

**Scripting **Extrafamilial** Child Sexual Abuse: A Latent Class Analysis of the Entire  
Crime-Commission Process**

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## Introduction

Over the last two decades, a number of empirical studies have shown that sex offenders behave in ways that are similar to other types of offenders, such as making rational decisions during the crime commission process (e.g., Harris, Smallbone, Dennison, & Knight, 2009; Lussier & Healey, 2009; Lussier, LeBlanc, & Proulx, 2005). The rational choice theory (Cornish & Clarke, 1986, 1987) assumes that an offender decides whether or not to commit a crime by weighing efforts, rewards, and costs involved in an alternative course of action. As a theoretical framework, this offers an interesting way to explain the perpetration of sexual assault by child abusers and also to better understand how these offenders' make decisions throughout the crime commission process. For example, child sexual abusers will make a series of decisions during the commission of their crime, such as selecting an appropriate victim, choosing a location to interact with this victim, and determining how to exit the crime. Moreover, these decisions are led by a cost-benefit analysis that is weighted both by the ability of offenders to maximize the payoffs and to minimize the costs associated with the crime commission (Beauregard, Leclerc, & Lussier, 2012; Chopin & Caneppele, 2019b; Leclerc, Chiu, & Cale, 2016; Leclerc, Proulx, & Beauregard, 2009; Leclerc, Smallbone, & Wortley, 2013; Leclerc, Wortley, & Smallbone, 2011). Thus, the rational choice perspective offers a systematic way to understand child sexual abusers based on patterns of decision-making throughout the crime commission process.

The crime script, based on the rational choice theory and developed by Cornish (1994), is an analytical framework aptly suited to investigate the set of decisions made during a crime. The purpose of the crime script is to break down the crime commission process into several distinct steps. This process allows for a more nuanced understanding of the different phases of a crime and provides a better understanding of the offenders' decision-making,

which in turn, can be used to adopt appropriate situational crime prevention strategies. Crime script analysis is fairly common in the criminological literature, however, studies focused exclusively on child sexual abuse (CSA) are scarce (Dehghanniri & Borrión, 2019).

Previous studies focusing on child abuse (Cornish, 1998; Leclerc and colleagues, 2013; Leclerc and colleagues, 2011; Proulx, Ouimet, & Lachaine, 1995) have produced general scripts from the analysis of each individual step of the crime-commission process. The general analysis of the script consists of describing the different steps of a crime without considering the influence of each specific step on the others. As mentioned by Cornish and Clarke (1986) the making of decisions is constrained by different factors (e.g., limit of time, situational characteristics, etc.) and the crime must be viewed as a dynamic process. Several studies of sex offending (e.g., Beauregard, Proulx, Rossmo, Leclerc, & Allaire, 2007) have demonstrated the utility of this approach, revealing that sex offenders decisions will change depending on the type of setting. General scripts provide a description of the major trends while neglecting the connection between each of these steps. For instance, it is assumed that the decisions, choices and actions made by offenders to complete the crime will change depending on the type of setting (i.e., public vs domestic locations), however, this has not been explicitly examined in the crime script literature on child sexual offenders. We argue that these general scripts constitute a first step to describe the criminal phenomenon, but improvements are needed to better understand the rationality underlying CSA and develop tailored situational prevention measures. The approach adopted in the current study examines the crime as a whole and not as a series of disconnected steps, while considering the interconnectedness between each step involved in the crime-commission process of child sexual abusers.

The first part of the article presents the fundamentals of the rational choice approach as well as the crime script analysis. This is followed by a general overview of the empirical

criminological literature using the crime script analysis and a comprehensive description of the scripts focusing on child sexual abuse. The remainder of this paper is devoted to the aim of the study, which is to provide a script analysis of extrafamilial child sexual abuse by considering the links between each step of the criminal event. The sample, measures and analytical strategies are described in a methodological section, followed by the presentation and the discussion of the main findings. Finally, practical implications in terms of crime prevention are discussed while a conclusive section presents the limits of this study and provides suggestions for further research.

### **The Rational Choice Approach in Criminology**

The rational choice approach (Cornish & Clarke, 1986, 1987) provides a theoretical framework to understand how criminals make decisions. Moreover, it proposes that rationality and self-interest are foundational principles of decision-making (Clarke & Cornish, 1985; Piquero & Tibbetts, 2002). This approach states that offenders make decisions so that the perceived benefits associated with the crime will outweigh the costs (Cornish & Clarke, 1986, 1987). Thus, in following a cost-benefit analysis, the expected benefits should be greater than the costs to overpass legal boundaries. Several studies have applied the rational choice approach to sexual crimes and found that sex offenders follow a rational choice reasoning to commit their crimes and to achieve their objectives (see for example Beauregard, 2005; Beauregard & Leclerc, 2007; Beauregard and colleagues, 2012; Beauregard, Proulx, and colleagues, 2007; Beauregard, Rebocho, & Rossmo, 2010; Beauregard, Rossmo, & Proulx, 2007; Chopin, 2017; Chopin & Beauregard, 2019a, 2019b; Chopin, Beauregard, Bitzer, & Reale, 2019; Chopin & Caneppele, 2019a, 2019b; Leclerc and colleagues, 2011). Rational choice theory suggests that there are two levels of decision-making. At the macro level, deciding to commit an offense is based on various parameters known to the offender

and the outcome of the cost-benefit analysis. At the micro level, analysis is concerned with all decisions made by offenders to achieve their goal (e.g., target a victim, choose a location, determine a method of approach, etc.) (Cornish & Clarke, 1986, 1987).

### **The Crime Script Analysis**

To facilitate the analysis of the entire crime-commission process, as well as help to identify the decisions and actions made by offenders at each step of their crimes (i.e., preparation, target selection, commission of the act, escape, and aftermath) and the situational variables during the criminal activity, Cornish (1994) proposed the concept of crime script borrowed from the field of cognitive science (Abelson, 1976, 1981; Schank & Abelson, 1977). From a general point of view, scripts are structures or schemata of people-and-event knowledge that can be used to understand a phenomenon. As suggested by Cornish (1994, p. 32), a “script is a special type of schema, known as an “event” schema, since it organizes our knowledge about how to understand and enact commonplace behavioral processes or routines”. Application of script analysis to crimes can divide the crime event into several steps to better understand the crime process. Crime scripts can be defined as the actions taken by offenders to complete a crime prior to, during, and following the crime commission (Cornish, 1994; Leclerc and colleagues, 2011). Traditionally, analysis of the crime-commission process is divided in three main phases: the pre-crime phase, the crime phase, and the post-crime phase (Cornish, 1994). Although there is not a clear and universal procedural framework analysis (Dehghanniri & Borrion, 2019), Cornish (1994) suggested a nine-steps theoretical model to adapt depending on the type of crime: 1) preparation, 2) entry, 3) pre-condition, 4) instrumental pre-condition, 5) instrumental initiation, 6) instrumental actualization, 7) doing, 8) post-condition, 9) exit. Finally, despite the script being a generic term, there is a hierarchy between scripts that can operate at different levels of abstraction: metascript, protoscript, script, and script tracks (Cornish, 1994). The metascript is a general

model for a general type of crime (e.g., sexual crime, homicide, etc.) while protoscript concerns only a specific type of crime (e.g., CSA, etc.). The script model focuses on one dimension of the situational crime prevention (e.g., victim, situation, and modus operandi). Lastly, track model provides details on a specific crime occurring in specific circumstances (e.g., home intrusion rape track, family-infiltrator rape track, etc.) (Beauregard, Proulx, and colleagues, 2007; Cornish, 1994, 1998; Leclerc and colleagues, 2011). As summarized by Leclerc and colleagues (2011, p. 212) from the metascript to the script track, the crime-commission process becomes more specific for a given offense (e.g., from sexual crime to sexual abuse of male children in a school context). As this is generally the case for most script studies (see for example Beauregard, Proulx, and colleagues, 2007; Cornish, 1998; Dehghanniri & Borrión, 2019; Deslauriers-Varin & Beauregard, 2010; Leclerc and colleagues, 2013; Leclerc and colleagues, 2011) we use these terms indifferently in this study.

