Sexual Homicide and its Investigation: New Perspectives to Improve Police Practices

Julien Chopin (PhD) & Eric Beauregard (PhD)

1. Introduction

Investigating sexual homicide represents an important challenge for the police. These challenges are due to a number of specific characteristics of sexual homicides that make them more complex to solve by the police. The first comes from the fact that these crimes are rarely observed. Studies suggest that sexual homicide represents between 2% and 4% of all homicides in Canada, less than 1% of all homicides in the US, and between 1.2% and 3.7% in the UK (Beauregard & Martineau, 2017b; Roberts & Grossman, 1993). Although the low base rate of this crime can be considered good news, it also contributes to specific challenges faced by investigators. As noted by Beauregard (2018), most investigators never had the opportunity to work sexual homicide investigations and develop the specific skills to manage these cases. A second challenge is that sexual murderers often assault unknown victims, who are randomly targeted. One of the most productive line of inquiry for investigators to identify a suspect in a homicide case is to establish a connection between the offender and the victim, who often know one another. Thus, such approach will usually lead to a dead-end in sexual homicide cases, forcing the police to focus on other techniques (e.g., criminal profiling, geospatial analysis, forensic expertise). Third, in order to identify and charge a suspect, police investigators need to understand and reconstruct the sequence of events. Sexual homicide is known to be a complex crime characterized by the commission of unusual and irrational acts that can complicate the overall understanding of the crime. Finally, findings of previous studies indicate that sexual murderers constitute a specific type of offender following a distinct crime-commission process compared to other rapists or murderers (Beauregard & DeLisi, 2018a, 2018b; Beauregard et al., 2018; Chopin & Beauregard, 2019e), suggesting that specific investigative techniques must be used by the police. Faced with these challenges,

academics and practitioners are conducting research to understand the behavior of individuals involved in this complex crime to assist the investigative work conducted by the police.

2. Identifying Sexual Homicide and Its Components for Investigators

Despite being rare, it is crucial for investigators to determine whether or not a homicide is of a sexual nature, as this can have very important implications for how the investigation proceeds. The identification of the sexual component could lead investigators to formulate different working hypotheses. This section discusses the different ways that can be used by investigators to determine whether a homicide has a sexual component or not.

2.1. How to identify sexual homicides?

Sexual homicide is a specific type of crime, combining the act of murder and sexual assault. there is no legal definition and so, as a result, there is are various approaches to identifying or categorizing a homicide as sexual. The most common divergence in these definitions, however, is related to whether not a sexual motive is necessary to classify a case as sexual homicide (Beech et al., 2005; Meloy, 2000; Myers, 2002; Porter et al., 2003). This definition assumes that the accidental or instrumental death of the victim following a sexual assault is considered as a sexual homicide (see Beauregard, Chopin, & Winter, 2020; Chopin & Beauregard, 2019b; Mieczkowski & Beauregard, 2010). For others, the sexual activity is not necessary for the murder to be sexual, as the act of killing itself may be sexually gratifying for the offender (Krafft Ebing, 1886; Money, 1990; Schlesinger, 2004). Although interesting, these definitions are not easily useful for police investigators. In some cases, offenders do not cooperate, which makes it difficult to identify the sexual component of a murder. In other instances, such as when the investigation has not yet identified a suspect, only the crime scene evidence can provide information to investigators.

To assist in the identification of sexual homicide cases by police investigators, the Federal Bureau of Investigation (FBI) suggested an operationalized definition of sexual

homicide including six specific characteristics. This definition suggests that to be considered as sexual, a homicide must present at least one of the following characteristics: victim's attire (e.g., torn clothing exposing the victim's breasts) or lack of attire; exposure of the sexual parts of the victim's body; sexual positioning of the victim's body; insertion of foreign objects into the victim's body cavities; evidence of sexual intercourse; evidence of substitute sexual activity (e.g., masturbation), interest, or sadistic fantasy. Despite being used in most studies on sexual homicide, this definition has been criticized for potentially increasing the likelihood of false positive (Beauregard & Martineau, 2017b; Kerr et al., 2013; Stefanska et al., 2016) as well as the lack of any offender's information (Kerr et al., 2013). Some recent studies have suggested simply ensuring the presence of at least two criteria in this definition to increase its validity (see e.g., Beauregard, Chopin, & Darjee, 2020; Chopin & Beauregard, 2019a, 2019b, 2019c; Chopin & Beauregard, 2020d).

