

**“Drop the body”:
Body disposal patterns in sexual homicide**

**by
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Abstract

The current study investigates body disposal patterns in sexual homicide cases, and examines whether offender's behaviour differ between solved and unsolved cases. To address these two research questions in line with rational choice perspective, a series of logistic regression analyses was conducted on a sample of 250 solved, and 100 unsolved sexual homicide cases in Canada. Within solved cases, results show that if victim is a prostitute, body found concealed, and found lying face down, it is likely the body was moved. For unsolved cases, the role of victim as a prostitute, and evidence of stabbing influenced whether the body was moved. Further, results indicate that *post-crime phase* factors predicted the most whether the victim's body was moved in solved cases. Whereas within unsolved cases, *pre-crime phase* factors contributed the most at predicting whether the body was moved post-homicide. Theoretical and practical implications from this study are discussed.

Keywords: sexual homicide; crime-commission process; body disposal patterns; rational choice

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Table of Contents

Approval.....	ii
Ethics Statement.....	iii
Abstract.....	iv
Dedication.....	v
Acknowledgements.....	vi
Table of Contents.....	vii
List of Tables.....	viii
List of Figure.....	viii
Chapter 1. Introduction.....	1
Chapter 2. Literature Review.....	3
2.1. Rational Choice Perspective.....	3
2.2. Crime-commission process: crime scripts.....	4
2.3. Choice-structuring properties.....	6
2.4. Criminal events.....	8
2.5. Post-crime phase: body disposal patterns.....	9
2.6. Detection avoidance.....	13
Chapter 3. The current study.....	16
Chapter 4. Data and Methods.....	17
4.1. Data source.....	17
4.2. Measures.....	17
4.2.1. Dependent variable.....	17
4.2.2. Independent variables.....	18
Victim characteristics.....	19
Situational factors.....	20
Location factors.....	20
Offender's modus operandi.....	21
Body recovery scene.....	22
Signs of forensic awareness.....	23
4.2.3. Analytical strategy.....	23
Chapter 5. Results.....	25
5.1. Solved cases.....	25
5.2. Unsolved cases.....	31
Chapter 6. Discussion.....	35
6.1. To move or not to move? (Solved cases).....	36
6.2. The one that got away (Unsolved cases).....	38
6.3. Implications for law investigations and conclusion.....	41
References.....	45

List of Tables

Table 4.1.	Descriptives and coding for solved and unsolved sexual homicide cases	18
Table 5.1.	Bivariate analysis of pre-crime, crime, and post-crime phase variables on body disposal patterns for solved cases.....	25
Table 5.2.	Logistic regression model of pre-crime variables	28
Table 5.3.	Logistic regression models of crime phase variables	29
Table 5.4.	Logistic regression model of post-crime phase variables	30
Table 5.5.	Best model combination of pre-crime, crime, and post-crime phase variables for solved cases	31
Table 5.6.	Bivariate analysis of pre-crime, crime, and post-crime phase variables on body disposal patterns for unsolved cases.....	32
Table 5.7	Logistic regression model for unsolved cases.....	34

List of Figure

Figure 2.1.	Levels of script abstraction	6
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Chapter 1.

Introduction

Sexual homicide cases have long fascinated the public and the media ever since Jack the Ripper claimed his first victim in Whitechapel in 1888. This type of crime is rare; only 1% to 4% of all homicides could be classified as sexual (Beauregard, 2018). Consequently, the disproportionate representation of sexual murderers creates public fear, and even moral panic (James & Proulx, 2014). Public opinion surveys ranked sexual homicide as the second most serious crime, just below acts of terrorism such as the bombing of a building causing 20 fatalities (Wolfgang, Figlio, Tracy, & Singer, 1985). In terms of criminal law, the sexual element in homicides is considered a major aggravating factor in the Canadian Criminal Code, and defaults into the presumption of first-degree murder. In effect, the disproportionate public fear and media sensationalism sexual homicides create has had substantial implications for criminal justice systems.

Sex offenders have been traditionally categorized as a special sub population of criminals exclusively motivated by uncontrollable sexual urges to offend (Beauregard & Lussier, 2018). However, recent research argued that sex offenders engaged in a similar decision-making process throughout the crime-commission process as non-sex offenders. Ouimet and Proulx (1994) conducted one of the first empirical studies to challenge the assertion that sex offenders were solely driven by fantasies and impulsivity. The authors explored the crime-commission process of child molesters and found that they performed cost-benefit analysis throughout the commission of the crime, similar to non-sex offenders (e.g., burglars). Subsequently, considerable research has identified models of scripts for different types of sex offenders (e.g., Beauregard & Leclerc, 2007; Beauregard, Leclerc, & Lussier, 2012; Beauregard, Proulx, Rossmo, Leclerc, & Allaire, 2007). These models identified the motivational, behavioural, contextual, and cognitive factors associated with sex offenders in influencing their choices to commit crimes (Beauregard & Leclerc, 2007).

In the subsequent years, considerable sexual homicide research was largely based on the rational choice perspective. In general, these studies took an offender-based approach, examining the behavioural pathways (i.e., modus operandi) that an

offender makes throughout the crime-commission process. However, a review of the current literature shows that the majority of sexual homicide studies tend to focus on either identifying offender typologies (e.g., Ressler, Burgess, Douglas, Hartman, & D'Agostino, 1986; Holmes & Holmes, 1998; Beauregard & Proulx, 2002), or focusing on separate crime phases (i.e., pre-crime, crime, or post-crime phase). Recent sex offence researchers have highlighted the importance of taking the entire criminal event into account (see Beauregard, Leclerc, & Lussier, 2012; Chopin & Beauregard, 2019a; Ensslen, Beauregard, & Pedneault, 2018), to provide a more complete picture of the offender's decision-making process. However, this approach is lacking within sexual homicide research, and this is even more apparent when considering the post-crime phase of sexual homicide (e.g., body disposal patterns).

Morton, Tillman, and Gaines (2014) acknowledged the lack of research on body disposal patterns and identified four body disposal pathways to assist law enforcement in investigations. The authors stressed the importance of identifying body disposal pathways due to several factors: 1) body disposal sites are usually the first scene encountered by law enforcement; 2) the manner and circumstances of the body disposal can provide logical clues to the nature of the crime; 3) different body disposal scenarios can reflect an offender's criminal experience level; and 4) the manner in which the body is disposed of can shed light into the relationship between the victim and the offender (Morton et al., 2014).

Evidently, this thesis project aims to fill the gap in sexual homicide literature using the crime-commission process approach in examining body disposal patterns. The theory underlying the current study – rational choice perspective – will first be reviewed, followed by an overview of current sex offence research which utilizes the crime-commission process approach. In addition, this study aims to investigate the differences between sexual murderers who got caught, and those who got away. Thus, a review of detection avoidance literature will also be included following body disposal literature.

Chapter 2.

Literature Review

2.1. Rational Choice Perspective

Rational choice perspective (RCP) is one of the leading theories that has influenced the extensive empirical research on sexual homicide. Through Classical Criminology, RCP emerged from the utilitarian theoretical perspective initiated by Beccaria and Bentham in the 18th century. In the contemporary period, sociologist Howard Becker too, proposed that *rationality* was an important principle to explain crime, in which individuals made choices by weighing the costs and benefits of different courses of actions (Becker, 1968). However, Becker's work was primarily focused on crime costs, which was used to inform deterrence studies (Pedneault, 2018). It was not until the mid 1980s that RCP began to gain popularity within criminology, primarily through the works of Clarke and Cornish. Expanding on Becker's model, Clarke and Cornish generated more sophisticated and comprehensive models of the criminal decision-making process (i.e., incorporating a wide range of costs *and* benefits for the decision maker). RCP posits that all individuals were active rational decision makers who responded to incentives and deterrents (Clarke & Cornish, 1985).

Instead of viewing criminal behaviour as the outcome of stable criminal motivations, it views the desires, preferences and motives of offenders and potential offenders as similar to those of the rest of us, and as in continual interaction with contemporary opportunities and constraints to produce, reinforce and sometimes reduce criminal behaviours (Cornish & Clarke, 2008, p. 21).

In other words, the key theoretical premise of RCP is to analyze the individual's thought processes concerning benefits outweighing the costs of committing crimes.

Specifically, Cornish and Clarke (1986; 2008) conceptualized six core concepts which embodied the main tenets of the RCP: 1) criminal behaviour is purposive; 2) criminal behaviour is rational; 3) criminal decision-making is crime-specific; 4) criminal choices can be characterized by "involvement", and "event" decisions; 5) involvement is typified in separate stages, and 6) criminal events unfold in a sequence of stages and

decisions. Expanding on this perspective, Clarke and Cornish constructed decision-making models of crime generalizing from residential burglaries in a middle-class suburban context. Four decision stages were specified: 1) the initial decision to be involved in crime; 2) the decisions necessary for the criminal event; 3) the decisions for crime continuance; and, 4) the decisions to desist from crime (Clarke & Cornish, 1985; Cornish & Clarke, 1986). In its entirety, these stages explained the criminal decision-making process which, recognizes both the offender's rationality, and the influence of environment on behaviour.

In addition to examining the offender's rational decision-making choices to explain crimes, Felson and Tedeschi (1993) highlighted the importance of situational factors surrounding the criminal event. Combining methodologies from psychology, sociology, and criminology, the authors used the social interactionist approach in their study of aggression and violence. This approach rests on four main principles: 1) aggression is instrumental; 2) conflict in relations creates aggression; 3) situational and interpersonal factors are critical in causing aggression; and 4) the aggressor's values and expectations heavily influence his/her actions (Felson & Tedeschi, 1993). In their study on coercive actions, and sexual coercion, the authors noted that social interactions (e.g., victim-offender relationship, role of victim, attitudes towards victim) played a significant role in the offender's decision to commit crimes (Tedeschi & Felson, 1994). For example, the National Crime Survey found that one third of rape victims knew their attacker (Felson & Krohn, 1990), suggesting that the offender is more likely to believe that his victim would not report the crime. Furthermore, previous research has shown that violence will more likely ensue during a sexual assault if victims resisted physically, compared to when victims resisted passively or verbally (Balemba, Beauregard, & Mieczkowski, 2012). Thus, instead of focusing on the offender's pathology, it is vital to examine the entirety of the crime (i.e., crime-commission process), which involves both the offender's decision-making process, and environmental factors. Recently, the crime-commission process perspective is becoming more evident in the study of sexual aggression (Beauregard & Leclerc, 2007).

2.2. Crime-commission process: crime scripts

The crime-commission process involves several decision-making stages. More specifically, it involves the offender's pattern of actions and behaviours prior to, during,

and following the commission of a crime. In general, research on the crime-commission process is divided into three phases: 1) pre-crime phase; 2) crime phase; and 3) post-crime phase. In order to understand the crime-commission process model, Cornish (1994) developed the concept of crime scripts (i.e., a series of actions taken in each stage when committing a crime). As with most studies on crime-commission processes, Cornish's work contributed to situational prevention measures, which mainly focused on property crimes (Leclerc, Wortley, & Smallbone, 2011).