### **The Crime Script Analysis in Criminology**

A recent systematic review showed a continuous increase in the use of crime script analysis by criminologists, with 889 publications between 1994 and 2018 (see Dehghanniri & Borrión, 2019 for an exhaustive review). Criminologists developed scripts for different types of crime, such as cybercrime (24 scripts), corruption and fraud offenses (23 scripts), robbery and theft offenses (19 scripts), sexual offenses (9 scripts), violent crimes (13 scripts), drug offenses (14 scripts), and environmental crime (13 scripts) (Dehghanniri & Borrión, 2019). Scripts elaborated in the field of sexual aggression focused on CSA (Cornish, 1998; Leclerc and colleagues, 2013; Leclerc and colleagues, 2011; Proulx and colleagues, 1995), child sex trafficking (Brayley, Cockbain, & Laycock, 2011), compensated dating (Li, 2015), human trafficking (Savona, Giommoni, & Mancuso, 2013), internet-mediated sex tracking (Lavorigna, 2014), sexual assault (general sample) (Beauregard & Leclerc, 2007; Beauregard, Proulx, and colleagues, 2007; Beauregard, Rossmo, and colleagues, 2007; Chiu & Leclerc,

2019; Cook, Reynald, Leclerc, & Wortley, 2018; Deslauriers-Varin & Beaugard, 2010) and sexual crimes involving elderly victims (Chopin & Beaugard, 2019a).

No specific methodological framework was developed to analyze the crime script in general. From a theoretical perspective, there is no agreement concerning the number and the type of steps to use to generate a script. Similarly, Dehghanniri and Borrion (2019) observed a lack of consensus concerning the data sources used to generate script models (e.g., police report, court data, offenders' testimonies, etc.) as well as the way to present these models (tables, schemata, flowcharts, text, etc.).

### **Investigating the Script Approach for Child Sexual Abuse**

Although there have been quite a few studies using a script approach, studies scripting CSA are scarce. To the best of our knowledge, only four studies generated theoretical or empirical scripts on CSA (Cornish, 1998; Leclerc and colleagues, 2013; Leclerc and colleagues, 2011; Proulx and colleagues, 1995).

#### **The Proulx and colleagues' (1995) Pedophiles Script Model**

In their study, Proulx and colleagues (1995) investigated the crime-commission process and the spatial behavior of ten pedophiles involved in extrafamilial cases of child abuse. They identified five phases allowing CSA offenders to successfully commit their crimes. The first phase corresponds to the offender's choice of the crime scene. In the second phase, the offender chooses the most appropriate time to commit his crime. According to the rational choice approach (Clarke & Cornish, 2000; Cornish & Clarke, 1986) they choose a time that allows for the least amount of risk. In the third phase, the offender targets a victim, while in the fourth phase he selects a strategy to approach his victim. In the last phase, the offender establishes strategies to have sexual intercourse with the targeted victim (Proulx and colleagues, 1995). Proulx and colleagues (1995) found that the decision-making process is influenced by the environment in which the predation process takes place.

## **The Cornish's (1998) Script Model of Child Sexual Abuse of Male Victims by Stranger Perpetrators**

In 1998, Cornish generated a theoretical crime script model based on two contexts of CSA of male children by strangers offenders: public place and residential settings. He proposed a 9-steps framework with: 1) preparation (e.g., elaboration of sexual fantasies, access to child pornography, select victim-rich setting), 2) entry to setting (e.g., enter to setting as a legitimate inhabitant, already in setting), 3) preconditions (e.g., absence of guardians, legitimate a role through the day and night), 4) instrumental precondition (e.g., selecting a suitable and vulnerable victim), 5) instrumental initiation (e.g., non-threatening approach, “grooming”), 6) instrumental actualization (e.g., access in an unsupervised place, lack of access routes), 7) doing (i.e., sexual assault), 8) post condition (e.g., successful disengagement), and 9) exit from setting (e.g., dispose of evidence, etc.).

## **The Leclerc and colleagues' (2011) General Script Model**

More recently, Leclerc and colleagues (2011) generated the most exhaustive script model focusing on CSA to date. Based on a sample of 221 offenders having assaulted children under 16 years of age, they elaborated an 8-steps protoscript model. In the first phase labeled *setting*, offenders encountered their victims at multiple locations (42.9%), domestic places (32.5%) or public places (15.6%). In the second phase, offenders gained victims' trust by using specific strategies. Leclerc and colleagues (2011) found that 88.7% of offenders used luring and grooming strategies (e.g., give love and attention, give money, give gifts, etc.). In the third phase, offenders proceeded to the crime location strategies using the same strategies described in the second phase as well as violence in some cases. In the fourth phase, offenders selected the crime location. Leclerc and colleagues (2011) found that crime occurred in offenders' residences (32.5%), outside offenders' homes (29.4%) or at multiple locations (38.1%). In the fifth phase, labeled *isolation*, Leclerc and colleagues (2011) found that



offenders (82%) exploited a set of circumstances to be alone with their victims (e.g., taking a bath, watching TV, etc.) and to not be disturbed by the interference of a third party (e.g., parents, witness, etc.). In the sixth phase, offenders used strategies to gain the victim cooperation in sexual activity. Leclerc and colleagues (2011) found that 85.1% of offenders desensitized the victim to sexual contacts, 50.8% gave gifts, while 17.8% used violence. The seventh phase labeled *proximate outcome* focused on the crime-commission in itself. Leclerc and colleagues (2011) found in their sample that the amount of time spent in sexual activity was high in 56.4% of cases and medium in 30.4% of cases. They found that the number of sexual acts performed on the offender by the victim was on average of 1.66 (on a scale of four sexual behaviors: Fondling, masturbation, oral sex and penetration) and the number of sexual behaviors performed on the victim by the offender was on average of 3.17 (on a scale of five sexual behaviors: rubbing/fondling, masturbation, oral sex, digital/object penetration, and penetration (Leclerc and colleagues, 2011)). Lastly, the eighth phase labeled avoiding disclosure strategies suggested that 37.6% of offenders tried to avoid police detection by using strategies such as providing benefits and privileges to the victim or threatening to withdraw love and attention (Leclerc and colleagues, 2011).

### **The Leclerc and colleagues' (2013) Interpersonal Scripts Model**

In their study based on a sample of 90 child sexual abusers with victims under the age of 16, Leclerc and colleagues (2013) examined the offender-victim interchange when the offender tries to gain the cooperation of the child victim in sexual activity. Specifically, they explored a 4-steps sequence: 1) offender action, 2) victim reaction, 3) offender response and, 4) sexual behaviors performed by the offender and the victim (Leclerc and colleagues, 2013). They found that the victim responses to sexual abuse situations affect the outcome of the aggression. Victimological characteristics are important to understand the sexual outcome of CSA. As previously highlighted by Leclerc and colleagues (2009), Leclerc and colleagues

(2013) empirically confirmed that victim age and sex are fundamental parameters. They found that males as well as older victims are more likely to yield to sexual penetration (Leclerc and colleagues, 2013). Lastly, studies highlighted the overriding importance to consider the victim-offender relationship and interaction in the crime script analysis (Block, 1981; Leclerc and colleagues, 2013; Leclerc and colleagues, 2011). These parameters can have an impact on the criminal event outcome and alter the script (Leclerc and colleagues, 2011).