Recently, Chan (2015) provided a new operational definition to identify a sexual homicide. He used the criteria of the FBI definition and added two additional items: 1) a legally admissible offender confession of the sexual motive of the offense that intentionally or unintentionally resulted in a homicide, and 2) an indication of the sexual element(s) of the offense from the offender's personal belongings (e.g., journal entries, social blogs, social media posts, and/or home computer). Although these two criteria increase the validity of the sexual homicide identification, they also limit its operational application for investigators as they largely depend on the identification of a suspect and his cooperation.

2.2. How to identify sadism in sexual homicides?

The identification of sexual sadism is usually a task associated with clinical practice and correctional intervention. However, the identification of sexual sadism may be useful in police investigations. It may assist in guiding police investigators to more tailored avenues of investigation as well as improve the understanding and the explanation of specific and

unusual behaviors at the crime scene. Several studies identified that sadistic sexual murderers follow a specific crime-commission process and present specific characteristics that can help investigators to focus on a profile and restrict the suspect list (see Beauregard et al., 2007; Brittain, 1970; Chopin & Beauregard, 2020d; Gratz & Bradford, 1995; Hare et al., 1999; Healey et al., 2013; Hill et al., 2006; Reale et al., 2017, 2020). Sadism is a psychological concept that can be defined as behaviors characterized by (1) some form of violent or humiliating behavior (Abel, 1989; Groth & Birnbaum, 1978; Knight et al., 1994), (2) the victim's reaction to this behavior (e.g., being frightened, scared, or being in pain) (Marshall & Kennedy, 2003), or (3) the resulting feeling of power and control as a result of the violence inflicted (Brittain, 1970; Dietz et al., 1990; Grubin, 1994; MacCulloch et al., 1983). Identification of sadism is traditionally made through clinical assessment and requires access to the offender. Nevertheless, researchers developed alternative methods to measure the degree of sexual sadism with scales focused on crime scene behaviors. Nitschke et al. (2009) developed the Severe Sexual Sadism Scale (SeSaS). This scale is based on 11 items and a score of 4 or above indicate the presence of sexual sadism:

1. Offender engages in gratuitous violence toward or wounding of the victim.
2. Offender exercises power/control/domination over the victim.
3. Offender humiliates/or degrades the victim.
4. Offender is sexually aroused by the act.
5. Offender tortures the victim or engages in acts of cruelty to the victim.
6. Evidence of ritualism in offense.
7. Victim is abducted/or confined.
8. Insertion of object(s) into victim's bodily orifice(s).
9. Offender mutilates sexual parts of the victim's body.
10. Offender mutilates nonsexual parts of the victim's body.

11. Offender keeps trophies (e.g., hair, underwear, ID) of the victim or keeps records of the offense.

Despite being interesting, the SeSaS requires some information from offenders that can be difficult to collect when the investigation is still in progress. To overcome this limitation, Myers et al. (2019) developed the SADSEX-SH scale to assist in the diagnostic assessment of unidentified or unconfirmed perpetrators purely from crime scene actions. This scale uses a cut-off score of six (i.e., not present or unknown = 0 point, possibly present/some evidence = 1 point, present = 2 points) to determine the presence or absence of sadism in a case of sexual homicide. This score is computed on the basis of eight items:

1. Sexual domination of the victim through the use of bondage, blindfolding, a knife, etc.
2. Physical or psychological torture of the victim
3. Victim forced to verbally or physically engage in sexually degrading, humiliating behavior
4. Gratuitous violence, excessive injury, biting, cutting, or other acts of physical cruelty inflicted on the victim
5. Anal or oral sex forced upon the victim
6. Use of an inanimate object(s) to sexually penetrate the victim
7. Sexual mutilation of the victim
8. Souvenirs or trophies taken from the victim.

SeSaS and SADSEX-SH are tools that police investigators can use at the beginning of the investigation from the crime characteristics they have observed to determine the sadistic nature of a sexual homicide. This can help investigators to develop hypotheses, identify profile details, and improve the understanding of the criminal event.