The concept of scripts first originated from cognitive science, in which computer simulation was used to understand human's thought processes in understanding text (see Schank & Abelson, 1977). Cornish (1994) explains:

Scripts are members of a family of hypothesized knowledge structures, or schemata, considered to organize our knowledge of people and events. Such schemata are held to guide our understanding of others' behaviour, and our own actions (p. 157-158).

A widely used example is the "restaurant script", which guides people's knowledge and actions when frequenting a restaurant. First, the person enters the restaurant and waits to be seated. Second, the person gets the menu, orders, and eats. Finally, the person pays the bill, and exits the restaurant. With repetition, and proven success in the past, these step-by-step procedures can be activated more readily from memory, and consequently guides the actor's corresponding behaviour (Tedeschi & Felson, 1994).

Crime script breaks down the crime-commission process into several stages, which allow for intervention efforts at multiple points throughout the crime. Cornish (1994) outlined the levels of script abstraction, starting from the most generalized scenes, to specific behavioural actions (Figure. 1).

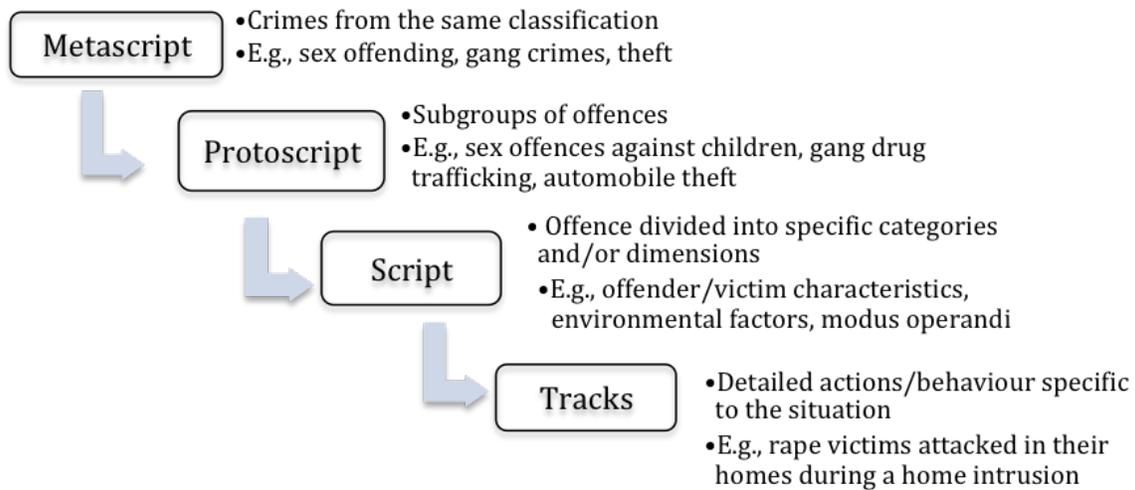


Figure 2.1. Levels of script abstraction

Research in Criminology has applied the use of scripts to examine several different types of offences like burglary (see Nee, 2015 for extensive review), cybercrime (Lavorgna, 2014; Hutchings & Holt, 2015), cheque forgery (Lacoste and Tremblay, 2003), vehicle theft (Tremblay, Talon, & Hurley, 2001), and mass shooting (Osborne & Capellan, 2017; Keatley, Mchurk, & Allely, 2019). Albeit scarce, crime scripts have also been used to examine “uncontrollable urge” crimes such as sex offences (Cook, Reynald, Leclerc, & Wortley, 2018; Beauregard, Proulx, Rossmo, Leclerc, & Allaire, 2007; Leclerc, Wortley, & Smallbone, 2011; Beauregard, Rossmo, & Proulx, 2007). For example, Beauregard, Proulx et al., (2007) identified three hunting process scripts – *coercive*; *manipulative*; and *persuasive* – among a sample of serial sex offenders. The authors expanded their analysis by further breaking down the scripts, and identified six different *tracks* - *home-intrusion rape track*; *outdoor rape track* (A and B); *sophisticated rape track*; *family-infiltrator rape track*; and *direct-action rape track* (Beauregard, Proulx et al., 2007, p. 1076-1079). By identifying specific rape tracks like *home-intrusion rape track*, one intervention point could be to target the pre-crime phase; the potential victim’s knowledge on properly securing their homes.

2.3. Choice-structuring properties

The script approach on crime emerged from the study of situational crime prevention (Cornish & Clarke, 1987). In order to develop effective crime prevention policies, one of the main tenants of the RCP approach on crime is that it needs to be

crime-specific (Cornish, 2008). For example, a script which involves a subway mugging is entirely different from a script for residential burglary. Consequently, prevention measures for subway muggings will not be useful for thwarting home burglaries. In addition to being crime-specific, the RCP approach also requires that *rationality* be individual-specific. *Rationality* in this sense is not considered to be in a “pure” form, but rather, heuristically (Andresen, 2014). A study collected from 30 burglars in Midland, Texas found that offenders relied on their heuristics (i.e., information that is readily available) when deciding on target selection (Shover, Cromwell, Olson, & Avary, 1991). Thus, the offender’s rational decision-making choices are *limited*, or *bounded* by the information that is readily available, making *rationality* individual-specific.

In keeping with RCP, and the *limited rationality* notion, Cornish and Clarke (1987) proposed the *choice-structuring properties* concept. Every offender takes into account the factors that relate to both offence, and offender characteristics when performing cost-benefits analysis. Factors like payoff, skills needed, previous experience, perceived risks, and motivations are referred to as *properties*, which, ultimately *structure* the offender’s *choice* of actions and behaviour in his crime-commission process (Cornish & Clarke, 1987). The authors highlighted that *choice-structuring properties* are not only crime-specific, but also situation-specific. To exemplify this concept, Cornish and Clarke (1987) outlined choice-structuring properties for two types of crimes: 1) theft involving cash, and 2) illegal substance abuse. For each type of crime, eighteen different choice-structuring properties were identified (e.g., availability, awareness of method, expertise needed, etc.). Some broad choice-structuring properties were similar for the two types of crimes. For example, *availability* and *awareness* were present in both theft involving cash, and illegal substance use (Cornish & Clarke, 1987). However, majority of the choice-structuring properties do not overlap. This suggest that offenders adopt different actions and behaviours for different situations.

In terms of sex offences, past research has shown that *choice-structuring properties* play an important role in an offender’s decision making process. During the pre-crime phase, environmental and situational factors were found to be significantly associated with the hunting process of serial sex offenders (Beauregard, Proulx et al., 2007; Beauregard, Rossmo, & Proulx, 2007; Beauregard & Leclerc, 2007), target selection (Deslauriers-Varin & Beauregard, 2010), and crime site selection (Hewitt, Beauregard, & Davies, 2012; Deslauriers-Varin & Beauregard, 2014). Research

investigating the criminal event have also shown how *choice-structuring properties* influenced the offender's decision-making process (Beauregard & Leclerc, 2007; Beauregard, Proulx et al., 2007; Balemba & Beauregard, 2013). For example, in investigating the outcome of a criminal event, Hewitt and Beauregard (2014) analyzed a sample of 72 serial rape cases in Canada and found that the crime was least likely to be completed when it took place during the week or outdoors. Given that there are more people likely to be outside during the week, this *choice-structuring property* contributed to the offender's decision to not complete the rape, in an effort to avoid detection.

2.4. Criminal events

In general, research on the crime-commission process is divided into three phases: 1) pre-crime phase; 2) crime phase; and 3) post-crime phase. The majority of research has focused on a single crime phase, which provides an in-depth analysis of the offender's decision-making process at that specific phase. For example, Beauregard, Rossmo, and Proulx (2007) developed a pathway model describing the "hunting process" (i.e., pre-crime phase) of a serial sex offender. During the hunt, several stages in relation to the offender's *victim search methods were specified*, which subsequently led to the crime phase, where six stages of *offender attack methods* were stipulated (Beauregard, Rossmo, & Proulx, 2007). In another study investigating the pathways of child molesters, Ward, Loudon, Hudson and Marshall (1995) identified nine stages that describe the factors leading to the offence and during the offence. Background factors, cognitive distortions, situational factors, and relationship with victims in constructing the child molester's crime-commission process were all sequenced in their model (Ward et al., 1995). Yet, research in the post-crime phase has largely been neglected. There is a dynamic interaction between the pre-crime phase, crime phase, and the post-crime phase; factors in each phase affect the decision-making process of the other phases. For example, if an offender is under the influence of alcohol or drugs in the pre-crime phase, then his decision-making process is arguably less effective during the crime phase, and post-crime phase, which could lead to carelessness in attempts to avoid detection.

In recent years, many studies on sexual homicides are based on RCP related crime-commission process models. Furthermore, descriptive models of the sexual murderer's crime-commission process have been developed to assist in police

investigations (e.g., Beauregard & Proulx, 2002). However, similar to general sex offences, research on the crime-commission process of sexual murderers was focused on the pre-crime, and crime phases. In the pre-crime phase, motivational models have been developed as a general framework for explaining the initial decision to commit sexual homicides (e.g., Kerr & Beech, 2016; Arrigo & Purcell, 2001; Burgess, Hartman, Ressler, Douglas, & McCormack, 1986; Hickey, 2002). There were also studies into the factors influencing the offender's decision-making in the crime phase regarding levels of force used, choice of weapons, and attack locations (e.g., Beauregard & Martineau, 2012; Beauregard & Martineau, 2016a; Chan & Heide, 2008; Chan, Heide, & Beauregard, 2019). Evidently, there is a lack of research investigating the entire criminal event of sexual homicides.

One of the first sex offending study that spear-headed the utilization of the entire criminal event was conducted by Beauregard and Leclerc (2007). The authors examined the decision-making process during the pre-crime, crime, and post-crime phase of serial sex offenders, and proposed an overall crime-commission process model (Beauregard & Leclerc, 2007). Since then, sex offending researchers have acknowledged the importance of investigating the entire criminal event and adopted this method into their study (see Beauregard, Leclerc, & Lussier, 2012; Chopin & Beauregard, 2019a; Ensslen, Beauregard, & Pedneault, 2018). In a recent study investigating sexual abuse against the elderly, Chopin and Beauregard (2019b) found that pre-crime phase factors such as victim's vulnerability, and the selection of a deserted crime site significantly influenced the development and commission of the crime. Furthermore, the authors found that elderly victims spent most of their time at home (i.e., target selection during pre-crime phase), which coincided with the finding that most assaults took place indoors (Chopin & Beauregard, 2019b). Given the scarce research on sexual homicide, to my knowledge, there is no current research investigating the post-sexual homicide phase (e.g., body disposal patterns) using the crime-commission process model.

