models. Thus, it may be possible for clinicians to assist the offender in reapplying the features of expertise from dysfunction to functional within various aspects of their life (Bourke et al., 2012). For example, the use of planning and problem-solving skills in offending could be restructured and repurposed towards a relapse prevent plan or solving lifestyle difficulties, such as establishing healthy adult sexual relationships (Ward, 1999).

In contrast, it may be easier to treat novices or less experienced offenders because their knowledge and skill sets relating to offending have not yet fully developed and may therefore be easier to disrupt (Bourke et al., 2012). For example, the offending of novices may be related to poor self-regulation and perceived criminal opportunity (e.g., vulnerable victim). Indeed, the novice subgroups identified in Chapter 3 appeared to be highly opportunistic as well as lack evidence of skill and sophistication. Thus, by

breaking down the offense and the individual's decision-making through each stage of the crime-commission process, it is possible to identify scenarios that may result in future offense situations (Bourke et al., 2012). For novices, this may be addressed in treatment through strategies to improve self-regulation, or removing the situational risk-factors (e.g., going to bars) that may trigger opportunistic offending.

Lastly, a clinical implication of the expertise perspective is that it may be possible to make judgements about an individuals' degree of severity or offense history despite the presence of denial and minimization (Ward, 1999). For example, behavioral evidence revealing that a sexual offense was well planned or that strategies were adopted by the offender cope with different types of victims or situations, indicates a certain level of sophistication and experience (Beauregard et al., 2012; Beauregard & Proulx, 2017; Chopin et al., 2021; Fortune et al., 2015). Such cues can therefore serve as "expertise indicators" and may be helpful for clinicians to formulate a more accurate risk assessment (Ward, 1999). Moreover, these behaviors may be relevant for police investigators to aid with suspect prioritization. For example, this could help investigators determine whether an offense was more likely to be committed by someone with a previous offense history (e.g., in sexual offending or in burglary or robbery) or aid in determining the motivation behind a hybrid offense. Taken together, this highlights the importance of further refinement and empirical analysis examining behavioral indicators of expertise.

6.3. Limitations and Future Research Directions

6.3.1. A move towards cognitive *and* behavioral studies of expertise

One of the criticisms of criminological theorizing has been its progression into two distinct and mainly separate tracks (Mamayek et al., 2015; van Gelder, 2014). One perspective has focused on relatively stable characteristics that make people conducive to offending, whereas the other has looked more closely at the role of decision-making processes that influence one's willingness to offend. Dual-systems theories offer a promising avenue for researchers to attempt to bridge the gap between these two viewpoints to arrive at a more comprehensive framework for criminal behavior (Mamayek et al., 2015; van Gelder, 2014). For example, findings from the present thesis highlight the likely operation of both systems to explain differences in expertise. Those

with more sophisticated MOs appeared to be more oriented around longer-term rewards (i.e., detection avoidance). Conversely, the MOs of novices appeared more impulsive and opportunistic, and thus oriented towards the “here and now”. Despite the integration of dual-systems perspectives to the study of criminal expertise, the extant literature has followed down much of the same path as criminological theorizing by approaching expertise through two distinct pathways. In doing so, they have formed a clear division between structural (i.e., cognitive) and behavioral manifestations of expertise. Nonetheless, as Ward (1999) highlights, cognition and behavior are interconnected and should be viewed as ‘two sides of the same coin’. Thus, there is still much that remains to be understood about criminal expertise and the role it plays in dual systems theories, including the extent that experts are better able to self-regulate impulsive behavior in favor of more rational decision-making such as taking steps to avoid detection, before, during, and after the crime.