3. Sexual Homicide Typologies based on Crime Scene Behaviors

The use of typologies in criminology is frequent and may serve various purposes. Cale (2018) noted that some of these typologies are police investigation-oriented and focus on associating the characteristics of the crime (e.g., level of planning, relationship to the victim, use of a weapon, emotional state of the offender, pre-offence alcohol use, pre-offence pornography use, type of sexual acts perpetrated) with offender characteristics (e.g., personality, motivation, physical characteristics, routine activities and criminal antecedents). Such typologies provide important findings that can help to improve investigative practices, focus on specific leads, and enhance suspect apprehension efforts (Douglas & Burgess, 1986; Douglas et al., 1986; Ressler et al., 1988). Associating the characteristics of the crime with offenders characteristics is not effective for all types of crime, but it has been found to be particularly valuable in the case of sexual homicides (Ressler et al., 1988).

3.1. What are the main sexual murderers' typologies?

Traditionally, sexual murderers were classified in two groups: Those whose sexual pleasure is associated with the commission of a murder and those whose sexual pleasure is dissociated from the murder. These types of offenders are known under the categories organized/disorganized sexual murderers (Ressler et al., 1988) or sadistic/angry sexual murderers (Beauregard & Proulx, 2002; Beauregard et al., 2007). The knowledge associated with these categories can allow investigators to identify the type of sexual murderer they are facing using the crime scene evidence. This can be used to assist in the creation of specific profiles to facilitate the prioritization of suspects and tailor the interrogation phase.

Research identified that sexual murderers follow patterns of aggression characterized by specific behaviors observable from the crime characteristics. At the beginning of the police investigation process, investigators can have the opportunity to identify which of the two categories that offenders are most likely to be involved. From a general point of view, sadistic sexual murderers follow an organized crime-commission process suggesting that they plan the

murder and display control at the crime scene (i.e., targeting vulnerable victims, leaving no evidence) (Beauregard & Martineau, 2016; Ressler et al., 1988). Specifically, these murderers are more likely to use a ruse as a strategy to approach the victim, to target unknown vulnerable victims, and to assault them in a predetermined isolated location other than the offender and victim living place (Beauregard & Proulx, 2002; Chopin & Beauregard, 2020d). These offenders are more likely to commit sadistic sexual behaviors and mutilation during the crime using torture instruments and restraints. As to the sexual acts, sadistic murderers are more likely to perpetrate vaginal, anal, and postmortem penetration as well as foreign object insertion (Beauregard & Proulx, 2002; Beech et al., 2001; Chopin & Beauregard, 2020c; Higgs et al., 2017; Stefanska et al., 2015). Finally, several studies highlighted that body dismemberment is a specificity of sadistic murderers (Beauregard & Proulx, 2002; Chopin & Beauregard, 2020a). Sadistic offenders follow a similar crime pattern and share common characteristics. Studies highlighted that they generally exhibit schizoid and avoidant personality disorders, deviant sexual fantasies and hypersexuality (Beauregard & Proulx, 2002; Stefanska et al., 2015). The presence of such characteristics may assist the work of investigators by giving them orientation on the suspect's lifestyle (i.e., loner lifestyle) and the elements of his daily life to be examined (e.g., possession of paraphernalia, collection of images or media related to his sexual fantasies). These offenders are characterized by previous contact with law enforcement. They are more likely to have a history of violence against women, previous convictions for sexual and violent crime, and history of mental illness (Beech et al., 2005; Kocsis et al., 2002). Considering this information, it is possible that sadistic offenders are already registered in the justice system for other crimes and that their biological profiles are also recorded. Therefore, forensic services could be of crucial importance for solving the crime by collecting evidence (e.g., fingerprints, semen, blood etc.) from the offender at the crime scene. Sadistic murderers require that investigators apply

pressure on suspects to get them to cooperate and/or confess, which could be challenging if no or little evidence is found at the crime scene (St-Yves, 2002).