2.5. Post-crime phase: body disposal patterns

Arguably, sexual homicides are so extreme in their violence that criminologists have focused on "why" sexual homicides happen and have neglected the post-sexual homicide phase. However, the latter is critical for constructing crime investigation models. In cases when there is no link between the victim and the offender, investigators

can rely on body disposal patterns, state of the body, and choice of body disposal locations to provide clues to the offender's identity (Morton et al., 2014). For example, a study on single homicides revealed that the majority of offenders targeted victims who were known to them, tended to not move the body after killing the victim, and were more likely to use a gun to kill the victim (Kraemer, Lord, & Heilburn, 2004). Therefore, when these characteristics are apparent at a crime scene, law enforcement are able to narrow down the suspects' list to those known to the victim. Another important related theme is that offenders who disposed of the victim's body, as opposed to leaving it at the crime scene had more criminal experience, higher IQ, and used more forensic awareness strategies (Rossmo, 2000; Oliver, Beech, Fisher, & Beckett, 2007). In effect, if the victim's body was suspected to have been moved or disposed of post-mortem, this could influence the construction of a suspects' profile.

Albeit scarce, existing body disposal research focused on linking offender characteristics to the decisions made in disposing of the victim's body (Hewitt, Beauregard, & Martineau, 2017). These studies rest on two assumptions: 1) *consistency*, and 2) *homology* (Alison, Bennell, Mokros, & Ormerod, 2002). The *consistency* assumption posits that an offender will reoffend in a similar pattern, while the *homology* assumption suggests that offenders who exhibit similar crime scene behaviours have similar background characteristics. The Federal Bureau of Investigation's *organized/disorganized* dichotomy is one of the most cited typologies for sexual murderers. According to this typology, *organized* sexual murderers are more likely to use a vehicle, transport their victim by utilizing multiple crime scenes, choosing locations that are farther away from their homes, and tend to conceal the victim's body post-crime. In contrast, *disorganized* sexual murderers are less likely to have planned their crimes, or transported their victims. They are also more likely to leave the victim's body at the crime scene (Ressler et al., 1986). A similar typology (i.e., *angry/sadistic*) has also been proposed by Beauregard and Proulx (2002).

Several other typologies that linked offender characteristics to body disposal patterns have been proposed. For example, Holmes and Holmes (1998) identified five types of serial murderer – *visionary*; *mission*; *lust*; *thrill*; and *power or control*. In terms of body disposal behaviour, the *lust*, *thrill*, and *power or control* killers are more likely to conceal the body, whereas the *visionary* and *mission* killers will tend to leave the victim's body at the crime scene (Holmes & Holmes, 1998). In another study, Keppel and

Walter's (1999) rape-murder typology suggests that the *power-assertive* and the *anger-excitation* offenders differ in the way that they dispose of their victims. The former type will often leave the body at the crime scene, while the latter type will often transport the body to another location in attempts to conceal it (Keppel & Walter, 1999). Further, an empirical study conducted by Kocsis, Cooksey, and Irwin (2002) suggests that murderers exhibiting *perversion* crime scene characteristics will most likely leave the victim's body exposed, *fury* type murderers lack concern over the position of their victim's body, and the *rape* type murderers will often leave the victim's body faced up (Kocsis et al., 2002).

Beauregard and Field (2008) expanded the body disposal patterns research by incorporating situational factors. The authors found that *organized* sexual murderers who were in a relationship were more likely to transport the victim's body post-sexual homicide, to ensure that their partners do not suspect their involvement. Moreover, sexual murderers who had conflicts with the victim 48 hours prior to the crime were more likely to leave the body at the crime scene (Beauregard & Field, 2008). The authors argued that this is consistent with the FBI's *disorganized* type of sexual murderer, where the offender usually knows the victim, was prone to have conflicts with the victim, and eventually kills the victim out of anger (Beauregard & Field, 2008). Additionally, victim characteristics, particularly the size of the victim, play an important factor in determining whether the body is transported or not. Research has shown that sexual murderers were more likely to transport or move child victims after killing them, compared to adult women victims (Beauregard, Stone, & Proulx, 2008). It is hypothesized that offenders weighed the costs and benefits when deciding to move the body, and since children are smaller, they are easier to move compared to adult victims.

Another emerging line of research in body disposal patterns is in relation to geographical distances. For example, studies conducted by Godwin and Canter (1997), and Lundrigan and Canter (2001) showed the mean distance from the offender's home base to the body disposal sites were 23 km and 40 km, respectively. Similarly, German serial killers were shown to travel a mean distance of 49 km from their home to dispose of their victim's body (Snook, Cullen, Mokros, & Harbort, 2005). Among Finish homicides, Häkkänen, Hurme, and Liukkonen (2007) found that offenders travelled an average of 41.1 km from their home to body disposal sites in rural areas. These studies suggest that offenders are willing to travel long distances in attempts to dispose of the

victim's body. Turning the attention closer to home, Beauregard and Martineau (2016b) analyzed distance patterns of sexual murderers in Canada and found that offenders travelled an average of 25 km from home base to body disposal sites. However, the authors noted that there was a wide range of distances travelled among sexual murderers (i.e., from 0 km to 890 km) (Beauregard & Martineau, 2016b). Although results from these studies can be useful for investigators to link distances travelled between home base to body disposal sites, to specific sexual murderer typologies (e.g., further distance travelled is linked to *organized* type), the wide variations of distance poses challenges to correctly place an offender into a single typology. Furthermore, distance travelled to dispose of a body is only a piece of a puzzle of the entire commission-crime process. More research needs to be done to assemble these pieces together to uncover the entire criminal event.

In order to assist in law enforcement investigations, Morton et al. (2014) conducted a study on body disposal pathways. From the sample of 480 cases of serial murder involving 92 offenders between 1960 to 2006, the authors identified four body disposal scenarios: 1) *transported from murder site and concealed*; 2) *transported from murder site and dumped*; 3) *left "as is" at murder site*; and 4) *left at murder site and concealed*. Expanding on these pathways, Hewitt, Beauregard, and Martineau (2017) identified several more factors associated with the post-sexual homicide pathway. The authors replicated the study by including factors like geography, type of victim, means of accessing the victim, weapons used, victim's cause of death, and victim-offender interactions. The results revealed three different pathways: 1) *Transported versus not*; 2) *Transported only*; and 3) *Not transported only* (Hewitt et al., 2017). Although interesting, these studies raised critically unanswered questions such as, "why were victims who were left at the crime site more likely to be over 45 years old compared with victims who were dumped?" It could be argued that offenders in this pathway were committing other types of instrumental crimes (e.g., robbing the elderly), but took advantage of the situation which led to a sexual assault that turned fatal. Furthermore, the majority of the offenders who left the body as is were reported to be less educated and had less job security than offenders in other pathways (Morton et al., 2014). Could low social and educational stability be factors influencing offenders to choose this pathway? Once again, this issue highlights the importance of examining the entire criminal event.

A recent study conducted by Sea and Beauregard (2018) investigated 54 Korean homicide cases and found several factors which influenced body disposal patterns. The authors found that close to half of stranger homicides involved an accomplice, and the majority of the offenders had access to a vehicle, which indicates the significance of pre-crime factors. Further, results showed that most bodies were dumped in wooded or agriculture areas, suggesting that offenders made rational choices in selecting deserted areas to dispose of the victim's body (Sea & Beauregard, 2018). In terms of geographical distance, the authors found that the majority of offenders committed the crime close to where they first encountered their victim (0.3 km) but were willing to travel up to 30 km to dump the victim's body. Additionally, expressive offenders were more likely to travel further from the crime scene to dispose of the victim's body, whereas instrumental offenders were more likely to choose a closer disposal site (Sea and Beauregard, 2018). These results suggested that pre-crime, crime, and post-crime phase factors were important in influencing the offender's decision to move the body.

2.6. Detection avoidance

One critical conundrum law enforcement face when dealing with sexual homicide cases is detection avoidance. As part of the RCP, offenders often make rational choices to either delay, or thwart police investigations. Avoiding detection literature stemmed from an earlier concept of *restrictive deterrence*, put forth by Gibbs in 1975, in which penalties and sanctions were posited to inhibit an individual's involvement in crime (Moeller, Copes, & Hochstetler, 2016). According to this concept, the fear of repercussions caused changes in behaviour and "strategies or tactics employed by individuals to evade detection, identification, or apprehension that have the effect of reducing the frequency of offences" (Gibbs, 1975, p. 33). *Restrictive deterrence* was further developed by Jacobs (1996a; 1996b), through his research on street-level drug dealers. Jacobs (1996a; 1996b) proposed that there are two types of restrictive deterrence. The first type, *probabilistic* restrictive deterrence, refers to the reduction in offending based on the individual's assessment of the law of averages concerning the risk of punishment (Jacobs, 1996a). The second type was termed *particularistic* restrictive deterrence – a reduction in offending based on tactical and strategic skills used by individuals to reduce the risk of detection and apprehension (Jacobs, 1996a;

1996b). In accordance with RCP, offenders using the *particularistic* strategy consciously alter their behaviour, or modus operandi to actively stay under the police's radar.

Most detection avoidance studies have been conducted on property or drug offences. One such study conducted by Wright, Logie, and Decker (1995) investigated target selection processes in residential burglary. The authors compared 47 active residential burglars to 34 non-offenders by showing them a series of 20 photographs of houses. Later, the participants were given a surprise memory test for the photographs shown previously. Some of these photographs had been altered to remove "burglary-related features" (e.g., alarm box). Results showed that active burglars were more likely to recognize environmental cues relating to "burglary-related features", and accurately reported them missing from the second set of photographs, compared with non-offenders (Wright et al., 1995). This suggested that burglars engaged in rational decision-making process when selecting potential houses; selecting targets that had lower chance of apprehension.

Arguably, sex offences add another layer of complication to the decision-making process of detection avoidance. Offenders have to ensure that they destroy forensic evidence, and to not leave any identifying clues that may lead back to them. In a three-aspect model outlining rapists' behaviour, Davies (1992) identified four modus operandi utilized by rapists to avoid detection: 1) avoiding interruption (e.g., selecting lone victims, disconnecting the phone); 2) protecting identity (e.g., using blindfolds on victims, wearing masks or gloves); 3) prevent victim from reporting (e.g., threatening victim); and 4) ensuring a safe exit (e.g., tying up victim, telling victim to count up to a certain number before moving). These behaviours of taking additional steps and adapting the modus operandi to avoid apprehension is known as "forensic awareness" (Davies, 1992).

