

A Developmental Model of Serial Killers: A Retrospective Analysis

by

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Abstract

Although in 2005 Hickey concluded that serial murder likely results from a combination of 'predisposition' and 'facilitating factors', he did not describe this predisposition nor did he define 'facilitating factors'. This research aimed to advance Hickey's conclusion by setting out the features of this predisposition and creating a model for identifying 'facilitating factors'. A new developmental model of serial killers was constructed by reformatting an existing military model of killing, deleting some of its components and adding others from the DSM IV's diagnostic criteria for PTSD. The model was then tested by analyzing biographical data collected on a sample of 34 known serial killers.

The collected data yielded findings which challenged long held assumptions that dysfunctional mother/child relationships and psychopathy are integral to the occurrence of serial murder and suggested that social isolation, bullying, trauma, chronic emotional numbing and committing murder during adolescence are pivotal factors in serial killer development.

Keywords: serial killers; serial killer development; biographical information; qualitative analysis

This work is dedicated to the
families and friends of loved ones lost to the violence of serial killers.

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List of Acronyms

APD	Antisocial Personality Disorder
ASD	Acute Stress Disorder
DSM IV	Diagnostic and Statistical Manual IV
Direct KEF	Direct Kill Enabling Factor
FBI	Federal Bureau of Investigations
Indirect KEF	Indirect Kill Enabling Factor
KEF	Kill Enabling Factor
MDSK	Model of Developing Serial Kills
MoK	Mathematics of Killing
PTSD	Post Traumatic Stress Disorder

Glossary

Acute Stress Disorder	A psychological reaction to a traumatic event where the sufferer experiences symptoms of anxiety, dissociation, emotional numbing, and detachment from people and the surrounding environment. Onset occurs within days of the traumatic event and lasts no longer than four weeks (Saigh and Bremner, 1999; Fullerton and Ursano, 1997)
Adolescence	The age range between twelve years and less than or equal to eighteen years.
Buffer	Any factor which prevents a soldier from experiencing psychological or emotional distress when he commits a killing act (Grossman, 1996; Grossman 2009).
Childhood	The age range between birth and less than or equal to eleven years.
Cultural Distance	A quality of disdain wherein soldiers regard the enemy as inferior and less than human based on the enemy's customs and beliefs (Grossman, 1996; Grossman 2009)
Direct Kill Enabling Factor	Any factor that directly facilitates the killing act by directly facilitating a person's overcoming the innate resistance to killing another human (Grossman, 1996; Grossman 2009).
Early Childhood	The age range between birth and less than or equal to seven years.
Emotional Distance	A soldier's lack of emotional and psychological connection to the enemy (Grossman, 1996; Grossman 2009).
Emotional Numbing	A condition wherein the sufferer becomes emotionally detached from the people around him and his surrounding environment
Emotional Release Model	A theory of serial murder which holds that serial killers are driven to kill by pent up emotions.
Indirect Kill Enabling Factor	Any factor that indirectly facilitates the killing act by indirectly facilitating a person's overcoming the innate resistance to killing another human (Grossman, 1996; Grossman 2009).
Intra-Species Murder	The killing of one member of a species by another member of the same species (Grossman, 1996; Grossman 2009).
Kill Enabling Factor	Any factor that will directly or indirectly facilitate a person's overcoming the innate resistance to killing another human (Grossman, 1996; Grossman 2009).
Killing Capacity	The capacity to kill another person without experiencing psychological or emotional fallout (Grossman, 1996; Grossman 2009).
Late Childhood	The age range between eight years and less than or equal to eleven years inclusive.

Law of Diminishing Returns	The progressive diminishment of a person's experience of guilt and anxiety with every act of brutal violence he or she perpetrates (Lankford, 2009)
Malignant Narcissism	A deeply distorted sense of self love wherein a person not only loves himself but demands awe and reverence from others (Kulbarsh, 2008).
Mass Murderer	A person who kills numerous persons during the course of a single act of violence.
Mechanical Distance	A term which refers to the psychological cushion created by military weapons that make the killing act easier (Grossman, 1996; Grossman, 2009).
Moral Distance	A form of disregard wherein the enemy is viewed as morally inferior and deserving of punishment (Grossman, 1996; Grossman 2009).
Physical Distance	The spatial distance between a soldier and the enemy (Grossman, 1996; Grossman; 2009).
Post Traumatic Stress Disorder	A psychological reaction to a traumatic event the symptoms of which include but are not limited to emotional numbing, dissociation, anxiety, and social withdrawal. Onset can occur anywhere up to a year after a traumatic event and symptoms can become entrenched if left untreated (American Psychiatric Association, 2000).
Psychopathy	A personality disorder characterized by lack of empathy, lack of remorse, no observable expression of emotion, grandiosity, lying, failure to accept responsibility for one's actions, manipulation and a need for stimulation (Hare, 1993).
Ratio of Fire	A phrase coined by Samuel Marshall that refers to the proportion of soldiers who shoot to kill while on the battlefield (Grossman, 1996; Grossman 2009).
Self-Selection Model	A theory of serial murder which holds that serial killers commit murder because they make a conscious decision earlier in their lives to kill.
Serial Killer	Any person who separately or in a team, has committed three or more murders with a cooling off period of at least 24 hours after each murder (Federal Bureau of Investigations (1985).
Social Distance	A term that refers to a lack of social interaction or social contact between persons (Grossman, 1996; Grossman, 2009)
Super-Egotistical State	A capitalist controlled society which seeks to serve itself by generating narcissistic citizens who are conditioned to seek self-gratification and self-expression but only through state legitimated means (Seltzer, 1998).
Technological Advantage	The superiority of a soldier's weapon over an enemy soldier's weapon (Grossman, 1996; Grossman, 2009).

Temperament Alteration	The process of wiping out a military recruit's pre-existing disposition and replacing it with a temperament preferred by the military establishment (Grossman 1996; Grossman, 2009)
Trauma Event	An event wherein a person witnesses, experiences or confronts an event which threatens death or severe injury to the self, or, where a person witnesses, experiences or confronts an event which threatens death or severe injury to an immediate other (American Psychiatric Association, 2000).

1. Introduction

“Mr. Pickton is 58 years of age. . . The evidence before me of his back ground is essentially benign. There is nothing before this Court to enable any understanding of what motivated Mr. Pickton. No explanation is apparent.” (Justice Williams, 2007).

On December 11, 2007, Mr. Justice Williams of the British Columbia Supreme Court sentenced convicted serial killer Robert William Pickton to six concurrent terms of life imprisonment with no eligibility for parole for twenty-five years. In his oral reasons for judgment Justice Williams stressed that the maximum period of parole ineligibility was justified as Pickton’s crimes were committed over the course of four years against victims who were in “positions of extreme vulnerability”, and, he went to great lengths to hide his victims by dismembering and disposing of their remains. Justice Williams’ observation about a lack of apparent explanation for Pickton’s violence signals a question that has vexed law enforcement, academics and the public over the last four decades (Hickey, 2005; Hensley and Wright, 2003): What causes a person to commit violent, pre-meditated acts of murder repeatedly? The research reported herein examined this question via psycho-social considerations of child and adolescent development.

Since the late 1980’s, in pursuit of the glory of being the first to answer the causation question (Hickey, 2005), numerous interested parties have published theories about serial murder’s etiology. While credible on their face, most of these theories were based upon misguided cultural stereotypes of ‘evil’ (Baumeister, 1999) and had questionable validity. In the wake of growing dissatisfaction with speculative explanations, law enforcement officials and academics began exploring the etiological question. The seminal piece of research in this regard, entitled *The Men Who Murdered*, was published in 1985 by the Federal Bureau of Investigations (the “FBI”) which interviewed 26 convicted serial killers and rapists in search of common themes in their childhood years. The FBI’s research incited further exploratory research which focused on childhood and adolescent experiences. During the latter part of the 1990’s etiological

research shifted to examining the presence or non-presence of specific variables. By the 21st Century a general consensus had emerged that no one variable can account for all instances of serial murder. Today, it is generally accepted that serial killers are a distinct class of criminal offender, primarily male, who grew up in severely dysfunctional homes, suffered severe physical, sexual and/or psychological abuse and exhibited anti-social behaviour prior to committing their first act of murder.

In 2005, after conducting a comprehensive review of all etiological research published around the globe, Hickey (2005) concluded that serial murder likely results from a combination of predisposition and facilitating factors. Unfortunately, Hickey did not elucidate what traits he believed comprised this predisposition nor did he explain what he meant by 'facilitating factors'. The current thesis aimed to advance Hickey's conclusion to the next level by relying upon a military model of killing to articulate what attributes make up a serial killer's predisposition and set out what factors qualify as facilitative. This was accomplished by constructing a developmental model of serial killers and then testing its validity by collecting and analyzing data on a sample of known serial killers. Model construction was accomplished by reformatting an existing model of killing to fit the developmental context of serial killers. Grossman's (1996; 2009) 'Mathematics of Killing' was the model reformatted. It is presented below in Table 1.

Table 1. Mathematics of Killing

$$\begin{array}{ccccccc}
 \begin{array}{c} \text{Demands of} \\ \text{Authority} \\ \text{and/or} \\ \text{Group} \\ \text{Absolution} \end{array} & + & \begin{array}{c} \text{Predisposition of} \\ \text{Killer} \end{array} & + & \begin{array}{c} \text{Total} \\ \text{Distance} \\ \text{from} \\ \text{Victim} \end{array} & + & \begin{array}{c} \text{Target} \\ \text{Attractiveness} \\ \text{of Victim} \end{array} & = & \text{Kill}
 \end{array}$$

Adapted from Grossman, 2009.

The Mathematics of Killing is a military model of killing developed by Grossman (1996; 2009) over the course of his thirty year career as a psychologist in the American Army. It encompasses his observations about American military training techniques developed after World War II and it is expressed in the form of a mathematical equation comprised of four integers which contain what Grossman (1996; 2009) refers to as 'Kill Enabling Factors'. The central premise of Grossman's model, termed the Mathematics of Killing, holds that if a man is going to act against his innate resistance to commit an

act of intra-species murder, he must first overcome it through a cumulative process that requires the presence of what Grossman refers to as Kill Enabling Factors.

The Kill Enabling Factors contained in the first integer of the Mathematics of Killing, 'Demands of Authority/Group Absolution', revolve around the psychological pressure that arises when a soldier is directly ordered by a higher ranking officer to kill and social pressure from unit comrades to kill. The Kill Enabling Factors in the second integer, 'Predisposition of Killer', encompass psychosocial experiences which instill in new military recruits that predisposition Grossman regards as necessary for killing in combat. The third integer, 'Total Distance from Victim', contains Kill Enabling Factors that disconnect new recruits from any emotional or psychological recognition of the enemy as human. The Kill Enabling Factors in the fourth integer, 'Target Attractiveness of Victim', focus on the considerations and concerns that go through a soldier's mind when he is presented with an opportunity to kill.

Grossman's model was conducive to constructing a model of serial killer development for a number of reasons. Not only does it recognize the influence that context has in shaping disposition and human behavior, it picks up precisely at the point of Hickey's (2005) conclusion by setting out what predisposition and facilitating factors are needed to make a man kill. It is rooted in sixty years of American military research into the dynamics of human aggression and it is untouched by cultural stereotypes of evil. Finally, soldiers and serial killers share one important characteristic: they repeatedly commit premeditated acts of murder.

Grossman's base assertions were adopted and restated in this thesis to fit the new model's focus. The new model holds that nurture can overcome nature and contextual forces have the power to shape and develop a child/adolescent into a person capable of committing repeated acts of premeditated murder. Where the resulting 'Kill' indicated at the end of the Mathematics of Killing signifies that a soldier has overcome his innate tendencies, the new model assumes that every kill committed by a serial killer signifies he has reached a state of emotional detachment from his target which buffers him from experiencing emotional fallout, thus enabling him to kill again. Concomitant with this assumption, two further assumptions about serial killers evolved through the course of new model construction:

1. serial killers have a predisposition similar to that of a fully trained American soldier; and
2. serial killers are imbued with an emotional distance similar to that of a fully trained American soldier.

The new model, called the Model of Developing Serial Killers (“MDSK”), is a non-linear mathematical equation comprised of three integers each of which contain Kill Enabling Factors that generate a state of complete emotional withdrawal in serial killers.

Once model construction was completed, a research hypothesis specific to the research’s focus presented itself in the form of three statements:

1. while growing up, serial killers develop a predisposition similar to that of a fully trained American soldier;
2. concurrent with the development of this predisposition, serial killers develop emotional distance; and
3. concurrent with the development of this predisposition and emotional distance, serial killers develop chronic emotional numbing.

Upon completion of model construction, a data coding sheet was devised. Forty-three variables directly related to the research were included on the data coding sheet. To assist comparing prevalences of variables between childhood and adolescence, the variables on the data coding sheet were broken across two designated age ranges: childhood and adolescence. In total, 101 variables were listed on the data coding sheet and an inter-rater reliability examination was performed with the assistance of a fourth year Honours Student from the School of Criminology. Data collection commenced in October, 2005 and ended in March, 2007. During data analysis the prevalence of a variable was examined and then consideration was made of whether or not the variable’s continued inclusion in the MDSK. For a variable to remain in the new model, it had to meet a minimum 40% presence. The presence of PTSD symptoms was examined in order to assess the validity of the new model’s assumption about chronic emotional numbing (American Psychiatric Association, 2000) in developing serial killers.

The Literature Review in this thesis begins by detailing a number of the more popular models of serial murder published during and after the late 1980’s, namely, the ‘Emotional Release’, ‘Self-Selection’ and ‘Psychopathy’ theories of serial murder. It then moves on to consider weaknesses within these models such as a lack of empirical

substantiation, an inability to account for serial killers who did not meet etiological criteria (Castle and Hensley, 2002), and a reliance upon shifting sociological interpretations of behaviour (Arrigo and Shipley, 2001; Kirkman, 2008; Levenson, 1992; Juni, 2010). The Review then moves on to examine early exploratory research efforts that hunted for common variables in the personal histories of serial killers, and later winds up by examining research which sought to confirm the presence or non-presence of specific etiological variables.

To provide a thorough grasp of the logic underlying the use of a military model of killing to construct a developmental model of serial killers, Chapter 3 begins by examining the historical roots of Grossman's Mathematics of Killing and then details its central tenets before finishing up with a discussion of the merits of examining serial killer development through the lens of military training techniques. Chapter 4 outlines each step taken during the course of new model construction and then moves on to describe each of the new Kill Enabling Factors incorporated into the new model before concluding with a presentation of the newly constructed Model of Developing Serial Killers. Chapter 5 supplies a detailed discussion of the research methodology employed, namely, construction of the data coding sheet; choice of data sources; data collection and an inter-rater reliability examination. Chapter 6 sets out a detailed discussion of research findings, recommendations for future research and comparison of current findings with previous research and Chapter 7 summarizes the research project undertaken before moving on to consider whether or not the stated and implicit goals of this research were achieved, what was learned about the MDSK's validity, and whether or not any unique information was disclosed by the collected data.

2. Literature Review

2.1. Causation Theories

The increase in occurrences of serial murder across North America since 1970 (Hickey, 2005; Hensley and Wright, 2003) and concomitant media accounts of brutal acts of violence committed by serial killers have provoked enduring public fascination with serial killers. Every time an alleged serial killer is apprehended or convicted, the same question presents itself: what causes a person to commit such violence repeatedly? Since the 1980's, in pursuit of the glory of being the first to answer the causation question (Hickey, 2005), numerous interested parties have published theories about serial murder's etiology. While credible on their face, many of these theories were misinformed and relied upon unproven assumptions or misguided cultural stereotypes of 'evil' which regard perpetrators of brutal aggression as sadistic and deriving great pleasure from their acts of violence (Baumeister, 1999, p.22). The following discussion reviews and critiques a number of the more popular and enduring causation theories of serial murder.

2.1.1. Emotional Release Theories

Emotional Release theories hold that serial killers are driven to kill by pent up emotions. The primary pundits of this view are Fox and Levin (1988), Hale (1994), Hensley and Wright (2003) and Hensley and Singer (2004). Fox and Levin (1988) hold that serial murder is the by-product of a youth oriented North American culture which places a high value on physical appearance. They state that within North American society there is a sub-population of sexually undesirable males who lack remorse, cannot build and maintain meaningful long term relationships and cannot accept their lack of sexual desirability. These males become increasingly frustrated and when this frustration melds with increasing post-adolescent arousal needs, they achieve release by taking what they want aggressively. With every act of aggression they perpetrate, these

males require greater stimulation in order to achieve and maintain sexual arousal and over time they progress to committing sadistic acts of torture and murder in pursuit of their sexual gratification and emotional release (Fox and Levin, 1988).

Hale (1994) argues that serial murder results when a person suffers deep humiliation during an early stage of his life but fears his 'humiliator'. This fear prevents the person from seeking revenge directly against his humiliator and as he grows to adulthood, his humiliation becomes internalized as a permanent threat to his self worth. When this person reaches adulthood and encounters stimuli that re-threatens his self-worth and reminds him of his original humiliation, his pent up emotions explode and he seeks rectification by killing people who remind him of his original humiliation (Hale, 1994, p.21). However, because no victims survive the violence, the conquest cannot be validated and this humiliated person is doomed to repeat his behaviour in the pursuit of permanent psychological redress (Hale, 1994).

Hensley and Wright's (2003) emotional release model incorporates a graduated hypothesis. During childhood, would-be serial killers repeatedly vent their anger and frustration over their relationship with their mother and other adults upon smaller, weaker animals and over time, they progress from venting their feelings upon animals to venting upon humans. Hensley and Singer (2004) argue that serial murder results when a child experiences parental rejection and/or parental abuse which leaves him traumatized and frustrated. Because he is unable to retaliate against the parent, the child goes on to set fires in order to vent his frustration and regain a sense of dignity and personal power. Because the achieved sense of dignity and power are short lived, the fire setting repeats over and over and then escalates to the point at which killing humans replaces fire setting.

2.1.2. Self-Selection

Self-Selection theorists argue that serial killers kill because they make a conscious decision to kill at an earlier point in their lives. While the reasons underlying this decision vary with each version of the Self-Selection paradigm, the initial premise of making a decision to kill remains constant. Sears (1991) contends that a serial killer kills entirely for his own pleasure. Growing up in an unstable home that lacks nurturing and

where he endures physical and/or emotional abuse, a serial killer does not develop a sense of self-worth and is left unable to form close emotional ties with other people. He becomes a loner who turns to fantasy to escape his pain and, as he matures, he comes to regard people as objects. When the lingering effects of his childhood suffering fuse with his adolescent frustration over a lack of sexual and social contact, he develops fantasies obsessed with sex and violence. As a result of these lingering effects, by the time he reaches adulthood, the boundary between reality and fantasy are blurred in his mind and he begins to act out his violent fantasies upon others (Sears, 1991, p124).

Fox and Levin's (2001) version of the Self-Selection model holds that self-selection occurs most often with Caucasian males in their late twenties or early thirties who experience little remorse for their behaviour and rationalize their acts as benefiting society. Not only do these males make a conscious decision to kill, they consciously repeat the act of killing because of the pleasant feelings they experience when committing murder. Egger's (2003) Self-Selection model argues for a cumulative progression to murder: a psychiatric pre-disposition to violence combined with brain damage, plus childhood sexual and/or physical abuse is compounded by an intense relationship with the mother which sparks a violent person who consciously decides to kill. The abuse experienced during childhood teaches a developing serial killer that sex is a means for dominating and destroying other living beings. In Egger's model, the violent predisposition precedes the occurrence of brain damage.

2.1.3. Psychopathy

The pathology of 'psychopathy' is virtually synonymous with serial killers. Of all explanations proffered for the occurrence of serial murder it is the most enduring. Psychopathy pundits consistently point to the brutality of the violence committed and the lack of remorse exhibited by convicted serial killers as proof of the disorder's involvement in acts of serial murder. As recently as 2007, Vronsky argued that the 'vast majority' of serial killers are psychopaths who, while able to simulate emotions for a limited period of time, do not actually experience a normal range of emotions. According to Hickey (2005), the reason for the ongoing association between psychopathy and serial murder is twofold. For those seeking to explain serial murder via the DSM IV, the classification of 'psychopathy' offers an effective catchall category for unexplainable

pathologies. Second, while serial killers are known for lacking remorse for their actions, they are regarded as having a pathological combination of the dispositional traits of “frustration, anger, hostility, feelings of inadequacy and low self-esteem” (Hickey, 2005, pp.84-85) and these same attributes are listed in the DSM IV as criteria for diagnosing psychopathy.

Psychopathy pundits often connect the presence of psychopathy in serial killers with pre-existing narcissism. Giannengelo (1996) holds that serial killers are psychopaths who have never developed a conscience, do not experience guilt, remorse, fear or anxiety, are unable to develop emotional bonds with others and do not experience love. Their attitude of entitlement and sense of grandiosity permeates all of their sexual activities and stimulates a hyper-arousal which, when melded with their narcissistic pursuit of pleasure and need to control and dominate, incites a compulsion to commit sadistic acts of violence. The presence of this compulsion in a person who lacks fear and remorse equals a predatory emotionless killer who seeks to control and dominate and kills for the “sheer joy of it” (Giannengelo, 1996).