The second category of sexual murderers is the angry offender. These offenders are known to follow a disorganized crime-commission process. Angry sexual murders do not plan their crime, which is perpetrated in a randomly selected crime location (i.e., usually an outdoor known location). These assailants exhibit behaviors that are totally opposed to those of sadists. Beech et al. (2001) noted that they are mainly motivated to sexually assault a victim they know or they had previously identified. The crime pattern of anger sexual murderers is mainly characterized by a disproportionate level of violence associated with feelings of anger that occurred during the pre-crime phase. Methods of killing used by angry offenders are asphyxiation and strangulation, and while they are more likely to perpetrate overkill behaviors, they are less likely to move the victim's body (Beauregard & Proulx, 2002; Beech et al., 2005; Beech et al., 2001; Chopin & Beauregard, 2020b; Kocsis et al., 2002; Stefanska et al., 2015). Angry sexual murderers present problems of substance abuse (i.e., alcohol, drugs), previous criminal conviction for non-violent and non-sexual offenses (e.g., burglaries). Beauregard and Proulx (2002) noted that personality disorders appear to affect the relational and occupational problems of angry murderers. These offenders suffer from borderline personality, which may result in impulsivity, over-the-top reactions, and disorganized lifestyle. These characteristics are important to consider for investigators when preparing interrogations. On the contrary, sadistic murderers are more likely to cooperate, admitting to their responsibility for the crime, as well as handing themselves in after the crime (Beauregard & Proulx, 2002). Other studies, have also identified the existence of a third type of sexual murder: The rape murderer (see Higgs et al., 2017, p. for a review). This type of offender is characterized by plans to sexually offend a victim and to vaginally penetrate her

while the death of the victim is not part of the deviant process (Higgs et al., 2017). This third type is often a subtype of the two identified by Beauregard & Proulx (2002).

It is important to keep in mind that the characteristics of sadistic/angry categories are based on analyses of heterogeneous samples of sexual murderers (i.e., victims and offenders with heterogeneous sociodemographic characteristics). The consequence for police investigators is that elements observed at crime scenes could not correspond exactly to what is described in the literature. Actually, several recent studies have shown that sexual murders against children (Beauregard et al., 2008; Chopin & Beauregard, 2019d, 2020d; Proulx et al., 2018), the elderly (Beauregard, Chopin, & Winter, 2020; Chopin & Beauregard, 2020f; Safarik et al., 2002) and men (Beauregard & Proulx, 2007; Chopin & Beauregard, 2020e) present a specific crime-commission process when compared to crimes involving adult women. It has also been established that the crime-commission process followed by juvenile sexual murderers presents specificities depending on the young age of the offenders (e.g., lack of maturity, limited mobility, etc.) (Chopin & Beauregard, 2020b).

Sexual Murderers Spatial Behaviors

The analysis of spatial behaviors of offenders is important for the criminal investigation. It assumes that crime location is not randomly distributed in space but influenced by individual and situational characteristics (Rossmo, 2018). One the main objective of the spatial analysis is to determine the most probable area for the offender's residence and to understand which factors influenced his mobility to the crime locations. From an investigative perspective, the understanding of the mobility of offenders as well as their interaction with the environment can lead investigators to develop hypotheses on their possible living area (see Rossmo, 1997; Rossmo, 2000). Spatial behaviors of sex offenders have been well described in criminology (see Beauregard et al., 2005; Chopin et al., in press for a review), but empirical studies which specifically examine the spatial behavior of sexual murderers are scarce (Aitken et al., 1996;

Beauregard & Martineau, 2017a; Brown et al., 2006; Chopin, Caneppele, et al., 2020; Martineau & Beauregard, 2016; Nethery, 2004). Findings have shown that in general, sexual murderers travel a short distance around their living space, and that cases involving child victims occur closer to the offender's residence than for adult victims (Aitken et al., 1996; Beauregard & Martineau, 2017a; Brown et al., 2006; Chopin, Caneppele, et al., 2020; Martineau & Beauregard, 2016; Nethery, 2004). Recent studies based on Canadian cases examined the journey to murder (Beauregard & Martineau, 2017a; Martineau & Beauregard, 2016). They specifically investigated the distance between initial contact scene, crime location, body recovery scene and offender residence, as well as the correlates of criminal mobility. Findings indicate two groups of sexual murderers according to their level of mobility: the travelers and the non-traveler offenders. Travelers sexual murderers are more likely to target a victim who was walking or jogging, encounter a victim in a bar, target a stranger or a victim who is working as a prostitute, and use a vehicle. The association between the distance traveled and the crime characteristics could help investigators to focus their research in a restricted area from the crime location. The analysis of crime scene characteristics provide important information to determine whether the suspect is more likely to have perpetrated the crime in his direct environment or, on the contrary, to have traveled to a different area. Chopin, Caneppele, et al. (2020) pursued this work by integrating the victim's displacement in addition to that of the offender. They were the first to use the crime triangle mobility analysis with sexual homicide cases (i.e. analysis of distances between offender's residence, victim's residence, and the crime location; see Chopin et al., in press for more details). They found that sexual homicides present an important spatial concentration and determined that the offender mobility was more likely to be impacted by crime and environmental constraints than by individual characteristics. Chopin, Caneppele, et al. (2020) proposed a four-category spatial typology of sexual murderers: 1) farming (i.e., victim and