Several studies have investigated forensic awareness strategies in sex offences. Studies on sexual assaults showed that the majority of offenders displayed forensic awareness behaviours, such as protecting their identity or wearing gloves (Davies, Wittebrood, & Jackson, 1997; Beauregard & Bouchard, 2010). Conversely, in a study of solved and unsolved sexual homicides, Beauregard and Martineau (2014) found that sexual murderers who utilized forensic awareness strategies did not increase avoidance detection. However, the authors found that it did increase the time it took to recover the victim's body. Thus, this finding suggests that there may be differences in forensic

awareness strategies used by offenders who successfully avoided detection, compared with offenders who were caught. Additionally, studies have suggested that forensic awareness strategies are not necessarily useful in avoiding detection. In a study comparing rape cases in France (Chopin, Beauregard, Bitzer, & Reale, 2019), the authors investigated the offender's behaviour, and choices that they made which influenced detection avoidance by comparing solved and unsolved cases. Results show that crime characteristics (e.g., victim was targeted, victim was a stranger) were better at predicting whether the case remained unsolved, compared with victim's characteristics and forensic awareness strategies used by offenders (Chopin et al., 2019). Similarly, a study conducted by James and Beauregard (2018) showed that forensic awareness strategies are not the only factors which influences detection avoidance, but also poor investigative practices, and contextual factors. A combination of these factors, and rational choices made by both sides (i.e., offender vs. law investigators) are what contribute to the success of detection avoidance (James & Beauregard, 2018).

Chapter 3.

The current study

Sexual homicides are rare. Consequently, the low base rate of this crime has meant that there is a limited amount of research available. The majority of sexual homicide studies focused on the pre-crime, and crime phase of sexual homicides, which includes motivational models (Kerr & Beech, 2015; Arrigo & Purcell, 2001; Burgess, Hartman, Ressler, Douglas, & McCormack, 1986; Hickey, 2002), and offender's modus operandi (e.g., Beauregard & Martineau, 2012; Beauregard & Martineau, 2016a; Chan & Heide, 2008). Although several authors have contributed to the body disposal literature of sexual homicides (e.g., Beauregard & Field, 2008; Beauregard, Stone, & Proulx, 2008; Hewitt et al., 2017; Beauregard & Martineau, 2016a; 2016b), there is a limited amount of research which directly investigated the relationship between the entire criminal event factors (i.e., pre-crime, crime, and post-crime) and the decision to move or leave the body after the victim has been killed (see Chan, 2015 as an exception).

The purpose of this research project is to investigate a combination of criminal event factors that predict body disposal patterns in sexual homicide cases. Specifically, variables from the three phases (i.e., pre-crime, crime, and post-crime) will be examined in relation to predicting whether the body was moved post-sexual homicide. Since factors from all three phases has been shown collectively to be better predictors in sexual assaults (e.g., Beauregard, Leclerc, & Lussier, 2012; Chopin & Beauregard, 2019a; 2019b), the current study aims to answer two research questions:

1. What are the factors that predict whether the body was moved post-sexual homicide?
2. Are these factors different for solved and unsolved sexual homicide cases?

Chapter 4.

Data and Methods

4.1. Data source

The current sample includes all completed homicide cases (i.e., no attempts), and involves a sexual element (i.e., cases had evidence of sexual activity and/or sexual motivation). Specifically, the sexual element is defined by the FBI as: a) victim's attire or lack of attire; b) exposure of victim's sexual parts; c) sexual positioning of the victim's body; d) insertion of foreign objects into victim's body cavities; e) evidence of sexual intercourse; or f) evidence of substitute sexual activity, interest, or sadistic fantasy (Ressler et al., 1988). Information on all cases were derived from a national database operated by the Royal Canadian Mounted Police (RCMP). Police investigators assigned to these cases collected information from the case file which included close-ended and multiple-choice questions and had to be completed within 45 days of the investigation. Data collected include victim and offender characteristics, victim and offender's routine activities, information on contact scene, offence scene, body disposal scene, and any forensic information that may be available. The complete dataset yielded a total of 350 sexual homicide cases that occurred between 1948 and 2010; in which majority of cases occurred after 1992 (53%). There were 250 cases identified as solved (i.e., offender identified and apprehended), and 100 unsolved cases (i.e., offender not identified). There were no missing values for the dependent variable in both solved and unsolved cases (n valid = 350). This dataset represents the secondary data source that will be used in the current study.

4.2. Measures

4.2.1. Dependent variable

The dichotomous dependent variable for this study is body disposal patterns. If the body has been left at the offence scene, it was coded as "body left" (0), whereas if the body was moved, it was coded as "body moved" (1). The body was considered to be left at the offence scene when the murder occurred at the same location as the body

disposal site. Conversely, the body was considered to be moved when the offender intentionally transported the body from the murder site to a different location. This is consistent with other body disposal research conducted previously (e.g., Beauregard & Field, 2008; Ressler et al., 1988; Salfatli & Dupont, 2006), where the decision to move the body has been shown to reflect offender characteristics. For the solved cases, the current sample has a total of 69.2% of cases where the body was left at the crime scene (n = 173), and 30.8% of cases where the body has been moved (n = 77). For the unsolved cases, there were 58% cases in which the body was left at the scene (n = 58), whereas the body was moved in 42% of the cases (n = 42).

4.2.2. Independent variables

Table 4.1 presents the descriptives and frequency data for the variables included in the study. There are a total of 27 dichotomous variables included in the analyses, which represent the crime-commission process (i.e., pre-crime, crime, and post-crime phase). These variables were further divided into six main categories: 1) victim characteristics; 2) situational factors; 3) location factors; 4) offender's modus operandi; 5) body recovery scene; and 6) signs of forensic awareness.

Table 4.1. Descriptives and coding for solved and unsolved sexual homicide cases

Variables	Solved (n = 250) % (n)	Unsolved (n = 100) % (n)
Pre-crime phase = 1 (yes)		
<i>Victim characteristics</i>		
Victim targeted	22 (55)	11 (11)
Victim is a prostitute	9.2 (23)	39 (39)
Victim is a street person/homeless	7.6 (19)	20 (20)
<i>Situational factors</i>		
Offender impaired at time of offence	68.8 (172)	-
Offender has access to vehicle	71.2 (178)	-
Victim-offender relationship - stranger	32.8 (82)	-
<i>Location factors</i>		
Contact scene was deserted	16.8 (42)	-
Contact scene was outdoors	29.2 (73)	32 (32)
Crime phase = 1 (yes)		
<i>Offender's modus operandi</i>		
Offender used CON approach	49.6 (124)	18 (18)
Offender used SURPRISED approach	9.2 (23)	-
Offender used BLITZ approach	15.2 (38)	-

Variables	Solved (<i>n</i> = 250) % (<i>n</i>)	Unsolved (<i>n</i> = 100) % (<i>n</i>)
Evidence of beating	50.4 (126)	39 (39)
Evidence of stabbing	23.2 (58)	20 (20)
Evidence of strangulation	43.2 (108)	38 (38)
Foreign objects inserted into victim	11.2 (28)	12 (12)
Evidence of overkill	46.4 (116)	35 (35)
Use of restraints/blindfolds/gags	16.8 (42)	10 (10)
Sexual penetration	62.4 (156)	28 (28)
Post-crime phase = 1 (yes)		
<i>Body recovery scene</i>		
Items taken from victim	37.2 (93)	39 (39)
Victim's body was concealed	38 (95)	31 (31)
Body found lying face down	26.8 (67)	24 (24)
<i>Signs of forensic awareness</i>		
FA – offender removed/destroyed evidence	38.8 (97)	10 (10)
FA – evidence of semen	30 (75)	22 (22)
FA – offender acted upon victim/environment	15.6 (39)	-
<i>Location factors</i>		
Body disposal site in victim's residence	25.2 (63)	-
Body disposal site was deserted	51.6 (129)	53 (53)
Body was found outdoors	53.6 (134)	81 (81)
Dependent variable = 1 (yes)		
Body moved after victim is killed	30.8 (77)	42 (42)

Victim characteristics

A total of three dichotomous variables were included in this analysis, which were coded “0” = *no*, and “1” = *yes*. “Victim targeted” was included in the analysis as previous studies have shown that offenders who targeted their victims exercised some degree of rational choice and planning of the crime (Deslauries-Varin & Beauregard, 2010; Beauregard, Rossmo, & Proulx, 2007; Beauregard & Proulx, 2002). Table 4.1 shows 22% of the victims in the sample of solved cases were targeted (*n* = 55), versus 11% targeted victims in the unsolved cases (*n* = 11). Furthermore, previous research indicated that the offender is more likely to move the victim's body if the victim was a prostitute to decrease the chance of being detected (Beauregard & Martineau, 2014). Thus, “victim is a prostitute” (solved = 9.2%, *n* = 23; unsolved = 39%, *n* = 39) and “victim

is a street person/homeless”¹(solved = 7.6%, n = 19; unsolved = 20%, n = 20) variables were included in the analysis.

Situational factors

Situational and environmental factors during the pre-crime phase are critical in initiating the start of the offender’s crime process. Offenders who were under the influence at the time of offence has been shown to reduce their forensic awareness, thus less likely to move the body after killing the victim (Beauregard & Bouchard, 2010). All variables were dichotomous and have been coded as “0” = *no*, and “1” = *yes*. The variable “offender impaired at time of offence” has been recoded, which involved a combination of drugs, alcohol, and solvents. Among the solved cases, 68.8% of offenders were impaired (n = 172). Further, the variable “offender has access to vehicle” was derived from criminal mobility research. Martineau and Beauregard (2016) found that offenders who had access to a vehicle were more likely to move the body after killing the victim. This variable was collapsed into a dichotomous level, which recoded *driving* as “1” and all others as “0”. Consequently, “offender has access to vehicle” represented the majority of the sample (71.2%, n = 178). The next variable investigates victim-offender relationships. Specifically, whether the offender knew the victim² (Ressler, et al., 1986; Langevin et al., 1988; Beauregard & Mieczkowski, 2012). In the solved cases sample, 32.8% of the victims were strangers (n = 82). There were no data available for unsolved cases under the *situational factors* category, as the offender was not apprehended.

Location factors

Crimes sites and the type of location are critical factors in influencing an offender’s choice of strategy they use to carry out their crimes (Beauregard, Proulx, et al., 2007; Beauregard, Rossmo, et al., 2007). Two location factor variables were included in this study for the pre-crime phase, and three variables for the post-crime phase (Table 4.1). Location factor variables for the crime phase was omitted from analysis due to its high multicollinearity with location variables from the pre-crime and

¹ Duff, Deering, Gibson, Tyndall, and Shannon (2011) found high prevalence of homelessness among prostitutes in Vancouver, BC.

² Previous studies have shown that offenders who were not known to victims often left the bodies at crime sites, as there is less chance of linking the crime back to them.

post-crime phase. In solved cases, only 29.2% of the contact scene occurred outdoors (n = 73), and even less at a deserted area (16.8%; n = 42). In the unsolved cases, the only available information was “contact scene was outdoors”, in which 32% of the cases were true. For solved cases in the post-crime phase, 63 victims were found in their homes (25.2%). More than half of the victim’s bodies were recovered in a deserted area (51.6%, n = 129), and outdoors (53.6%, n = 134). For unsolved cases, 53% of the victim’s body were found in a deserted area (n = 53), and the majority were found outdoors (81%, n = 81).