While the current findings shed light on short-term and longer-term decision-making processes (i.e., hot/cool modes; Van Gelder, 2014), this was done exclusively through behavioural observations of the offender’s modus operandi. This approach was utilized specifically because past studies have largely neglected behavioral indicators of expertise in favor of measuring expertise through cognitive skills, such as heuristics and memory capabilities. Arguably, this past approach has resulted in an over-emphasis on the “hot-mode” or system 1 decision-making processes, despite the clear links between expertise and longer-term rewards (i.e., avoiding detection) associated with the “cool-mode” or system 2. Nonetheless, by examining behavioural indicators there is a ‘trade-off’ of sorts, wherein expert decision-making processes are not directly measured but inferred as indicators of expertise. For example, although engaging in strategies to avoid detection (e.g., planning the offense, choosing a deserted location, destroying and removing evidence) are associated with experienced and more skilled offenders (e.g., Beauregard & Proulx, 2017; Chopin et al., 2021; Reale et al., 2020), it is not possible to conclude that each individual who engaged in these behaviors would also be an “expert” in cognitive measures of expertise (e.g., through memory skills and heuristics). There is also the possibility that some individuals classified in the current study as “experts” used these strategies, even without previous direct or indirect experience. The lack of research that strives to include both elements of expertise is one the current study was unfortunately unable to address, and thus remains an important empirical gap to address

for future research. For instance, it should be possible to adapt research methods and designs from both cognitive and behavioral studies of expertise to examine whether offenders with expert MO's are also more capable of encoding, representing, and recalling offense-related information relative to those identified as novices and intermediates.

6.3.2. Indicators of expertise

Although studies have consistently shown that most individuals convicted of sexual crimes do not specialize in sexual offending and tend not to be convicted for another sexual offense, there remain a small minority that do (see Lussier, 2005 for a review). Moreover, the dark figure is particularly pronounced for sexual offending (Bouchard & Lussier, 2015; Langevin et al., 2004) and studies of self-reported offending have shown repeat sexual victimization tends to be higher than what is observed in official data (e.g., Drury et al., 2020; Lisak & Miller, 2002; Lussier et al., 2011; Weinrott & Saylor, 1991). Thus, one of the benefits of the expertise perspective is that it provides behavioral indicators of expertise that are observed objectively through the crime-commission process. Ward (1999) notes, these "expertise indicators" can be useful to assess an individual's degree of severity or offense history despite the presence of denial and minimization. Although behavioral indicators used in the current study are based on theoretically and empirical research on criminal expertise and crime sophistication, there is an overall lack of specific criteria or standards for the determination of expertise. As a result, it is possible that some indicators of expertise used in the current study do not adequately capture expertise or that they would not be generalizable outside of hybrid sexual crimes. For example, one potential avenue for future research could be to utilize the 10 behavioural indicators of criminal expertise from Chapter 3, as these variables were successful at differentiating novices, intermediate, and expert offenders in the latent class analyses. These indicators could be used to develop a criminal expertise scale, which could be cross validated in different samples.

It is also important to acknowledge the potential issue of associating expertise with avoiding detection. Proxies by nature are indirect measures, and thus come with drawbacks, including extraneous variables that cannot be accounted for. In particular, the ability for an offender to remain unapprehended is not solely due to their own abilities or skills; there are many other factors that may influence case outcome. For instance,

studies have also shown that the skills of the investigators can play a role in case solvability (James & Beauregard, 2018), and others have suggested that it may not be because of the offender or the police, but some cases are not solved simply due to circumstances and bad luck (Rossmo, 2009). Moreover, it remains possible that offender expertise may impede or delay the investigation, but ultimately not impact the ability to solve the case. Future research should therefore consider the impacts of criminal expertise on other aspects of the investigation, such as the length of time to case clearance.

Outside of case outcome, it is also important to acknowledge the limitations in examining expertise among detected offenders. It is possible that offenders with the most expertise are those who have never been caught or those who have managed to avoid detection over long periods of time, despite increasing the severity or frequency of their offending. A good example of this is Lussier et al. (2011) who showed that the most productive offenders (i.e., high number of sexual contacts) were the least likely to be detected. It may be possible identify prolific offenders through self-reported offense history, and this would be a particularly relevant area to examine through an expertise perspective for future research. Another limitation with the expertise literature more generally, but that also applies to the current study, is that even though someone may have more skills and competencies relative to other individuals, they are not incapable of making mistakes that may ultimately lead to their apprehension. Considering that expert decision-makers are thought to be engaging in “bounded rationality” (Simon, 1957, Gigerenzer & Selten, 2002) or “cognitive short-cuts”, it is possible to make errors in judgements, especially under pressure (Klein, 2009) or to be influenced by affect prior to the crime (van Gelder, 2013). Moreover, experimental research in a variety of domains (e.g., chess, physics, music) has shown that experts consistently and significantly over-estimate their ability to problem solve in their domains, compared to novices and intermediates (Chi, 2006). As a result, they can be less cautious about their abilities which can lead to errors in decision-making. Indeed, Loughran et al. (2012) observed in young offenders, that the more overconfident they were in the belief that their risk of detection was low, the more likely they were to be arrested. This once again highlights the importance of examining expertise behaviorally over the crime-commission process, as reliance exclusively on outcome measures such as detection avoidance could lead to an under-estimate of the extent that individual possess expertise within their domain.