offender are acquaintance and usually live close to each other), 2) hunting (i.e., offenders is ready to travel beyond his neighborhood to assault in her residence a victim they don't know), 3) trapping (i.e., victim travels into the offender's neighborhood) and 4) picking (i.e., offender and the victim are both far from their residence) of SHOs (Chopin, Caneppele, et al., 2020). Farmer sexual murderers were more likely to be single, to know their victims, and to use the same location to meet and assault the victim. They were also more likely to be familiar with the crime location and to be driven by anger. *Hunting sexual murderers* are less likely to assault victims while they were walking to or from somewhere and to be familiar with the crime location, but they are more likely to assault victims in their own residence. *Trapping sexual murderers* are less likely to assault victims while they were traveling from or to somewhere, but are more likely to be single and familiar with the crime location. Finally, *picking sexual murderers* are more likely to assault victims that are traveling from or to somewhere, but are less likely to target an acquaintance, to use the same location to meet and assault their victims and to use a residence as crime location (Chopin, Caneppele, et al., 2020). This typology may be of use to investigators. By considering the victim's and crime scene addresses as well as the crime characteristics, police investigators can identify the most likely spatial pattern used by murderers. Identification of this pattern can guide in determining whether the victim and the offender live in the same environment, or whether the victim and/or the offender have traveled. This information is useful in guiding, supporting and prioritizing working hypotheses developed during the investigation.

4. Dispose of the victim's body or not?

When the crime has been perpetrated, sexual murderers have to deal with the victim's body. It is important for the investigation to identify whether the body disposal location is the same as the crime location. The identification of the body disposal pattern provides important information to investigators by allowing them to both improve the suspect's profile as well as

the general understanding of the criminal event. Analysis of body disposal patterns may provide investigators additional information in order to complete the offender profile and help in the search and prioritization of suspects. Studies found that offenders characteristics could be associated with decisions made by sexual murders to dispose victims' bodies. Findings of these studies indicated that sexual murderers with criminal experience, with a higher IQ, and who used specific strategies to avoid police detection were more likely to dispose of the victim's body (Oliver et al., 2007; Rossmo, 2000). Moreover, Beauregard and Field (2008) highlighted that offenders who were in a relationship were more likely to transport the victim's body post-SH, to ensure that their partners do not suspect their involvement. The victim's body disposal may suggest that offenders are known by law enforcement as well as their biological profiles. In the case where the victim's body has been moved, police investigators could check whether the biological traces match the profile of an individual already known to the police. Scholars also identified that the identification of body disposal patterns assist the understanding of the crime-commission process. Findings indicated that sadistic/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. Moreover, the presence of an accomplice and the access to a vehicle predict the victim's body disposal as well as the fact that sex trade workers are more likely to be moved from the crime location (Chai et al., 2020; Hewitt et al., 2017). This information is precious as it allows police investigators to consider additional hypotheses (e.g., presence of an accomplice, victim's lifestyle) to test and supplementary pieces of the puzzle to reconstruct and understand the criminal event.

5. Sexual Murderers' Behaviors to Avoid Police Detection

Despite the commission of apparently irrational acts, several studies demonstrated that sexual murderers followed a rational choice approach (see e.g., Chai et al., 2020; Chopin &

Beauregard, 2020d; Chopin, Beauregard, & Bitzer, 2020). In other words, the rational choice approach (Cornish & Clarke, 1986, 1987) states that offenders make decisions to gain more than what it costs to commit the crime. Decision-making process of sexual murderers led them to reduce the costs associated with the crime commission and consequently to avoid police detection. In terms of the investigative process, it seems important for the police to understand how sexual murderers try to thwart police detection.