Offender’s modus operandi

Previous research investigating offender’s modus operandi during the crime have been classified into different sexual murderer typologies (e.g., Groth, 1979³; Ressler et al., 1986, Holmes & Holmes, 1998; Beaugard & Proulx, 2002⁴; Proulx, Blais, & Beaugard, 2007), which in turn, influences body disposal patterns. Consistent with rape studies⁵, three types of victim-approach methods are included in this analysis: 1) con approach (i.e., offender use ruse or manipulation) (solved = 49.6%, n = 124; unsolved = 18%, n = 18); 2) surprised approach (i.e., offender attacks unsuspecting victim) (solved = 9.2%, n = 23); and 3) blitz approach (offender use physical force to subdue victim) (solved = 15.2%, n = 38). Furthermore, four physical violence factors were included in the analysis: 1) beating (solved = 50.4%, n = 126; unsolved = 39%, n = 39); 2) stabbing (solved = 23.2%, n = 58; unsolved = 20%, n = 20); 3) strangulation (solved = 43.2%, n = 108; unsolved = 38%, n = 38); and 4) overkill (solved = 46.4%, n = 116; unsolved = 35%, n = 35). The evidence of foreign objects insertion in the victim’s cavities, and sexual penetration have been linked to *sadistic* or *organized* type of sexual murderers (Ressler et al., 1986; Beaugard & Proulx, 2002), thus these variables are included this study. Table 4.1 shows that the number of victims who were found with foreign objects in their cavities were fairly similar among the solved (11.2%; n = 28), and unsolved cases (12%, n = 12). Further, “sexual penetration” has been recoded to include evidence of vaginal, anal, and digital penetration (solved = 62.4%, n = 156; unsolved =

³ For example, evidence of increased aggression, and blitz attacks, has been shown to be linked with the *anger-retaliatory* offender (Groth, 1979).

⁴ *Sadistic* offender were more likely to use physical restraints, move victim’s body, and use strangulation to kill the victim (Beaugard & Proulx, 2002; Proulx, Blais, & Beaugard, 2007).

⁵ See Hazelwood and Burgess (1999).

28%, n = 28). The final modus operandi variable, “use of restraints/blindfolds/gags” has been recoded to reflect whether the offender used physical restraints, bindings, or gags to restrain the victim⁶. For the solved cases, 16.8% of offenders showed this behaviour (n = 42), whereas only 10 offenders in the unsolved cases used any restraints against the victim (10%).

Body recovery scene

Whether items were taken from the victim was included in this analysis as it may suggest the offender’s motivation for the crime (Knight & Prentky, 1990⁷). In my sample of solved cases, 37.2% of offenders took items from the victim (n = 93), while 39% of offenders in the unsolved cases (n = 39) took items from the victim. Furthermore, body concealment seems to indicate links to specific types of offender (see Santilla, Canter, Elfgrén, & Häkkänen, 2001). The investigators initially coded body disposal method as “1 = openly”, “2 = concealed”, “3 = lack of concern”, “4 = displayed” and “5 = staged” in the dataset. These variables were collapsed into a dichotomous variable “body was concealed” (0 = no; 1 = yes) as to isolate cases in which offenders hid the victim’s body. In the final sample of solved cases, the victim’s body was concealed in 38% of the cases (n = 95), and 31% in unsolved cases (n = 31). Moreover, the body positioning of the victim may suggest the type of offender⁸. This variable was recoded from multiple body positions (e.g., face down, sitting, fetal) to only include “face down”, as to correspond with existing sexual murderer typology literature (Ressler et al., 1986; Beauregard & Proulx, 2002). Sixty-seven victims were found lying face down in solved cases (26.8%), and 24 victims in unsolved cases (n = 24).

⁶ Dietz, Hazelwood, & Warren, 1990; Ressler et al., 1986).

⁷ *Opportunistic* rapists often commit sexual assaults while committing other crimes (Knight & Prentky, 1990).

⁸ *Angry* offenders often leave their victims on their backs, suggesting that the crime was spontaneous, anger-driven, where offenders quickly left the scene after killing the victim (Beauregard & Proulx, 2002).

Signs of forensic awareness

Detection avoidance studies have shown links to premeditation, and planning of the crime⁹, indicating an *organized* type of offender. As outlined in Table 4.1, the majority of the offenders did not try to remove or destroy evidence in 61.2% of the cases (n = 153) in the solved cases, and only 10% of the offenders in the unsolved cases showed signs of forensic awareness (n = 10). Further, approximately a third of offenders left semen at the crime scene in solved cases (30%, n = 75), and in 22% of unsolved cases, semen was left behind (n = 22). “Offender acted upon victim/environment” includes precautions such as disabling the lighting, telephones, security system, and/or victim’s vehicle, administering drugs, or tying up the victim, and blocking accesses in and out of exits. In solved cases, 15.6% of offenders acted upon the victim/environment (n = 39). There was not enough information for unsolved cases.

4.2.3. Analytical strategy

First, chi-square analysis was conducted between all 27 independent variables against the dependent variable to examine whether there were any significant associations at the bivariate level for both solved and unsolved cases. Only significant variables were retained to be included into the logistic regression analyses. This is to ensure that the regression models will not be over-fitted, as per the 1 to 10 ratio (i.e., the smallest number of cases in the dependent variable, “body moved”, was n = 77) (Garson, 2014). I decided to use logistic regression because the goal was to find the best combination of predictor variables for whether the body is moved post-crime. This method allows for the ability to maximize the likelihood of correctly assigning a case to the observed group (i.e., body moved vs. body left). Regression analyses were conducted in four separate stages for the solved cases. In the first stage (pre-crime phase), *victim characteristics* and *location factors* were analyzed in Model I. In the second stage (crime phase), *offender’s modus operandi* and *location factors* variables were analyzed in Model II. Next was stage 3 (post-crime phase), in which *body recovery scene*, *signs of forensic awareness*, and *location factors* variables represented Model III. In the final stage, logistic regression analysis was conducted using only significant

⁹ Beauregard & Martineau (2014) found that the act of removing/destroying evidence did not increase avoidance detection, therefore offenders were more likely to move the body.

variables from Model I (pre-crime), Model II (crime), and Model III (post-crime). This analysis will represent the best model for solved cases. For the second part of this study, similar steps and procedures were conducted for the unsolved cases¹⁰. Results from solved cases will be compared with unsolved cases.

¹⁰ Variables with missing information were not included. Refer to Table 4.1.

Chapter 5.

Results

5.1. Solved cases

After selecting 27 independent variables in accordance with current literature, a bivariate analysis was conducted against the dependent variable. Table 5.1 shows that two out of eight variables in the pre-crime phase were significantly associated with body disposal. Consistent with previous research (Beauregard & Martineau, 2014), there were two *victim characteristics* variables that were found to be significantly associated with whether the body was moved; 1) victim is a prostitute (body left = 39.1% vs. body moved = 60.9%; Phi = .207, p = .001), and 2) victim is a street person/homeless (body left = 47.4% vs. body moved = 52.6%; Phi = .136, p = .032). Furthermore, two variables from *location factors* was found to be approaching significance. Specifically, the victim's body was most likely left at the crime scene when the contact scene was deserted (81% vs. 19%; Phi = -.144; p = .071), and outdoors (61.6% vs. 38.4%; Phi = .105; p = .097). Contrary to previous research, none of the variables in *situational factors* were found to be significantly associated with body disposal.

Table 5.1. Bivariate analysis of pre-crime, crime, and post-crime phase variables on body disposal patterns for solved cases

Variables	Body left (n = 173) % (n)	Body moved (n = 77) % (n)	Phi
Pre-crime phase = 1 (yes)			
<i>Victim characteristics</i>			
Victim targeted	67.3 (37)	32.7 (18)	.022
Victim is a prostitute	39.1 (9)	60.9 (14)	.207***
Victim is a street person/homeless	47.4 (9)	52.6 (10)	.136*
<i>Situational factors</i>			
Offender impaired at time of offence	69.2 (119)	30.8 (53)	.000
Offender has access to vehicle	68.5 (122)	31.5 (56)	.023
Victim-offender relationship - stranger	67.1 (55)	32.9 (27)	.032
<i>Location factors</i>			

Variables	Body left (n = 173) % (n)	Body moved (n = 77) % (n)	Phi
Contact scene was deserted	81 (34)	19 (8)	-.114†
Contact scene was outdoors	61.6 (45)	38.4 (28)	.105†
Crime phase = 1 (yes)			
<i>Offender's modus operandi</i>			
Offender used CON approach	62.9 (78)	37.1 (46)	.135*
Offender used SURPRISED approach	82.6 (19)	17.4 (4)	-.092
Offender used BLITZ approach	78.9 (30)	21.1 (8)	-.089
Evidence of beating	69.8 (88)	30.2 (38)	-.014
Evidence of stabbing	74.1 (43)	25.9 (15)	-.059
Evidence of strangulation	63.9 (69)	36.1 (39)	.100†
Foreign objects inserted into victim	89.3 (25)	10.7 (3)	-.155*
Evidence of overkill	69 (80)	31 (36)	.005
Use of restraints/blindfolds/gags	64.3 (27)	35.7 (15)	.048
Sexual penetration	66 (103)	34 (53)	.089
Post-crime phase = 1 (yes)			
<i>Body recovery scene</i>			
Items taken from victim	68.8 (64)	31.2 (29)	.006
Victim's body was concealed	47.4 (45)	52.6 (50)	.370***
Body found lying face down	53.7 (36)	46.3 (31)	.203***
<i>Signs of forensic awareness</i>			
FA – offender removed/destroyed evidence	58.8 (57)	41.2 (40)	.180**
FA – evidence of semen	69.3 (52)	30.7 (23)	-.002
FA – offender acted upon victim/environment	74.4 (29)	25.6 (10)	-.048
<i>Location factors</i>			
Body disposal site in victim's residence	87.3 (55)	12.7 (8)	-.228***
Body disposal site was deserted	65.9 (85)	34.1 (44)	.074
Body was found outdoors	58.2 (78)	41.8 (56)	.256***

*p<.05; **p<.01; ***p<.001; †p<.10

In the crime phase, two variables were found to have significant associations with body disposal patterns. Table 5.1 shows that the majority of offenders who used the con

approach was significantly associated with the body being left on site (62.9% vs. 37.1%; $\Phi = .135$; $p = .032$). There were no difference in whether the body was left at crime scene or moved when the offender used the surprised approach (body left = 82.6% vs. body moved = 17.4%), and the blitz approach (body left = 78.9% vs. body moved = 21.1%). Moreover, when there was evidence that foreign objects were inserted into the victim, her body was more likely to be left on site (89.3% vs. 10.7%; $\Phi = -.155$; $p = .015$). In cases of strangulation, victims were less likely to be moved (36.2% vs. 63.9%; $\Phi = .10$; $p = .103$).