The literature review shows that research focusing on the CSA with a crime script analysis is scarce. It is therefore important to acknowledge that the four studies mentioned above have contributed significantly to improve the crime-commission process understanding of sexual crimes involving child victims. However, as it is the case for all studies, they present several limitations. First, from a methodological perspective, although it had the merit of being the first to present a script, the study by Proulx and Ouimet (1995) used a very limited sample of nine cases, while the model proposed by Cornish (1998) was not empirical as no data were used to identify the scripts. Despite being interesting, we argue that the reliability of these two models is limited and their results cannot be generalizable. The two models proposed by Leclerc and colleagues (2011) and Leclerc and colleagues (2013) have contributed to this effort of generalization. These two studies used a more representative sample of data collected from incarcerated offenders in the Queensland state (Australia) for having committed a CSA. Judicial data are known to be much more reliable but present a limited degree of validity as they focus only on certain types of cases (see Aebi, 2006). A comprehensive description of the data collection was made by Smallbone and Wortley (2000) and indicate a significant rate of attrition between the number of offenders identified as potential participants and the number of aggressors finally included in the study. Second, from a fundamental perspective, all these studies used only univariate statistics to describe, in

various degrees of detail, the different steps that make up the script of CSA. None of them attempted to use multivariate methods to examine the influence of the choices between them. We argue that to increase the understanding of the crime complexity, it is important to consider the relationship between the different steps involved in crime scripts.

### **Aim of Study**

Crime script analysis is a structured framework that can help to facilitate the analysis of offenders' decision-making process through the rational choice perspective. This theoretical approach assumes that decisions made by offenders during the entire crime process are mainly driven by a costs-benefit analysis influenced by situational factors of crime (e.g., the location of the assault, the relationship between the offender and the victim) (see Beaugard, Proulx, and colleagues, 2007). Consequently, offenders will adapt their decisions to commit their crimes and to achieve their objectives according to the different crime characteristics. A more comprehensive approach to the crime script can not only describe each decision phase independently but also provide an analysis of the entire criminal event by considering the relationships between each phase. We believe that a script analysis considering the crime as a whole can improve the understanding of CSA offenders' decision-making process. Moreover, this new perspective would allow for more tailored prevention measures based on the decisions made by CSA offenders.

Therefore, the aim of this study is to provide a crime script analysis of extrafamilial CSA known by the police authorities by considering the interconnectedness between the different stages of the crime-commission process. Specifically, this study aims to empirically explore whether different scripts are enacted by CSA offenders and identify the relationships between each step of the script in order to better understand the rationality of CSA offenders over the entire crime-commission process.

### **Methodology**

## Sample

*Research Data.* This study used a sample of 2264 cases of sexual abuse against children that occurred in an extrafamilial context between 1979 and 2018 in France. Specifically, 0.57% (n= 13) of the cases occurred between 1979 and 1989, 13.43% (n= 304) of the cases occurred between 1990 and 1999, 58.66% (n= 1328) of the cases occurred between 2000 and 2009, and 27.34% (n=619) of the cases occurred between 2010 and 2018. In this sample, 1612 cases (71.20%) have been solved by police (i.e., police investigators identified and charged a suspect) while 652 cases (28.80%) remained unsolved (i.e., offenders have not been identified by investigators while the sexual abuse is proven) at the time of data collection<sup>1</sup>. The extrafamilial context suggested that offenders and victims may be acquaintance<sup>2</sup> (i.e., excludes familial relationships) or strangers (i.e., describes situations where offenders and victims were totally unknown at the time of the offence). We decided to include both serial and non-serial cases of CSA<sup>3</sup>. For solved crimes, 204 cases were committed by 91 offenders that were identified as serial [range 2-5] with an average of 2.24 crimes per offenders. Data comes from an operational national police database. In order to avoid missing data, information is compiled by crime analysts, experts in CSA, from criminal investigation files<sup>4</sup>. Information included in these files are mainly filled out by police officers but may also include other experts, such as psychologists, when they are required in the investigative process. There is no consistent method to operationalize what constitutes a child. In this study, we chose to follow the guidelines provided by previous studies and therefore the

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<sup>1</sup> We tested this information as covariate and no significant differences appears between the different scripts.

<sup>2</sup> An acquaintance could be a family friend, neighbor, teacher, etc.

<sup>3</sup> We tested this information as covariate for solved cases and no significant differences appears between the different scripts. Methodological implications of this choice are discussed in the limitation section.

<sup>4</sup> The process followed to enter data in the database allows to avoid missing data as crime analysts collect the necessary information from investigative files. They know exactly where the information is in the files and where it must be entered in the database. They are also familiar with how each variable is operationalized. Although it is still possible to have missing values as the information may not always be known by the investigators, this was not the case with the variables examined in the current study.

current sample includes all cases involving victims under 16 of age (see for example Beauregard and colleagues, 2012; Chopin, 2017; Chopin & Beauregard, 2019c; Chopin & Caneppele, 2019a; Leclerc, Beauregard, & Proulx, 2007; Leclerc, Carpentier, & Proulx, 2006; Leclerc and colleagues, 2009; Leclerc and colleagues, 2013; Leclerc, Wortley, & Smallbone, 2010; Leclerc and colleagues, 2011; Proulx, James, Siwic, & Beauregard, 2018). In order to be considered as CSA in this sample, there needed to be the presence of at least one of the following sexual behaviors: sexual penetration with a penis (i.e., vaginal and/or anal), fellatio, cunnilingus, penetration with fingers, masturbation, and inanimate object insertion.

*Victims.* Child victims from the sample are mostly females (78.3%) and were, on average, 11.89 years (SD=3.56; 0-15 years) at the time of the offense. They were mostly commuting (54.9%), babysitting (21.2%) or involved in recreational activities (16.8%) before the crime was committed.

### **Measure**

A total of 29 dichotomous variables (coded as 0, 1) related to crime and victim characteristics were used in this research.

*Script Analysis.* On the basis of previous studies on the topic (Cornish, 1994, 1998; Dehghanniri & Borrion, 2019; Leclerc, 2013; Leclerc and colleagues, 2011; Proulx and colleagues, 1995), we selected 10 variables to operationalize CSA scripts. First, to operationalize the setting step, we used a variable to describe the stranger relationship between offenders and victims (i.e., victims and offenders have never been in contact before the crime). This variable was not included in previous script models but studies highlighted its importance given its impact on the criminal event outcome (Chopin & Caneppele, 2019a; Leclerc and colleagues, 2011). We used one variable to describe whether the contact scene was indoors as well as one variable to determine if the aggression occurred during daylight (i.e., 6 am-6 pm). To operationalize the second step labeled as “gaining trust strategies”, we

used a variable describing whether offenders used a ruse strategy to approach the victim (e.g., befriended the victim, posed as an authority figure, offered assistance, etc.: coded as 1). This variable opposes the surprise (e.g., lay in wait inside a building, grabbed the victim, etc.) and blitz approach strategies (e.g., offender grabbed and immediately choked the victim, offender immediately overpowered the victim, offender immediately hit the victim, etc.: coded as 0). To describe the third step of the script labeled “crime location”, we used a variable to determine if the offense occurred at an indoor location. As the fourth step, we used a variable to describe situations where offenders used strategies to reassure their victims. To operationalize the fifth step “gaining cooperation”, we used a variable describing a situation where the victims did not resist. For the sixth step, “sexual behaviors”, we used a variable describing cases where CSA offenders perpetrated sexual penetration with a penis (i.e., vaginal and or anal penetration). For the seventh step “end of contact”, we used a variable describing cases where victims were intentionally released (i.e., in opposition to cases where victims escaped or were rescued). The last step focused on strategies used by CSA offenders to avoid police detection. To operationalize this step, we used a variable describing cases where offenders acted on victims (i.e., offenders told/threatened/bribed victims not to report).