In Lester’s (1995) model, when narcissistic tendencies and psychopathic attributes coalesce within a person, a ‘malignant narcissism’ takes root. All people who kill have some degree of inborn ‘malignant narcissism’ which can be classified across a ten level scale that measures the degree of malignant narcissism inherent in the violent act. At level one, killing is incited by chronic humiliation and a deep sense of worthlessness. At level two, people kill out of a sense of not feeling respectable. Level three killing involves the narcissist being rejected by someone he loves and level four involves killing family members for reasons other than love or jealousy. At level five, killing occurs because the victim is seen as an obstacle to a perceived end or opportunity. Level six killers are mass murderers and killers at level seven are persons with minimal interpersonal skills. Serial killers appear at level eight as they are killers who rarely exhibit discernible affect and their acts of cruelty are commensurate with the cruelty they feel they endured during childhood. Level nine serial killers commit sadistic acts of torture and level ten serial killers will not only torture victims, they will hold their victims hostage for extended periods of time and repeatedly torture them before killing them (Lester, 1995, pp. 62-63).

Seltzer (1998) blames serial murder on the psychopathic narcissism of the 'super egotistical state' which seeks only to serve itself by generating highly narcissistic citizens who are conditioned through mass advertising to seek self gratification and self-expression. Conditioned citizens of the super-egotistical state are trained to desire wealth and celebrity and then are pressured to pursue both through state legitimized avenues. Unfortunately, these touted avenues of attainment do not exist for everyone and a small number of narcissists become deeply frustrated and traumatized by their inability to fulfill their desires. They act out their internalized violent fantasies and then achieve a form of celebrity when they become wanted by law enforcement and their crimes are reported in the media (Seltzer, 1998).

2.2. Theoretical Limits

Upon their publication, the Emotional Release, Self-Selection and Psychopathy models of serial murder were touted as convincing analyses of serial murder. To this day, they are regarded as offering valid insights into serial murder's etiology despite the fact that they are laden with defects, the most notable of which is lack of empirical substantiation. Giannengelo and Lester relied on case studies which were hardly generalizable to the larger population of serial killers to support their contention that serial killers are psychopaths. Seltzer relied on Theodore Bundy's comments about listening obsessively to radio talk shows to substantiate his claim that serial murder results from the narcissism of the super egotistical state. Fox and Levin (2001) provide no empirical substantiation for their claim that serial killers kill because they make a conscious decision to kill. All simply point to the violent nature of the acts committed as proof of their theoretical assumptions.

Concomitant with their lack of empirical substantiation, the Emotional Release, Self-Selection and Psychopathy models are almost impossible to verify empirically. Outside of aggression, nowhere in their Emotional Release model do Fox and Levin (1988) set out measurable dispositional traits or developmental sign posts. Hale (1994) who argues that humiliation internalized earlier in life works to incite acts of serial murder, fails to supply measureable markers for verifying that humiliation internalization is occurring. Verifying Egger's (2003) contention that serial murder occurs when a

violent predisposition melds with organic brain damage would entail performing MRI's on all known serial killers and there is no way to determine if any organic brain injury revealed through a MRI exam occurred before or after the development of the violent predisposition. Finally, Sears (1991) offers no measurable elucidation of the predisposition needed for acting out violent fantasies on others.

A weakness of the Emotional Release models is that they fail to consider the influence of personal choice on violent behavior (Baumeister, 1999). According to Baumeister (1999, p.142), research indicates that a critical factor in the progression to violence from frustration is the response chosen by the person. Consequently, Emotional Release theorists like Fox and Levin (1988), Hale (1994), Hensley and Wright (2003) and Hensley and Singer (2004) cannot account for people who experience anger or frustration but do not commit murder. In a similar vein, theorists who argue that serial killers cannot maintain meaningful relationships are unable to account for serial killers such as John Wayne Gacy, Frederick West and Harold Shipman, who were married throughout their lengthy killing careers.

Psychopathy pundits face a significant limitation in that there is ongoing disagreement between academics and clinicians about the diagnostic criteria to be used for diagnosing psychopathy and the evolving use of the classification of psychopathy (Arrigo and Shipley, 2001; Hare and Neumann, 2005; Vien and Beech, 2006; Juni, 2010; Skeem and Cooke, 2010; Kirkman, 2008). This disagreement began decades ago when the preference for relying upon dispositional traits for diagnosing psychopathy (Reid, 2001; Juni, 2010) was replaced with the preference for relying upon sociologically sensitive interpretations of behaviour (Arrigo and Shipley, 2001, p. 336; Kirkman, 2008; Levenson, 1992; Juni, 2010). In 1952 the *Diagnostic and Statistical Manual* redefined psychopathy as 'Sociopathic Personality Disturbance' and made antisocial behavior the central criterion for diagnosis. By 1980, when the *Diagnostic and Statistical Manual III* was published, the diagnostic criteria were broadened to include consideration of chronic violation of conduct prohibited by law (Arrigo and Shipley, 2001, p. 329), thereby casting a diagnostic net wide enough to include all "criminal" behaviour (Arrigo and Shipley, 2001). By 1994 when the *Diagnostic and Statistical Manual IV* was published, the diagnostic criteria expanded even further to include chronic violation of social norms and

the label 'Sociopathic Personality Disturbance' was replaced with the label 'Antisocial Personality Disturbance' ("APD") (Juni, 2010).

Critics of the Psychopathy approach have argued that criminal behaviour is a secondary result of a wide range of factors in a person's circumstance and, of itself; criminal behaviour does not properly confirm the presence of a psychopathology (Skeem and Cooke, 2010, p.433). Persons who are not psychopathic are being diagnosed as psychopaths based on their criminal behaviour (Reid, 2001, p. 55) and psychopaths whose behaviour does not bring them into contact with the law are being missed (Skeem and Cooke, 2010). More so, diagnoses of APD have become central to predictions of future violent criminal behavior even though there is no empirical foundation for this link (Fowles, 2011). Criminal acts empirically linked to APD are proactive or goal directed and perpetrators expect a positive outcome for themselves (Kaplan and Cornell, 2004; Reid, 2001) such as attaining money or valuables (Kaplan and Cornell, 2004, p.150). Violent criminal acts, on the other hand, are motivated by hostility, anger or revenge; they are reactive and perpetrators anticipate outcomes where their victims are harmed. Notwithstanding the fact that violent criminal acts have never been empirically linked to APD (Kaplan and Cornell, 2004), the use of diagnosing APD to predict homicidal behaviour or acts of sexual violence continues and the label 'psychopath' now has three uses: as a legal classification, as a clinical classification and as a term of the vernacular (Kirkman, 2008, p. 29).

Lester's (1995) ten level scale of murder is an example of relying upon overt criminality to diagnose psychopathy. He argues that the psychopathic serial killers who first appear at level eight on his scale rarely exhibit discernible affect and tend to commit brutal acts of killing. Seltzer's (1998) model of serial murder is a primary example of using a diagnosis of psychopathy to predict future violence; however, he does this with a twist. He argues that it is the super egotistical state's psychopathy which generates the commission of brutal acts of murder from a subset of citizens frustrated by their inability to obtain wealth and celebrity.

Finally, the validity of the models of serial murder outlined here is weakened by the fact that they contradict each other. The Emotional Release models which hold that serial killers lack impulse control and kill in an explosion of pent up emotions contradict

the Self-Selection models which hold that serial killers possess impulse control and make a conscious decision to kill, but do not act upon the decision until a later age. By the same token, the Psychopathy models which hold that serial killers are born with an extra dispositional trait (albeit one that is pathological), are contradicted by the Emotional Release theories which assert that serial killers are born missing a dispositional trait.

2.3. Empirical Investigation

In the face of growing discontent with the weaknesses inherent in the Emotional Release, Self-Selection and Psychopathy models, law enforcement officials and academics commenced attempting to unravel the etiology of serial murder empirically. Initial investigations were exploratory, and as common themes emerged within reported findings, the focus of empirical research narrowed and researchers began seeking out key variables. The following discussion reviews the highlights of early exploratory research, and then moves on to examine the subsequent trend of narrowing empirical focus.

2.3.1. Exploration

The seminal piece of exploratory empirical research on serial killers was published by the American Federal Bureau of Investigations (the "FBI") in 1985. Researchers from the FBI looked for common variables among a sample of 36 convicted serial offenders, 25 of whom were serial killers. Through face to face interviews, all 36 study subjects were questioned about their early lives; and all reported multiple problems within their families of origin. Eighteen (50%) subjects stated that while growing up they had immediate family members who were engaged in criminal activity and 18 (50%) stated that they had immediate family members who suffered from mental illness. Seventeen study subjects reported that their biological fathers left the family prior to the subjects' reaching age twelve and 20 reported that their mothers were the primary parent while they were growing up. Twenty-six sample subjects reported a lack of warmth and nurturing from their fathers during their early years and 25 reported that one or both of their parents abused alcohol. Twenty study subjects reported that by the age of eighteen they were wrapped up in rape fantasies (Federal Bureau of

Investigations, 1985). According to FBI researchers (1985), two variables stood out as significant across the sample: obsession with sadistic and violent fantasies during adolescence and enduring sexual, physical and/or psychological abuse while growing up.

While the percentages reported by FBI investigators did not differentiate between study subjects who were serial killers and those who were convicted rapists, the findings did direct researchers to look at the involvement of childhood experiences in the development of serial killers. Kenney and Heide (1994) examined a sample of ten female serial killers in an attempt to determine whether they were similar to or distinct from male serial killers. Using the case study method they found that four of their study subjects were adopted, two were raised in traditional homes with two parents and four were raised in non-traditional homes comprised of extended relatives and non-relatives (Kenney and Heide, 1994, p.391). Five women reported overt sexual abuse during their childhood; four reported having been raped before the age of eighteen; and five reported being beaten (Kenney and Heide, 1994, p.393). Although data were not available across all of the variables Kenney and Heide examined, they concluded from their findings that there were distinct similarities in the backgrounds of both male and female serial killers, most notably, the occurrence of childhood abuse and coming from broken homes.

McKenzie (1995, p.5) examined the lives of 20 serial killers and compiled a list of 28 variables which she divided into the following categories and sub-categories:

1. Environmental incubators:
 - a. alcoholic family dysfunction;
 - b. lack of consistent parenting;
 - c. frequent observation of violence in the home;
2. Childhood dysfunction indicators;
3. Floodgate disinhibitors; and
4. Adulthood dysfunction indicators.

According to McKenzie, 15 subjects grew up in homes where all three environmental incubators were present and 18 subjects grew up with inconsistent parenting and inconsistent limit setting. The 'adult dysfunction indicators' set out by

McKenzie included the presence of alcohol or drug abuse by the study subjects themselves; 13 of her study subjects fell into this category. McKenzie concluded that the high prevalence of substance abuse among the study subjects and the high number who grew up with inconsistent parenting indicated that the serial killers in her study committed the brutal acts of violence as a way to escape the long term pain of growing up with inconsistent parenting.

Warren, Hazelwood and Dietz (1996) reviewed police and court files and interviewed family members in an effort to compile data on 20 convicted sexually sadistic serial killers who operated throughout Canada and the United States. They found that 19 members of their sample were Caucasian, 13 came from middle or upper middle class families and 10 came from families marred by infidelity or divorce. While 16 members of their sample became obsessed with violent fantasies before reaching adulthood, only seven had prior arrests before committing their first act of murder. On the basis of their findings, Warren, Hazelwood and Dietz (1996) concluded that a primary factor in the development of serial killers was the dissolution of the family through infidelity or divorce.

Harbort and Mokros (2001) looked at socio-demographics, family background, social integration, intellectual capability and the presence of personality disorder when they examined the lives of all serial killers convicted in Germany between 1945 and 1995. They then compared their sample of 61 serial killers to a sub-sample of 750 non-serial offenders in order to determine whether or not serial killers comprise a distinct class of criminals. Although they did not elaborate as to what constituted a 'disturbed relationship', Harbort and Mokros (2001) reported that 49 of the serial killers had disturbed relationships with both parents; 12 had disturbed relationships with their mothers; and 17 had troubled relationships with their fathers. Twenty-nine of the German serial killers grew up in homes where there was physical abuse and 28 grew up in homes where one or both of the parents abused alcohol. Twenty-one of the serial killers came from homes divided by divorce and 18 came from homes where there was criminal activity. Because all of these same variables did not rate as high among the comparative population of non-serial offenders, Harbort and Mokros (2001) concluded that serial killers comprise a distinct class of violent offenders which shows greater signs

of alienation and social maladjustment and which is more likely than non-serial offenders to have dysfunctional family backgrounds.

2.3.2. Investigating Specifics

In the wake of recurring variables in published reports, researchers narrowed their focus and sought out specific explanations for the occurrence of serial murder. Gerbeth and Turco (1997) applied a Freudian analysis to examine whether or not serial killers endured disturbed mother/child relationships during their infancy. They hypothesized that the mothers of serial killers created disorganized developmental experiences which prevented the developing serial killers from experiencing empathic bonding and lead them to develop faulty object relations (Gerbeth and Turco, 1997, p.56). Gerbeth and Turco examined the lives of 68 known sexually sadistic serial killers and found that by age fifteen, 66 sample members had been in trouble for lying; 58 had committed theft; 41 exhibited cruelty towards others; and 10 exhibited cruelty toward animals. Twenty-four of their study subjects had forced sex on others. Most important for Gerbeth and Turco (1997) however, was the discovery that the killing styles of all 68 killers had elements of domination, control, humiliation and sadistic sexual violence (Gerbeth and Turco, 1997, p56). This led them to conclude that by the time their subjects reached adulthood, all of the “badness” (Gerbeth and Turco, 1997) they experienced from their mothers was transferred on to their victims.

Cater (1997) assumed that serial killers are socially constructed and provoked to kill by internalized rage. Via social profiling, he scrutinized the lives of three known serial killers and found that all three endured abuse during childhood and all three were socialized by their parents to take part in anti-social behavior. He concluded that the combination of childhood trauma, repressed rage and feelings of inadequacy from the trauma and anti-social upbringing sent the study subjects down a path of escalating violent behaviour which culminated in their acting out their rage through murder.

Castle and Hensley (2002) investigated the potential involvement of ‘military service’ in acts of serial murder. On the assumption that military training promotes aggression and violence, they reviewed the cases of 354 known American serial killers to see how many had served in the military prior to committing acts of murder. Although

only seven percent of their study subjects served in the military prior to committing acts of serial murder, Castle and Hensley (2002) concluded that more investigation into a possible connection between serial murder and military service was warranted. They also concluded that no one variable can account for all cases of serial murder.

Delisi and Scherer (2006, p. 386) examined multiple murder from a career criminal perspective by conducting an in depth assessment that considered whether or not previous criminal acts were predictive of committing homicide. Comparing a sample of 160 serial killers and spree shooters with a control group of 494 single homicide offenders, they found that the two groups had comparable rates of zero arrests prior to first kill at 38% and 42% respectively and they found comparable rates of study subjects who were established career criminals prior to committing their first homicide at 29% and 42% respectively. When Delisi and Scherer (2006) compared the types of criminal activity prior to first kill across the two groups, they found that those with previous convictions for burglary and rape were more likely to be multiple killers. More recently, Farrell, Keppel and Titterington (2011) examined the lives and violent acts of ten convicted female serial killers. Although the focus of their investigation was not etiological, their findings are informative of the etiological issue. All of their study subjects were white; seven were 29 years of age or older when they committed their first murder; all came from different educational and socioeconomic backgrounds; and most endured physical, sexual and/or emotional abuse during their childhoods.

2.4. What Do We Know and Where Do We Go?

Even though research into serial murder has been ongoing for over twenty-five years, little is known about its etiology. It is generally accepted that serial killers are a distinct class of criminal offender (Harbort and Makros, 2001) in which male and female members share common features in their personal histories (Kenney and Heide, 1994; Vronsky, 2007). They grow up in severely dysfunctional households where they endure severe physical, sexual and/or psychological abuse (FBI, 1985; Kenney and Heide, 1994; McKenzie, 1995; Warren, Hazelwood and Dietz, 1996; Harbort and Makros, 2001; Vronsky, 2007; Ferrell, Keppel and Titterington, 2011) and they exhibit anti-social behaviour prior to committing their first act of murder (Gerbeth and Turco, 1997). Male

serial killers far outnumber female serial killers (Gurian, 2011) and female serial killers tend to begin their killing career later than male serial killers (Farrell, Keppel and Titterington, 2011).

Despite the broad lack of etiological certainty, the evolution of etiological thought from speculative causation theories to exploratory research to seeking out the presence or non-presence of specific variables has brought researchers to the recognition that no one variable can explain all occurrences of serial murder. Therefore, the next viable direction for research to follow was suggested by Hickey (2005) who, after conducting an extensive review of etiological research from around the globe, concluded that serial murder likely results from a combination of predisposition and facilitating factors (Hickey, 2006, p. 114). Unfortunately, Hickey did not specify the nature of the predisposition involved in serial murder and he gave no direction as to what qualifies as a facilitating factor. Nevertheless, the current research assumed Hickey is correct and purported to advance his conclusion by articulating this predisposition and facilitating factors via a process which involved subsuming an existing military model of killing. A military model of killing was thought an appropriate one to employ and explore for the development of the current model because of the particular attributes of training which successfully produces a soldier who can overcome resistance to killing another human being. The rationale was that this training process might mirror the life experiences of a developing serial killer. Therefore, a developmental model of serial killers was constructed and then its validity tested via biographical data collected on a sample of known serial killers. The military model of killing subsumed for this research was developed by Lieutenant-Colonel David Grossman ("Grossman") over the course of his thirty year career working as an army psychologist.

3. A Military Model of Killing

Valuable in that it maps out the transformation of military recruit from non-violent adult to aggressive soldier who will kill upon command, the roots of Grossman's model can be traced back to Samuel Marshall's ("Marshall") controversial ratio of fire statistics¹ published in 1947. Data collected by Marshall in interviews with American soldiers returning from Eastern European Theatres during World War II indicated that only 15% to 25% of the soldiers fired their guns at the enemy, even when the soldiers faced an advancing enemy and their lives were in imminent danger (as cited in Grossman, 1996; Grossman, 2009; Bourke, 1999; Dyer, 2004; Watson, 1978). On the basis of Marshall's statistics, American military leaders concluded that American soldiers lacked 'Killing Capacity' (Watson, 1978; Bourke, 1999). The term Killing Capacity describes a predisposition wherein, given the right circumstances, a person has the capacity to kill another human being without experiencing any psychological fallout² (Grossman, 1996; Grossman, 2009).

To address the low ratios of fire, American military leaders enlisted the assistance of psychologists who determined that two obstacles were preventing soldiers from firing their weapons (Watson, 1978; Bourke, 1999). The first was fear; during battle soldiers were either becoming paralyzed by fear (Dyer, 2004) or so overwhelmed that they could not perform effectively (Dyer, 2004, p. 21). To eradicate this problem, the American army developed training methods that relied on conditioning and desensitization to prepare recruits for the chaos of battle. Recruits were forewarned that they would experience fear during battle and they were conditioned to believe that fear was unacceptable. Battle hardened veterans who personified bravery were used to train new recruits and put them through 'battle-proofing' exercises (Watson, 1978, p.200).

¹ "Ratio of Fire" is a phrase coined by Samuel Marshall. It refers to the proportion of soldiers who reported shooting to kill while on the battlefield.

² This predisposition is different than that alluded to by the Self-Selection and Psychopathy models where serial killers have a pre-existing inclination to kill.

The second obstacle preventing soldiers firing their weapons was a strong resistance to killing other humans. To address this obstacle, the American army developed training techniques that altered recruits' temperament, conditioned them to obey authority and instilled Killing Capacity in them. Over time, the training methods developed by the American army became so effective, by the mid-mark of the Viet Nam War, the firing ratio among American infantrymen reached 95% (Grossman, 1996; Grossman, 2009).

When constructing his model of killing, Grossman (1996; 2009) drew upon 30 years of direct observation of American military training methods and an intimate knowledge of the assumptions upon which these training methods were based. The following discussion outlines Grossman's model, the Mathematics of Killing (the "MoK").

3.1. The Mathematics of Killing

Grossman's model (Grossman, 1996; Grossman, 2009) assumes that all humans are born with an innate resistance to intra-species murder which prevents them from killing other humans. His central hypothesis holds that in order for a man to act against this innate resistance he must first overcome it through a cumulative process made up of specific Kill Enabling Factors. If one Kill Enabling Factor is absent, overcoming the innate resistance will not occur and no act of intra-species murder will occur. Grossman (1996; 2009), defined Kill Enabling Factors ("KEF(s)") as any factors that will directly or indirectly facilitate overcoming the innate resistance to intra-species murder.

The Mathematics of Killing is constructed in the form of a mathematical equation. It is presented below in Table 2.

Table 2. Mathematics of Killing

$$\begin{array}{ccccccc}
 \text{Demands of} & & & & & & \\
 \text{Authority} & & & & & & \\
 \text{and/or} & + & \text{Predisposition of} & + & \text{Total} & + & \text{Target} \\
 \text{Group} & & \text{Killer} & & \text{Distance} & & \text{Attractiveness} \\
 \text{Absolution} & & & & \text{from} & & \text{of Victim} \\
 & & & & \text{Victim} & & \\
 & & & & & & = \text{Kill}
 \end{array}$$

Adapted from Grossman, 2009.

The MoK contains four integers, each of which is a cluster of direct and indirect KEFs. Direct Kill Enabling Factors (“Direct KEF(s)”) and Indirect Kill Enabling Factors (“Indirect KEF(s)”) are best understood in terms of the immediacy of their effect on the killing act. Direct KEFs have an immediate effect on the killing act. For example, ‘aggression’ is a Direct KEF for two reasons. First, the killing act itself is a form of aggression. Second, if a person’s predisposition is not in any way aggressive, it is unlikely he will commit an aggressive act like murder. In short, the Direct KEF of aggression must be present when the killing act occurs. The influence of an Indirect KEF on the killing act is not immediate and an Indirect KEF does not need to be present at the instant of killing. For example, a child who endures constant verbal denigration from parents or peers while growing up is likely to develop deep rooted hostility. In the MoK, deep rooted hostility is a Direct KEF which must be present at the moment of killing, however; the verbal denigration (the Indirect KEF) which generated that hostility need not be present at the instant of killing. Logic would dictate that because Direct KEFs have an immediate influence, they are more important than Indirect KEFs to the killing act. However, this is not the case as Direct KEFs cannot exist without the Indirect KEFs that generate their presence. Even more so, Indirect KEFs generate the degree of influence that a Direct KEF will have on a killer’s behaviour.