Moving on to the post-crime phase, five variables were found to be significantly associated with body disposal patterns. Two out of the three *body recovery scene* variables showed significant relationship with whether the body was moved after the victim has been killed. Specifically, when the victim's body has been found concealed, it was most likely to have been moved (52.6% vs. 47.4%; $\Phi = .37$; $p = .000$). In addition, the victim was likely to have been left at the scene when she was found lying face down (53.7% vs. 46.3%; $\Phi = .203$; $p = .001$). There were no significant associations found between whether items taken from victim, and whether the body was moved post-homicide. Moreover, only one variable under the *signs of forensic awareness* domain was found to have a significant relationship with body disposal pattern; when the offender removed or destroyed evidence, the victim was more likely to be left at the scene (58.8% vs. 41.2%; $\Phi = .180$; $p = .004$). The fact that offenders left evidence of semen, or acted upon the victim or environment, did not show any significant relationship with whether the body was moved post-crime. The last domain, *location factors* show two variables that were significantly associated with body disposal patterns. In particular, the victim was more likely to be left on site when the body was recovered in the victim's residence (87.3% vs. 12.7%; $\Phi = -.228$; $p = .000$), and when the body was found outdoors (58.2% vs. 41.8%; $\Phi = .256$; $p = .000$). A deserted body disposal site did not show any significant association with whether the body was moved.

Next, the relationship between body disposal patterns and independent variables were tested at the multivariate level using multiple logistic regression analyses. To ensure that the models will not be over-fitted, only significant variables obtained in bivariate analysis were used for the logistic regression models. A decision was made to include three variables approaching significance (contact scene was deserted and outdoors, and evidence of strangulation), so as to reduce the risk of Type II error. There

were no signs of multicollinearity, as all variables were within the threshold of Tolerance > 0.2, and VIF < 5.0. Logistic regression analyses were conducted in four stages with corresponding independent variables: 1) pre-crime phase, 2) crime phase, and 3) post-crime phase. Next, significant variables from these three models were analyzed in a final logistic regression, resulting in the best model.

In Model I, pre-crime phase variables were analyzed. The model is significant ($p = .007$; $X^2 = 14.212$; Nagelkerke $R^2 = .078$). Hosmer and Lemeshow test was not significant ($p = .069$), signifying a well-fitted model. Model I accurately predicted 71.6% of the dependent variable, which is an increase from the null model (69.2%). Whether the victim is a prostitute was found to be a significant predictor of body disposal patterns. Table 5.2 shows that the odds of the offender moving the body increased by a factor of 2.881 when the victim was a prostitute ($p = .037$; $b = 1.058$). However, whether the victim was a street person or homeless, did not appear to be a significant predictor for whether the offender will move the body after killing the victim. None of the variables under *location factors* appeared to be significant.

Table 5.2. Logistic regression model of pre-crime variables

	Model I	
	b (SE)	OR
Constant	-.975 (.185)	.377
<i>Victim characteristics</i>		
Victim is a prostitute	1.058 (.509)	2.881*
Victim is a street person/homeless	.426 (.554)	1.532
<i>Location factors</i>		
Contact scene was deserted	-.652 (.427)	.521
Contact scene was outdoors	.374 (.309)	1.453
X^2	14.212**	
Nagelkerke R2	.078	
Overall Classification %	71.6	

* $p < .05$; ** $p < .01$; *** $p < .001$; † $p < .10$

In the second stage of analysis, crime phase variables were tested. Model II is significant ($p = .003$; $X^2 = 14.088$; Nagelkerke $R^2 = .077$), and accurately predicted 69.2% of the dependent variable. Out of the three *offender's modus operandi* variables, con approach significantly predicted whether the offender moved the body ($p = .036$; OR = 1.812; $b = .595$). Furthermore, evidence of foreign objects in victim's cavities

decreased the odds of the victim's body being moved by a factor of .228 ($p = .020$; $b = -1.479$).

Table 5.3. Logistic regression models of crime phase variables

	Model II	
	b (SE)	OR
Constant	-1.194 (.248)	.303
<i>Offender's Modus Operandi</i>		
Offender used CON approach	.595 (.283)	1.812**
Evidence of strangulation	.426 (.282)	1.531
Foreign objects inserted into victim	-1.479 (.634)	.228*
χ^2	14.088**	
Nagelkerke R ²	.077	
Overall Classification %	69.2	

* $p < .05$; ** $p < .01$; *** $p < .001$; † $p < .10$

The third stage analyzed post-crime phase variables (Table 5.4). Model III is significant at $p = .000$, with Nagelkerke $R^2 = .294$, and predicted 76.8% of the dependent variable. Both independent variables under *body recovery scene* were found to be significant. When the victim's body was found to be concealed, it increased the odds of the body being moved by a factor of 4.085 ($p = .000$; $b = 1.407$). Furthermore, when the victim was found lying faced down, she was almost three times more likely to have been moved ($p = .002$; OR = 2.821; $b = 1.037$). Next, one variable from *signs of forensic awareness* was found to be significant in predicting whether the body was moved post-homicide. When the offender removed or destroyed evidence, it increased the odds of him moving the body by a factor of 1.931 ($b = .658$; $p = .040$). One variable from *location factors* was found to be a significant predictor of the dependent variable. Specifically, when the victim's body was recovered outdoors, it increased the odds of the offender moving the body by a factor of 1.912 ($b = .648$), although this was only approaching significance ($p = .095$).

Table 5.4. Logistic regression model of post-crime phase variables

	Model III	
	b (SE)	OR
Constant	-2.274 (.411)	.103
<i>Body recovery scene</i>		
Victim's body was concealed	1.407 (.320)	4.085***
Body found lying face down	1.037 (.337)	2.821**
<i>Signs of forensic awareness</i>		
FA – offender removed/destroyed evidence	.685 (.320)	1.931*
<i>Location factors</i>		
Body disposal site in victim's residence	-.742 (.523)	.476
Body was found outdoors	.648 (.388)	1.912†
χ^2	58.459***	
Nagelkerke R2	.294	
Overall Classification %	76.8	

* $p < .05$; ** $p < .01$; *** $p < .001$; † $p < .10$

In the final stage of logistic regression analyses, significant variables from Model I, Model II and Model III were analyzed together to construct the best model (Table 5.5). This model is significant ($p = .000$), and Hosmer and Lemeshow test is non-significant ($p = .195$), indicating a well fit model. The model accurately predicts 78.8% of the dependent variable, the highest value among all four regression models. Table 5.5 shows that only one pre-crime phase variable is significant: when victim is a prostitute, the offender is more likely to move her body post-crime ($p = .009$; OR = 4.161; $b = 1.426$). Additionally, one crime phase variable approached significance in predicting body disposal patterns: when foreign objects were found inserted into victim's cavity, the odds of the offender moving her body decreased by a factor of .275 ($p = .052$; $b = -1.289$).

Table 5.5. Best model combination of pre-crime, crime, and post-crime phase variables for solved cases

	Best Model	
	b (SE)	OR
Constant	-2.620 (.382)	.073
<i>Pre-crime phase</i>		
Victim is a prostitute	1.426 (.549)	4.161**
<i>Crime phase</i>		
Offender used CON approach	.085 (.338)	1.088
Foreign objects inserted into victim	-1.289 (.663)	.275†
<i>Post-crime phase</i>		
Victim's body was concealed	1.552 (.332)	4.722***
Body found lying face down	1.100 (.350)	3.005**
FA – offender removed/destroyed evidence	.530 (.331)	1.699
Body was found outdoors	.796 (.342)	2.217*
χ^2	69.232***	
Nagelkerke R2	.341	
Overall Classification %	78.8	

*p<.05; **p<.01; ***p<.001; †p<.10

For post-crime phase variables, three out of the four were found to be significant predictors for body disposal patterns. When the victim's body was found concealed, it increased the odds of the body being moved by a factor of 4.722 ($p = .000$; $b = 1.552$). Further, when the victim was found lying face down, her body was most likely to have been moved post-homicide ($p = .002$; $OR = 3.005$; $b = 1.100$). And finally, when the body was found outdoors, the odds of it being moved was increased by a factor of 2.217 ($p = .020$; $b = .796$). By analyzing the entire crime-commission process, we are able to better identify significant factors which predict whether the offender will move the body after he killed his victim.

5.2. Unsolved cases

The next stage in this study was to conduct similar analyses on unsolved sexual homicide cases. Variables and descriptives were outlined in Table 4.1 in Chapter 4. Of the available observable variables, bivariate analysis was performed and the results are shown in Table 5.6. In the pre-crime phase, two of the three *victim characteristics* variables were significantly associated with body disposal patterns. Specifically, the

offender is more likely to move the body when the victim is a prostitute (66.7% vs. 33.3%; Phi = .40; p = .000). Similar significant relationship was found between the body being moved and when the victim is a street person/homeless (65% vs. 35%; Phi = .233; p = .020). However, unlike results from the solved cases, there were no significant associations between *location factors* and body disposal patterns in unsolved cases. This could be because there was only one variable included in the bivariate analysis (i.e., contact scene was outdoors) due to the lack of available data in unsolved cases.

Table 5.6. Bivariate analysis of pre-crime, crime, and post-crime phase variables on body disposal patterns for unsolved cases

Variables	Body left (n = 58) % (n)	Body moved (n = 42) % (n)	Phi
Pre-crime phase = 1 (yes)			
<i>Victim characteristics</i>			
Victim targeted	54.5 (6)	45.5 (5)	.025
Victim is a prostitute	33.3 (13)	66.7 (26)	.40***
Victim is a street person/homeless	35 (7)	65 (13)	.233*
<i>Location factors</i>			
Contact scene was outdoors	65.6 (21)	34.4 (11)	-.106
Crime phase = 1 (yes)			
<i>Offender's modus operandi</i>			
Offender used CON approach	55.6 (10)	44.4 (8)	.023
Evidence of beating	61.5 (24)	38.5 (15)	-.507
Evidence of stabbing	80 (16)	20 (4)	-.223*
Evidence of strangulation	52.6 (20)	47.4 (18)	.085
Foreign objects inserted into victim	50 (6)	50 (6)	.06
Evidence of overkill	65.7 (23)	34.3 (12)	-.115
Use of restraints/blindfolds/gags	60 (6)	40 (4)	-.014
Sexual penetration	67.9 (19)	32.1 (9)	-.125
Post-crime phase = 1 (yes)			
<i>Body recovery scene</i>			
Items taken from victim	61.5 (24)	38.5 (15)	-.057
Victim's body was concealed	58.1 (18)	41.9 (13)	-.001
Body found lying face down	45.8 (11)	54.2 (13)	.058
<i>Signs of forensic awareness</i>			

Variables	Body left (n = 58) % (n)	Body moved (n = 42) % (n)	Phi
FA – offender removed/destroyed evidence	50 (5)	50 (5)	.054
FA – evidence of semen	54.5 (12)	45.5 (10)	.037
<i>Location factors</i>			
Body disposal site was deserted	52.8 (28)	47.2 (25)	.111
Body was found outdoors	53.1 (43)	46.9 (38)	.206*

*p<.05; **p<.01; ***p<.001; †p<.10

In the crime phase, only one out of eight *offender's modus operandi* variables was shown to be significantly associated with whether the body was moved post-crime. When there was evidence of stabbing, the victim's body was more likely to be left at the crime scene (80% vs. 20%; Phi = -.223; p = .026). This variable was not observed to be significantly associated with body disposal patterns in the solved cases. Interestingly in the post-crime phase, only one out of seven variables was found to have significant association with body disposal patterns. In particular, the *location factors* variable "body was found outdoors" showed that victims were more likely to have been left on site (53.1% vs. 46.9%; Phi = .206; p = .040).