*Victimological characteristics.* To provide a more comprehensive understanding of CSA scripts, we used 12 additional dichotomous variables focusing on victimological characteristics. The first concerns the gender of victims (i.e., male = 0; female = 1). Second, age of victim has been divided<sup>5</sup> according to the different stages of childhood: 0–9 years old (childhood), 10–12 years old (pre-adolescence), and 13–15 years old (adolescence) as suggested by Finkelhor, Turner, Ormrod, and Hamby (2009). We broke down the age into these three classes based on the assumption that offender crime process may vary depending

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<sup>5</sup> We choose to transform a continuous variable in three dichotomous variables because the software used in this research, Latent Gold V5.1, do not allow to provide bivariate analysis (e.g., ANOVA, Kruskal-Wallis test) on continuous data. Methodological outcomes of this choice are discussed in the limitation section.

on the developmental stages of children (Chopin & Caneppele, 2019a; McKillop, Brown, Wortley, & Smallbone, 2015). The other victimological variables describe victims' everyday activities prior to the crime. Deslauriers-Varin and Beauregard (2010) demonstrated the importance of this information to understand the crime-commission process and especially victim target selection. Variables used to operationalize the victim's activities prior to the crime are: domestic activities (e.g., watching TV, sleeping, etc.), activities under the care of professionals (school activities, physician consultation), babysitting, social activities (e.g., was shopping, dining in a restaurant), commuting (i.e., walking in the street to go somewhere), was involved in sports and recreational activities, was partying, was visiting friends or relatives (e.g., parents' friends, own friends, etc.).

*Crime Scene characteristics.* A set of 8 dichotomous variables was used to describe the crime scene characteristics. These variables provided more precision about the contact scene and the crime scene. For both types of scenes, variables include: victim's residence, offender residence, common areas of a residential building, public area (e.g., school, library, hospital, public washroom, public park, street, pathways, trail, wood, etc.).

### **Analytical Strategy**

Our analytical strategy followed a two-step process. First, a latent class analysis (LCA) was conducted using Latent Gold V5.1 software package to identify CSA scripts on the basis of 10 dichotomous variables. As mentioned by Collins and Lanza (2010), LCA is a statistical procedure used to identify heterogeneity that is not directly observable or measurable in order to detect underlying patterns in a set of data or subgroups of individuals who share important behavioral characteristics. The goal is to identify mutually exclusive classes (nonoverlapping) on the basis of dichotomous indicator variables (Collins & Lanza, 2010; Lanza, Collins, Lemmon, & Schafer, 2007; Lanza, Flaherty, & Collins, 2003). LCA analysis is similar to cluster analysis but provide stronger models as it attributes class

membership probabilities to each individual case. Seven models were computed and analyzed from a one-to-seven class solution (see Table 1). The Bayesian Information Criterion (BIC) was used to evaluate the model fit and determine the number of classes to use in LCA. Schwartz (1978) mentioned that a lower BIC value indicates an improvement in the fit of models. We also used other fit measure: log likelihood, likelihood ratio  $L^2$ , degrees of freedom, Akaike Information Criterion (AIC) and entropy.

In the second step, we used additional variables to improve the depth of our model. We used bivariate analysis (i.e., Chi-square analysis) to identify significant differences between the different classes.

Ethical approval was obtained to conduct this research from the Institutional Review Board of the authors' institution.

## Results

### Latent class analysis

A total of 10 categorical variables were used to operationalize the 8 dimensions of the script. To assess the best latent class solution, one-to-seven class solutions were analyzed. Table 1 describes the model fit indices for the latent classes and it appeared that the 4-class solution was the best fitting class solution according to the BIC as well as AIC. Up to class 4, BIC and AIC decreased, while from class 5 onward BIC and AIC started to increase. A smaller BIC and AIC suggest that the trade-off between fit and parsimony was achieved. Entropy for the 4-class solution was high, suggesting that predictors used are fair to classify the cases and that classes were sufficiently distinct.

[INSERT TABLE 1 HERE]

Table 2 and Figure 1 describe the 4-class solution representing the 4 scripts followed by CSA offenders. The larger class corresponds to the script 1, which includes 35% of cases, while the smaller class corresponds to script 4, with 14% of cases. In script 1, CSA offenders



had a stranger relationship with their victims (0.90) and did not approach them indoors (0.01). The offense was more likely to occur during the daytime (0.80) and offenders typically used a ruse to approach the victim (.60), although this strategy is less likely to be used compared to script 2 and 3. In most cases, the crime location was not indoors (0.06) and offenders did not use specific strategies to reassure their victims (0.36). Victims did not typically participate without resistance (0.45), while sexual penetration with a penis was rarely committed (0.02). At the end of the crime, it was unlikely for victims to be intentionally released (0.43) and offenders did not act on victims (0.09) to avoid police detection.

In script 2, CSA offenders also had a stranger relationship with the victims (0.79), met them outdoors (0.02) and were most likely to assault them during daytime (0.63). Offenders mainly used a ruse to approach the victims (0.63) and offenders did not try to reassure victims (0.38). Crimes were also unlikely to occur indoors (0.15). Probability of sexual penetration with a penis was the highest of the four scripts (0.59) as well as the probability of intentional release (0.79).

Script 3 is characterized by a relationship of acquaintance between offenders and victims (stranger relationship = 0.25). Child abusers met victims indoors (0.88) and most often assaulted them during the daytime (0.68). They used a ruse strategy to approach them (0.94) and crimes occurred indoors (0.97). In this script, offenders used strategies to reassure their victims more often than in other scripts (0.52), though the probability that victims do not resist is higher (0.67). Although the probability of sexual penetration with a penis was not clear to interpret (0.50), we observed that it is the second highest probability after the script 2. Victims are generally intentionally released (0.79) and offenders did not try to act on victims to avoid detection.

Script 4 is characterized by a stranger relationship between offenders and victims (0.91). The meeting place was indoors (0.99) and aggression occurred during daytime (0.83). Offenders

did not specifically use a ruse to approach the victims (0.49). Crime location was at an indoor location (1.00) and offenders did not use strategies to reassure their victims (0.28). During this script, victims were unlikely to cooperate (without resistance 0.39) while sexual penetration with a penis was not perpetrated (0.08). Lastly, it was very unlikely for offenders to act on victims as a strategy to avoid detection (0.16).