5.1. How and why some sexual murderers used specific strategies to avoid detection?

The offender's behavior consisting of avoiding police detection has been discussed and defined for the first time by Davies (1992) with the concept of forensic awareness strategies. This concept encompasses the decisions taken by offenders to hide evidence in order to ultimately avoid apprehension and has been mostly studied for non-lethal sexual crimes (Beauregard & Bouchard, 2010), while research focusing on sexual homicide are scarce. Most studies focusing on this aspect provide only descriptive outcomes of this question. Findings indicate that sexual murderers are forensically aware and try to avoid detection (Beauregard & Martineau, 2013; Chopin & Beauregard, 2019c; Chopin, Beauregard, & Bitzer, 2020). In the most recent study to date on this question, Chopin, Beauregard and Bitzer (2020) found that 83.99% of sexual murderers used at least one strategy to avoid police detection. Specifically, studies focus on three types of strategies: The protection of identity, the destruction of evidence, and the disposal of the victim's body. Strategies consisting of protecting the offender's identity include the use of condoms or wearing gloves during the crime phase to prevent any evidence from being left at the crime scene, and are, interestingly, the less popular choice. The destruction of evidence is the most frequently used type of strategies (i.e., removed or destroyed forensic evidence, cleared scene, planted evidence/staged scene, set fire to scene, undressed victim's body) and are perpetrated

once the crime is completed. As noted by Chopin, Beauregard and Bitzer (2020), the main objective of these strategies is not to avoid leaving evidence at the crime scene but rather to erase them. Finally, the last set of measures has been recently considered as a type of detection avoidance strategy and consists of disposing the victim's body (e.g., moving or concealing the victim's body). These results show investigators how sexual murderers try to avoid police detection. It is important to understand that not all strategies are the same, and that they may reflect a certain level of expertise from the offender (Chopin, Paquette, et al., 2020). This information may be important when developing a profile of the perpetrator. Chopin, Beauregard and Bitzer (2020) focused on the decision-making process to avoid police detection and aimed to understand why some sexual murderers used specific strategies while others did not. They tested the role of the offender expertise (e.g., previous criminal conviction), situational characteristics (e.g., alcohol use, location parameters), and crime characteristics (e.g., victim-offender relationship, sexual sadism, vaginal penetration) on the use of strategies by sexual murderers. Their findings indicated that criminal expertise and crime characteristics are the most important factors to explain the use of strategies by sexual murderers, while the situational characteristics do not have any impact. This aspect is important for investigators as identification of forensic awareness strategies could lead investigators to identify interesting offender characteristics (e.g., previous criminal convictions, possession of sexual collection) and limit the list of suspects.

5.1. Does the use of forensic awareness strategies allow sexual murderers to avoid police detection?

One of the major issues in the study of the avoidance detection strategies used by sexual murderers is to determine their efficiency in solving the crime. Such findings would have important insight for investigative practice. The main way to answer such a question consists of comparing solved and unsolved cases of sexual homicides. The difficulty for

scholars to obtain information on unsolved sexual homicides is one the main reasons why few studies have focused on this aspect. The study by Beauregard and Martineau (2014) was the first to test the impact of avoidance detection strategies on the crime-solving status (i.e., solved, unsolved) and the number of days before body recovery. Their results were counterintuitive and partially opposed to the studies focusing on non-lethal sexual crimes (see Chiu & Leclerc, 2019; Chopin et al., 2019; Chopin, Beauregard, & Deslauriers-Varin, 2020) because they suggested that crimes perpetrated by sexual murderers using specific strategies of avoiding detection are more likely to be solved. They also identified that offenders who did not leave biological evidence at the crime scene are more likely to be identified by police. Beauregard and Martineau (2014) suggested that these results could be due to the specific nature of police data and that the lack of victim and witness testimony limited the data for unsolved cases. They also suggested that the avoidance detection strategies are difficult to identify and thus the ones observed by the police are unlikely to be the most effective (Beauregard & Martineau, 2014). Findings of these studies are important for investigations of sexual homicides because they relativize the impact of these strategies on the investigation and suggest that investigators should not spend too much time trying to identify them. Furthermore, Balemba et al. (2014) proposed a typology of unsolved sexual homicides using crime scene behaviors and identified two clusters: *the forensically aware* and *the lucky*. The *forensically aware* class is characterized by a low level of sexual and violent behaviors usually perpetrated during the crime-commission process of sexual homicides. Cases included in this cluster are less likely to be characterized by vaginal intercourse, leaving semen on the crime scene, taking items belonging to the victim, mutilating, beating and strangulating the victim. Offenders include in this category seems totally focused on leaving no evidence. The lucky class present cases on the complete opposite that should result in offender detection and apprehension. They are more likely to perpetrate vaginal penetration, to leave semen at the