Beginning with the first integer, Demands of Authority/Group Absolution, the MoK is set out in detail in the following discussion and illustrated with tables that specifically identify which KEFs in the model are direct and which are indirect.

3.1.1. Integer 1: Demands of Authority and/or Group Absolution

Integer 1 in the MoK, Demands of Authority and/or Group Absolution, is made up of two sub-clusters of KEFs. The KEFs in the first sub-cluster, Demands of Authority, arise when a high ranking officer gives an order to kill. Obeying the order of an officer is considered imperative in American military culture (Lankford, 2009, p.19) and new recruits are conditioned to accept that obedience is crucial for success against the enemy (Lankford, 2009, p.20) no matter how repugnant a soldier may find an order to be (Lankford, 2009, p.19). Thus, it seems logical that such psychological pressure would sufficiently motivate a soldier to fire his weapon, but this is not the case. If a soldier is to obey an order to kill, the order must be made forcefully; the soldier must respect the officer

who made the order; and the soldier must regard the officer and the order to kill as legitimate. Furthermore, the soldier must be within eyesight of the officer on the battlefield (Grossman, 1996; 2009). If a soldier lacks respect for the officer giving the order or is out of sight of the officer on the battlefield, the psychological pressure to kill will be lessened thereby lessening the likelihood that the soldier will kill. Within the MoK, all of these contingencies constitute Indirect KEFs and the order to kill is a Direct KEF. These designations are presented below in Table 3.

Table 3. Demand of Authority Kill Enabling Factors

Direct Kill Enabling Factor	Indirect Kill Enabling Factor
Order to Kill	<ol style="list-style-type: none"> 1. Respect for superior ranking officer 2. Views superior officer as legitimate 3. Views order to kill as legitimate 4. Command to kill is forceful 5. Officer is present on battlefield 6. Soldier is within eye sight of officer

The KEFs contained in the Group Absolution sub-cluster relate to a soldier's relationship with his unit comrades. American military training techniques assume that "soldiers are less likely to abandon their colleagues or resist following orders if they care about their peers on a personal level" (Lankford, 2009, p.19). They also assume that battlefield operations will be enhanced when a group of soldiers coordinate closely and work well together (Lankford, 2009). As a result, during training recruits participate in bonding rituals aimed to build solidarity and bolster unit camaraderie. However, according to Grossman (1996; 2009), peer solidarity is not enough to incite a soldier to kill. The soldier's unit must have received orders to kill; everyone in the unit must agree with the order; and the soldier must be within eyesight of his unit comrades on the battlefield. The presence of all of these factors will enable a soldier to pass responsibility for his actions onto his comrades and avoid taking personal responsibility for any killings he perpetrates (Grossman, 1996; Grossman, 2009). In this sub-cluster, group absolution for killing another human constitutes the Direct KEF and the factors that generate this sense of personal pardon constitute the Indirect KEFs. They are set out below in Table 4.

Table 4. Group Absolution Kill Enabling Factors

Direct Kill Enabling Factor	Indirect Kill Enabling Factor
<p>Group Absolution for Killing</p>	<ol style="list-style-type: none"> 1. Unit has authority to act 2. Everyone in unit agrees with the killing 3. Close identification with comrades 4. Being within eyesight of comrades on battlefield 5. Being within eye sight of more than one comrade on the battlefield

The presence of the ‘and/or’ conjunctions between Demands of Authority and Group Absolution in Integer 1 means that if one Indirect KEF is missing from one of the two sub-groups, a kill may still occur if all of the Indirect KEFs are present for the other subgroup. However, if one or more Indirect KEFs is missing from both sub-groups, a kill will not occur (Grossman, 1996; Grossman, 2009). Integer 1 is the only integer in the MoK where the ‘and/or’ proposition is present.

3.1.2. Integer 2: Predisposition of Killer

Integer 2 in the MoK, Predisposition of Killer, focuses on the influence of disposition on the killing act. American military training methods work not only to teach recruits to fight but also to instill in them that specific predisposition that the American military believes is necessary for committing repeated acts of intra-species murder: “Killing Capacity”. Killing Capacity has four specific features: desensitization to violence, desensitization to the act of killing, aggression and hostility. Thus, during basic training new recruits endure training and conditioning which makes the killing act reflexive and they undergo an alteration of their temperament to ensure they are capable of committing acts of destructive aggression without experiencing any psychological fallout (Grossman, 1996; 2009).

To the American military, ‘desensitization to violence’ means new recruits are desensitized to the noise and chaos of battle (Grossman, 1996; Grossman, 2009). During training new recruits are made to crawl on their bellies along the ground while guns and artillery are fired close over their heads. Desensitization to the act of killing is

accomplished by having new recruits repeatedly shoot at human shaped targets which drop down the same way humans do when killed and making recruits repeatedly stab human shaped dummies with bayonets (Lankford, 2009; Watson, 1987; Grossman, 1996; Grossman, 2009). Such training methods rely upon what Lankford (2009) refers to as the “Law of Diminishing Returns” which he summarizes as follows:

“the first time recruits use violence, they are likely to feel the most guilt and psychological angst . . . each subsequent time they attack, torture or kill, they feel less remorse and find it easier to proceed” (Lankford, 2009, p.19).

Another such American military training method involves dulling recruits to the suffering of others by repeatedly showing them movies containing graphic scenes of violence and victim suffering (Grossman, 1996; 2009). In its most extreme form, this method of desensitization has recruits for commando squads being made to watch and re-watch graphic depictions of brutality and killing while their heads are clamped still and their eyes are pried open (Watson, 1978, p.248).

The alteration of temperament is central to instilling Killing Capacity in new recruits as it aims to wipe out recruits’ pre-existing disposition and replace it with hostility and aggression (Grossman, 1996; Grossman, 2009). Hostility and aggression are so strongly endorsed and glorified by the American military (Lankford, 2009, p.22; Grossman, 1996) that battle hardened veterans who personify and role model aggression are used to lead recruits during basic training (Watson, 1978, p. 250) and positive reinforcement is used to promote aggressive behavior. Recruits are rewarded for aggressive behaviour via medals for demonstrating exceptional combat performance or superior marksmanship (Grossman, 1996; Grossman, 2009).

Hostility is generated in new recruits via demoralization and denigration. The same battle hardened veterans that role model aggression also bully and humiliate recruits in front of each other (Bourke, 1999, pp.88-89; Grossman, 1996; Grossman, 2009). Such damage to self esteem is compounded by removing all sense of the personal identity new recruits arrive at basic training with; their heads are shaved and their names replaced with identification numbers (Bourke, 1999; Watson, 1978). Table 5

below lists all the KEFs contained in Integer 2 and demarcates them according to their direct and indirect classification.

Table 5. Predisposition of Killer Enabling Factors

Direct Kill Enabling Factor	Indirect Kill Enabling Factor
Desensitization to Violence	<ol style="list-style-type: none"> 1. crawl on stomach along ground while guns & artillery fired overhead 2. witness violence against others
Desensitization to Act of Killing	<ol style="list-style-type: none"> 1. shoot at human shaped targets 2. impale human shaped dummies
Aggression	<ol style="list-style-type: none"> 1. indoctrinate into culture of violence 2. battle hardened veterans personify and role model aggression 3. positive reinforcement for aggressive behaviour 4. instill deep hostility
Hostility	<ol style="list-style-type: none"> 1. role models humiliate and bully new recruits 2. shave heads to remove individuality 3. replace names with numbers

It bears noting that since World War II speculation has repeatedly surfaced within military circles about the existence of a sub-population of recruits born ready for killing. Such notions first appeared in 1946 when Swank and Marchand (as cited by Grossman, 1996 and Grossman, 2009) estimated that approximately 2% of American soldiers fighting in World War II were not only predisposed to aggressive behaviour, they did not exhibit any resistance to killing. In 1947, the U.S. Navy reported estimates that 1% of its fighter pilots were responsible for shooting down 40% of all the enemy planes downed during World War II (Watson, 1971). In 1971, after two years of interviewing American soldiers who committed acts of atrocity upon unarmed Vietnamese citizens and soldiers who witnessed such acts, American military psychiatrist W. B. Gault concluded that there are men who arrive in the military more “psychologically ready” to be violent. He stated that (1971, p.454) the soldiers who committed the atrocities arrived at basic

training “more psychologically ready to commit acts of gratuitous violence”. He described them as men of:

. . . blunted sensibilities and ready violence, unburdened by empathy or compassion . . . seeing others merely as objects; of restless, aggressively stimulus seeking disposition; . . . enthusiastic advocates of wanton destruction. (1971, p. 454).

By the 1970’s, the U.S. Navy began screening recruits in search of persons believed to be ‘better suited to killing’. It actively sought out passive-aggressive, well disciplined men who rarely appeared nervous and were prone to violent outbursts where they could kill without remorse (Watson, 1978, p. 248).

In 2004, Dyer (p. 42) argued that there are ‘natural soldiers’ who, when placed in the right moral environment, are not reluctant to kill when aroused by the commotion of battle. Lankford (2009, p.18) reports that modern military bodies worldwide prefer to recruit men with malleable personalities who strongly respect authority and are inclined to act obediently. Even Grossman (1996; 2009) acknowledges that there is a particular temperament preferred by the American military which is comprised of lack sympathy and no appreciation for the pain and suffering of others. However, he points out that the American military avoids recruiting psychopaths because “by their very nature, [they tend to] rebel against authority” (1996, pp. 181-182; 2009, p. 182). Ultimately, Grossman argues that there are no natural born soldiers, but instead, there is a sub-population of persons who arrive at basic training with a pre-existing “capacity for . . . level headed participation in combat . . .” (Grossman, 1996, p. 181; 2009, p.181).

3.1.3. Integer 3: Total Distance from the Victim

The Kill Enabling Factors in Integer 3 of the MoK, Total Distance from Victim, constitute what Grossman refers to as ‘buffers’. Buffers prevent a soldier from experiencing any psychological or emotional distress when he kills. Should a soldier fire his gun at an enemy soldier and then hears cries of pain or see his victim’s face contorted with suffering, he will experience anxiety and be less likely to kill again (Grossman, 1996; 2009). To avoid this, American military training attempts to create

distance between soldiers and the enemy on three levels: mechanical, physical and emotional.

“Mechanical Distance” refers to the psychological cushion created by the use of weapons which ease the killing act. In modern warfare, weapons such as rapid shot firearms fire off bullets so quickly and kill so efficiently with the slightest touch of a trigger, a soldier has no time to think about the consequences of his actions before he shoots (Grossman, 1996; Grossman, 2009). “Physical Distance” refers to the spatial distance between a soldier and the enemy; the greater the distance, the less likely a soldier is to see or hear pain and suffering. Modern military armaments generate significant distance between a soldier and the enemy. Long range missiles facilitate killing across such vast expanses human targets are reduced to compass coordinates (Grossman, 1996). Sniper rifles that can kill from hundreds of meters away transform the enemy into obscure figures behind scope hairs (Watson, 1978). In both instances, the risk of emotional fallout from the act of killing is virtually nullified.

“Emotional Distance” facilitates a soldier’s killing the enemy by preventing him from experiencing any anxiety during the killing act. This is especially important during hand to hand combat when a soldier will see and hear his enemy’s suffering. According to Fromm (as cited by Grossmann (1996, p. 160; 2009, p. 160), acts of destructive aggression usually occur when the perpetrator is in a state of complete emotional withdrawal. Emotional Distance facilitates the attainment of such a state by preventing a soldier from experiencing any emotional or psychological connection with the target of his aggression during the killing act. Consequently, American military training includes cognitive restructuring in order to inculcate emotional distance in new recruits (Grossman, 1996; Grossman, 2009). Inculcating emotional distance is accomplished on three levels: cultural, moral and social.

“Cultural Distance” is generated by dehumanizing the enemy through the use of propaganda. New recruits are shown movies that ridicule the enemy’s obvious differences such as skin colour, facial features, politics, economy, religious beliefs and rituals (Watson, 1978, p.38; Grossman, 1996; Grossman, 2009). The same battle hardened veterans that train new recruits also role model denigrating attitudes toward

the enemy by spouting racist remarks and dehumanizing nick names (Watson, 1978, p.250).

Propaganda is also used to instill 'Moral Distance' in new recruits by arousing a sense of righteous indignation (Grossman, 1996; Grossman, 2009) and a belief that Americans are morally superior. References to a higher authority such as God are commonly used (Grossman, 1996, p.164; Grossman, 2009, pp.164-165). A belief in one's moral superiority means accepting the moral inferiority of the enemy and, by implication, this dictates the necessity of retribution against the enemy for its moral transgressions (Grossman, 1996, p. 164; Grossman, 2009, p. 164; Baumeister, 1999, p.68). Baumeister (1999) identifies the historical role of creating Moral Distance during times of war and points out that opposing sides in a war have gone to considerable lengths to portray each other as evil. New recruits are told that they are in danger (Lankford, 2009, p. 19) and that the enemy is "*part of a dangerously powerful movement that aims to destroy*" (Baumeister, 1999, p.183). Such propaganda aims to incite self defense instincts and provoke aggression (Lankford, 2009) and, thus, new recruits are repeatedly presented with images of the enemy in a way which:

“. . . create[s] an obligation and an incentive to fight. If the enemy is clearly evil, then it is right to hate him and it is appropriate to do one's part to . . . destroy him" (Baumeister, 1999, p. 84).

'Social Distance' is generated by segregating recruits from the outside world and imposing interpersonal isolation (Grossman, 1996). Recruits are trained in a facility physically removed from the outside world in order to assimilate them into the military culture and negate outside influences (Lankford, 2009, p. 25). Interpersonal isolation is imposed by controlling who recruits talk to and punishing them for unauthorized interactions (Lankford, 2009). Such isolation enables manipulation of recruits' pre-existing beliefs about social class and instills in them an 'us' and 'them' mentality, which, in turn, will keep lower ranked soldiers from questioning orders handed down by higher ranked officers (Lankford, 2009, p.25) and free up higher ranked officers to hand down battle orders that they know will result in the deaths of the lower ranked soldiers (Lankford, 2009, p.26). The direct and indirect Kill Enabling Factors contained in Integer 3, Total Distance from Victim are presented below in Table 6.

Table 6. Total Distance from Victim

Direct Kill Enabling Factor	Indirect Kill Enabling Factor
Mechanical Distance	<ol style="list-style-type: none"> 1. artillery that transforms enemy into compass points 2. sniper rifles that transform enemy into obscure figures behind scope cross hairs 3. rapid shot firearms that kill quickly and efficiently and negate consideration of actions and witnessing of suffering
Physical Distance	<ol style="list-style-type: none"> 1. artillery that increases killing range to kilometers 2. sniper rifles that increase killing range to numerous meters
Emotional Distance	<p>Cultural Distance</p> <ol style="list-style-type: none"> 1. dehumanize enemy with propaganda 2. role model racists remarks and dehumanizing nicknames
	<p>Moral Distance</p> <ol style="list-style-type: none"> 1. instill sense of moral superiority 2. wipe out awareness of enemy as human 3. arouse righteous indignation 4. make proclamations of superiority that invoke higher authority 5. instill belief that moral superiority requires retribution for moral transgressions
	<p>Social Distance</p> <ol style="list-style-type: none"> 1. isolate from influence of societal norms 2. control interpersonal communication 3. punish unauthorized interaction 4. segregate higher military ranks from lower ranks 5. mandatory deference to higher ranks by lower ranks 6. instill 'us' and 'them' attitude

3.1.4. Integer 4: Target Attractiveness of the Victim

The KEFs in the fourth integer, Target Attractiveness of Victim, revolve around a soldier's thought processes in the minutes immediately preceding the killing act.

Grossman (1996, p. 171; 2009, pg. 171) characterizes a soldier in these moments as very much “like a killer in a classical murder mystery, assessing his ‘means, motive and opportunity’”. If a soldier believes he has the appropriate ‘means and opportunity’, he is more likely to kill. Grossman’s (1996; 2009) phrase ‘means and opportunity’ refers to a soldier’s assessment of his tactical and technological advantage³. If a soldier believes he has sufficient tactical and technical advantage over his target, he will assume that he has the ‘means and opportunity’ to kill. Whether or not he does kill however, will depend upon his assessment of being able to kill without being killed himself; if he sees no risk to himself, he is more likely to kill (Grossman, 1996, p.172; Grossman, 2009, p. 172). Table 7 below sets out the Kill Enabling Factors encompassed in the fourth integer.

Table 7. Target Attractiveness of Victim

Direct Kill Enabling Factor	Indirect Kill Enabling Factor
Means and Opportunity	<ol style="list-style-type: none"> 1. perceives of self as having tactical advantage 2. perceives of self as having technological advantage 3. perceives being able to kill without being killed
Suitability of Victim	<ol style="list-style-type: none"> 1. regards killing enemy as battle mandate 2. perceives self as having more to gain by killing than victim has to lose

The attractiveness of a target will also be influenced by a soldier’s motive for killing. ‘Motive’ in this sense refers to the relevance of a target to a soldier and the potential psychological payoff in killing (Grossman, 1996, p.173; Grossman, 2009, p. 173). If a soldier believes his battle mandate is to kill the enemy and he believes he has more to gain by killing an enemy soldier than the enemy soldier has to lose by being killed, the soldier is more likely to kill (Grossman, 1996, p.173; Grossman, 2009, p.173)⁴.

³ “Technological Advantage” refers to the superiority of the soldier’s weapon over the enemy’s weapon.

⁴ Gault (1971) reports a similar benefit-cost assessment occurred with soldiers who committed atrocities during the Viet Nam War stating that these soldiers believed it did not matter if they killed Vietnamese civilian because the Vietnamese are apathetic towards death.

Similarly, if a potential target represents a very high payoff for the soldier and greater loss for the enemy, then he will also be more inclined to kill. An example of such a scenario would be shooting high ranking enemy officers (Grossman, 2009, p. 174).

3.2. Summarizing Grossman

The primary theme running through Grossman's model of killing is an assumption about the power of contextual forces to influence human behavior. His hypothesis that a man will act contrary to his innate resistance to intra-species murder only after undergoing a cumulative process made up of specific psychosocial experiences makes two assumptions about the potential influence of contextual forces on human behavior:

1. contextual forces are capable of compelling a person to act against a pre-existing dispositional trait (even one as deeply imbedded as an innate resistance to intra-species murder); and
2. contextual forces are capable of re-configuring an established predisposition

These assumptions are rooted in over sixty years of American military investigation and, have long been acknowledged by military theorists as maxims for generating aggressive behavior on the battlefield (Lankford, 2009). As Lankford (2009, p. 17) notes, "in the right (or wrong) context, many otherwise ordinary people can be compelled to act with brutal aggression, regardless of their personal history or make up".

The MoK maps out the process by which contextual forces will transform military recruits from non-violent adults into battlefield killers. In the MoK, the transformation process is not immediate nor the result of any one specific factor. Rather, it is a cumulative process made up of specific psychosocial experiences which culminate with the occurrence of complete emotional detachment from the intended target during each killing act. As noted, Emotional Detachment from the victim during the killing act is critical because it buffers a soldier from feeling any internal distress over his actions, and makes it easier for him to kill again. Every kill carried out by a soldier signifies the successful occurrence of this transformation process which means that the following has occurred for the soldier:

1. he developed a predisposition wherein he is desensitized to violence, he is desensitized to the act of killing, he is aggressive and he is hostile towards a perceived enemy;
2. he developed sufficient emotional distance from his intended victim;
3. he either came to perceive that he not responsible for his intended actions, or, he came to perceive that his intended actions are justified; and
4. he assessed himself as having a tactical advantage over his intended victim and he perceived his intended victim's losses as being outweighed by his anticipated benefits.

The development model of serial killers constructed from Grossman's MoK for the research reported here adopted the MoK's assumption about the power of contextual forces over human behaviour and asserts that serial killers are formed by contextual forces within their developmental environments.

To summate, the new model enjoys a number of benefits not enjoyed by the Emotional Release, Self-Selection and Psychopathy models critiqued in the Literature Review; it does not get mired down in erroneous notions about 'evil' and persons who commit acts of 'evil', it draws upon that body of information about serial killers acquired to date, and, it maps out the etiology of serial murder via examination of multiple variables simultaneously rather than assuming one universal variable can explain all occurrences of serial murder. Finally, because the new model is developmental one, it sets out measurable dispositional traits and developmental road signs which lends itself to empirical evaluation.

4. New Model Construction

4.1. The Relevance of Grossman's model to Serial Murder

Although soldiers kill in a military context while serial killers kill in a civilian context, and, despite the fact that soldiers are formed in a tightly controlled environment with pre-fabricated psychosocial experiences while serial killers develop in uncontrolled environments, soldiers and serial killers share one critical feature; they perpetrate the killing act when so motivated. Thus, where Grossman's MoK details a military recruit's progression into battlefield killer, it may provide clues about the development of serial killers. As well, the MoK has a number of features that make it ideal for investigating serial murder. First, it picks up where Hickey's (2005) conclusion (serial murder results from a combination of predisposition and facilitating factors) leaves off by assuming that repeated acts of killing require a specific predisposition and the presence of specific facilitating factors. Next, it articulates the nature of this predisposition and it provides a formula for finding factors that facilitate the killing act.