[INSERT TABLE 2 HERE]

[INSERT FIGURE 1 HERE]

## **Additional Analysis of Covariates Information**

### **Victimological Characteristics**

Most of the victims were females in each script. Nevertheless, there are significant differences between classes. In script 3, CSA offenders targeted young males ( $X^2= 14.14$ ,  $p<.001$ ) and child victims ( $X^2= 99.72$ ,  $p<.001$ ) at a significantly greater rate. Pre-adolescent children were more often targeted by offenders following scripts 3 and 4 ( $X^2= 20.66$ ,  $p<.05$ ). Teen victims were more often targeted by CSA offenders following scripts 1 and 2 ( $X^2= 107.42$ ,  $p<.001$ ). As to the everyday activities of victims before being assaulted, we observe that victims involved in domestic activities ( $X^2= 72.18$ ,  $p<.001$ ), who were babysitting ( $X^2= 132.58$ ,  $p<.001$ ), or were visiting friends or relative ( $X^2= 9.96$ ,  $p<.05$ ) were more likely to be victimized following script 3. On the opposite end, victims assaulted while they were involved in social activities ( $X^2= 25.15$ ,  $p<.01$ ) and commuting ( $X^2= 260.31$ ,  $p<.001$ ) were more likely to be assaulted following script 1, 2 and 4. Finally, to a lesser extent, victims assaulted while they were partying were more likely to be assaulted by offenders using scripts 2 and 3 ( $X^2= 23.96$ ,  $p<.01$ ).

[INSERT TABLE 3 HERE]

### **Crime Scene Characteristics**

In the script 4, CSA offenders more frequently chose the same place to approach and to assault victims they targeted ( $X^2= 215.46, p<.001$ ). In the script 4, CSA offenders more often chose the victim's residence ( $X^2= 52.21, p<.001$ ) or common areas of a residential building ( $X^2= 345.97, p<.001$ ) to approach the victims, while in the script 3, offenders more often chose their own home ( $X^2= 628.12, p<.001$ ) and to a lesser extent the victim's residence. In scripts 1 and 2, CSA offenders more often chose a public area to approach the victims ( $X^2= 1204.42, p<.001$ ).

In script 4, CSA offenders more often chose the victim's residence ( $X^2= 350.01, p<.001$ ) or common areas of a residential building ( $X^2= 31.63, p<.001$ ) to assault the victims, while in script 3, offenders more often chose their own home ( $X^2= 586.19, p<.001$ ) and to a lesser extent, the victim's residence. Finally, in scripts 1 and 2 CSA offenders more often chose a public area to assault the victims ( $X^2= 974.66, p<.001$ ).

[INSERT TABLE 4 HERE]

## Discussion

In this study, we aimed to explore the concept of the crime script within CSA using a multivariate technique, LCA. The goal was to determine whether scripts used by CSA offenders are heterogeneous and also to examine the relationship between each step of the crime scripts. For this purpose, we used a large sample of extrafamilial CSA which occurred in France and we have included cases where offenders had both a stranger and acquaintance relationship with the victims. LCA identified four different scripts used by CSA offenders. As mentioned by Cornish (1994), crime script analysis provides an analytical structure of the decision-making process to better understand the rationality of offenders.

Findings of our study suggest that four different scripts can be identified for the cases of extrafamilial CSA registered by police forces. Three scripts mainly concern offenders who did not know the victim at the time of the aggression (script 1, 2, 4) while one script is

devoted to describe the modus operandi followed by child abusers who are mostly known by the victim (script 3). Despite being all characterized by stranger relationship between offender and victims, Scripts 1, 2, and 4 present important specificities.

Scripts 1 and 2 present important differences in terms of crime outcomes (i.e., sexual penetration with a penis, end of contact and the use of strategies to avoid detection), while script 4 present differences in the first steps of the crime- commission process (i.e., contact and crime locations are indoor places). In addition to being statistically significant (see Table 1) the differences observed between the four scripts increase our understanding of the decisions and choices made by child abusers during the crime-commission process.

### **Offender-Victim Relationship and Child Abuse Opportunities**

It appears that the victim-offender relationship is one of the most important factors in determining the various scripts used by child sexual abusers. Our findings showed that three scripts included a stranger relationship (script 1, 2 and 4) while one script (script 3) was mainly composed of offenders who had an acquaintance relationship with the victims. Interestingly, this information suggests that the crime-commission process used by CSA offenders is more diversified when offenders and victims did not know each other at the time of the offense. This could be explained by the specific context of CSA in terms of offenders' opportunities. According to rational choice perspective (Clarke & Cornish, 2000; Cornish & Clarke, 1987) as well as the routine activities theory (Cohen & Felson, 1979), previous empirical studies showed that the crime-commission process involving child victims is very specific (Chopin & Beauregard, in press; Chopin & Caneppele, 2019a; Leclerc and colleagues, 2009; Smallbone & Wortley, 2001). In comparison to adult sexual assaults, one of the major challenges for CSA offenders is to access victims who are supervised most of the time by capable guardians (e.g., parents, teachers, etc.). When victims are strangers to the offender, opportunities and possibilities of assault are more diversified than when they are

acquaintances. Previous studies identified a strong relationship between the type of opportunity and the age of child victims (Chopin & Caneppele, 2019a; McKillop and colleagues, 2015). These studies suggest that younger children tend to spend most of their time at supervised locations while adolescents, due to secondary socialization (e.g., meeting peers, making friends), tend to change their everyday activities and spend more time at non-supervised locations (Chopin & Caneppele, 2019a). Our findings confirm this assumption.

Script 3 described a context where younger victims are assaulted by acquaintance offenders. Child abusers exploit the trusting relationships they have with the victims' parents in order to access vulnerable victims and to initiate sexual activity (Chopin & Caneppele, 2019a; Deslauriers-Varin & Beauregard, 2010; Smallbone & Wortley, 2000). Victims' everyday activities prior to the crime showed that most of the victims assaulted in Script 3 were involved in domestic activities, were babysitting, or were visiting friends/ relatives. In Scripts 1, 2 and 4 we observed that CSA offenders exploited unsupervised everyday activities (i.e., activities where children were alone, without a capable guardian). Specifically, most of the victims assaulted by unknown CSA were commuting. This is coherent with the geometric theory of crime (Brantingham & Brantingham, 1993), which suggests that most crimes do not occur at the locations where individuals spend the majority of their time but in the pathways they use to travel between them and the surrounding areas.

### **The Crime Preparation and Victim Access**

When offenders have identified an opportunity, they need to act and encounter the target they selected (Leclerc and colleagues, 2011; Proulx and colleagues, 1995). They choose a contact scene, a time during the day, a strategy of approach and a place to perpetrate the crime. Research showed that CSA offenders follow a rational choice reasoning (see for example Chopin & Caneppele, 2019a) and select places and time for which the risk is less important compared to the cost involved by their actions (Clarke & Cornish, 2000; Cornish &

Clarke, 1986). Our findings showed that in scripts 1 and 2, offenders choose an indoor location to approach their victim (contact scene), while in scripts 3 and 4, it is an indoor scene. By analyzing the relationship between steps of each script, we observe that the type of scene never differs from the contact to the crime scene. When the contact scene is an indoor location, the crime scene is also indoor and vice versa. Cornish (1998), mentioned this dichotomy of places and suggested one specific script for crime occurring in public places and another specific script for crime occurring in residential area. Our findings empirically confirmed the assumption of Cornish (1998), suggesting that the crime location has a strong impact on the script process. Additional analyses showed that offenders using script 2 tend to use a different crime scene than the contact scene, while in other scripts the crime location remains generally the same. Scripts 1 and 2 focus on assaults committed by stranger offenders in a public area, script 3 focuses on assaults committed by acquaintances in a residence, and script 4 focuses on assaults committed by stranger offenders in a residence. Scripts 1 and 2 appear very similar and could correspond to situations where CSA offenders are opportunistic by identifying targets on the street and choosing closer locations to encounter and assault them. Script 3 is very different and could correspond to the “invited” script identified by Deslauriers-Varin and Beaugard (2010). A more detailed analysis of crime locations showed that in most cases, contact and crime scenes occur at the offenders’ residence. This result could confirm the hypothesis suggested by Chopin and Caneppele (2019a) that the probability for a child to be sexually assaulted during a visit to see friends/relatives is higher. In that case, the increased risk can depend on the victim’s proximity to sex offenders who are also family members. Following the same script, probability is higher for a child to be assaulted while babysitting, where sex offenders can be the babysitter themselves but also the babysitter’s friends or family (Chopin & Caneppele, 2019a).