crime location, and to have more physical interactions (beating, mutilation, strangulation). For other reasons than the offender's behavior, some sexual homicides remain unsolved. James and Beauregard (2018) tested the role of criminal investigation factors for the duration of crime solving. Their findings indicated that criminal investigation factors, when compared with crime scene behaviors, are mainly responsible for the duration of the investigation. Specifically, they identified that the body discovery by civilians and a body in advanced decomposition increase the length of the investigation, as well as contentious decisions taken by the investigators (i.e., failure to conduct a neighborhood canvas; failure to use a DNA sample from the crime scene; failure to follow up on a missing person's report concerning the victim; failure to investigate the location at which the victim disappeared; failure of investigative teams to share information; drawing conclusions concerning the nature of the victim's death that do not reflect the facts; conviction of an innocent third part) are more likely to explain the investigation length. In addition to the behavioral aspects of offenders and investigators, Rossmo (2009, p. 3) notes that there is simply a bad luck factor in the crime-solving equation: 'Not all crimes are solvable. In some circumstances, even solvable crimes are not cleared because of incompetence, misfeasance, nonfeasance, resource problems, or simple bad luck.'

These results put in perspective the factors that contribute to the inability to solve a homicide. While investigative work is essential, it is also important to ask about the procedures that guide it, which can have an important impact on crime solving. It is therefore important for police officers to assess and challenge their practices to improve the crime solving rate and limit the impact of "bad luck".

Conclusion

This chapter discussed sexual homicide findings as they relate to the police investigation. We first discussed operational ways used to identify a sexual homicide. We

provided different operational definitions that are useful for investigators to determine the presence of a sexual motivation from the observation of crime scene behaviors. We went further in identifying whether a sadistic component was also present. This phase of identifying the sexual component is crucial as it is going to determine the orientations and strategies to implement during the investigation. Then, we discussed the different investigative typologies of sexual murderers and the different crime scene behaviors they involve. Knowledge from investigative typologies allows investigators to identify the type of sexual murderers they are facing, to better understand the crime-commission process, to facilitate the crime reconstitution, and improve the identification as well as prioritization of suspects. Spatial analysis of offenders' behaviors is also very informative for investigators as it offers a method as well as information to identify the offender's residence. This information can help to frame an investigation while limiting the number of working hypotheses. Finally, we present the main findings on sexual murderers' behaviors to avoid police detection. The identification and understanding of these behaviors are important for forensic experts and investigators because it can offer complementary information for suspect apprehension. The low level of efficiency of these behaviors on crime solving is also discussed.

Future studies should focus on the issue of sexual homicide identification by improving and refining operational definitions. The objective would be to facilitate the identification process and limit the number of false positives. Research on the offenders' motivations should be taken one step further using samples of specific types of victims and/or offenders to offer more specific information for investigators. Research focusing on geospatial analysis should be continued in order to identify the links between offender's motivations and their spatial behaviors. Finally, future research should focus on factors other than the perpetrator's behavior that influence crime solving. The results of such research could be used to adopt procedures and improve the solving rate.

Highlights

- The FBI's definition allows to identify the sexual component of a homicide from crime scene behaviors.
- Investigative typologies are based on crime and offender characteristics and distinguish two main types of sexual murderers: The sadistic and the angry.
- Geospatial analysis suggested that sexual murderers traveled a short distance around their living space.
- Analysis of mobility and crime characteristics suggest a four-type spatial classification of sexual murderers: farming, hunting, trapping, and picking.
- The use of specific detection avoidance strategies by sexual murderers has a limited impact on the crime-solving.
- Beauregard, E., & Proulx, J. (2002). Profiles in the offending process of nonserial sexual murderers. *International Journal of Offender Therapy and Comparative Criminology*, 46(4), 386-399. <https://doi.org/10.1177/0306624X02464002>

Recommended readings

Balemba, S., Beauregard, E., & Martineau, M. M. (2014). Getting away with murder: a thematic approach to solved sexual homicides using crime scene factors. *Police Practice and Research: An International Journal*, 15(3), 221-233.

Beauregard, E., & Martineau, M. M. (2014). No body, no crime? The role of forensic awareness in avoiding police detection in cases of sexual homicide. *Journal of Criminal Justice*, 42(2), 213-220.

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- Chopin, J., & Beauregard, E. (2020). Juvenile Sexual Murderers: Examination and Classification of the Crime-Commission Process. *Journal of Forensic Sciences*. doi:10.1111/1556-4029.14504
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