With these points in mind, construction of a developmental model of serial murder proceeded, first, with the adoption of the relevant assumptions contained in Grossman's model; then, by subsuming those integers of the MoK directly relevant to the development of a child/adolescent; and finally, by adding a new component to the developmental equation.

4.1.1. Step 1 – Adopting Assumptions

The derived model echoes both of Grossman's assumptions about the power of contextual forces over human behavior and surmises that if contextual forces can not only compel a person to act contrary to a deeply embedded dispositional trait but also re-configure an established predisposition, they must surely have the power to influence a child's psychosocial development in such a way so as to produce an adult capable of

perpetrating repeated acts of murder. Moreover, the derived model assumes that the progression from child to serial killer is comprised of specific psychosocial experiences which culminate in the occurrence of complete emotional detachment during the killing act. Thus, every kill committed by a serial killer indicates that:

1. he has developed a predisposition similar to that of a fully trained American soldier (i.e. desensitized to violence, desensitized to the act of killing, aggressive and hostile); and
2. he has developed emotional distance from his victims.

The derived model, however, does not assume that every kill committed by a serial killer indicates that the serial killer perceives himself as not responsible for his actions or his actions are justified and it does not assume that he felt he had the tactical advantage over his victim. Based upon the analysis of the literature, the new model is intended to be a developmental model of serial killers. Consequently, it was felt that issues of social approval of and/or social pressure to commit acts of destructive violence and assessment of means and opportunity are applicable specifically to the moments immediately leading up to and during the killing act and not to the development of serial killers. Furthermore, in keeping with the developmental focus, it was decided that two of Grossman's Direct KEFs in Integer III of the MoK (Total Distance from Victim), Physical Distance and Mechanical Distance, also apply more to the killing act than the developmental context and these were omitted from the model.

As construction of the new model proceeded, it became apparent that the omission of Integers 1 and 4 and the Direct KEFs of Physical Distance and Mechanical Distance, left a gap in the sequence of psychosocial experiences that lead up to the state of emotional detachment present when the killing act occurs. To fill in the gap, the knowledge that most serial killers endure severe personal abuse while growing up was reflected upon and it was posited that the lingering effects of such abuse may facilitate emotional detachment via a trauma response involving emotional shut down. The *Diagnostic and Statistical Manual of Mental Disorders, DSM-IV-TR* (the "DSM IV") was consulted and two potential abuse responses were found. The first was Acute Stress Disorder; it has a central element of emotional numbing. Emotional numbing is a condition whereby the sufferer becomes emotionally detached from the people around him and his surrounding environment (Saigh and Bremner, 1999, p. 5). Acute Stress

Disorder onset will occur within days of experiencing a traumatic event but its symptoms last no longer than four weeks (Fullerton and Ursano, 1997) and, thus, would not feed a state of complete emotional withdrawal years later. The second trauma response found in the DSM IV was Post Traumatic Stress Disorder (“PTSD”). It too has a central element of emotional numbing and its onset can occur immediately after a traumatic experience or anywhere up to a year later (Saigh and Bremner, 1999, p. 311; American Psychiatric Association, 2000). If left untreated, PTSD symptoms can become entrenched (Hamblen, 1998; Kaplan, 2002) and where this occurs, emotional numbing can remain for years after a traumatic event and even become entrenched (Hamblen, 1998). On this basis, it was decided that the new model would also contain a third assumption, namely, that every act of serial murder indicates that the serial killer has developed chronic emotional numbing.

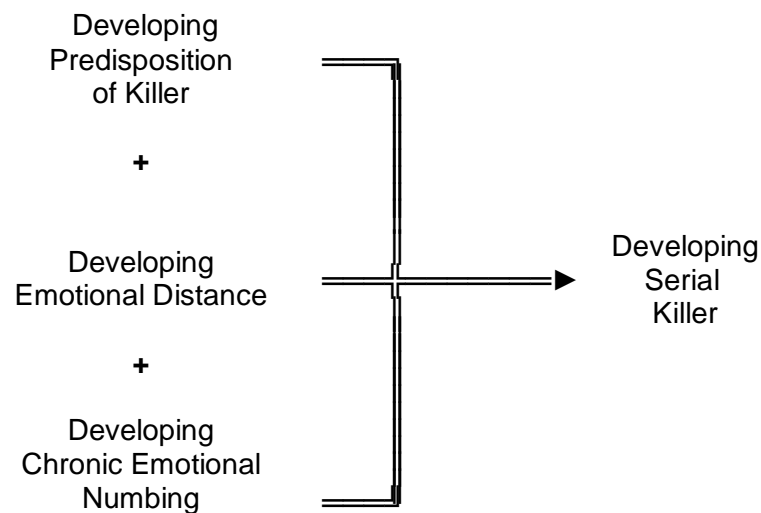
With these base assumptions set out, the next step in new model construction involved finalizing its format.

4.1.2. Step 2 – Fashioning a New Formula

Given that the new model follows Grossman’s example and assumes the development of serial killers is made up of a cumulative process comprised of psychosocial experiences, the quasi-math equation format of the MoK was adopted in the new model. However, the closed ended, linear layout of the MoK was not used in the new model. This is because, for Grossman, all KEFs which facilitate battlefield killing have been established and their order of importance has been determined. For American military training techniques, killing context is the primary consideration and thus, the MoK’s first and fourth integers (Demands of Authority/Group Absolution and Target Attractiveness of Victim) surround the second and third integers (Predisposition of Killer and Total Distance from Victim) in the equation. In the new model, developmental context and developmental experiences are the focal points, and, given that past research has not been able to uncover all etiological variables underlying serial murder and, given that the formative experiences which create serial killers likely intersect during childhood and adolescence, the new model was set up as a non-linear quasi-math equation.

Furthermore, because the new model seeks to explain “what *is* happening” as opposed to “what happened”, its integers were framed in the present tense. As a result, the three integers of new equation were labelled “Developing Predisposition of Killer”, “Developing Emotional Distance” and “Developing Chronic Emotional Numbing” thereby making the outcome of the equation not an act of killing act but rather an individual referred to as the “Developing Serial Killer”. The model itself was called the “Model of Developing Serial Killers” (hereinafter referred to as the MDSK) and its base form is presented below in Table 8.

Table 8. Model of Developing Serial Killer



4.1.3. Step 3 – Setting Out the Kill Enabling Factors

Once the model’s format was determined, the last step in model construction involved fleshing out the Direct and Indirect KEFs in each integer. The Direct KEFs in Integer I, Developing Predisposition of Killer, and Integer II, Developing Emotional Distance, were taken directly from their counterparts in the MoK. The Indirect KEFs in Integers I and II of the new model, on the other hand, were formulated by deducing what developmental experiences would potentially generate the adopted Direct KEFs. The Indirect KEFs in Integer III, Developing Chronic Emotional Numbing, were drawn from the DSM IV. The following discussion details the fleshing out of the Direct Kefs and the Indirect KEFs of the new model.

4.1.3.1. Integer 1 - Developing Predisposition of Killer

Because the MDSK assumes serial killers have a predisposition similar to that of a fully trained American soldier the Indirect KEFs chosen for Integer I of the MDSK were selected with the expectation that they generate the four components of that predisposition (i.e. desensitized to violence, desensitized to the act of killing and aggressive and hostile). The obvious choice of an Indirect KEF that would desensitize a developing serial killer to violence was enrollment in a military organization prior to the age of nineteen. The next Indirect KEFs assumed to desensitize a child/adolescent to violence were: witnessing physical and verbal altercations between primary adults, witnessing physical violence by one primary adult against the other, and having a primary adult who served in the military (on the assumption that the primary adult's own desensitization to violence would influence his parenting style).

Desensitization to the act of killing was presumed to occur by way of witnessing the killing of animals, killing animals and committing an act of murder. For the development of hostility, it was reasoned that where military recruits are denigrated and demoralized by the officers who train them, primary adults and peers would constitute high status individuals in a child/adolescent's environment whose denigrating comments or actions would have a similar effect. Finally, where American military training has officers who role modeling aggression, it was reasoned that primary adults and peers would act as sources of such role modeling. Table 9 below lists the Direct KEFs and Indirect KEFs contained in the first integer of the MDSK, Developing Predisposition of Killer.

Table 9. Developing Predisposition of Killer

Direct Kill Enabling Factor	Indirect Kill Enabling Factor
Desensitization to Violence	<ol style="list-style-type: none"> 1. primary adult served in military 2. subject served in military 3. severe verbal abuse and/or physical fights between primary adults 4. male primary adult physically violent with female primary adult 5. female primary adult physically violent with male primary adult
Desensitization to Act of Killing	<ol style="list-style-type: none"> 1. witness killing of animals 2. commit killing of animals 3. commit murder
Hostility	<ol style="list-style-type: none"> 1. verbal denigration from male primary adult 2. verbal denigration from female primary adult 3. verbal denigration from peers
Aggression	<ol style="list-style-type: none"> 1. physical violence/violent discipline from male primary adult 2. physical violence/violent discipline from female primary adult 3. physical violence from peers

4.1.3.2. Integer 2 – Developing Emotional Distance

When deducing what Indirect KEFs would generate Developing Emotional Distance, the three levels upon which American military training works to generate Emotional Distance in its recruits: social, cultural and Moral Distance, were adopted. Thus, where the American military inculcates Social Distance by isolating recruits physically, socially and interpersonally, it was surmised that Social Distance for a growing child/adolescent would be generated by isolation within the family, isolation from peers and isolation of the family within and from the surrounding community. Whereas the American military works to generate Cultural Distance by instilling denigrating attitudes towards the enemy in recruits, it was reasoned that Cultural Distance for a

growing child/adolescent would be generated by the presence of racist, sexist or bigoted attitudes in the family home. Moral Distance for a growing child/adolescent was assumed to be generated by growing up in an environment where moral and legal transgressions occurred; this included adultery by a primary adult, criminal activity by a household member and criminal acts by the child/adolescent himself.

Table 10 below sets out the Direct and Indirect Kill Enabling Factors encompassed in Integer 2, Developing Emotional Distance.

Table 10. Developing Emotional Distance

Direct Kill Enabling Factor	Indirect Kill Enabling Factor
Emotional Distance	Social Distance <ol style="list-style-type: none"> 1. family isolated within community 2. singled out/isolated within family 3. isolation from peers
	Cultural Distance <ol style="list-style-type: none"> 1. racism, sexism, bigotry role modeled in family home
	Moral Distance <ol style="list-style-type: none"> 1. male primary adult commit adultery 2. female primary adult commit adultery 3. criminal activity by members of household 4. criminal acts by study subject

4.1.3.3. Integer 3 - Developing Chronic Emotional Numbing

Fleshing out the Indirect KEFs in Integer 3 was accomplished by consulting the DSM IV which contains six criteria for diagnosing PTSD. Each criterion represents a classification of sub-criteria. The first criterion, Criteria A, requires the occurrence of a “Trauma Event”. What constitutes a Trauma Event is as set out below, namely:

personally witnessing, experiencing or confronting an event which threatens death or severe injury to self or an immediate other, which is

accompanied by an intense response of fear and helplessness (American Psychiatric Association, 2000, p. 467)

There are two components to Criteria A: personally witnessing, experiencing or confronting an event that threatens death or severe injury to the self; and personally witnessing, experiencing or confronting an event that threatens death or severe injury to an immediate other. Both were incorporated into Integer 3 of the MDSK as Indirect KEFs.

Table 11 below sets out the Direct and Indirect KEFs contained in Integer 3.

Table 11. Developing Chronic Emotional Numbing

Direct Kill Enabling Factor	Indirect Kill Enabling Factor
Chronic Emotional Numbing	<ol style="list-style-type: none"> 1. personally witnessing, experiencing or confronting an event which threatens death or severe injury to self 2. personally witnessing, experiencing or confronting an event which threatens death or severe injury to an immediate other

The five remaining PTSD criteria in the DSM IV, B through F, are not triggers of the disorder but rather are symptoms that must be present before a diagnosis of PTSD can be made. They signal the disorder's onset. It was decided that as significant time and effort was already being expended collecting biographical data and investigating the presence of the numerous Direct and Indirect KEFs contained in the MDSK, it would be beneficial to invest the extra time and effort to collect data needed to investigate the presence of PTSD symptoms so as to assess the validity of the MDSK's assuming that serial killers develop chronic emotional numbing during childhood and/or adolescence.

The DSM IV sets out its required PTSD symptoms alpha numerically across a complex four axis diagnostic grid. This grid contains PTSD symptoms specific to adults and adolescents, symptoms specific to children and symptoms specific to children and adolescents. The DSM IV's demarcation of PTSD symptoms across the four axis grid proved to be too intricate to break down and list on the data coding sheet and, as a

result, child and adolescent PTSD symptoms as reported by Hamblen (1998) and Kaplan (2002) were included on the data coding sheet. They are as listed below:

1. repeated themes in behaviour;
2. re-enactment of Trauma Event in play, drawings or verbalizations (compulsively repeating some aspect of a Trauma Event);
3. avoiding all stimuli related to a Trauma Event;
4. preoccupation with words/symbols related to a Trauma Event;
5. preoccupation with words/symbols though not related to a Trauma Event;
6. dissociation, constant daydreaming or fantasizing;
7. generalized fear, separation anxiety;
8. hostility;
9. aggression;
10. omen formation;
11. feelings of isolation and stigma;
12. physical violence against peers;
13. ongoing increased arousal and exaggerated startle response;
14. loss of achieved developmental task;
15. impulsive behaviour;
16. alcohol and/or drug use; and
17. significant impairment in school or social functioning.

Six of the above listed PTSD symptoms are specific to children. They are:

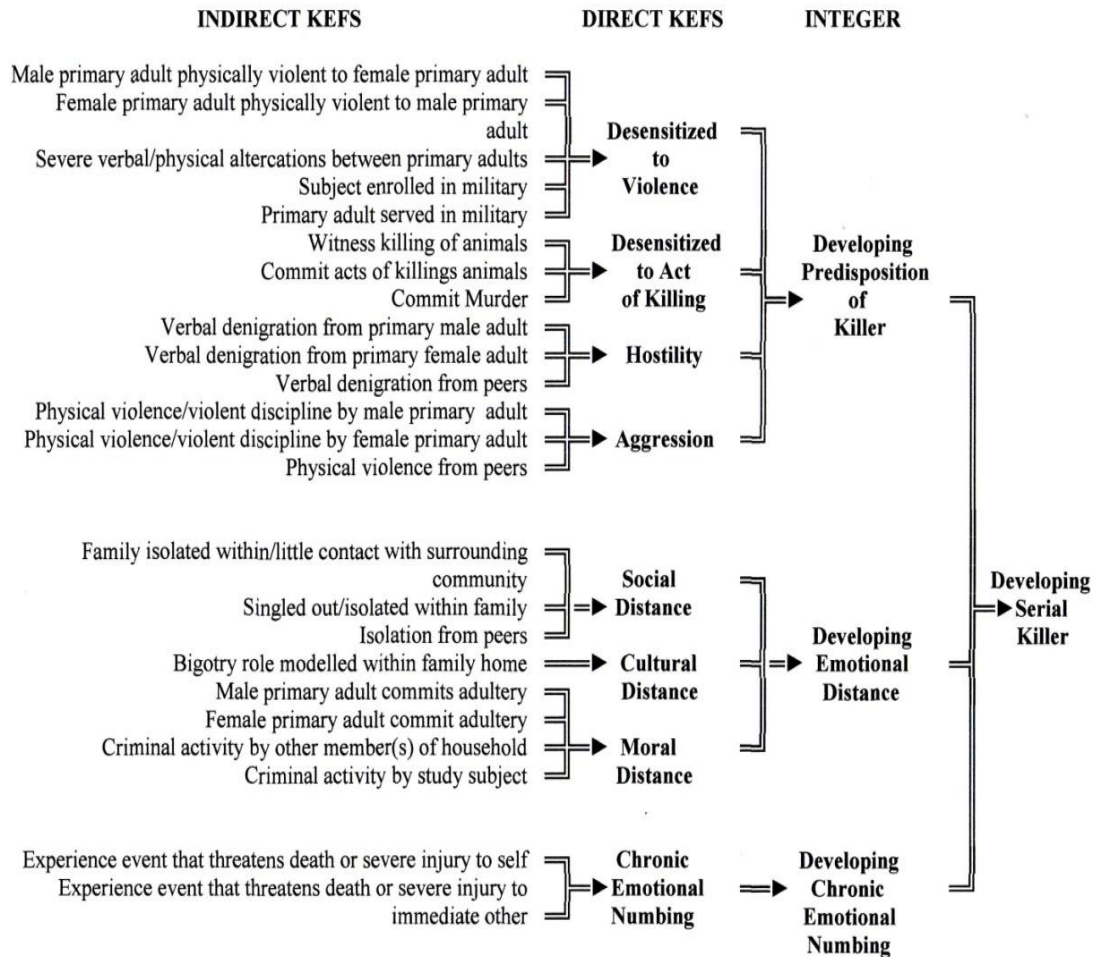
1. repeated themes in behavior;
2. preoccupation with words or symbols related to a Trauma Event;
3. preoccupation with words or symbols though not related to a Trauma Event;
4. generalized fear;
5. stranger/separation anxiety; and
6. loss of achieved developmental task.

The PTSD symptoms of drug abuse and alcohol are reported by Hamblen (1998) and (Kaplan, 2002) as being symptoms displayed by adolescents.

4.1.4. Model Completed

Once all of the Direct and Indirect KEFs in the MDSK were determined, the new model was completed. In all, the MDSK contains three integers, six Direct KEFs and 24 Indirect KEFs. Its final form is presented below in Table 12.

Table 12. Model of Developing Serial Killer



4.1.5. Anticipated Strengths of the MDSK

Although the MDSK focuses on interpersonal killing while Grossman's MoK focuses on intergroup killing, it is anticipated the MDSK offers a number of benefits not enjoyed by the Emotional Release, Self-Selection and Psychopathy models critiqued in the Literature Review. First, because it is subsumed from a military model of killing developed upon thirty years of direct observation of American military training methods, the MDSK does not get mired down in erroneous notions about 'evil' and persons who commit acts of 'evil'. Second, it draws upon the body of information about serial killers acquired over the course of twenty-five years of the empirical investigation which began with the FBI's research in 1985. Third, the MDSK maps out the etiology of serial murder via examination of multiple variables simultaneously rather than assuming one universal variable can explain all occurrences of serial murder. Finally, because the MDSK is a developmental model of serial murder which sets out measurable dispositional traits and developmental road signs, it lends itself to empirical evaluation.

5. Methodology

Because the MDSK's focus is the development of serial killers, it was decided that biographical information covering the childhood/adolescent years of a sample of known serial killers would be collected in order to investigate its veracity. The following discussion outlines the hypothesis used to investigate the MDSK, construction of the data coding sheet, operationalization of the Direct and Indirect KEFs on the data coding sheet, data collection, the study sample obtained and inter-rater reliability examination. The primary tool for analysis was descriptive statistics, given that the sample size and the nature of the data itself, did not allow for the application of advanced statistical techniques.

5.1. Research Hypothesis

Once construction of the new model was completed, the research hypotheses presented itself in the form of three statements, namely:

1. during childhood, serial killers develop a predisposition similar to that of a fully trained American soldier;
2. concurrent with development of this predisposition, serial killers develop emotional distance; and
3. concurrent with the development of this predisposition and emotional distance, serial killers develop chronic emotional numbing.

5.2. The Data Coding Sheet

Since MDSK encompasses a broad spectrum of childhood and adolescence experiences it was anticipated that the data coding sheet would be substantial. The age of twelve was chosen as the dividing between childhood and adolescence so, from birth all the way up to and including the last day of age eleven was designated as the childhood age range. From the first day of age twelve up to and including the last day of

age eighteen was designated the adolescent age range. The symbol used to represent childhood on the data coding sheet was '<=11 yrs' and the symbol used on the data to represent adolescence was '>=12 yrs'.

In total, the MDSK contains 24 Indirect KEFs and when combined with the PTSD symptoms investigated, the total number of variables on the data coding directly relevant to the research was 43. When all of the appropriate variables on the data coding sheet were broken down according to the childhood and adolescence age ranges, the final number of variables listed on the data coding sheet was 101. A copy of the data coding sheet is presented in Appendix A.

5.3. Data Collection

. . .perpetrators of exceptional crimes are difficult to study: They are often in prison or in hiding; there are not usually enough of them to make a statistically "robust" sample; and there are numerous technical, legal and other difficulties for the researcher (Baumeister (1999, p. 39).

Once the data coding sheet was assembled, the data collection method needed to be established. As many known serial killers are either dead or in prison, data collection was expected, and proved to be, extremely difficult. Conducting-one-on-one interviews was not a realistic option given travel costs and time constraints and anonymous survey questionnaires were impossible given correctional facility policies that censure incoming and outgoing inmate mail. As a result, it was decided that biographical information would be gathered from secondary archival sources.

The secondary archival sources used in the research included biographies, autobiographies and factual accounts. Initially, television documentaries, reported decisions on Quicklaw and in law books and newspaper reports were also examined as information sources; however, these quickly proved ineffective. Although television documentaries presented a fair amount of biographical information, they did not adequately disclose their sources. Reported case law that referred psychiatric and pre-sentence reports only provided sentencing recommendations and not the information upon which the recommendations was based. Newspaper reports were not reliable due

to problems with accuracy of information. For example, Vancouver Sun and Vancouver Province articles from 1980 to 1983 that described the activities, arrest and subsequent conviction of serial killer Clifford Robert Olson made repeated mistakes with simple biographical information such as Olson's birth date.