We observed that in three scripts (script 1, 2 and 3) offenders used a ruse strategy to approach the victims they targeted. This finding is coherent with those of Leclerc and colleagues (2011), which found that most of CSA offenders used luring and grooming strategies. These strategies are used by offenders to gain the child's trust in order to facilitate the crime success. On the contrary, in script 4 offenders did not use a ruse but instead went for a surprise and coercive approach. We can hypothesize that in script 4, offenders target a victim that was walking in the street, followed her to her home (victim's residence) and used surprise and blitz approach strategies to commit the crime in her own residence.

We can see that most of CSA offenders choose to assault their victims during the daytime. Although rational choice approach suggests that crimes committed during the daytime are generally riskier (i.e., higher risk to be interrupted by a third party), opportunities to access child victims during the night are very limited. This assumption is confirmed by the fact that crimes have less probability to occur during daytime in scripts 2 and 3. In script 2, victims are more often adolescents and the analysis of their everyday activities suggested that they spend more time in unsupervised activities during the night than other victims. Script 3 focused on assaults perpetrated by acquaintances indoor where opportunities are not dependent of the child's unsupervised everyday activities.

### **The Crime Commission**

Once offenders identified opportunities, select crime locations, and access to victims, they set up the crime phase. The first stage consists of reassuring the victim and gaining the victim's cooperation (see Leclerc and colleagues, 2013). Our findings show that these strategies are not randomly distributed across the different scripts. Only offenders following script 3 used strategies to reassure their victims and gain the victim's cooperation. These results are partially different from the study of Leclerc and colleagues (2011). They found that that in most cases, CSA offenders used strategies to desensitize the victim to sexual acts while

the level of participation of victims is moderate. This difference could be due to methodological considerations. The sample used in this research is approximately 10 times larger than the one used in the study of Leclerc and colleagues (2011) and it is based solely on police data. We can hypothesize that a larger sample of police cases provides a greater diversity of CSA situations.

In scripts 1, 2 and 4, CSA offenders do not tend to use strategies to reassure and gain the victim's cooperation. This result can be interpreted through the rational choice perspective. We could hypothesize that in script 1, 2 and 4 where victims are assaulted by strangers, offenders try to limit verbal interactions as well as the time spent with the victims in order to avoid being recognized and elude police detection (Chopin and colleagues, 2019). In script 3, the context is quite different because offenders and victims already know each other, and sex offenders need to use strategies to obtain the victim's consent. The goal for offenders is to empower victims, avoid denunciations, and consequently police detection. In scripts 2 and 3, CSA offenders perpetrated sexual penetration with a penis before intentionally releasing their victims. These findings are congruent with the Leclerc and colleagues (2013) study, suggesting that older child victims are more likely to sustain intrusive sexual acts as it is the case in script 2 where victims were adolescents. In script 3, the acquaintance relationship between offenders and victims allows sex offenders to spend more time at the crime scene, experience less resistance from the victim and are better at gaining the victim's trust to perpetrate intrusive sexual assaults. Script 1 differs from script 2 in terms of sexual behaviors and crime outcome. In script 1 offenders do not perpetrate intrusive sexual behaviors and do not intentionally release their victims. We can suggest two hypotheses to explain these differences. First, as it is the case for sexual homicide of children (Chopin & Beauregard, 2019c), CSA offenders following script 2 could be unexperienced pedophiles who try to have a first sexual experience with a child. This could explain the lack of sexual



penetration and the inability to control the aftermath of the crime. Second, it is possible that these offenders did not have the desire to perform intrusive sexual behaviors and were interrupted by a third party (see for example Chopin & Beauregard, 2019c; Gravier, Mezzo, Abbiati, Spagnoli, & Waeny, 2010; Kahn & Chambers, 1991).

### **Practical Implications: Entire Script Analysis for a Targeted Crime Prevention**

#### **Situational Crime Prevention and Child Sexual Abuse**

In his seminal work, Cornish (1994) mentioned that the major practical application of the crime script analysis is situational crime prevention. Situational crime prevention can be defined as the concrete measures and techniques used to reduce criminal opportunities by increasing perceived risks of arrest and or decreasing expected benefits (Clarke, 1980, 1983; Clarke & Eck, 2005; Jendly, 2013; Wortley, 1998, 2001). Situational crime prevention has been applied to CSA (Leclerc and colleagues, 2011; Wortley, Leclerc, Reynald, & Smallbone, 2019; Wortley & Smallbone, 2010) with techniques leading to increased effort by the offender to commit a crime as well as the risk to be detected. Traditionally, situational crime prevention measures were tested with pretest/post-test methodology (see for example Grossrieder, Chopin, Jendly, Genessay, & Baechler, 2017). However, due to obvious ethical considerations, such methodology is unready applicable to cases of CSA (Wortley & Smallbone, 2010). Theoretical situational crime prevention measures were nonetheless suggested for CSA (for an exhaustive overview of preventive intervention points see Leclerc and colleagues, 2011). These measures focus on the setting phase (e.g., pay attention to adults who spend time with children), gaining victims' trust phase (e.g., increase supervision of children), proceeding to crime location phase (e.g., require explicit information about planned activities from adults), location selection phase (e.g., restricted area to unsupervised area), isolating the victim phase (e.g., avoid delegating intimate and parenting activities to others without supervision), proximate outcome phase (e.g., limit long-term and repetitive access to

children) and post condition phase (e.g., anonymous hotline for victims). The scripts identified in this research can be useful as a tool for providing more precise measures of prevention. As was found in our study, offenders seem to adapt their crime-commission process to the specific context of the crime as well as the type of victim targeted. Therefore, it becomes possible to provide a set of crime prevention measures according to the type of victims and the specific script followed by CSA offenders.

### **Applying the Situational Crime Prevention Measures to the Four Scripts Model**

Despite the different outcome, scripts 1 and 2 are similar in terms of crime context. They focus on older children (adolescence and pre-adolescence) assaulted by a stranger offender at a public location. Situational crime prevention measures should focus here on opportunity reduction. As suggest by Leclerc and colleagues (2011), a general measure of prevention would be to make parents and children aware of the modus operandi used by CSA offenders. The goal of this measure would be to raise their awareness of the opportunities exploited by CSA offenders.

An important finding from the current study is the differences in crime scripts between offenders who victimize strangers compared to acquaintances. As such, more specific crime prevention measures focused on offender relationship would be beneficial. Firstly, children should be sensitized about the risk to be assaulted by strangers and the necessity not to trust unknown people. Findings suggested that in scripts 1 and 2, offenders used a ruse as a strategy to approach the victims. As mentioned by Leclerc and colleagues (2011), children need to be aware of these techniques (e.g., a stranger give gifts or privileges) and clear rules should be established not to follow strangers. Parents should monitor suspicious adult behaviors through discussion with their children concerning their daily activities. Most of the victims were assaulted while they were commuting. In terms of situational crime prevention, it is very important to limit journeys where children are alone or unsupervised by a capable

guardian. Children should be accompanied, and routes must be pre-determined in order to avoid unsupervised locations (e.g., lack of people, isolated areas, etc.). Unsupervised activities at isolated locations should be avoided as they represent a good opportunity for CSA offenders.