6.3.3. Criminal careers and criminal expertise

Although determining how expertise develops and the relationship this has to prior offense history was beyond the scope of this thesis, the lack of detail pertaining to the offender's criminal history is still an important limitation to acknowledge. As a result, the development of expertise was mainly inferred from the presence of sophisticated behaviors indicative of prior sexual offending experience (e.g., destroying and removing evidence), or with the case of the "experts" in sexual burglary, observed indirectly through associations with pornography, which can be used as form of practice through mental rehearsal (Bourke et al., 2012; Ó Ciardha, 2015; Ward, 1999). However, it is important to highlight that the goal of this thesis was not to measure how expertise developed over time, but rather, to provide an examination of behavioral manifestations of expertise. Yet, from a criminological and psychological standpoint, the question of how one develops "skills" in interpersonally violent crime remains an important area to address. Although this thesis made significant contributions to how expertise varies between individuals, there is still much to understand about how expertise varies *within* individuals. Such an approach requires a longitudinal design, and although difficult to achieve, would provide immense value to expertise research. Ideally, beginning at the age at first juvenile offense and following into the adult criminal career, researchers could identify early behavioral indicators of expertise as well measure how specialized knowledge and skills develop over time, and in relation to criminal other aspects of the criminal career (e.g., time spent in prison, deviant groups, number of victims and offenses). This could offer insight into the goal and reward structure that drives repeated offending, which may provide use for tools to potentially prevent young people from becoming involved in crime (Nee et al., 2019). In fact, one of the main practical conclusions that can be drawn from expertise research is the need for earlier treatment, and the identification of expert structural and behavioral indicators should be both a clinical and research priority (Ward, 1999).

Another important question to understand is why some individuals become experts and others do not. Relatedly, how do offenders explain their own reasons for persistence in offending and does this relate to a sense of self-mastery within their domain? For example, recently Meenaghan et al. (2020) investigated indicators of expertise and their potential impact on specialization and diversification in offending. Many of the older participants who continued to specialize indicated that the reason they

had done so was because they felt they had developed some level of skill and mastery, considering burglary to be their ‘chosen career’. Thus, interview-based studies on individuals who self-report specialization in sexual crimes that directly aims at assessing self-perceptions of skills and competency can provide invaluable insights for crime prevention and rehabilitation.

Lastly, several researchers have noted the many similarities between burglary, robbery, and rape (e.g., Horning et al., 2013; Delisi et al., 2011; 2017; Pedneault et al., 2015a; Vaughn et al., 2008), however, there has yet to be a complete theoretical explanation of their relation to each other – particularly within the context of skill development and criminal sophistication. This thesis, although not without limitations, hopes to have contributed valuable practical and theoretical insight into this question. Nonetheless, the relationship between burglary and sexual offending should be explored further, specifically through an expertise framework. Although primary motivation in most burglary is material gain, it can also conceal other powerful motivations, such as sexual gratification (Horning et al., 2013). Thus, a particularly important question for future research is whether burglary and fetish-theft are the starting points for some to develop a sense of mastery, or skill and then progressively escalate to more serious forms of sexual offending. This is especially relevant for risk assessment, given that burglary has been found to have predictive utility in assessing recidivism among sexual offenders (Risk Matrix; Thornton et al., 2013) and sexual burglary may increase one’s risk of committing future homicide (Vaughn et al. 2008) and sexual homicide (Schlesinger & Revitch, 1999).