Gathering biographical data from reliable archival sources was an extremely protracted process. Virtually every source examined gave more details about murders committed than childhood and teenage histories; it was quite evident that the identities of serial killers are bound up in their gruesome acts of violence and not in their life story. While a few sources contained chapters dedicated to biographical information, most had biographical information scattered throughout the entire work in one or two line snippets. Every source had to be read from front to back, page by page and paragraph by paragraph to ensure no biographical information was missed.

Tracking down information sources was also protracted. It was accomplished by working backwards through reference sections; once initial sources were read, their reference sections were examined in search of further information sources. For example, search of the reference list in Hickey's (2005) *Serial Killers and Their Victims*, revealed the existence of eight biographies, one documentary, ten historical accounts and one autobiography. Once these sources were obtained and read, their reference sections were examined for more information sources and so on. This process of digging backwards continued until no further sources could be found. Obtaining sources was done with the assistance of the Inter-Library Loan Departments at Simon Fraser University Library and Fraser Valley Regional Library. Books were borrowed from public and university libraries in Prince George, Edmonton, Calgary, Toronto, Ottawa, Saskatchewan, Southern California, Los Angeles, North Dakota, Texas and New Brunswick. Many books had been out of print for decades and were it not for the painstaking efforts of to track down information sources by Simon Fraser's Inter-Library Loan Department and Fraser Valley Regional Library's Inter-Library loan department, the research here would not have occurred. Data collection began in October, 2005, with review of Hickey's book and books purchased at local book stores. Data collection ended in mid-March, 2007, with the return of the final books to the Fraser Valley Regional Public Library and the Simon Fraser University Library.

To ensure information reliability, at least two reliable sources had to be obtained in order for a serial killer to be included in the study sample. All suitable sources had to have drawn their information from all or a combination of direct interviews with family, friends, police officers, teachers or the killers themselves and police, court or psychiatric files and trial transcripts. The two source rule was relaxed in only one instance where the study subject wrote an autobiography with the help of a co-author who verified information accuracy through interviews with family, childhood and school friends, teachers and police, and court, police, medical and psychiatric records. Two hundred and twenty-six sources were read in search of biographical information; when the two source and information quality rule was applied, this number was whittled down to 105 information sources.

5.4. Study Sample

The term 'serial killer' is a by-product of the label 'serial murder' which itself is an investigative marker adopted by the Federal Bureau of Investigations in the early 1980's to describe incidents where an individual or team of individuals committed a series of pre-meditated murders over an extended period of time (Castle and Hensley, 2002). Although the term is universally recognized by law enforcement and academics alike, considerable debate has mounted over what boundaries to place around the 'serial killer' label (Busch and Cavanaugh, 1986; Jenkins, 1988; Keeney and Heide, 1994). The FBI requires the commission of at least three premeditated killings by the same person or team of persons followed by a 'cooling down period' after each killing (Castle and Hensley, 2002, p.435). Some academics maintain that three kills are not necessary if the parameters of the definition encompass requirements such as lack of financial motive, no relationship between killer and victim and a period of time between each killing (Hickey, 2005). In this research, the FBI's parameters were adopted and only those persons who separately or in a team committed three or more murders with a cooling off period after each murder were included in the sample.

When the two source minimum rule was applied, an initial sample of fifty-one known serial killers was whittled down to thirty-four. These thirty-four serial killers are

listed below in Table 13. With the exception of one study subject noted earlier, each member of the final sample met the two source rule.

Table 13. Sample Members

Berkowitz, David Richard	Jespersion, Keith Hunter
Bianchi, Kenneth	Kaczynski, Theodore
Brady, Ian	Kemper, Edmund
Bundy, Theodore Robert	Lucas, Henry Lee
Harvey, Carnigan	Long, Robert Joe
Richard, Caputo	McDuff, Kenneth
Chikatilo, Andrei	Ng, Charles
Christie, John Reginald	Nilsen, Dennis
Cole, Carroll Edward	Rifkin, Joel
Dean, Corll	Shipman, Harold F.
Costanzo, Adolfo	Starkweather, Charles
Dahmer, Jeffrey	Sutcliffe, Peter
De Salvo, Albert Henry	Toole, Otis
Dodd, Westley Allan	West, Fred
Gacy, John Wayne	West, Rose
Glatman, Harvey	Wuornos, Aileen
Hindley, Myra	Young, Graham

5.5. Reliability

Given that there were so many factors to investigate and so many variables listed on the data coding sheet, strict controls were placed on data recording to ensure reliability. Unless a variable was explicitly stated in an information source, it was not recorded as being present. No room for inference was permitted. For example, Theodore Bundy's information sources reported that when he was three years old he placed knives in the bed of his aunt and told his mother they were to protect his aunt. While one can infer that he likely witnessed a violent event that made him feel his aunt needed protection, such an event was not explicitly reported and therefore was not recorded as witnessing an act of violence in the family home that threatened the safety and well being of an immediate other.

5.5.1. Examining Inter-Rater Reliability

Even with strict data recording controls in place, subjective interpretation posed a threat to the reliability of findings. To address this concern, a fourth year Honours Student was recruited to assist in conducting an inter-rater reliability examination. The fourth year Honours Student was asked to code biographical information about four known serial killers discussed in Gibson's (2006) book, *Serial murder and media circuses*. He was given a copy of the data coding sheet and during the course of a thirty minute meeting was trained to use it and notified about the strict data controls. He was then sent away with a data coding sheet and Gibson's book and asked to review and code all of the biographical information relating Jeffrey Dahmer, Ian Brady, Myra Hindly and Westley Alan Dodd. Once the student completed this task, he returned the book, data coding sheet and his recorded findings. Without reviewing the honours student's results, this researcher used the same coding sheet to review the same book and recorded her findings. The results of the two separate data coding exercises are provided below in Table 14.

Table 14. Inter-Rater Reliability Examination Results

Honours Student Results

1. Ian Brady: January 2, 1938, O, P: before birth, AH, AQ, CF, CR
2. Myra Hindley: July 23, 1942
3. Jeffrey Dahmer: May 21, 1960, T, AG, AH, AP, AQ, AW, BW, CH, CJ
4. Westley Alan Dodd: July 3, 1961, U, AH, AJ, AW, CR, CS, CU

Masters of Arts Student Results

1. Ian Brady: January 2, 1938, O, P: before birth, AH, AP, AQ, BM, BU, BZ, CF, CQ, CR
2. Myra Hindley: July 23, 1942
3. Jeffrey Dahmer: May 21, 1960, L, T, AG, AH, AP, AQ, AW, BW, CH, CJ, C
4. Westley Alan Dodd: July 3, 1961, U, AG, AH, AI, AJ, AW, BW, CA, CD, CH, CR, CS, CU

(Information Source: Gibson, D.C. (2006). *Serial murder and media circuses*.)

The inter-rater reliability examination results indicated that both the Honours Student and this researcher recorded the presence of the same variables however; this researcher recorded the presence of more variables than the Honours Student for three of the study subjects. When the results were discussed with the student, it became clear that the difference in findings resulted from this researcher having had more experience

with the data coding sheet than the student. Despite the difference in outcomes, it was felt that as this researcher was the only party reviewing sources and coding information in this research, the difference in results between the Honours Student and this researcher would not threaten the reliability of findings.

6. Findings and Discussion

The biographical data collected was examined for the prevalence of each Indirect KEF. Because the study sample consisted of only 34 subjects, it was decided by the original academic committee that in order for an Indirect KEF to remain in the MDSK its recorded prevalence had to suggest a pattern worthy of future investigation by meeting a minimum prevalence of 40% (14 sample members). This decision was made in a vacuum as the material to be examined had not yet been engaged. Table 15 below provides an overview of those Indirect KEFs which met the 40% minimum via the removal of the Indirect KEFs from the original MDSK model presented in Table 12.

In all, 12 of the 24 Indirect KEFs envisaged as generating the Direct KEFs in the MDSK did not meet the minimum threshold and had to be removed from the model. They were:

1. male primary adult physically violent with female primary adult;
2. female primary adult physically violent with male primary adult;
3. severe mutual verbal abuse and/or physical altercations between primary adults;
4. study subject enlisted in the military;
5. witnessing the killing of animals;
6. committing an act of murder during adolescence;
7. verbal denigration from female primary adult;
8. physical violence/violent discipline from female primary adult;
9. family isolated within/from surrounding community;
10. criminal activity within the female home;
11. male primary adult committed adult committed adultery; and
12. female primary adult committed adultery.

The failure of these Indirect KEFs to meet the 40% minimum told as much about the development of serial killers as those Indirect KEFS which did meet the minimum. The

examination of factors assumed to generate their presence uncovered results that contradicted two long held etiological assumptions. This is discussed below.

6.1.1. Developing Desensitization to Violence

Table 16 below sets out the percentages recorded across the five Indirect KEFs envisaged as generators of desensitization to violence. Of these factors, three involved aggression between primary adults and two involved military enrollment. None of the factors involving violence between primary adults met the 40% threshold. Only seven (20.5%) study subjects lived in homes marked by male primary adult violence against female primary adults and only two study subjects lived in homes where female primary adults were physically violent with male primary adults. Ten (29%) study subjects grew up in homes where mutual verbal and/or physical altercations between primary adults occurred⁵. These findings are inconsistent with McKenzie’s (1995) report that 15 of her 20 study subjects grew up in homes where violence was frequently observed. However, without knowing which household members were encompassed in McKenzie’s (1995) “violence in the home” category, the only way to account for the difference between McKenzie and this research is to assume that McKenzie recorded acts of violence involving any household member and not just primary adults.

Table 16. Desensitization to Violence

Indirect Kill Enabling Factor	Number #	Percentage %
Severe verbal abuse/physical altercations between primary adults	7	20.5
Male primary adult physically violent to female primary adult	7	20.5
Female primary adult physically violent to male primary adult	2	5.8
Subject in military	9	26
Primary adult in military	15	44

⁵ Primary adult violence towards siblings, inter-sibling violence and violence among peers were not examined.

Military enrollment by study subject also did not meet the 40% minimum as only nine (26%) study subjects were found to have enrolled in the military prior to adulthood; six enlisted at age eighteen, two at age seventeen, and one at age fifteen⁶. This prevalence tends to corroborate Castle and Hensley's (2002) conclusion that there is no direct correlation between serial murder and military service. Military service by a primary adult was the only Indirect KEF that met the minimum threshold as 15 (44%) study subjects had male primary adults who took part in active military service. Closer examination of the data however, indicated that 14 of these 15 study subjects had fathers who fought in World War II. To ensure this research's prevalence is not a statistical blip related to the occurrence of World War II⁷, further research on this matter is recommended.

6.1.2. Developing Desensitization to Killing Act

The percentages recorded for the Indirect KEF's assumed to generate desensitization to the killing act are presented below in Table 17.

Table 17. Desensitization to Killing Act

Indirect Kill Enabling Factor	Number #	Percentage %
Witnessed killing of animals	8	23.5
Committed acts of killing animals during childhood or adolescence	16	47
Committed acts of killing animals during childhood and adolescence	10	29
Committed acts of killing animals during childhood	14	41
Committed acts of killing animals during adolescence	12	35
Committed murder less than or equal to 18 years of age	7	20.5

⁶ When military enrollment during adulthood was added to the number who enlisted prior to adulthood, the total number of study subjects who had enlisted in the military increased to 12 (35%).

⁷ When military enrollment by study subject and primary adult was examined, it was found that 22 (64.7%) study subjects either had enlisted in the military or had a primary adult who served in the military.

Three Indirect KEFS were assumed to generate desensitization to the killing act: witnessing the killing of animals, killing animals and committing an act of murder. While the data showed that only eight (23.5%) study subjects witnessed the killing of animals, closer examination indicated that six of these eight went on to kill animals during childhood and six went on to kill animals during both childhood and adolescence. In all, 16 (47%) sample members killed animals during their formative years. Of these, 10 (29%) killed animals during both childhood and adolescence. Across the age ranges, 14 (41%) study subjects killed animals during childhood and 12 (35%) killed animals during adolescence. It is difficult to compare the 16 study subjects in this research who killed animals while growing up to Gerbeth and Turco's (1997) 10 of 68 study subjects (15%) who exhibited cruelty towards animals as Gerbeth and Turco do not clarify whether killing animals was included in their designation of "cruelty".

The inclusion of committing an act of murder as a generator of desensitization to the killing act yielded an unanticipated discovery; seven (20.5%) study subjects committed an act of murder during adolescence⁸. Although lower than the required 40% minimum, this prevalence contradicts long held assumptions that serial killers commit their first murder during early adulthood and signifies that first kill occurring during the formative years is not a rare event. When the data were queried further, it was found that six of these seven study subjects witnessed the killing of animals prior to committing their first murder. In conjunction with the six study subjects who went on to kill animals after witnessing animal killing, these study subjects suggest that the Law of Diminishing Returns may have a pivotal role in the development of serial killers. The decision was made to use this sub-sample of seven adolescent murderers as a comparison group during the balance of data analysis.

6.1.3. Developing Hostility

Verbal denigration by primary adults and verbal denigration by peers were envisaged as being generators of hostility in developing serial killers. Table 18 below presents the incidences of verbal denigration found across the study sample.

⁸ Four of these seven study subjects' acts of murder were premeditated. Their ages at first kill were 12, 14, 15 and 18.

Table 18. Hostility

Indirect Kill Enabling Factor	Number #	Percentage %
Verbal denigration by male primary adult during childhood or adolescence	14	41
Verbal denigration by male primary adult during childhood and adolescence	9	26
Verbal denigration by male primary adult during childhood	14	41
Verbal denigration by male primary adult during adolescence	9	26
Verbal denigration by female primary adult during childhood or adolescence	13	38
Verbal denigration by female primary adult during childhood and adolescence	7	20.5
Verbal denigration by female primary adult during childhood	13	38
Verbal denigration by female primary adult during adolescence	7	20.5
Verbal denigration by peers during childhood or adolescence	26	76
Verbal denigration by peers during childhood and adolescence	15	44
Verbal denigration by peers during childhood	23	67.6
Verbal denigration by peers during adolescence	18	52.9

When the data collected on verbal denigration were examined, another unexpected finding was made, namely, that peers constituted the highest source of verbal denigration. In total, 26 (76%) study subjects endured verbal denigration from their peers while growing up. When this prevalence was examined across the two age ranges, it was found that 23 (67.6%) sample members endured peer denigration during childhood and 18 (52.9%) endured it during adolescence. Examination of the overlap across the two age ranges indicated that 15 (55%) study subjects endured peer denigration during both childhood and adolescence. These percentages reflect the contentions of Newman, Fox, Harding, Mehta and Roth's (2004) and Gilligan (2001) that bullying from peers is a critical factor in the occurrence of school rampage shootings in North America. Of the 27 teenage shooters examined by Newman et al (2004, p. 242),

17 endured constant attacks on their personal character and were mercilessly denigrated. The net effect if such abuse is explained by Gilligan (2001, p.35) who states,

[t]he more a person is shamed by others, from childhood by . . . peers, who ridicule or reject him, the more he is likely to feel chronically shamed and hypersensitive to feelings and experiences of being shamed . . .

According to Gilligan (2001, p.35), the purpose of the violence this person perpetrates is to “*force respect from other people*”.

Male primary adults were the second highest source of verbal denigration with 14 (41%) sample members enduring this while growing up. When the rates across the two age ranges were queried, it was found that 14 (41%) study subjects endured male primary adult verbal denigration during childhood; nine (26%) endured it during adolescence and nine (26%) endured it during both childhood and adolescence. Female primary adult verbal denigration did not meet the 40% minimum threshold on any level. Thirteen (38%) study subjects endured female primary adult verbal denigration while growing up; 13 (38%) endured it during childhood; and seven (20.5%) endured it during adolescence. The dominant presence of peer verbal denigration over female primary adult verbal denigration contradicts declarations by authors like Gerbeth and Turco (1997) and Hensley and Wright (2003) that dysfunctional relationships with female primary adults are central to the occurrence of serial murder. As well, it signals the need to begin looking outside the family unit for causative factors in serial murder.

6.1.4. Aggression

The MDSK assumes that aggression from male primary adults, female primary adults and peers generate aggression in developing serial killers. The percentages recorded for these Indirect KEFs are set out in Table 19 below.

Table 19. Aggression

Indirect Kill Enabling Factor	Number #	Percentage %
Physical violence/violent discipline from male primary adult during childhood or adolescence	20	58.8
Physical violence/violent discipline from male primary adult during childhood	16	47
Physical violence/violent discipline from male primary adult during adolescence	15	44
Physical violence/violent discipline from female primary adult during childhood or adolescence	12	35
Physical violence/violent discipline from female primary adult during childhood	11	32
Physical violence/violent discipline from female primary adult during adolescence	7	20.5
Physical violence from peers during childhood or adolescence	16	47
Physical violence from peers during childhood	13	38
Physical violence from peers during adolescence	13	38

Not only did male primary adult violence/violent discipline (hereinafter referred to as “Male Primary Adult Violence”) have the highest prevalence; it exceeded the 40% minimum across both age ranges. In all, 20 (58.8%) study subjects endured Male Primary Adult Violence while growing up. Of these, 16 (47%) endured Male Primary Adult Violence during childhood and 15 (44%) endured Male Primary Adult Violence during adolescence. Physical violence from peers (hereinafter referred to as “Peer Violence”) had the second highest prevalence as 16 (47%) sample members endured Peer Violence during their formative years. Although it fell just short of the 40% threshold in each of the age ranges, Peer Violence rates were consistent across childhood and adolescence with 13 (38%) study subjects having Peer Violence during childhood and 13 (38%) having endured it during adolescence. Physical violence/violent discipline from female primary adults (hereinafter referred to “Female Primary Adult Violence”) did not meet the 40% threshold across the sample or in either age range. While growing up, 12(35%) study subjects endured Female Primary Adult Violence. Across the age ranges, 11 (32%) study subjects endured Female Primary Adult Violence

during childhood and seven (20.5%) endured Female Primary Adult Violence during adolescence.

When the data from the sub-group of seven study subjects who killed during adolescence were queried for physical violence, it was found that four of these seven endured Peer Violence during both childhood and adolescence while only two endured Male Primary Adult Violence during childhood and adolescence and two endured Female Primary Adult Violence during childhood and adolescence. Whilst limited in their generalizability, the experiences of these four sub-sample members may signal that ongoing Peer Violence is a more potent generator of aggression in developing serial killers than primary adult violence. Further research which compares the presence of Peer Violence between a sample of serial killers and a sample of non-serial offenders is recommended.

6.2. Developing Emotional Distance

The MDSK assumes that Emotional Distance facilitates acts of serial murder by impeding any emotional connection with victims. Because the MDSK assumes that Emotional Distance in serial killers develops on three levels: social, cultural and moral, the prevalences of the Indirect KEFs presumed to generate emotional distance are discussed as per each level.

6.2.1. Social Distance

Table 20 below sets out the percentages recorded across the three Indirect KEFs believed to generate Social Distance, namely, isolation of the family⁹, being isolated within the family¹⁰ and, isolation from peers. Of these three Indirect KEFs, only isolation of the family did not meet the 40% threshold. Twelve 12 (32%) study subjects grew up in families that were either isolated from or had little social contact with the surrounding community. The occurrence of isolation from peers and isolation within the family, on

⁹ Listed on the data coding sheet as “family isolated in/from community, little social contact”.

¹⁰ Listed on the data coding sheet as “isolated within family/singled out for abusive treatment/withdrawn from family”.

the other hand, not only passed the minimum threshold, they significantly overlapped. Thirty-three (97%) study subjects spent a significant length of time during their formative years isolated from their peers. Across the age ranges, 31 (91%) study subjects experienced isolation from their peers during childhood and 31 (91%) study subjects experienced isolation from their peers during adolescence. Twenty-eight (82%) study subjects grew up isolated within their families, withdrawn from their families or singled out for abusive treatment in their families (hereinafter referred to as “Isolated within the Family”). Of these 28, all experienced isolation from their peers as well. It bears noting that this high prevalence of social isolation mirrors the incidence of social marginalization observed by Newman et al (2004) and Gilligan (2001) among school shooters. Newman et al (2004, p. 242) report that almost all of their study subjects experienced ostracism from their peers and social marginality prior to perpetrating the shootings.

Table 20. Social Distance

Indirect Kill Enabling Factor	Number #	Percentage %
Family isolated in/from community, little social contact	11	32
Isolated within family/singled out/withdrawn from family	28	82
Isolation form peers during childhood or adolescence	33	97
Isolation from peers during childhood	31	91
Isolation form peers during adolescence	31	91
Isolation within family and isolation from peers during childhood	26	76
Isolation within family and isolation from peers during adolescence	25	73.5
Isolation within family and isolation from peers during childhood and adolescence	24	70.5

When the overlap between being Isolated within the Family and isolation from peers was queried further, the data showed that of the 28 study subjects Isolated within the Family; 26 experienced isolation from peers during childhood, and 25 were isolated from peers during adolescence. Most significant however, was the finding that 24 of the 28 sample subjects Isolated within the Family also experienced isolation from peers during both childhood and adolescence. When social isolation was examined among the seven study subjects who committed murder during adolescence, it was found that

six not only grew up isolated within their families, they also experienced isolation from their peers during childhood and adolescence.

It is easy to see where such profound isolation during the formative years would constitute a developmental liability; one that likely contributes to the social alienation in serial killers detected by Harbort and Mokros' (2001) and the display of anti-social conduct prior to committing the first kill noted by Gerbeth and Turco (1997). Despite being pointed to as an etiological factor by Fox and Levin (1988), Sears (1991) and Vronsky (2007), the role of social isolation in the development of serial killers has received little empirical attention. Further research which compares the prevalence of social isolation between serial killers and non-serial offenders is recommended.