On the other hand, Script 3 focuses on young victims (childhood and pre-adolescence victims) assaulted by offenders who had an acquaintance relationship with them. Situational crime prevention measures should focus on increasing efforts and risks for potential sex offenders. First, parents should be better informed (e.g., information session) that young children represent a greater risk of sexual assault from an acquaintance than from a stranger. Previous research found that in most cases, parents warn children about sexual abuse perpetrated by strangers (Craun & Theriot, 2009; Jacobs, Hashima, & Kenning, 1995). They should be aware of newcomers in the family circle, new care givers, babysitters, as well as their acquaintances (Deslauriers-Varin & Beauregard, 2010; Leclerc and colleagues, 2011). Unsupervised time with untrusted people should be limited. To detect inappropriate acts, regular discussion with children should be conducted about activities that took place with adults during the day, while intimate activities (e.g., shower time) should not be delegated to untrusted people. It is also important, despite the young age of victims, to raise their awareness about the privacy of their bodies in order to increase the denunciation of inappropriate acts. In many cases, acquaintance CSA offenders trivialized sexual contacts and empowered children to avoid detection.

Script 4 focuses on mid-age children (pre-adolescence and childhood to a lesser extent) that were assaulted by stranger CSA offenders in the victim's residence. Most of the previous situational crime prevention measures suggested for scripts 1 and 2 could also be applied for script 4. However, the specific context of surprise/blitz approach in the victim's residence needs appropriate prevention reflections. In that situation, we assume that according

to the rational choice perspective, CSA offenders knew that nobody was present when the children got back home. Similar to robbery prevention, one measure could be to simulate the presence of somebody at home (e.g., presence of automatic lights before children arrive home). A second measure should be to sensitize children to never open the door to someone when they are alone at home and lock the door until an adult arrives home.

### **Conclusion**

This research aimed to identify the interconnectivity of the different steps of CSA scripts and to examine their heterogeneity. We used a multivariate statistical approach with latent class analysis to identify in a set of 2264 solved and unsolved CSA cases different scripts enacted by offenders. To the best of our knowledge, this research provides the first empirical overview of the different scripts followed by CSA offenders as well as the relationships existing between the different steps. First, our findings reveal four different scripts used by CSA offenders: three scripts involved stranger offenders while only one involved acquaintance abusers. Heterogeneity of stranger offenders' scripts can be explained in terms of criminal opportunities. Generally, according to routine activities theory, offenders must target a victim that is not under the care of a capable guardian. Situations to complete these conditions are more diversified when offenders are strangers than when they are acquaintances. Second, the analysis of different scripts shows that the relationship between offenders and victims, as well as the victim's profile in terms of opportunities (i.e., age and everyday activities) influenced the decision-making process of CSA offenders.

### **Data Limitation**

This research is not without limitation and bias of interpretation due to the nature of data and methodological choices. As every study based on police data, this research suffers of limitations in terms of validity and reliability (see for example Aebi, 2006; Chopin & Aebi, 2018, 2019). First, this study is based on cases reported to the police. Despite the fact that

solved and unsolved cases were included in our sample to increase the representativeness of our findings, many cases are never reported to the police. The lack of official statistics on CSA makes it difficult to estimate the dark figure (i.e., the number of cases never reported to authorities). For cases of extrafamilial sexual assaults, Chopin (2017) estimated a reporting rate of 16% in France. Consequently, findings of this research concern only cases of extrafamilial CSA reported to the French police and cannot be applied to intrafamilial CSA and for cases never reported to the police. Another limitation related to the use of police data concerns the representation of cases committed by stranger offenders and those known to the victims. Cases perpetrated by stranger offenders are much more likely to be reported to police than abuse by acquaintances. Thus, the police data is skewed towards stranger abuse cases. Second, data focuses only on cases that occurred in the French territory and we cannot exclude that cases occurring in other countries follow a different distribution and may present different scripts. Third, although police data allow us to have a larger and more representative (presence of solved and unsolved cases) sample, the counterpart of using police data is that they are less detailed than judicial data or data collected specifically for this type of research, as it is the case for the study by Leclerc and colleagues (2011). Fourth, the methodological choice to transform the continuous variable related to the age of the victim in three categorical variables can have an impact in terms of finding interpretation (see MacCallum, Zhang, Preacher, & Rucker, 2002 for more details). Finally, we used the rational choice approach to analyze the decision-making process of extrafamilial CSA offenders. Studies (e.g., Van Gelder, 2013) highlighted the fact that the emotional state of offenders can impact their decision-making process. However, this type of information is very difficult both to operationalize and to collect and constitute very subjective data. Unfortunately, we could not collect this information and consequently it was not possible to test their effect on decisions involved in the crime scripts we identified.

### **Crime Script Analysis Limitation**

The crime script analysis provides a very interesting method to improve the understanding of the decisions, choices, and actions taken by the offender during the crime-commission process. Despite being interesting and improving the crime-commission understanding, the models generated with the crime script analysis method present several limitations. The first limitation is the simplification of a complex set of interactions that constitute the criminal event. Modelling the crime using the script method requires using data that cannot reflect the complexity and the subtlety of all situations and possible interactions between the offender and the victim. For instance, most of the data we used for the current study are dichotomous information from the police. The data collection requires transformation and results in the loss of some information. Victim resistance represents a good example of this loss of information. Although we coded for the presence or absence of resistance, we are aware that this concept presents various degrees and types of resistance as well as reactions to the victim resistance. Moreover, in through the effort to simplify the data it is not possible to consider all the steps involved in the crime-commission process (e.g., grooming process, which could last several days, weeks or months in some cases). It is also important to consider the fact that the script consists of a sequence of decisions, choices, and actions made by the offender and does not take into account the victim's reactions that may affect the crime-commission process. Finally, the script analysis does not consider the temporal aspect of the crime.

### **Research Perspective**

Further research should follow three main directions. First, it is important for future research to test the validity of our model by using data from other countries. If differences are found, it is important to identify if they are due to methodological or contextual issues. Second, it would be interesting to pursue work on CSA by using more precise data and add more specific information to script models. We suggest that future analysis using the crime script of

CSA should include both mixed or qualitative research methodology. The goal would be to consider the different limitation associated with the use of quantitative analysis we discussed above. Such analysis could complete the actual knowledge to further improve the understanding of the offender decision-making process and generate more targeted intervention measures. Finally, linking offender profiles and motivations to the different scripts would be informative and could offer practical implications for the criminal investigation.