6.3.4. Other potential “expert” offending populations

The thesis has shown that the expertise framework extends beyond persistent child sexual offending and can be applied to other types of sexual crimes, including those that are hybrid in nature. However, it has only begun to validate the expertise framework on sexual and violent crimes; there remain many other potential expert offending populations that should be explored. For example, Davies (1997) observed that the methods of target selection in burglars was remarkably akin to how sexually motivated murderers selected their victims (e.g., targeting after encountering a potential victim or by prowling in a particular area). Examining expertise in this population could provide further insight into how expertise manifests in the most severe forms of violent

crime; an area that has yet to be empirically addressed. Additionally, polymorphic offenders (i.e., those who cross-over between victim age, gender, or relationship; Beauregard et al., 2012) by their very nature will engage in repeat sexual offending. Polymorphic sexual offending is also associated with high sexual sensation seeking and sexual preoccupation (Stephens et al., 2017), and would therefore be an important population to examine in relation to the development of criminal expertise.

Another area that remains unaddressed is the role of personality in the development and manifestation of criminal expertise. Certain personality traits or paraphilias could arguably influence the development of expertise, particularly if they enable an offender to weigh the costs and benefits of a crime differently. For example, sadistic sexual homicide offenders have been found to engage in significant offense planning reflective of their deviant fantasies, are more investigatively aware, and better at avoiding detection (Beauregard & Proulx, 2002; Dietz et al., 1990; Reale et al., 2020). Moreover, high sexual sensation seeking may be part of an antisocial lifestyle, thus the relationship between criminal expertise and psychopathy should be explored in future research given associations with violence and chronic offending (DeLisi, 2016; Douglas et al. 2006; McCuish et al., 2014). In sum, future studies should consider examine criminal expertise in both these potential “expert” offending populations. This would contribute not only to a greater understanding of differences in criminal expertise but also account for the influence of individual traits on decision-making.

6.4. Final Remarks

In Hirshi's (1986) classical assessment of offenders, he argued that little or no expertise is needed to enact crime in general or to specific types of crime. In fact, he asserted that within an offender's criminal career there does not appear to be increasing skill or sophistication, but rather, “starts with little of either and goes downhill from there”. Yet, such a perspective simply cannot adequately explain the growing body of evidence that indicates that some offenders possess offense related skills and competencies than differ from more novice or amateur offenders (e.g., Bourke et al., 2012; Chopin et al., 2021; Clare, 2011; Meenaghan et al., 2020; Roth & Trecki, 2017). Moreover, Hirshi's views do not account for the observation that some offenders may also believe that they have developed mastery in their criminal domains, which can serve as a powerful motivator for continuation in offending. As Ward (1999) observed, some sexual offenders

simply believe they are “good at what they do” (pg. 298). Thus, although mainstream criminology tends to refer the study of sexual crimes to the field of psychiatry and psychology (Harris, 2008; Soothill et al., 2000), the vast harm that sexual offending causes to both victims and society, suggests the need for greater attention to be paid to how persons convicted of sexual crimes are able to rationalize the level of risk in relation to their perceived gains and how this may motivate them to continue to sexually or violently offend. Perhaps this is because, as Delisi & Wright (2014) argue, violent crimes such as sexual offending and homicide simply don’t fit traditional criminological theories of offending, or because sexual offenders are often viewed as deficit-based (Ward, 1999). Nonetheless, as this thesis shows, sexual offending is certainly part of the criminological realm, and by utilizing the expertise perspective new insights into existing debates on offense specialization and generalization, offender motivation, and criminal decision-making can be gleaned.

Importantly, this thesis provided a more nuanced understanding of where an individual falls on a novice to expert continuum and how this relates to different decision-making processes during before, during, and after the crime. Such findings highlight the possibility to identify cognitive mechanisms used by offenders to block or delay treatment initiatives as well as highlight those that could facilitate it (Bourke et al., 2012). Moreover, by considering an offender’s modus operandi, it may be possible to identify the degree of specialization or versatility in offense related skills and competencies, allowing for more tailored treatment approaches that target the most high-risk offenders. The ultimate goal, however, will be to disrupt the acquisition of these knowledge structures and criminal skillsets before they become firmly entrenched, and to provide alternative interpretations of high-risk situations (Ward, 1999). As such, this thesis aimed to not only bring sexual violence back into the expertise literature but inspire new ways of thinking about sexual offense prevention and rehabilitation.

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