6.2.2. Cultural Distance

It was anticipated that bigoted attitudes within the family home would generate emotional distance in developing serial killers in much the same way as the American military cultivating emotional distance in its recruits by having seasoned war veterans role model degrading attitudes towards the enemy. While bigoted attitudes met the 40% threshold with 20 (58.8%) study subjects growing up in homes where bigotry was present, it was realized during data analysis that the designation of 'bigoted attitudes' was too broad as it included prejudice against gender and sexual orientation. As it was not possible to go back and sort out which study subject was actually exposed to ethnic prejudice, the findings reported here must be viewed as indicating the presence of prejudice against ethnicity, gender and sexual orientation and not just ethnicity.

6.2.3. Moral Distance

Four Indirect KEFs were included in the MDSK as generators of Moral Distance: criminal acts by the study subjects, the presence of household members who commit criminal acts and male primary adult adultery and female primary adult adultery. Their prevalences are presented in Table 21.

Table 21. Predicted Generators of Moral Distance

Indirect Kill Enabling Factor	Number	Percentage
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	#	%
Commit criminal act(s) during childhood or adolescence	28	82
Commit criminal act(s) during childhood and adolescence	15	51
Commit criminal act(s) during childhood	16	47
Commit criminal act(s) during adolescence	27	79
Criminal activity by another member(s) of household	7	20.5
Male primary adult committed adultery	4	11.7
Female primary adult committed adultery	4	11.7

The occurrence of criminal acts by study subject was significant as 28 (82%) study subjects engaged in criminal activity during their formative years. More specifically, 16 (47%) subjects engaged in criminal acts during childhood and 27 (79%) engaged in criminal acts during adolescence. When the data were queried for the seven sample members who killed during adolescence, it was found that all had engaged in criminal activity prior to committing their first act of murder. These percentages suggest the need for further investigation of serial murder from Delisi and Scherer's (2006) career criminal perspective and Gerbeth and Turco's (1997) anti-social behavior perspective. Investigation into the facilitative role, if any, of criminal acts prior to first murder is recommended.

The incidences of the remaining Indirect KEFs proved non-significant. Only seven (20.5%) sample subjects grew up in homes where another family member engaged in criminal acts, four (11.7%) grew up in homes where the primary male adult committed adultery and four (11.7%) grew up in homes where the primary female adult committed adultery. This low presence of adultery contradicts the 10 out of 20 study subject presence of adultery and divorce reported by Warren, Hazelwood and Dietz (1996). It is unclear at this point if sample size may account for the different findings between the two studies. Further research is recommended.

6.3. Developing Chronic Emotional Numbing

The MDSK assumes that serial killers develop chronic emotional numbing while they are growing up. The two Indirect KEFs assumed to generate this numbing were drawn directly from the DSM IV. They are: personally experiencing, confronting or witnessing an event that threatens death or severe injury to the person, and experiencing, confronting or witnessing an event that threatened death or severe injury to an immediate other. When examined, the data disclosed that the rate of Trauma Events across the study sample was very high (Table 22 sets out the percentages recorded for Trauma Events). In all, 33 (97%) study subjects experienced an event that threatened severe injury or death to the self at least once while growing up and 25 (73.5%) study subjects witnessed an event that threatened severe injury or death to an immediate other while growing up.

Table 22. Incidence of Trauma Events

Indirect Kill Enabling Factor	Number #	Percentage %
Personally experience event which threatened death or severe injury to self during childhood or adolescence	33	97
Personally experience event which threatened death or severe injury to self during childhood and adolescence	17	50
Personally experience event which threatened death or severe injury to self during childhood	31	91
Personally experience event which threatened death or severe injury to self during adolescence	23	67.6
Witness event which threatens death or severe injury to immediate other during childhood or adolescence	25	73.5
Witness event which threatens death or severe injury to immediate other during childhood	21	61.7
Witness event which threatens death or severe injury to immediate other during adolescence	10	29

When the incidence of Trauma Events was examined across the age ranges it was found that 31 (91%) study subjects experienced an event that threatened severe injury or death to the self during childhood and 23 (67.6%) experienced an event that threatened severe injury or death to self during adolescence. Seventeen (50%) study

subjects experienced an event that threatened severe or death to the self during childhood and adolescence. Twenty-one (61.7%) study subjects witnessed an event that threatened severe injury or death to an immediate other during childhood and 10 (29%) witnessed such an event during adolescence. To provide a fuller appreciation of just how prevalent Trauma Events were for the study subjects, Table 23 below is provided.

The prevalence of Trauma Events for the study subjects was so high that four sample members experienced both types of Trauma Event during childhood and adolescence and 10 study subjects (29%) experienced an event that threatened death or severe injury to the self during childhood and adolescence and, on top of that, they witnessed an event that threatened death or severe injury to an immediate other either during childhood or adolescence¹¹. These findings corroborate the research of the FBI (1985), Kenney and Heide (1994), Cater (1997) and Harbort and Mokros (2001) which indicate that serial killers endure severe physical, sexual and/or emotional abuse while growing up. It would be beneficial to conduct research similar to Harbort and Mokros (2001) and compare the prevalence of Trauma Events of a sample of serial killers with that of non-serial offenders in order to examine whether or not such a high prevalence is endemic to serial killers.

Table 23. Incidence of Trauma Events per Subject

	BA	BB	BC	BD
DeSalvo	1	1	1	1
Jespersion	1	1	1	1
Sutcliffe	1	1	1	1
West, R.	1	1	1	1
Berkowitz	1	1		1
Hindley	1	1		1
Caputo	1	1	1	
Chikatilo	1	1	1	

¹¹ It would be beneficial to obtain raw data from previous research which recorded the presence of traumatic events such as frequent observations of violence in the family home (McKenzie, 1995; Harbort and Mokros, 2001), or 'personal abuse' (Federal Bureau of Investigations, 1985; Cater, 1997; Myers, 2004; Gerbeth and Turco, 1997) and re-examine their findings under the DSM IV's PTSD diagnostic criteria.

	BA	BB	BC	BD
Christie	1	1	1	
Dahmer	1	1	1	
Kemper	1	1	1	
Long	1		1	1
Lucas	1	1	1	
Nilsen	1	1	1	
Rifkin	1	1	1	
Starkweather	1	1	1	
Wuornos		1	1	1
Young	1	1	1	
Gacy	1		1	
Kaczynski	1		1	1
McDuff		1	1	
Carignan		1		1
Ng		1		1
West, F.	1		1	
Brady	1	1		
Cole		1	1	
Costonzo		1		1
Bianchi	1			1
Dodd	1			1
Corll		1		
Glatman	1			
Toole	1			
Bundy	1			
Shipman				1
Total	31	21	23	10

- BA** – personally experience an event that threatens severe injury or death to self during childhood
BB - personally experience an event that threatens severe injury or death to self during adolescence
BC – witness an event that threatens severe injury or death to immediate other during childhood
BD - witness an event that threatens severe injury or death to immediate other during adolescence

6.3.1. Presence of PTSD Symptoms

Despite past empirical substantiation of personal abuse during the formative years, little consideration has been given to how such experiences contribute to the

occurrence of serial murder. This research addressed this gap through the collection of data on the presence of PTSD symptoms. The elevated presence of the Trauma Events found across the study sample led to the expectation that the data would show that most, if not all, of the study subjects displayed PTSD symptoms¹² while growing up. This expectation proved to be correct. PTSD symptom prevalence was examined on six levels:

1. child specific symptoms;
2. child and adolescent symptoms;
3. adolescent specific symptoms;
4. increasing occurrence of PTSD symptoms from childhood to adolescence;
5. symptom entrenchment; and
6. effects of symptoms.

The following discussion outlines the findings on each of these six levels.

6.3.2. Child Specific PTSD Symptoms

The six PTSD symptoms reported by Hamblen (1998) and Kaplan (2002) to be specific to children were included on the data coding sheet. These were:

1. repeated themes in behaviour;
2. preoccupation with words or symbols related to a Trauma Event;
3. a preoccupation with words or symbols but which are not related to a Trauma Event;
4. generalized fear;
5. stranger or separation anxiety; and
6. loss of achieved developmental task/

The percentages recorded across these child specific symptoms are presented below in Table 24.

¹² The data presented must not be construed as diagnosing PTSD in sample members. At best, the data can only suggest its presence.

Table 24. Childhood Specific PTSD Symptoms

Child Specific PTSD Symptom	Prevalence	
	Number #	Percentage %
Repeated themes in behaviour	28	82
Preoccupation with words or symbols related to Trauma Event	26	76.4
Preoccupation with words or symbols though not related to a Trauma Event	21	61.7
Generalized Fear	18	53
Stranger or separation anxiety	8	23.5
Loss of achieved developmental task	6	17.6

The first three of these PTSD symptoms signal chronic anxiety and compulsive attempts to alleviate that anxiety (Hamblen, 1998). The data showed that two thirds of the study subjects exhibited such behaviour. Twenty-eight (82%) study subjects exhibited repeated themes in their behaviour such as hypochondria or being accident prone; 26 (76%) displayed a preoccupation with words and symbols related to a Trauma Event and 22 (64.7%) displayed a preoccupation with words and symbols though not related to a Trauma Event. While slightly more than half of the study subjects, 18 (52.9%), displayed generalized fear, the presence of the remaining two childhood PTSD symptoms was low with only eight (23.5%) study subjects exhibiting stranger/separation anxiety and six (17.6%) suffering the loss of an achieved developmental task. Further query of the data gave no indication why these two symptoms came in so low when the first four showed a sizeable presence across the sample.

6.3.3. Child and Adolescent PTSD Symptoms

With the exception of alcohol abuse and drug abuse, which are regarded as specific to adolescents and adults, and the PTSD symptoms of interference with school/social functioning and feelings of isolation and stigma (to be discussed shortly as effects of PTSD), the PTSD symptoms demonstrable by children and adolescents that were investigated in this research are listed below:

1. re-enactment of Trauma Event in play, drawings or verbalizations (compulsively repeating some aspect of a Trauma Event);
2. avoiding all stimuli related to a Trauma Event;
3. dissociation, constant daydreaming or fantasizing;
4. hostility;
5. aggression;
6. omen formation (there were signs that the event was going to occur);
7. physical violence against peers;
8. ongoing increased arousal/significant startle response; and
9. impulsive behaviour

The percentages recorded across these symptoms are presented below in Table 25.

Table 25. PTSD Symptoms Demonstrable by Children and Adolescents

PTSD Symptom Demonstrable By Children And Adolescents	Prevalence	
	Number #	Percentage %
Re-enactment of Trauma Event in play, drawings, verbalizations - compulsive repeating of some aspect of trauma	28	82.8
Avoiding all stimuli related to Trauma Event	22	64.7
Dissociation, constant daydreams or fantasizing	25	73
Hostility during childhood ¹³	23	67.6
Aggression	31	91
Omen formation – belief warning signs predicted Trauma Event	4	11.7
Physical violence against peers	22	64.7
Ongoing increased arousal and exaggerated startle response	18	52.9
Impulsive behaviour	14	41

¹³ When the data was examined it was discovered that hostility during adolescence was left off the data coding sheet inadvertently and, as a result, only data on hostility during childhood was collected and available for examination.

The data indicated that aggression was very high across the study sample with 31 (91%) study subjects displaying aggressive behavior during their formative years and 22 (64.7%) study subjects committing acts of violence against peers. Additionally, almost two thirds of the study sample, 23 (67.6%) study subjects, displayed hostility during childhood. According to Hamblen (1998) and the DSM IV (American Psychiatric Association, 2000), the PTSD symptoms of re-enacting a Trauma Event in play, drawings, verbalizations (hereinafter referred to as “Trauma Re-Enactment”), avoidance of stimuli related to a Trauma Event (hereinafter referred to as “Trauma Avoidance”), and constant dissociating, daydreaming or fantasizing (hereinafter referred to as “Dissociative Tendencies”) represent compulsive attempts by a child or adolescent to alleviate anxiety. Overall, the data indicated that persistent attempts to alleviate anxiety were widely prevalent among the study subjects; 28 (82.8%) exhibited Trauma Re-Enactment; 22 (64.7%) displayed Trauma Avoidance; and 25 (73%) demonstrated Dissociative Tendencies.

Although not indicators of attempts to alleviate anxiety, ongoing increased arousal and exaggerated startle response indicate that a trauma survivor is experiencing increased anxiety as a result of a Trauma Event (Hamblen, 1998; DSM IV, 2000). Altogether, 18 (52.9%) study subjects showed ongoing increased arousal via exhibited ongoing increased arousal and/or an exaggerated startle response. According to Hamblen (1998), exhibiting impulsive behavior indicates that the effects of a Trauma Event are remaining immediate even with the passage of time. In total, 14 (41%) study subjects exhibited impulsive behavior while growing up.

Prevalence rates for the remaining two PTSD symptoms listed in Table 25 were not noteworthy. Eight (23.5%) study subjects exhibited paranoia during their formative years and four (11.7%) exhibited omen formation (a belief that there were warning signs which indicated the Trauma Event was coming).

6.3.4. Adolescent PTSD Symptoms

The findings for PTSD symptoms displayable by adolescents are set out below in Table 26.

Table 26. Adolescent PTSD Symptoms

PTSD Symptom	Number #	Percentage %
Alcohol use	13	38
Drug use	7	20.5

While alcohol use almost doubled the presence of drug, neither alcohol use nor drug use showed an overwhelming presence across the study sample. The fact that the incidence of dissociative tendencies almost doubled that of alcohol use may signify that dissociation is a feature peculiar to serial killers. Further research which compares the incidence of alcohol use and dissociative tendencies between a sample of serial killers and non-repeat offenders is recommended.

6.3.5. Increasing Occurrence of PTSD Symptoms

PTSD symptom prevalences for childhood were compared with PTSD symptom prevalences for adolescence in search of symptoms which showed an increase in incidence. The findings are presented below in Table 27.

Table 27. Symptoms Which Increased in Prevalence

PTSD Symptom	Childhood Prevalence		Adolescence Prevalence	
	#	%	#	%
Aggression	21	61.7	27	79
Physically violent with peers	14	41	20	58.8
Dissociation, constant daydreams or fantasizing	19	55.8	22	64.7
Re-enactment of trauma in play, drawings, verbalizations - compulsive repeating of some aspect of trauma	22	64.7	27	79

Overall, four PTSD symptoms showed a marked increase in prevalence across the two age ranges. During childhood, 21 (61.7%) study subjects exhibited aggressive behavior and during adolescence 27 (79%) study subjects exhibited aggressive behavior. This was accompanied by an increase in acts of violence against peers as 14 (41%) study subjects committed acts of violence against peers during childhood and 20

(58.8%) study subjects committed acts of violence against peers during adolescence. The concurrent increase of these two symptoms may signal that serial killers are criminal offenders who experience early escalation of violent behavior. Further research which compares the childhood and adolescent rates of aggression and violence against peers of serial killers with the childhood and adolescent rates of aggression and violence against peers of non-serial offenders is recommended.

The remaining PTSD symptoms that showed an increase in prevalence from childhood to adolescence, Dissociative Tendencies and Trauma Re-enactment, signify that as their formative years progressed, an increasing number of study subjects were both experiencing anxiety and attempting to alleviate anxiety resulting from a Trauma Event. Nineteen (55.8%) sample subjects exhibited Dissociative Tendencies during childhood and 22 (64.7%) study subjects exhibited Dissociative Tendencies during adolescence. Concurrently, 22 (64.7%) study subjects displayed Trauma Re-Enactment during childhood and 27 (79%) sample subjects displayed Trauma Re-Enactment during adolescence. The parallel increases in these two PTSD symptoms may signal that for serial killers, either repeated violent acts operate as ongoing acts of anxiety release or, that heightened states of anxiety repeatedly incite states of complete emotional detachment which, in turn, facilitate repeated acts of brutality. Further research which investigates this matter is strongly recommended.

6.3.6. PTSD Symptom Entrenchment

An examination of symptom entrenchment was carried out in an effort to verify the MDSK's assumption that serial killers experience chronic emotional numbing. Symptom entrenchment was regarded as evidenced when a study subject displayed the same PTSD symptom during both childhood and adolescence. Table 28 below presents the PTSD symptoms exhibited during childhood *and* adolescence.

Table 28. Entrenched PTSD Symptoms

PTSD Symptom	Exhibited During Childhood & Adolescence	
	#	%
Aggression	17	50
Physically violent with peers	12	35
Preoccupation with words or symbols related to Trauma Event	21	61.7
Re-enactment of trauma in play, drawings, verbalizations - compulsive repeating of some aspect of trauma	21	61.7
Dissociation, constant daydreams or fantasizing during early childhood and late childhood	11	32
Dissociation, constant daydreams or fantasizing during childhood and adolescence	16	47

As with the PTSD symptoms whose prevalence increased from childhood to adolescence, symptom entrenchment was present for PTSD symptoms that indicate violence and ongoing anxiety. Seventeen (50%) study subjects exhibited aggression during childhood and adolescence and 12 (35%) committed acts of violence against peers during childhood and adolescence. When the data were queried closer to examine the seven study subjects who committed murder during adolescence, it was found that six exhibited aggression during both childhood and adolescence and five committed acts of violence against peers during both childhood and adolescence. Trauma Re-Enactment and preoccupation with words or symbols related to a Trauma Event had the highest occurrence of symptom entrenchment. Twenty-one (61.7%) study subjects displayed Trauma Re-Enactment during childhood and adolescence and 21 (61.7%) study subjects displayed a preoccupation with words or symbols related to a Trauma Event during childhood and adolescence. These percentages indicate that almost two thirds of the study sample was unable to progress past Trauma Events experienced during childhood. When the seven study subjects who committed murder during adolescence were queried for entrenchment of Trauma Re-Enactment, it was found that six exhibited Trauma Re-enactment during childhood and during adolescence.

Almost half of the study subjects, 16 (47%), displayed Dissociative Tendencies during both childhood and adolescence. When the seven study subjects who committed murder during adolescence were investigated for Dissociative Tendencies it was found that all seven exhibited this symptom prior to committing their first act of murder. In an attempt to pinpoint when during the course of development Dissociative Tendencies may become entrenched, the age range of childhood was broken down into 'early childhood' (birth to age seven inclusive) and 'late childhood' (age eight to age eleven inclusive). In total, 11 (32%) of the original 16 study subjects displayed Dissociative Tendencies during early childhood and late childhood thus signaling early entrenchment of this symptom for almost one third of the study sample.

When one considers that emotional numbing is a condition wherein the possessor is emotionally detached from everyone and everything around him (Saigh and Bremner, 1999, p.5), the contention that entrenched pathological trauma responses can adversely affect the development of a child or adolescent in such a way as to produce an adult who operates in a state of chronic emotional detachment, or, who can withdraw into such a state when so motivated becomes tenable (Saigh and Bremner, 1999; Hamblen, 1998). When one reflects on the high occurrence of Trauma Events evidenced across this study's sample in combination with the entrenchment of PTSD symptoms which signal aggression, anxiety and the inability to progress past an experienced Trauma Event, the assertion that the violent acts they commit are influenced by a chronic emotional numbing that begins developing during childhood becomes quite reasonable. In such circumstances, the lack of empathy and remorse for their actions that serial killers are identified with is not psychopathy as Giannengelo (1996) and Lester (1995) would argue nor is it the commission of repeated acts of murder in an explosions of pent up emotions as Fox and Levin (1988), Hale (1994), Hensley and Wright (2003) and Hensley and Singer (2004) would argue. It may be circumstances which facilitate a person acting on a decision made earlier in life to commit acts of murder as Sears (1991), Fox and Levin (2001) and Egger (2003) would argue, however, empirical verification of Sears' (1991), Fox and Levin's (2001) and Egger's (2003) contention that serial killers make a decision earlier in life to commit acts of murder is needed.

6.3.7. Symptom Effects

The DSM IV (2000) designates that central to a diagnosis of PTSD is consideration of the effect that symptoms have on the functioning of a child/adolescent survivor of a Trauma Event. Given this, an examination was made of the number of study subjects whose exhibited PTSD symptoms interfered with their functioning. The results are presented below in Table 29.

Table 29. PTSD Symptom Effect

Symptom Effect	Number #	Percentage %
PTSD symptoms interfere with school or social functioning	32	94
Feelings of isolation and/or stigma	27	79

The PTSD symptoms displayed by the study subjects significantly interfered with the school/social functioning of 32 (94%) of them. During psychiatric and police interviews conducted after their arrest, 27 (79%) study subjects indicated that they constantly felt isolated and stigmatized while they were growing up. These prevalences mirror the high prevalence of social isolation found across the sample, however, it is unknown whether the PTSD symptoms exhibited by the study subjects contributed to their social isolation or whether their social isolation exacerbated their PTSD symptoms. Further research on this issue is recommended.

7. Summary and Conclusions

To date, empirical research has established that serial killers are a distinct group of criminal offenders whose personal histories include growing up in severely dysfunctional households, enduring severe abuse and exhibiting anti-social behaviour prior to committing their first act of murder. Current opinions hold that no one variable can account for all incidents of serial murder. In 2005, Hickey concluded that serial murder is likely the result of a combination of predisposition and facilitating factors however, he did not elucidate upon the nature of this predisposition nor did he explain what he meant by 'facilitating factors'. The research here attempted to advance Hickey's work to the next level by constructing a developmental model of serial killers which articulates the nature of this predisposition and sets out a formula for identifying facilitating factors. The new model's applicability was then tested via the examination of biographical data collected on a sample of known serial killers.