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Table 1. Fit indices for latent classes

Nb of classes	Log Likelihood	L <sup>2</sup>	df	AIC	BIC	Entropy
1	-14385.85	3743.33***	1013	28848.94	28848.94	1
2	-13419.19	1810.01***	1002	26880.38	27000.60	0.89
3	-13245.94	1463.51***	991	26555.88	26739.00	0.83
<b>4</b>	<b>-13103.00</b>	<b>1177.64***</b>	<b>980</b>	<b>26292.01</b>	<b>26538.18</b>	<b>0.73</b>
5	-13013.07	997.77***	969	26334.14	26543.28	0.69
6	-12974.42	920.4736***	958	26478.84	26550.96	0.69
7	-12947.85	870.1418***	947	26517.51	26585.60	0.68

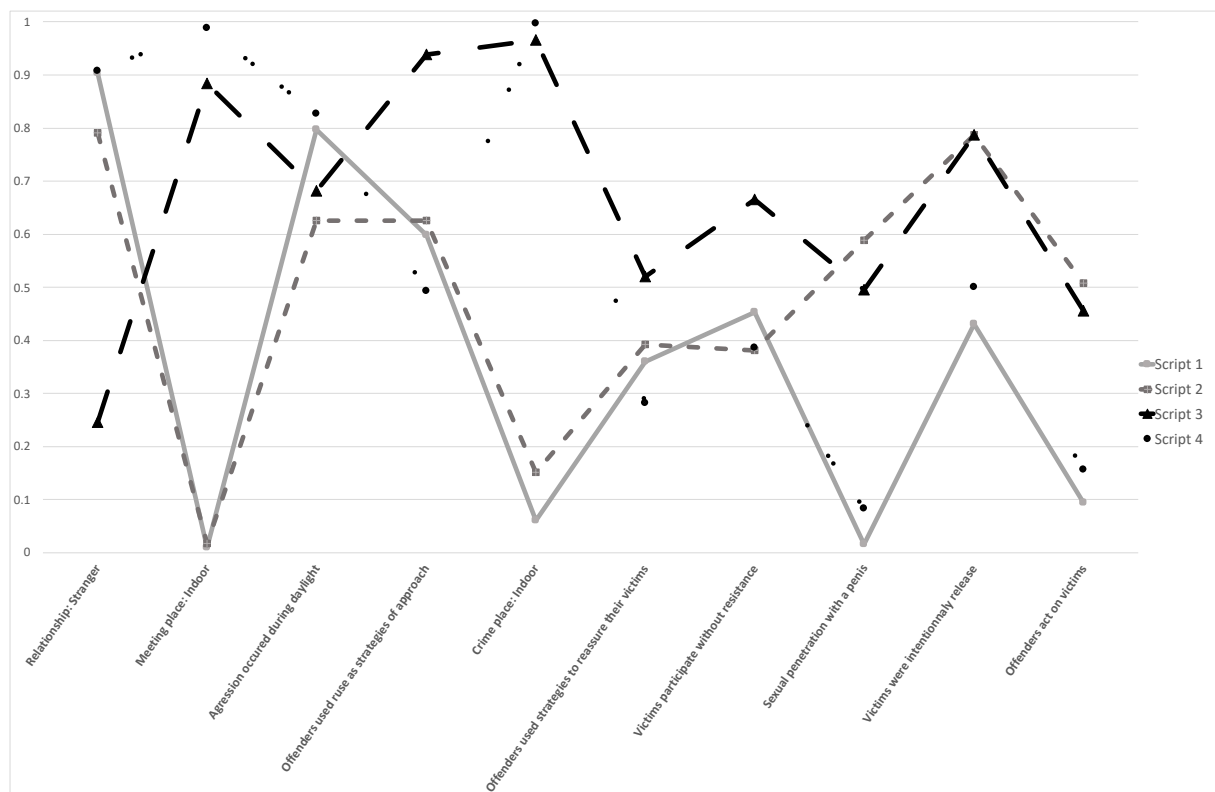


Fig. 1. Profile of four latent classes - Mean probabilities of crime characteristics based on class membership.



Table 2. Profile of four latent classes - Mean probabilities of crime characteristics based on class membership.

		Script 1	Script 2	Script 3	Script 4
		0.35	0.31	0.20	0.14
		795	703	457	309
Script steps	Indicators				
1. Setting	Relationship: Stranger	0.90	0.79	0.25	0.91
	Meeting place: Indoor	0.01	0.02	0.88	0.99
	Aggression occurred during daylight	0.80	0.63	0.68	0.83
2. Gaining trust strategies	Offenders used ruse as strategies of approach	0.60	0.63	0.94	0.49
3. Crime location	Crime place: Indoor	0.06	0.15	0.97	1.00
4. Strategies to reassure victims	Offenders used strategies to reassure their victims	0.36	0.39	0.52	0.28
5. Gaining cooperation	Victims participate without resistance	0.45	0.38	0.67	0.39
6. Sexual behaviors	Sexual penetration with a penis	0.02	0.59	0.50	0.08
7. End of contact	Victims were intentionally release	0.43	0.79	0.79	0.50
8. Strategies to avoid detection	Offenders act on victims	0.09	0.51	0.46	0.16

Table 3. Correlates of the victimological characteristics (N=2264)

	Script 1		Script 2		Script 3		Script 4		$\chi^2$
	35.11%		31.05%		20.19%		13.65%		
	795		703		457		309		
	n=	%	n=	%	n=	%	n=	%	
Sex of victim: Female	641	80.65%	572	81.33%	308	67.49%	252	81.55%	40.35***
<b>Stages of childhood</b>									
Childhood	123	15.44%	96	13.68%	163	35.72%	59	19.08%	99.72***
Pre-adolescence	161	20.20%	105	14.96%	100	21.85%	82	26.67%	20.66*
Adolescence	512	64.36%	502	71.36%	194	42.43%	168	54.24%	107.42***
<b>Everyday activities</b>									
Home activities	11	1.40%	18	2.54%	49	10.62%	12	3.73%	72.18***
Activities under the care of professionals	29	3.60%	28	3.96%	25	5.56%	11	3.58%	2.79
Babysitting	143	18.04%	110	15.68%	185	40.57%	40	12.95%	132.58***
Urban activities	109	13.73%	74	10.57%	22	4.76%	39	12.53%	25.15**
Walking	508	63.87%	452	64.29%	98	21.55%	184	59.40%	260.31***
Sports and recreational activities	127	15.96%	109	15.55%	89	19.37%	56	18.22%	0.0395
Partying	28	3.58%	63	8.91%	40	8.73%	15	4.85%	23.969***
Visiting friends or relatives	7	0.93%	18	2.49%	111	24.19%	10	3.12%	9.96*

Notes. \*p = .05. \*\*p = .01. \*\*\*p = .001.

Table 4. Correlates of the scene of crime characteristics (N=2264)

	Script 1		Script 2		Script 3		Script 4		$\chi^2$
	n=	%	n=	%	n=	%	n=	%	
<b>Contact scene and crime scene are the same</b>	527	66.24%	291	41.43%	308	67.35%	267	86.56%	215.46***
<b>Contact scene</b>									
Victim's residence	44	5.48%	102	14.47%	124	27.16%	138	44.55%	345.97***
Offender's residence	9	1.11%	48	6.81%	198	43.38%	18	5.91%	628.12***
Common part of res. building.	24	3.07%	21	2.96%	20	4.36%	42	13.52%	52.21***
Public area	688	86.54%	617	87.78%	77	16.74%	19	6.09%	1204.42***
<b>Crime scene</b>									
Victim's residence	48	6.05%	40	5.67%	114	25.04%	139	44.92%	350.01***
Offender's residence	19	2.45%	58	8.18%	225	49.24%	20	6.54%	586.19***
Common part of res. building	35	4.34%	70	10.00%	37	7.98%	43	13.87%	31.63***
Public area	632	79.49%	520	74.03%	45	9.77%	16	5.30%	974.66***

Notes. \*p = .05. \*\*p = .01. \*\*\*p = .001.