In keeping with similar analyses processes, significant values obtained from the bivariate analysis were then analyzed on the multivariate level. Since there were less available variables for investigation, the decision was made to conduct one logistic regression analysis. Four variables from all three phases were included. Results show that when the victim is a prostitute, the odds of the offender moving her body is increased by a factor of 5.012 (p = .001; b = 1.612). However, whether the victim is a street person or homeless did not predict body disposal patterns. For the crime phase, when there was evidence of stabbing the odds that the victim was moved decreased by a factor of .291, although this variable only approaches significance (p = .065; b = -1.233). Interestingly, the post-crime phase variable, "body found outdoors" was not a significant predictor for whether the offender would move the body post-homicide (p = .182).

Table 5.7 Logistic regression model for unsolved cases

	Model I	
	b (SE)	OR
Constant	-1.559 (.646)	.210
<i>Pre-crime phase</i>		
Victim is a prostitute	1.612 (.502)	5.012***
Victim is a street person/homeless	.147 (.612)	1.159
<i>Crime phase</i>		
Evidence of stabbing	-1.233 (.669)	.291†
<i>Post-crime phase</i>		
Body was found outdoors	.895 (.670)	2.447
χ^2	22.755***	
Nagelkerke R2	.274	
Overall Classification %	69	

*p<.05; **p<.01; ***p<.001; †p<.10

Compared with solved cases in best model, only one variable was found to be similar in predicting body disposal patterns. Namely, when the victim is a prostitute (pre-crime phase). However, none of the crime phase variables in unsolved cases appeared to be predictors for solved cases (Table 5.5). Several other variables throughout the entire criminal event that were shown to be significant predictors in solved cases did not appear to be true for unsolved cases. This suggests that there are other factors at play when it comes to predicting body disposal patterns between offenders who were caught, and those who got away.

Chapter 6.

Discussion

Given the low base rate of sexual homicide cases, researchers have faced several challenges studying this phenomenon. Nonetheless, it was imperative for criminologists to understand the sexual murderer's decision-making process throughout the criminal event, in order to assist and inform preventative methods. Prior sexual homicide research has either focused on identifying offender typologies (e.g., Ressler et al., 1986; Beauregard & Proulx, 2002, Holmes & Holmes, 1998), or focused on the pre-crime (e.g., Kerr & Beech, 2015; Arrigo & Purcell, 2001; Burgess, Hartman, Ressler, Douglas, & McCormack, 1986; Hickey, 2002), and crime phases (e.g., Beauregard & Martineau, 2012; Beauregard & Martineau, 2016a; Chan & Heide, 2008). The post-crime phase, in particular body disposal patterns, has been neglected in sexual homicide studies. Morton et al. (2014) have stressed the importance of body disposal patterns in providing critical clues to the offender's identity. In terms of practicality, body disposal patterns (e.g., disposal site, state of body) are usually the first known and most objective location encountered by law enforcement (Rossmo, 2000). Further, the victim's body location provided the least disputatious crime scene variables; any evidence present is taken at face value (Lundrigan & Canter, 2001).

RCP, and the crime-commission process have been researched and applied to a wide variety of crimes. Although RCP was mainly used initially to explain property crimes like burglaries (Leclerc, Wortley, & Smallbone, 2011), recent criminologists saw the utility of applying RCP to more violent crimes such as sexual-aggressions. Similar to other non-aggressive crimes, sex offenders perform cost-benefit analyses throughout the crime-commission process, making rational choices, and adopting specific crime scripts which allow them to successfully complete the sexual crime (Beauregard & Leclerc, 2007; Leclerc & Wortley, 2014; Beauregard, Proulx et al., 2007; Leclerc, Beauregard, & Proulx, 2008). Accordingly, the current study investigated the behavioural choices that sexual murderers made throughout the criminal event on cases of solved and unsolved sexual homicides in Canada. From the outset, there were differences observed in behavioural choices between the solved and unsolved cases at the bivariate level. In

solved cases, post-crime phase factors (e.g., victim's body was concealed, offender destroyed evidence, disposal sites) explained the most in body disposal patterns predictability. However, post-crime phase factors were the least helpful in predicting whether the body was moved post-sexual homicide in unsolved cases (Table 5.6). Hence, this suggests that offenders who successfully avoided detection employed a different crime script than offenders who got caught (Beauregard & Martineau, 2014).

6.1. To move or not to move? (Solved cases)

An examination of each of the crime phases has produced interesting results. Notably, post-crime phase variables represented the most value in predicting body disposal patterns for solved sexual homicide cases. In particular, Table 5.5 shows that when the victim's body was concealed, or if the victim was found outdoors, it was more likely that the offender had moved the body. Previous research has shown that when the offender moved the body after killing the victim, it increased the risk of detection, resulting in a shorter time for law enforcement to recover the body (Beauregard & Martineau, 2016a). When an offender decides to move the victim's body, he may be exposed to potential eyewitnesses in the area, or risk leaving forensic evidence during the move. However, research has also shown that when the victim's body was concealed, it took longer for law enforcement to recover the body (Beauregard & Martineau, 2014). Thus, since moving a body increases the risk of detection, this suggests that the offender had made additional rational decisions to conceal the body or move it outdoors.

Another interesting finding was that when the victim's body was found lying face down, it was almost three times more likely to have been moved. This suggests a sense of an impersonal relationship between the victim and the offender, in which the victim is seen as an object to be discarded (see Canter & Young, 2012). Conversely, *expressive* offenders were more likely to manually strangle their victims, and then leave their body at the crime scene. Usually, the offender is positioned on top of the victim whilst he strangled her thus, her body would be lying face up. For example, in the *expressive/instrumental* typology study by Goodwill, Allen, and Kolarevic (2014) of Serbian homicide cases, the authors found that *expressive-personal* offenders used strangulation to kill their victims, often knew their victim, and often left her at the crime

scene. Therefore, it made sense that when the victim's body was found lying face down, it was more than likely to have been moved from somewhere else.

Previous research on crime locations found that one-third of sexual homicides occurred in the victim's home (Langevin et al., 1988). Similarly, the *disorganized* offender often knew the victim, attacks the victim in her home and leaves her body at the crime scene (Ressler et al., 1988). Conversely, this study's results show the fact that the victim's body was found in her residence did not predict whether the body was moved post-sexual homicide. Thus, it is imperative to carefully scrutinize the utility of sexual murderers' typologies such as the FBI's *organized/disorganized* dichotomy, which mainly focused on the crime, and post-crime phase factors. In fact, Beauregard and Proulx (2002) demonstrated that when pre-crime variables were analyzed, several significant differences were found within the FBI's *organized/disorganized* pathway. The authors examined the offender's affect, relationship status, and occupational problems prior to the crime which led them to propose the *angry/sadistic* pathway. They found that *angry* murderers felt particularly more anger shortly before the crime, whereas *sadistic* murderers had positive feelings prior to committing the crime (Beauregard & Proulx, 2002). This study's result echoes the importance of considering factors from not only one phase of the crime-commission process, but rather, the entirety of the criminal event.

Furthermore, the role of the victim seems to play a significant role in predicting body disposal patterns in sexual homicide cases. In particular, when the victim is a prostitute, the offender is most likely to move her body after completing his crime. Research has shown that prostitutes represented the highest victimization rates among women (Brewer et al., 2006), and topped the homicide charts for riskiest line of work (Lowman, 2000). Due to the criminalization and the stigma of prostitution, these women were forced to work in environments that are dark, dangerous, out-of-sight, and hidden from the general public (Sanders & Sarat, 2016). This type of working environment perpetuates violence against prostitutes, given that there are no capable guardians around to witness the crime. Thus, the victim's role as a prostitute is an indicator of what has been termed "risky lifestyle" (Beauregard & Martineau, 2012), and the riskier the lifestyle, the more likely they become an easier target for the offender. Furthermore, the transient nature of some prostitutes may exacerbate their risky lifestyle. Due to the criminalization of prostitution, these women are forced to move from one location to

another whenever the police came to sweep prostitution from a particular stroll (Lowman, 2000). Being highly mobile, these women become vulnerable targets for offenders, as their disappearance will not be noticed immediately.

Further, prostitutes were often forced to work on the streets given that bawdy houses were criminalized up until recently (see *Canada (AG) v Bedford, 2013*). Thus, sexual murderers who target prostitutes probably had their initial contact on the street where the victim worked, and moved to another location to commit the crime. The crime location is most likely a familiar and convenient, yet secluded (e.g., abandoned building), or a temporary indoor lodging (e.g., motel room). These crime locations may have been usual sites used to conduct sexual act transactions therefore, the police will most likely search these areas first. In order to reduce the risk of being tied back to the crime, the offender is more likely to dump the victim's body at another location. This is consistent with Beauregard and Busina's (2013) criminal mobility research on sex offenders, where the authors found that offenders who targeted their victims were more likely to move their victims from the contact location, to the crime location. In this case, we see the offender moving the victim from the contact location, to the crime location, and finally to the body disposal location.

6.2. The one that got away (Unsolved cases)

The second research question this study aimed to answer was whether the factors which influenced body disposal patterns for offenders who were apprehended (i.e., solved cases) were similar for offenders who succeeded in avoiding detection (i.e., unsolved cases). The vast majority of sex offence research has been conducted on incarcerated offenders. Albeit informative, law investigators generally do not know the identity of the offender, especially in sexual homicide cases (Trussler, 2010). To address this issue, a detection avoidance study conducted by Balemba, Beauregard, and Martineau (2014) examined the difference of crime scene factors present between solved and unsolved cases in sexual homicides. Specifically, the authors found three classes of sexual murderers: 1) *sloppy/reckless*; 2) *violent/sadistic*; and 3) *forensically aware*. Offenders who were categorized under the *sloppy/reckless* class were most likely to be apprehended by police, as they often leave incriminating evidence at the crime scene (e.g., DNA samples). Similarly, *violent/sadistic* offenders were more likely to be apprehended by police, but their modus operandi involved more violence and torture

against the victim. On the other hand, *forensically aware* offenders were more likely to succeed in avoiding apprehension as they employed behaviours and tactics that would leave the least amount of evidence as possible (e.g., not leaving evidence of semen, no physical beating of victim). This suggests that there is indeed a difference in the offender's modus operandi between the ones who got caught, and the ones who got away.