Although serial killers develop in an uncontrolled environment and kill in the civilian context, their conduct mirrors that of trained soldiers in that they commit repeated acts of murder. Consequently, Grossman's military model of killing, the MoK, was regarded as ideal for investigating the development of serial killers. Like Hickey, Grossman assumes that repeated acts of killing require a specific predisposition and the presence of specific facilitating factors. Unlike Hickey, Grossman articulates the nature of this predisposition and provides a formula for ascertaining what factors facilitate repeated acts of murder. With this in mind, a developmental model of serial murder was constructed by adopting Grossman's theoretical assumptions, subsuming those integers of the MoK directly relevant to the development of a child/adolescent and adding a new integer which encompasses chronic emotional numbing.

The MDSK's central assumption holds that where contextual forces are capable of exerting enough power to impede the influence of dispositional traits over human behavior, or even re-configure an established predisposition, they can also influence the

psychosocial development of a child in such a way as to produce a serial killer. The MDSK views the development of a serial killer as a cumulative process made up of specific psychosocial experiences which culminate in a state of emotional detachment during the killing act. Every act of murder committed by a serial killer signifies that:

1. he has developed a predisposition similar to that of a fully trained American soldier;
2. he has developed emotional distance from his victim; and
3. he has developed chronic emotional numbing.

To illustrate the progression of intersecting psychosocial experiences which create a serial killer, the MDSK is expressed in non-linear quasi-math equation. Because it seeks to explain “what is happening” as opposed to explaining “what happened”, each integer in the MDSK is labeled in the present tense. Accordingly, the three integers in the MDSK are:

1. Developing Predisposition;
2. Developing Emotional Distance; and
3. Developing Chronic Emotional Numbing.

The net outcome at the end of the MDSK equation is “Developing Serial Killer”. The Direct KEFs contained in the MDSK’s first integer, Developing Predisposition and second integer Developing Emotional Distance, were drawn directly from their MoK counterparts; their Indirect KEFs were determined by way of deducing what factors in a child’s developmental environment would generate their presence. The Direct and Indirect KEFs in the third integer, Developing Chronic Emotional Numbing, were drawn directly from the DSM IV.

Model construction was carried out with an eye to ensuring that the MDSK would hold a number of advantages not enjoyed by the models of serial murder examined in the Literature Review. First, it avoids getting mired down in cultural notions about ‘evil’ and is able to draw upon the body of knowledge about serial killers acquired since the FBI’s work in 1985. Next, the MDSK picks up where current etiological thought leaves off; it maps the development of serial killers via consideration of multiple variables simultaneously rather than relying upon one universal variable to explain all occurrences of serial murder. The most anticipated advantage of the MDSK is that it is a

developmental model of serial murder which lends itself to assessment by setting out dispositional traits and developmental road signs for charting the development of serial killers.

The study's sample of 34 known serial killers was selected during the course of collecting data from secondary archival sources. For a serial killer to be included in the study sample, a minimum of two suitable secondary archival sources which drew their information from all or a combination of legitimate sources, such as family, court records or psychiatric records, had to be obtained. Two hundred and twenty-six information sources were examined in search of biographical information. When the information quality rule was applied, this number was whittled down to 105 information sources. Data collection commenced in October, 2005 and ended in March, 2007. The data coding sheet used to record biographical information contained 101 variables. To examine inter-rater reliability, a fourth year honours student was asked to code biographical information about a sub-sample of serial killers contained in Gibson's book, *Serial murder and media circuses*. There was high consistency found in the ratings between the author and student ratings.

Once data analysis was completed and the findings reported, consideration was directed to the issue of whether or not the research herein achieved its stated aims.

7.1. Mission Accomplished?

The stated goal of this research was to advance Hickey's work to the next level by constructing a developmental model of serial murder that articulates the nature of the predisposition he alludes to and sets out a formula for identifying facilitating factors, and then, test this model's viable applicability via an analysis of biographical data collected on a sample of known serial killers. The implicit ambition driving this research was to expand the current body of knowledge about serial murder's etiology and push past the constrictions of entrenched etiological assumptions. In discussing whether or not these objectives were achieved, three questions will be addressed:

1. What do we learn about the MDSK's viable applicability?
2. Were any unidentified variables disclosed by the data?

3. Were there findings that challenged entrenched etiological assumptions?

Commencing with consideration of the MDSK's validity, the following discussion will address each question separately.

7.2. MDSK Validity

The hypothesis that presented itself during model construction was expressed in three sub-statements, namely:

1. during childhood, serial killers develop a predisposition similar to that of a fully trained American soldiers;
2. concurrent with the development of this predisposition, serial killers develop emotional distance; and
3. concurrent with the development of this predisposition and emotional distance, serial killers develop chronic emotional numbing.

The issue of MDSK viable applicability will be examined by discussing what the research results indicated for each of these sub-statements.

7.2.1. Developing Predisposition

The first sub-statement of the research hypothesis submits that while growing up, serial killers develop a predisposition similar to that of fully trained American soldiers. That is to say, the MDSK holds that during their formative years, serial killers develop desensitization to violence, desensitization to the killing act, hostility and aggression. Despite a gap which arose in the first integer of the MDSK when three of the four Indirect KEFs assumed to generate desensitization to violence did not meet the 40% minimum, the data yielded results which largely support this assumption. The Law of Diminishing Returns (desensitization to the killing act) was evidenced with 16 (47%) study subjects who killed animals while growing up. Of these sixteen, 14 (41%) killed animals during childhood, 12 (35%) killed animals during adolescence, and 10 (29%) killed animals during both childhood and adolescence. Additionally, of the eight (23.5%) study subjects who witnessed the killing of animals during childhood, six went on to kill animals during both childhood and adolescence. Finally, of the subsample of seven (20.5%) study

subjects who committed murder during adolescence, six had witnessed the killing of animals prior to committing their first murder.

The inclusion of the PTSD symptoms of aggression, hostility and acts of violence against peers on the data coding sheet afforded a means by which to assess the MDSK's assumption that serial killers develop the same predisposition as that of American soldiers. The resulting data confirmed that there is some apparent validity to this assumption as 31 (91%) study subjects displayed aggressive behavior while growing up, 22 (64.7%) study subjects committed acts of violence against peers, and 23 (67.6%) study subjects displayed hostility during childhood. Moreover, aggression and violent acts against peers showed increasing prevalences across the study sample from childhood to adolescence and symptom entrenchment was evidenced with 17 (50%) study subjects who displayed aggression during both childhood and adolescence and 12 (35%) study subjects who committed acts of violence against their peers during childhood and adolescence.

7.2.2. Developing Emotional Distance

The second sub-statement of the research hypothesis submits that concurrent with the development of their predisposition, serial killers develop emotional distance. While it is arguable that the lack of empathy serial killers have for their victims and their lack of remorse upon capture evidences the significance of this sub-statement, this does not clarify when such emotional distance developed. The profound isolation experienced by the study subjects during their formative years strongly suggests that their lack of emotional connection with victims and their ability to kill without experiencing any anxiety developed during the formative years. Virtually all of the study subjects, 33 (97%), spent a significant length of time isolated from their peers while growing up and most of the study subjects, 28 (82%) grew up isolated within their own families. Of the 28 study subjects who grew up isolated within their families, 24 (70.5%) were isolated from their peers during both childhood and adolescence.

Contemporaneous with the experience of social isolation, Moral Distance was evidenced across the study sample as 28 (82%) study subjects perpetrated criminal acts while growing up. Of these, 16 (47%) engaged in criminal activity during childhood and

27 (79%) engaged in criminal activity during adolescence. When considered in conjunction with the deficit in interpersonal relationships, the prevalence of criminal activity suggests that the MDSK's assumption of emotional distance in serial killers is viable.

7.2.3. Developing Chronic Emotional Numbing

The collected data provided support for the assumption that chronic emotional numbing develops in serial killers during their formative years. The incidence of Trauma Events was universal across the study sample: while growing up, 33 (97%) study subjects experienced at least one Trauma Event which threatened severe injury or death to the self and 25 (73.5%) witnessed an event that threatened severe injury or death to an immediate other. The occurrence of Trauma Events during childhood and adolescence was so high, 30 (88%) study subjects experienced two or more Trauma Events.

PTSD symptom prevalences across the sample signified that the effects of experiencing Trauma Events remained with the study subjects despite the passage of time. The child specific PTSD symptoms highest in prevalence evidenced chronic anxiety and compulsive attempts to alleviate anxiety. Twenty-eight (82%) study subjects showed repeated themes in their behaviour and 26 (76%) displayed a preoccupation with words and symbols related to a Trauma Event. Of the PTSD symptoms displayable by children and adolescents, attempts to alleviate anxiety were widely prevalent: 28 (82.8%) study subjects exhibited Trauma Re-Enactment and 25 (73%) study subjects demonstrated Dissociative Tendencies. The incidence of symptom entrenchment across the study sample indicated that well more than half the study sample was unable to progress psychologically past Trauma Events experienced during the formative years. Seventeen (50%) study subjects displayed aggression during childhood and adolescence and 12 (35%) committed acts of violence against peers during childhood and adolescence. Twenty-one (61.7%) study subjects displayed Trauma Re-Enactment during both childhood and adolescence and 21 (61.7%) study subjects displayed a preoccupation with words or symbols related to a Trauma Event during both childhood and adolescence. Almost half of the study subjects, 16 (47%), displayed Dissociative Tendencies during both childhood and adolescence and 11 (32%) of these 16 study

subjects displayed Dissociative Tendencies during both early childhood and late childhood thus signaling early entrenchment for this symptom.

7.3. Unidentified Variables

When tested with the collected data, the MDSK generated useful and unique information with which to inform the study of serial killers. Data analysis identified four potentially crucial factors in the development of serial killers: trauma, isolation, bullying and first kill during adolescence. Trauma, in the form of severe abuse, was originally identified by the FBI in 1985 and corroborated by this research and the research of Kenney and Heide (1994), Cater (1997) and Harbort and Mokros (2001). Its presence in the early lives of serial killers is not new information. The remaining three factors revealed by the data, however, are new information. Despite being alluded to by Fox and Levin (1988) and Sears (1991) and argued by Vronsky (2007) isolation has received little, if any, attention, yet the profound degree of isolation found across the study sample adds a new element to the portrait of serial killers. Not only did the serial killers in this sample develop in severely dysfunctional families; endure severe physical, sexual and/or emotional abuse while growing up; demonstrate anti-social behaviour (engage in criminal acts) prior to committing their first act of murder, they grew up in a circumstance of disengagement from their household environments.

Again, while emotional abuse and physical abuse in the personal histories of serial killers is not new information, that peers were the chief source of emotional abuse and the second highest source of physical abuse for the serial killers in this study, is unique information. The presence of peer bullying in the development of serial killers has never been empirically investigated nor has it received any theoretical attention aside from Hale's (1994) contention that internalized humiliation contributes to acts of serial murder. Twenty-six (76%) of the study subjects endured verbal denigration from peers while growing up. That 23 of these study subjects endured peer denigration during childhood signals that emotional abuse from peers starts early in the lives of serial killers. Along with peer denigration, almost half of the study sample, 16 (44%) study subjects, endured physical violence from peers and the prevalence of peer aggression remained consistent across childhood and adolescence with 13 (38%) study

subjects having endured it in each age range. The connection between peer bullying/aggression has been cited by Newman et al (2004) and Gilligan (2001) as a central factor in the occurrence of rampage shootings in schools; its connection to acts of serial murder demands further investigation.

The discovery of seven (20.5%) study subjects who perpetrated their first kill during adolescence was unexpected and new information. This factor's power to generate desensitization to the killing act seemed obvious when it was included in the MDSK as an Indirect KEF. However, under the influence of the long held assumption that serial killers commit their first kill during early adulthood, it was expected that the data would show that only one or two study subjects committed an act of murder before adulthood. While this Indirect KEF did not meet the minimum threshold required to remain in the MDSK, the presence of the seven study subjects signified that first kill occurring during the formative years is not a rare event. Using these seven study subjects as a sub-sample for closer data queries revealed that for this sub-group: the Law of Diminishing Returns was present in their development as six of these subjects witnessed the killing of animals prior to committing their first murder; peer violence was a more potent generator of aggression; social isolation was profound as six of these subjects grew up isolated within their families and isolated from their peers during childhood and adolescence; all exhibited Dissociative Tendencies prior to committing their first murder; and six displayed Trauma Re-Enactment during childhood and adolescence. The prevalences of all of these variables were higher across this sub-sample than they were across the entire study sample, thus possibly signaling potential developmental differences between the two groups.

7.4. Challenging Erroneous Assumptions

Results yielded from the collected data challenged three long held assumptions about serial murder's etiology. The first assumption, as discussed above, is that first kill occurs during early adulthood. In this study, seven sample subjects were found to have committed their first murder during adolescence thus suggesting that this is not an atypical occurrence. The second assumption challenged holds that dysfunctional relationships with female primary adults incite acts of serial murder. According to

Hensley and Wright (2003), serial killers vent their anger and frustration over their relationship with their mother upon smaller and weaker animals and then progress to venting on people. Egger (2003) claims that an intense relationship between SK and his mother compounds pre-existing factors and drives serial killers to kill. Gerbeth and Turco (1997), via Freudian analysis, argue that serial killers transfer all of the 'badness' they experience from their mothers on to their victims. In contrast, the data collected on the 34 study subjects in this research revealed that female primary adults were the least common source of emotional and physical abuse and that peers and male primary adults were more common sources.

The prevalence of verbal denigration from peers while growing up not only doubled that of female primary adults, it doubled that of female primary adults during childhood and during adolescence. The incidence of male primary adult verbal denigration was higher than female primary verbal denigration during childhood, during adolescence and during the formative years in general. Additionally, physical violence from male primary adults and peers was consistently higher than that of female primary adults. Whereas 12 (35%) study subjects endured female primary adult violence while growing up, 20 (58.8%) endured male primary violence and 16 (47%) endured peer violence. If the development of serial killers is to be effectively queried, future research must look outside the boundaries of the mother/child relationship for causative variables.

The third long held assumption, that serial killers are psychopaths, is not so much challenged by the research findings as an alternate explanation is provided, namely, that serial killers operate in a state of chronic emotional numbing. Those who disagree with using psychopathy to explain serial murder have argued that criminal behaviour is a secondary result of a wide range of factors in a person's circumstance and, of itself, criminal behaviour does not properly confirm the presence of psychopathology (Skeem and Cooke, 2010, p. 433) nor have violent criminal acts ever been empirically linked to psychopathy (Kaplan and Cornell, 2004). Yet, the penchant for arguing that serial killers are psychopaths persists and is partly rooted in the lack of emotional affect displayed for their actions by serial killers. When one considers that emotional numbing is a condition wherein the possessor is emotionally detached from everyone and everything around him (Saigh and Bremner, 1999, p. 5); and the experience of multiple Trauma Events by developing serial killers leaves them in a state

of chronic detachment and unable to progress past Trauma Events, it becomes apparent that their lack of empathy for victims and lack of remorse for their actions may be a corollary of unresolved trauma and not psychopathy. To this extent, the presence of chronic emotional numbing in serial killers warrants further investigation.

7.5. Limitations

Despite efforts to ensure the MDSK accounted for weaknesses noted in the Emotional Release, Self-Selection and Psychopathy models, a number of difficulties became apparent during the course of data analysis. First, the limited sample size did not allow for the application of advanced statistical techniques. Next, the setting of a 40% minimum prevalence in order to remain in the MDSK and then discarding an Indirect KEF that does not meet the minimum, set one up to overlook potentially important details presented by Indirect KEFs that do not meet the minimum. For example, since only eight (23.5%) study subjects witnessed the killing of animals while growing up, this Indirect KEF was not retained, yet, closer examination of these eight study subjects disclosed the Law of Diminishing Returns at work as six of these eight study subjects went on to kill animals themselves during childhood and six went on to kill animals during both childhood and adolescence. The same can be said with the Indirect KEF of committing an act of murder. Seven study subjects committed their first murders during adolescence. Simply tossing out this Indirect KEF without further consideration would overlook the fact that these seven study subjects signal the existence of a potentially separate genus of serial killer; one whose developmental processes may differ from the larger population of serial killers. It would also pass up on the opportunity to use these seven study subjects as a sub-group for comparison. Therefore, although the 40% minimum prevalence was the standard cut-off employed, all results were examined and interesting relevant outliers noted, as referenced above.

Another difficulty that became apparent was that trying to do too much resulted in missing out on crucial information. This predicament occurred during the course of attempting to assemble a complex and comprehensive data coding sheet. When the PTSD symptoms were broken down according to presence during childhood or adolescence and assigned data coding letters, exhibiting hostility during adolescence

was missed. Its omission was not discovered until data analysis and it was too late to remedy the omission as all of the secondary archival sources used for the research had long since been returned to their respective libraries. The loss of data on the presence or non-presence of hostility during adolescence prevented investigation of the potential entrenchment of this symptom.

Finally, even before data analysis began, difficulties were present with relying upon secondary archival sources, such as biographies, autobiographies and factual accounts, as sources for gathering biographical information. First, their quality ranged from unreliable and based on hearsay to thorough examinations of police files, court files, prison records, personal interviews and trial transcripts. Second, some serial killers attract more interest than others. For example, Jeffrey Dahmer, John Wayne Gacy and Theodore Bundy have had numerous biographies and factual accounts written about them but the majority of known serial killers have virtually nothing written about them. Finally, the availability of suitable biographies, autobiographies and factual accounts was severely limited and resulted in a long drawn out data collection process as information sources had to be requested through inter-library loan from libraries across North America.

7.6. Epilogue

Overall, data analysis confirmed that the assumptions contained in the MDSK have potential viable applicability and the investigation of that applicability generated useful and unique information with which to inform the study of serial killers and police and justice system professionals. After this pilot study, the MDSK appears deserving of further study and refinement.

References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders, DSM-IV-TR*. (4th Ed.). Washington, D.C.: American Psychiatric Association.
- Arrigo, B. A. and Shipley, S. (2001). The confusion over psychopathy (I): historical considerations. *International Journal of Offender Therapy and Comparative Criminology*. Volume 45 Number 3, pp. 325-344.
- Baumeister, R.F. (1999). *Evil: inside human violence and cruelty*. New York: Holt Paperbacks.
- Bourke, J. (1999). *An intimate history of killing: face to face in Twentieth Century warfare*. Great Britain: Granata.
- Busch, K.A. & Cavanaugh, J.L. (1986). The study of multiple murder: preliminary examination of the interface between epistemology and methodology. *Journal of Interpersonal Violence*, Vol 1, No. 1, 5-23.
- Castle, T., & Hensley, C. (2002). Serial Killers with military experience: applying Learning Theory to serial murder. *International Journal of Offender Therapy and Comparative Criminology*, 46, 453-465.
- Cater, J.C. (1997). The social construction of the serial killer. *RCMP Gazette*. 59(2), 2-21.
- DeHart, D.D., & Mahony, J.M. (1994) The serial killer's motivations: an interdisciplinary review. *Omega*, 29, 29-45.
- Delisi, M. and Sherer, A. (2006) Multiple homicide offenders: offense characteristics, social correlates and criminal careers. *Criminal Justice and Behavior*, 33(3), 367 – 391.
- Dyer, G. (2004). *War*. (2nd Edition). Toronto: Random House.
- Egger, S. (2003) *The need to kill: inside the world of the serial killer*. New Jersey: Prentice Hall.
- Farkas, B. (2004). Etiology and Pathogenesis of PTSD in Children and Adolescents. *Post Traumatic Stress Disorders in Children & Adolescents* [Handbook]. Silva, P.R. (Ed). Chapter 6 pp123-140. New York: W.W. Norton & Company.

- Federal Bureau of Investigations. (August, 1985). The men who murdered. *FBI law Enforcement Bulletin*. 2-6.
- Farrell, A. L., Keppel, R. D. and Titterington, V. B. (2011) Lethal ladies: revisiting what we know about female serial murders. *Homicide Studies* 15(3) 228 -252.
- Fowles, D. C. (2011). Current scientific views of psychopathy. *Psychological Science in the Public Interest*. Volume 12 Number 3, pp.93-94.
- Fox, J.A., & Levin, J. (1988). *Mass murder: America's growing menace*. New York: Plenum Press.
- Fox, J.A., & Levin, J. (2001). *The will to kill: making sense of senseless murder*. Boston: Allyn and Bacon.
- Fullerton, C.S., & Ursano, R.J. (1997). *Post traumatic disorder: acute and long-term responses to trauma and disaster*. Washington, D.C.: American Psychiatric Press.
- Gault, W.B. (1971, October). Some Remarks on Slaughter. *American Journal of Psychiatry*, 128, 450-454.
- Gerbeth, V.J., & Turco, R.N. (1997). Antisocial personality disorder, sexual sadism, malignant narcissism, and serial murder. *Journal of Forensic Sciences*. 42(10), 49-60.
- Giannangelo, S. (1996). *The psychopathology of serial murder*. West Port, Connecticut: Praeger.
- Gibson, D.C. (2006). *Serial murder and media circuses*. West Port, Connecticut: Praeger.
- Gilligan, J. (2001). *Preventing violence*. New York: Thames & Hudson.
- Grossman, D. (1996) *On killing*. New York: Little, Brown and Company.
- Grossman, D. (2009) *On killing; revised and updated*. New York: Little, Brown and Company.
- Gurian, E. (2011) Female serial killers: directions for future research on a hidden population. *International Journal of Offender Therapy and Comparative Criminology*. 55(1), 27-42.
- Hale, R. (1994). The Role of Humiliation and Embarrassment in Serial Murder. *Psychology, A Journal of Human Behaviour*, 31, 17-23.
- Hare, R. D. (1993). *Without conscience: the disturbing world of the psychopaths among us*. New York: The Guildford Press.

- Hamblen, J. (October, 1998). PTSD in Children and Adolescents. Retrieved August 1, 2005, from the National Center for PTSD Web site:
http://www.ncptsd.va.gov/facts/specific/fs_children.html
- Harbort, S., & Mokros, A. (2001). Serial killers in Germany from 1945 to 1995. *Homicide Studies*, 5, 311-334.
- Hare, R. D. and Neumann, C. S. (2008). Psychopathy as a clinical and empirical construct. *Annual Review of Psychology*. Volume 4, pp. 217-246.
- Hensley, C. & Wright, J. (2003). From animal cruelty to serial murder: applying the Graduation Hypothesis. *International Journal of Offender Therapy*. 47(1), 71-88.
- Hensley, C. & Singer, S. D. (2004). Applying Social Learning Theory to childhood and adolescent fire setting: can it lead to serial murder? *International Journal of Offender Therapy and Comparative Criminology*. 48(4), 461-476.
- Hickey, E.W. (2005). *Serial killers and their victims*. (4th Edition). Belmont, California: Wadsworth.
- Jenkins, P. (1988). Serial Murder in England 1940-1985. *Journal of Criminal Justice*, 16, 1-15.
- Juni, S. (2010) Conceptualizing psychopathy: a psychodynamic approach. *Journal of Aggression, Maltreatment & Trauma*. Volume 19, pp. 777-800.
- Kaplan, S.J. (2002). "When the past won't go away". *Jacksonville Medicine*. August/September, pp. 1-10.
- Kaplan, S. G. and Cornell, G. C. (2004) Psychopathy and ADHD in adolescent male offenders. *Youth Violence and Juvenile Justice*. Volume 2 Number 2, pp 148-160.
- Keeney, B.T., & Heide, K.M. (1994). Gender differences in serial murder: a preliminary analysis. *Journal of Interpersonal Violence*. 9(3), 383-398.
- Kirkman, C. A. (2008). Psychopathy: a confusing clinical construct. *Journal of Forensic Nursing*. Volume 4, pp. 29-39.
- Kulbarsh, P. (April, 2008). *The Malignant Narcissist*. Retrieved September 2, 2013, from Officer.com Web site: <http://www.officer.com/article/10248968/the-malignant-narcissist>.
- Lankford, A. (2009) *Human killing machines: systematic indoctrination in Iran, Nazi Germany, Al Qaeda, and Abu Ghraib*. Lanham, Maryland: Lexington Books.
- Lester, D. (1995). *Serial killers: the insatiable passion*. Philadelphia: The Charles Press.
- Levenson, M. R. (1992). Rethinking psychopathy. *Theory Psychology*. Volume 2 Number 1, pp. 51-71.

- McKenzie, C. (1995). A study of serial murder. *International Journal of Offender Therapy and Comparative Criminology*, 39, 3-10.
- Meloy, J.R. (1992). *Violent attachments*. New Jersey: Jason Aronson Inc.
- Myers, W.C. (2004). Serial murder by children and adolescents. *Behavioral Sciences and the Law*. 22, 357-374.
- Newman, K. S., Fox, C., Harding, D.J., Mehta, J. and Roth, W. (2004) *Rampage: the social roots of school shootings*. New York: Basic Books.
- Reid, W. H. (2001) Antisocial Personality, Psychopathy, and Forensic Psychiatry. *Journal of Psychiatric Practice*. Volume 7 Issue 1, pp. 55-58.
- Saigh, P., & Bremner, J.D. (1999). *Post Traumatic Stress Disorder, a comprehensive text*. Boston: Allyn and Bacon.
- Sears, D. (1991). *To kill again: the motivation and development of serial killers*. Delaware: SR Books.
- Seltzer, M. (1998) *Serial killers: death and life in America's wound culture*. New York: Routledge.
- Skeem, J. L. and Cooke, D. J. (2010). Is criminal behavior a central component of psychopathy?: conceptual directions for resolving the debate. *Psychological Assessment*. Volume 22 Number 2, pp. 433-445.
- Vien, A. and Beech, A. R. (2006). Psychopathy: theory, measurement and treatment. *Trauma, Violence & Abuse*. Volume 7 Number 3, pp. 155-174.
- Vronsky, P. (2007) *Female serial killers: how and why women become monsters*. New York: Berkley Books.
- Warren, J.I., & Hazelwood, & R.R., Dietz, P.E. (1996). The sexually sadistic serial killer. *Journal of Forensic Sciences*. 41(6), 970-974.
- Watson, P. (1978). *War on the mind: the military uses and abuses of psychology*. London: Hutchinson of London.

Appendix A. Data Coding Sheet

- A.** Name
- B.** Date of Birth
- C.** Adopted out or sent to foster home
- D.** Age at time adopted out or sent to foster home
- E.** Raised by grandparents
- F.** Female primary adult left family through abandonment, divorce or death
- G.** Female primary adult an alcoholic
- H.** Male primary adult an alcoholic
- I.** Witnessed sex acts, sexual touching during childhood
- J.** Criminal by other member(s) of household
- K.** Female primary adult committed adultery
- L.** Subjected enlisted in military
- M.** Age when enlisted in military
- N.** Primary adult in military
- O.** Female primary adult single mother between subject's birth and age of 3
- P.** Male primary adult left family through abandonment, divorce or death
- Q.** Male primary adult absent most of day
- R.** Male primary adult committed adultery
- S.** Family isolated within/from community, little social contact
- T.** Isolated within family/singled out/withdrawn from family
- U.** No supportive or protective primary adult
- V.** Firearms, hunting knives, poison or other potential weapons in family home

- W.** Prejudice against certain races, gender, sex preferences role modelled in family home
- X.** Female primary adult dominated male primary adult in home
- Y.** Male primary adult physically violent with female primary adult
- Z.** Female primary adult physically violent with male primary adult
- AA** Verbal denigration from male primary adult during childhood
- AB** Verbal denigration from female primary adult during childhood
- AC** Verbal denigration from peers during childhood
- AD** Verbal denigration from male primary adult during adolescence
- AE** Verbal denigration from female primary adult during adolescence
- AF** Verbal denigration from peers during adolescence
- AG** Isolation from peers during childhood
- AH** Isolation from peers during adolescence
- AI** Physical violence from peers during childhood
- AJ** Physical violence from peers during adolescence
- AK** Physical violence/violent discipline from female primary adult during childhood
- AL** Physical violence/violent discipline from male primary adult during childhood
- AM** Physical violence/violent discipline from female primary adult during adolescence
- AN** Physical violence/violent discipline from male primary adult during adolescence
- AO** Witnessed acts of killing animals during childhood
- AP** Committed acts of killing animal(s) during childhood
- AQ** Committed acts of killing animal(s) during adolescence
- AR** Sexual contact/abuse from female primary adult during childhood

AS	Sexual contact/abuse from male primary adult during childhood
AT	Sexual contact/abuse from female primary adult during adolescence
AU.	Sexual contact/abuse from male primary adult during adolescence
AV	Sexual contact/abuse from female outside immediate family during childhood
AW	Sexual contact/abuse from male outside immediate family during childhood
AX	Sexual contact from sibling during childhood
AY	Sexual contact from sibling during adolescence
AZ	Sexual contact from study subject towards sibling or another child during childhood or adolescence
BA	Personally experienced event which threatened death or severe injury to self during childhood
BB.	Personally experienced event which threatened death or severe injury to immediate other during childhood
BC	Personally experienced event which threatened death or severe injury to self during adolescence
BD	Personally experienced event which threatened death or severe injury to immediate other during adolescence
BE	Consistent re-experiencing of event through flashbacks, episodes of intense distress during childhood
BF	Persistent avoidance of all stimuli related to the original event during childhood
BG	Ongoing increased arousal as a result of trauma including irritability, concentration difficulties, hyper-vigilance and an exaggerated startle response during childhood
BH	Generalized fear during childhood
BI	Stranger or separation anxiety during childhood
BJ	Persistent avoidance of all stimuli related to trauma during childhood
BK	Persistent avoidance of situations though not related to Trauma Event during childhood

BL	Preoccupation with words, symbols related to Trauma Event during childhood
BM	Preoccupation with words, symbols not related to Trauma Event during childhood
BN	Loss of achieved developmental task during childhood
BO	Sleep disturbances during childhood
BP	Dissociation during childhood
BQ	Time skew during childhood or adolescence
BR	Hostility during childhood
BS	Depression during childhood
BT	Aggression during childhood
BU	Aggression during adolescence
BV	Sexually inappropriate behaviour during childhood
BW	Feelings of isolation and stigma during childhood or adolescence
BX	Omen formation – belief there were warning signs that predicted Trauma Event during childhood
BY	Omen formation – belief there were warning signs that predicted Trauma Event during adolescence
BZ	Re-enactment of Trauma Event in play, drawings, verbalizations during childhood
CA	Re-enactment of Trauma Event in play, drawings, verbalizations during adolescence
CB	Engage in traumatic re-enactment during childhood
CC	Exhibit impulsive behaviours during childhood or adolescence
CD	Symptoms cause significant impairment in social or school functioning
CE	Physically violent towards peers during childhood
CF	Physically violent towards peers during adolescence
CG	Pre-elementary sexually acting out

CH	Repeated themes in childhood conduct
CI	Alcohol use during childhood
CJ	Alcohol use during adolescence
CK	Drug use during childhood
CL	Drug use during adolescence
CM	Dissociation, constant daydreams or fantasizing under or equal to 7 years old
CN	Dissociation, constant daydreams or fantasizing greater than or equal to age 8 and less than or equal to age 11
CO	Dissociation, constant daydreams or fantasizing greater than or equal to age 12 and less than or equal to age 18
CP	Paranoia during childhood or adolescence
CQ	Committed criminal act(s) during childhood
CR	Committed criminal act(s) during adolescence
CS	Involved in mutually consensual sex act during adolescence
CT	Committed murder during childhood or adolescence
CU	Severe mutual verbal abuse and/or mutual physical altercations between primary adults
CW	Father openly rejecting during childhood or adolescence
CX	Sent away by primary adult(s) temporally or permanently

Appendix B. Data Sources

- Abrahamsen, D. (1985). *Confessions of Son of Sam*. New York: Columbia University Press.
- Allen, W. (1976). *Starkweather: The Story of a Mass Killer*. Boston: Houghton Mifflin Company.
- Beasley, J. O. (2004). Serial murder in America: case studies of seven offenders. *Behavioral Sciences and the Law*. 22, 395-414.
- Beattie, J. (1981). *The Yorkshire Ripper story*. London: Quartet Books Limited.
- Beaver, N., & B.K. Ripley & Trese, P. (1974). *Caril*. Philadelphia: J.B. Lippincott.
- Brady, I. (2001). *The Gates of Janus*. London: Feral House.
- Brown, P. (2003). *Killing for sport: inside the mind of serial killers*. Beverley Hills, California: New Millennium Press.
- Burn, G. (1984). *Somebody's husband, somebody's son; the story of Peter Sutcliffe*. London, England: William Heineman Ltd.
- Burn, G. (1998). *Happy like killers*. England: Faber and Faber.
- Cahill, T. (1986). *Buried dreams: inside the mind of a serial killer*. New York: Bantam Books.
- Call, M. (1985). *Hand of death; the Henry Lee Lucas story*. Louisiana: Prescott Press, Inc.
- Chase, A. (2002). *Harvard and the Unabomber: the education of an American terrorist*. New York: W.W. Norton & Company.
- Cheney, M. (1976). *The Coed Killer*. New York: Walker and Company.
- Cheney, M. (1992). *Why: the serial killer in America*. Lincoln, Nebraska: Authors Guild Backinprint.com.
- Clarkson, W. (2002). *The Good Doctor*. New York: St. Martin's Paperbacks.
- Conradi, P. (1992). *The Red Ripper*. New York: Dell Publishing.
- Cox, M. (1991). *The confessions of Henry Lee Lucas*. New York: Pocket Star Books.
- Cross, R. (1981). *The Yorkshire Ripper: the in-depth study of a mass killer and his methods*. London: Granada Publishing Limited.

- Dahmer, L. (1994). *A father's story*. New York: William Morrow and Company, Inc.
- Damio, W. (1974). *Urge to kill*. New York: Pinnacle Books, Inc.
- Dodd, W. A., Steinhorst, R., Rose J. (1994). *When the monster come out of the closet*. Torrence, California: Rose Publishing.
- Eddowes, J. (1994). *The two killers of Rillington Place*. London: Little, Brown and Company.
- Eftimiades, M. (1993). *Garden of graves: the shocking true story of Long Island serial killer Joel Rifkin*. New York: St. Martin's paperbacks.
- Fisher, J. C. (1997). *Killer among us: public reactions to serial murder*. Westport, Connecticut: Praeger.
- Flowers, A. (2000). *Bound to die*. New York: Pinnacle Books.
- Fox, J.A., & Levin, J. (1988). *Mass murder: America's growing menace*. New York: Plenum Press.
- Furneaux, R. (1961). *The two stranglers of Rillington Place*. London: Panther Books.
- Gekoski, A. (1998). *Murder by numbers, British serial sex killers since 1950: their childhoods, their lives, their crimes*. Great Britain: Andre Deutsch.
- Gibson, D.C. (2006). *Serial murder and media circuses*. West Port, Connecticut: Praeger.
- Gurwell, J.K. (1974). *Mass murder in Houston: 27 youths slain in bizarre sex rituals*. Houston, Texas: Cordovan Press.
- Hanna, D. (1975). *Harvest of horror: Mass murder in Houston*. New York: Belmont Tower Books.
- Harrington, J., & Burger, R. (1999). *Justice denied: The NG case, the most infamous and expensive murder case in history*. New York: Plenum Trade.
- Henton, D., & Owens, G. (2001). *No kill, no thrill*. Edmonton, Alberta: Red Deer Press.
- Hickey, E.W. (2005). *Serial killers and their victims*. (4th Edition). Belmont, California: Wadsworth.
- Holden, A. (1974). *The St. Albans poisoner: the life and crimes of Graham Young*. London: Hodder and Stoughton.
- Humes, E. (1991). *Buried secrets*. New York: Dutton Books.
- Jackman, T., & Cole, T. (1992). *Rites of burial*. New York: Windsor Publishing Corp.

- Jespersion, K., & O'Brien, D. (2002). *I: the creation of a serial killer*. New York: St. Martin's Press.
- Jouve, N. W. (1986). *The street-cleaner: The Yorkshire Ripper case on trial*. London: Marion Boyars.
- Kelleher, M.D., & Kelleher, C.L. (1998). *Murder most rare: the female serial killer*. West Port, Connecticut: Praeger.
- Kelley, S. (2002). *The Boston Strangler*. New York: Pinnacle Books, Kensington Publishing Corp.
- Kennedy, D., & Nolin, R. (1992). *On a killing day*. Chicago: Bonus Books, Inc.
- Kennedy, L. (1961). *Ten Rillington Place*. New York: Simon and Schuster.
- King, G. C. (1993). *Driven to kill*. New York: Windsor Publishing Corp.
- Klausner, L. D. (1981). *Son of Sam: based on the authorized transcription of the tapes, official documents and diaries of David Berkowitz*. New York: McGraw Hill.
- Krivich, M., & Ol' Gert, O. (1993). *Comrade Chikatilo: the psychopathology of Russia's notorious serial killer*. New Jersey: Barricade Books.
- Lane, B., & Gregg, W. (1992). *The encyclopedia of serial killers*. London: Headline Book Publishing.
- Lavergne, G.M. (1999). *Bad boy from Rosebud: the murderous life of Kenneth Allen McDuff*. Denton, Texas: University of North Texas Press.
- Leyton, E. (1986). *Hunting humans*. Toronto: McClelland and Stewart Limited.
- Linedecker, C.L. (1989). *Hell Ranch*. Austin, Texas: Diamond Books.
- Lourie, R. (1993). *Hunting the devil*. New York: Harper Collins Publishers.
- McDougal, D. (1991). *Angel of darkness*. New York: Warner Books.
- Martingale, M. (1993). *Cannibal killers*. New York: St. Martin's Paperbacks.
- Masters, B. (1985). *Killing for company: the case of Dennis Nilsen*. London: Jonathan Cape.
- Masters, B. (1996). *She must have known*. New York: Doubleday.
- Mello, M. (1999). *The United States versus Theodore John Kaczynski: ethics power and the invention of the Unabomber*. New York: Context Books.
- Michaud, S., & Aynesworth, H. (1983). *The only living witness*. New York: Simon & Schuster.

- Michaud, S., & Aynesworth. (1989). *Ted Bundy: conversations with a killer*. New York: Signet.
- Mladinich, R. (2001). *From the mouth of the monster: the Joel Rifkin story*. New York: Simon & Schuster Inc.
- Morrison, H., & Goldberg, H. (2004). *My life among the serial killers*. New York: Avon Books.
- Moss, J., & Kottler, J. (1999). *The last victim: a true life journey into the mind of the serial killer*. New York: Warner Books.
- Nelson, P. (1994). *Defending the devil: my story as Ted Bundy's last lawyer*. New York: William Morrow and Company, Inc.
- Newton, M. (1994). *Silent rage: the 30-year odyssey of a serial killer*. New York: Dell Publishing.
- Newton, M. (1998). *Rope: the twisted life and crimes of Harvey Glatman*. New York: Pocket Star Books.
- Newton, M. (2006). *The encyclopedia of serial killers*. (2nd Ed.) New York: Facts on File.
- Norris, J. (1988). *Serial killers*. New York: Anchor Books.
- O'Brien, D. (1985). *Two of a kind: The Hillside Stranglers*. New York: Nal Books.
- O'Donnell, J. (1993). *Starkweather: a story of mass murder on the Great Plains*. Nebraska: J & L Lee Co.
- Olsen, J. (1974). *The man with the candy: the story of the Houston mass murders*. New York: Simon and Schuster.
- Papa, J. (1995). *Lady killer*. New York: St. Martin's Paperbacks.
- Peters, C. (2005). *Harold Shipman: mind set on murder*. London, England: Carlton Books.
- Philbin, T. & Philbin P. (2009). *The killer book of serial killers*. Illinois: Sourcebooks Inc.
- Potter, J.D. (1966). *The monsters of the Moors*. New York: Ballantine Books.
- Provost, G. (1989). *Across the border: the true story of the satanic cult killings in Matamoros, Mexico*. London: Pocket Books.
- Pulitzer, L.B., & Swirsky, J. (1994). *Crossing the line: the true story of Long Island serial killer Joel Rifkin*. New York: Berkley Books.
- Reinhardt, J. M. (1960). *The murderous trail of Charles Starkweather*. Illinois: Bannerstone House.

- Ressler, R. K., & Shactman, T. (1997) *I have lived in the monster: inside the minds of the world's most notorious serial killers*. New York: St. Martin's Paperbacks.
- Reynolds, M. (1992). *Dead ends*. New York: St. Martin's Paperbacks.
- Rule, A. (1988). *The Want-Ad Killer*. New York: Penguin Putnam Inc.
- Rule, A. (2000). *The stranger beside me*. New York: Signet.
- Russell, S. (2002). *Lethal intent*. New York: Kensington Publishing Corp.
- Sargeant, J. (1996). *Born bad*. London, England: Creation Books.
- Schutze, J. (1989). *Cauldron of blood: the Matamoros cult killings*. New York: Avon Books.
- Schwartz, A. E. (1992). *The man who could not kill enough: the secret murders of Milwaukee's Jeffrey Dahmer*. New York: Birch Lane Press.
- Schwarz, T. (1988). *Hillside Strangler: a killer's mind*. New York: Vivisphere Publishing.
- Scott, R. (2002). *Savage: he killed with shocking brutality*. New York: Pinnacle.
- Sherman, C. (2003). *Search for the Boston Strangler*. New York: Warner Books.
- Sitford, M. (2000). *Addicted to murder*. New York: Virgin Publishing.
- Stewart, B. (1996). *No remorse*. New York: Pinnacle Books.
- Strean, H., & Freeman, L. (1991). *Our wish to kill: the murder in all our hearts*. New York: St. Martin's Press.
- Tithecott, R. (2001). *Of men and monsters: Jeffrey Dahmer and the construction of the serial killer*. Wisconsin: University of Wisconsin Press.
- Vorpagel, R. (1998). *Profiles in murder: an FBI legend dissects killers and their crimes*. New York: Dell Books.
- Vronsky, P. (2007). *Female serial killers: how and why women become monsters*. New York: Berkley Books.
- Ward, B. (1995). *Bobby Joe: in the mind of a monster*. Boca Raton, Florida: Cool Hand Communications, Inc.
- Wellman, J., & McVey, L., & Replogle, S. (1997). *Smoldering Embers: The True Story of a Serial Killer and Three Courageous Women*. Farhills, New Jersey: New Horizon Press.
- West, D. (1974). *Sacrifice unto me: the 21 Santa Cruz murders*. New York: Pyramid Books.

- Whittle, B., & Ritchie, J. (2004). *Prescription for murder*. New York: Warner Books.
- Williams, E. (1967). *Beyond Belief: A Chronicle of Murder and its Detection*. New York: Random House.
- Wilson, C., Seaman, D. (1990). *The serial killers: a study in the psychology of violence*. London: W.H. Allen.
- Wilson, R. (1986). *Devil's disciples*. New York: Javelin Books.
- Wilson, R. (1988). *Return to Hell: the continuing story of Moors killers Brady and Hindley*. London: Javelin Books.
- Wolfe, L. (1998). *Love me to death*. New York: Pocket Books.
- Wright, J., & Hensely, C. (2003). "From animal cruelty to serial murder: applying the Graduation Hypothesis." *International Journal of Offender Therapy*. 47(1), 71-88.
- Young, W. (1987). *Obsessive poisoner: the strange story of Graham Young*. London: Robert Hale & Company.
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Appendix C. Publication Permission



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