Investigating further, the authors examined unsolved cases only and identified two classes of offenders who managed to avoid detection: 1) *forensically aware*; and 2) *lucky* (Balemba et al., 2014). In this instance, *forensically aware* offenders were least likely to perform intercourse with the victim, hence resulting in the lack of semen evidence. They also appear to limit their interactions with their victims as much as possible, leaving little to no trace of any evidence behind. On the other hand, *lucky* offenders' behaviour should have left enough evidence to lead to an arrest (e.g., performed vaginal intercourse, left semen evidence), but due to chance or luck, these offenders managed to avoid detection (Balemba et al., 2014). Results from the current study seem to corroborate Balemba et al.'s (2014) findings. Table 5.7 shows that the pre-crime phase has the most value in predicting body disposal patterns for unsolved cases. Specifically, whether the victim was a prostitute better predicted whether the victim's body was moved for *unsolved* cases. On the other hand, post-crime phase behaviours (i.e., victim's body concealed, body found lying face down, body found outdoors) had the most predictive value in *solved* cases (Table 5.5). This difference is notable, as it also supports previous research results which found that offenders who took precautions in trying to hide their identity post-crime were in fact, apprehended sooner (Beauregard & Martineau, 2016a). Thus, it is likely that offenders in this sample who managed to avoid detection employed different modus operandi or behaviours that allowed them to thwart police investigations.

Results show that when there was evidence of stabbing, the offender is less likely to move the victim's body after killing her. Consistent with the *angry* type of offender, excessive violence is associated with an offender who may have known the victim, and often left her body at the crime scene (Beauregard & Proulx, 2002). Moreover, the act of stabbing can also be related to the *situational precipitated* type of offender; whom did not intend to kill their victim but was angered by the victim's resistance which turned into lethal violence (Healey, Beauregard, Beech, & Vettor,

2016). Thus, since the initial plan was not to kill the victim, the offender most likely did not plan on what to do with the body after the victim died, resulting in the body not being moved, or being left outdoors at the scene. Leaving behind a body, and possibly knowing the victim – these offenders should have left enough information for investigators to be identified and apprehended. Why then, do these cases remain unsolved? Perhaps these offenders are what Balemba et al. (2014) classified as *lucky* – due to investigation errors, uncooperative witnesses, or discrepancies in the chain of custody. Recent research has shown that the skills of the investigators are equally as important in determining the resolution of a sexual homicide case. In a study conducted by James and Beauregard (2018), the authors examined the effects of unskilled criminal investigation practices which included 1) failure to conduct a neighbourhood canvas; 2) failure to use a DNA sample from the crime scene; 3) failure to follow up on a missing person's report; 4) failure to investigate the location where the victim was last seen; 5) failure to share information between investigative teams; 6) drawing conclusions on the victim's death prematurely; and 7) conviction of an innocent party. The authors found that the presence of unskilled investigations practices tend to result in delayed arrest of the offender (James & Beauregard, 2018), which corresponds with the current study's findings for offenders who should have been caught but managed to avoid detection.

Interestingly, the location on where the body was discovered did not predict whether the offender moved the body post-sexual homicide for *unsolved* cases. This is counter intuitive in regards to rational sense, as offenders will most likely choose a secluded location like dense forests, undeveloped areas, and isolated locations to dispose of the victim's body. According to routine activity theory (Cohen & Felson, 1979), the dumping site choice of offenders in this study is similar to previous research on serial homicides, where the majority of body disposal sites were public outdoor locations (Morton et al., 2014; Sea & Beauregard, 2018), a rational choice of location where there are no capable guardians around to detect the offence. Moreover, choosing an outdoor dumping site meant that human remains will be exposed to environmental elements such as gravity, weather, water flow, and animal activity (Skinner & Lazenby, 1983). Exposure to these elements will cause the body to decompose and deteriorate quicker compared with a protected (i.e., indoor) crime location, resulting in the loss of potentially important evidence that could help link the offender to the victim. However, whether the body was found outdoors did not predict if the body was moved in the current study for

unsolved cases. Perhaps the crime and post-crime locations were similar. That is, the offender attacked the victim outdoors and left her body at the scene. This suggests that there is an interplay of several other factors that need to be considered, rather than focusing solely on the location of body disposal sites to predict body disposal patterns for *unsolved* cases.

Lastly, bivariate results show that forensic awareness strategies were not predictors for whether the body was moved post-sexual homicide (Table 5.7). Similar to Beauregard and Martineau's (2014) study on unsolved sexual homicides, forensic awareness strategies did not increase the likelihood of avoidance detection. Thus, we hypothesize that offenders who successfully avoided detection (*unsolved* cases) were possibly aware that the cost of performing forensic awareness strategies (e.g., cleaning up crime scene, hiding identity) will not produce the desired optimum benefits (i.e., avoiding detection) therefore, they decided that it was not worth the risk. Perhaps these "successful" offenders employed a different script, adopting different behavioural methods which allowed them to elude law investigators. For example, instead of trying to destroy evidence, or taking precautions to hide their identity, these offenders' script could be as follows: 1) target prostitutes (vulnerable target, no connection to offender), and 2) limit physical contact with victim (no intercourse, no evidence of semen).

6.3. Implications for law investigations and conclusion

The purpose of the current study is to identify the offender's behavioural choices throughout the criminal event, which influenced the moving of the victim's body post-sexual homicide. Specifically, this study aims to answer the following two questions:

1. What factors predict whether an offender will move the body post-sexual homicide?
2. Is there a difference in disposal patterns for solved and unsolved sexual homicide cases?

The results show that there are indeed differences in factors which predicted whether the offender moved the victim's body after completing the crime between solved and unsolved cases. On the theoretical level, this study provides empirical support to the RCP, and crime-commission process literature. Sex offenders, like any other criminal offenders, make rational decisions through a cost-benefit analysis when committing a

crime (Cornish & Clarke, 2008). However, these choices are *bounded* by limitations surrounding the event (Cornish & Clarke, 1987). Choices are made to move the victim's body based on *choice-structuring properties* such as victim characteristics, situational factors, and location factors. Each different *property* lends its credence to the pros and cons in influencing whether the offender decides to move the body after killing the victim. For solved cases, post-crime phase factors (i.e., victim's body concealed, lying face down, found outdoors) most predicted whether the offender moved the body post-sexual homicide. Conversely in unsolved cases, pre-crime phase factors (i.e., victim is a prostitute) most explained body disposal patterns. Offenders from each case status (solved vs. unsolved) clearly employed different behavioural strategies and methods, through cost-benefit analysis, in their crime-commission process which ultimately resulted in them either being apprehended, or not.

In terms of practical implications, the results highlight the importance of distinction between offenders who got caught, and those who got away. In Chopin and Beauregard's (2019b) study, the authors found differences in behavioural methods utilized by rapists in solved and unsolved rape cases. Similarly, the current study's results show that different crime-phase factors were better at predicting whether the body was moved post-sexual homicide in solved and unsolved cases. For instance, if the victim's body was concealed, lying faced down, or found outdoors, it is most likely that the offender will be detected soon (solved cases). Whereas, if the crime scene presented evidence of stabbing or, if the victim was a prostitute, then it may be a clue that the offender may have taken additional steps to avoid detection (unsolved cases). By identifying which factors are present at the beginning of the investigation, law enforcement are better equipped to predict the type of offender: those who will be apprehended soon, or those who will remain elusive. Thus, appropriate resources and manpower can be determined at the onset of an investigation, ensuring sufficient dedication to particularly more difficult cases to solve.

The use of criminal event factors to deduce body disposal patterns is a tangible, and effective way to discern clues as to the identity of the offender. Body disposal sites, forensic evidence left behind, and the way victim was killed are usually the first identifiable clues to investigators. Additionally, the body disposal patterns identified will provide valuable information to investigators, as most lack experience in dealing with sexual homicides (Beauregard & Martineau, 2012). Specifically, investigators can be

aware of crime scene, victim, and offender characteristics associated with each unique body disposal pattern. This information will lead to higher accuracy and swift identification of offenders, which ensures scarce criminal justice resources are being utilized in the most cost-effective manner. Moreover, efficient investigative techniques will lead to better public safety policies (Carter & Carter, 2015) by targeting known risk factors associated with sexual homicides.

Although informative, this study is not without its limitations. First, the sample is derived from police data, in which constitutes the issue of the dark figure of crime. Previous research have shown that only between 1% to 5% of all homicides can be classified as sexual (Chan & Heide, 2008). Although these crimes are rare, the low base rate in official reports can be attributed to underestimations. Examples include improper classification of the crime due to the lack of a standardized sexual homicide definition, missing persons not reported, or misclassification by the investigator due to an absent sexual element at the crime scene (Beauregard, 2018). Second, the cases in this sample ranged from 1948 to 2010, presenting a wide range in years. This may pose some challenges when considering what generational effects could be influencing the variables. For example, there were only 2,304,943 motor vehicles in Canada in 1948, compared to 20,267,982 vehicles in 2010 (Statistics Canada). Thus, the criminal mobility of the offender may be attributed to the lack of vehicle availability during that era. Moreover, factors of urbanization, and changes in the environmental backcloth over the decades may also impact the offender's crime script. In the early 1950s, numerous lands may still have been under-developed, which meant isolated locations for offenders to attack unsuspecting victims. Compare this with today's urban landscape; there are currently more people around, acting as "capable guardians" thus, making it more difficult for the offender to target victims without being seen (Cohen & Felson, 1979). Future research should consider these generational factors, and how it would affect the offender's behaviour, and body disposal patterns.

Third, substantial advancement in forensic science since the 1970s has led to significant improvements within criminal investigations. One of the greatest scientific breakthroughs, DNA typing in 1986, greatly improved the reliability of forensic investigative techniques (Peterson & Leggett, 2007), which allowed for higher clearance rates. This could be a contributing factor in influencing the status of the cases (i.e., solved vs. unsolved) in this sample. Finally, the current sample did not include offenders'

psychological profiles as part of the analysis. In terms of profiling offenders, previous research based the majority of its findings on offenders' psychological profile, mainly from interviews with incarcerated sexual murderers, or clinical data (see Beauregard & Field, 2008; Ressler et al., 1988; Kocsis et al., 2002).

Rational choice, and crime scripts have contributed to the explanation of why people commit crimes. In the current study's case, even seemingly irrational crimes like sexual homicides can be explained in a *rational* sense. The notion that sex offenders have "uncontrollable sexual urges to offend" are no longer the norm within criminology academe, as more researchers moved to adopt RCP to explain sexual homicides (Beauregard & Lussier, 2018). Like any other criminals, sex offenders perform rational thought analysis when carrying out their crime. They weigh the cost and benefits in each crime phase throughout the entire criminal event, from target selection (pre-crime phase), to committing the assault (crime phase), and finally to body disposal locations (post-crime phase). Each phase involves rational (albeit *bounded*) thought processes which influence the offender's choice of actions in engaging, carrying out, and completing the crime. Furthermore, not only are crime scripts crime-specific (e.g., burglary vs. sex offence), this study has shown that crime scripts are also specific to offenders who were apprehended, and those who avoided detection. It is recommended that future research investigate crime scripts on a more micro and detailed level, to possibly identify script pathways between the two types of offenders.

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