AN EVOLUTIONARY PSYCHOLOGICAL PERSPECTIVE ON FILICIDE AND FILICIDE-SUICIDE

by

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A Dissertation Submitted to the Faculty of
The Charles E. Schmidt College of Science
in Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy

Florida Atlantic University
Boca Raton, Florida
August 2011
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This dissertation was prepared under the direction of the candidate's dissertation advisor, Dr. David Bjorklund, Department of Psychology, and has been approved by the members of her supervisory committee. It was submitted to the faculty of the Charles E. Schmidt College of Science and was accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

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Title: An Evolutionary Psychological Perspective on Filicide and Filicide-Suicide
Institution: Florida Atlantic University
Dissertation Advisor: Dr. David Bjorklund
Degree: Doctor of Philosophy
Year: 2011

This dissertation focuses on using one tangible component of filicide, the method or weapon used by a parent to kill a child, as a means by which to understand parental psychology. An evolutionary psychological perspective (e.g., Buss, 2004; Bjorklund & Pellegrini, 2002; Daly & Wilson, 1988; Tooby & Cosmides, 1992) can provide insight into our understanding of filicide. Questions that have not been asked by previous researchers may come to the fore by using an evolutionary perspective as a guide for investigating filicide and its surrounding circumstances and contexts. I present the results of three empirical studies using archival data on filicides recorded in Chicago, Illinois. In Study 1, I present the results of an investigation of parental psychological differences evidenced by the methods of filicide, for filicides recorded between 1965 and 1994. The key results of Study 1 are: (a) while overall (i.e., non-genetic and genetic parents combined), beating was the method of filicide used most often, the percentage of filicides
committed by non-genetic parents by beating significantly exceeded the percentage of filicides committed by genetic parents; (b) in contrast, the percentage of filicides committed by non-genetic parents by asphyxiation was significantly less than the percentage of filicides committed by genetic parents. In Studies 2A and 2B, I present the results of an investigation using the 1965-1994 dataset as well as a dataset of filicides-suicides recorded between 1870 and 1930. The key results of these two studies indicate that filicide-suicide may be more likely to occur in certain contexts (e.g., multiple-victim killings) and in certain circumstances (e.g., following paternal filicide). In the final chapter, I discuss the key findings, identify limitations of the current research, and present several future directions for research.
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CHAPTER 1: INTRODUCTION

Parent-child relationships can be loving and emotionally rewarding. These relationships also can be physically, emotionally, and financially exhausting. The sometimes exhausting costs for parents are usually outweighed by the many psychological and emotional benefits. On the other hand, when it is perceived by the parent that the exhausting costs outweigh the potential benefits, parent-child relationships may include child abuse, neglect, and sometimes filicide the killing of a child by a parent. How can a relationship that can be characterized by love, nurturance, and innocence result in the death of a child by the hands of a parent or parent substitute (e.g., stepparent)? Although there are many starting points at which this question can be answered, using an evolutionary psychological perspective as the starting point provides one with a spectrum of parental psychology that allows for a better understanding of the circumstances surrounding filicide.

The studies contained herein focus on the method of filicide and other predictors of filicide as a window into understanding parental psychological differences. Although other perspectives have been applied to the study of the contexts and circumstances surrounding filicide, using an evolutionary psychological perspective (e.g., Buss, 2004; Bjorklund & Pellegrini, 2002; Daly & Wilson, 1988; Tooby & Cosmides, 1992) can provide unique insight into our understanding of filicide. More specifically, questions
that have not been asked by previous researchers may come to fore by using an evolutionary perspective as a theoretical guide for investigating filicide in a more comprehensive manner. In this document, I first provide an overview of previous research on filicide. Second, I discuss how an evolutionary psychological perspective, relative to other perspectives, has contributed to our understanding of filicide. Third, I present the results of three studies. Finally, a general discussion and future directions section will conclude this series of studies.

**Child Homicide and Filicide**

In general, homicide is an appalling crime. When a child is killed, however, the emotional charge that is typically experienced tends to be exaggerated (Alder & Polk, 2001; Christoffel, 1990). Despite the many efforts of parents and the community, the homicide rate for children in the United States is among the highest in developing countries (Ferguson, Miller-Stratton, Heinrich, Fitz, & Smith, 2008). One of the five leading causes of death among children in the United States is among the highest in developing countries (Christoffel, 1984; Goetting, 1990) is in fact homicide. In a recent study conducted by Mugavin (2008), the researcher reported there were about 1,460 child-abuse fatalities in the United States in 2005. Furthermore, according to the United States Department of Justice, 75 percent of victims of child maltreatment are younger than 5 years old. Based on data collected by the Federal Bureau of Investigations (FBI) Uniform Crime Reports (UCR) for the years 1976 to 1994, there was an average of 420 filicides by a biological parent each year.

Parents are most often the offenders of child homicides (see Bourget & Gagne, 2002). Accordingly, Mugavin (2008) reported that in 2005, more than 76% of child
homicides were committed by one or both parents. Other researchers have documented similar findings. Based on information provided on death certificates over a 10-year period in Sweden, Somander and Rammer (1991) found that parents committed 84% of child homicides. Similarly, Wallace (1986) obtained information on all homicides recorded by the New South Wales police department spanning a 14-year period and found that parents committed roughly 85% of child homicides. Using an English and Wales sample, Wilczynski (1997) documented that a parent or parent-substitute killed 80.2% of child homicide victims under 16 years old. Using an Australian sample, Wilczynski (1997) also documented that parents or parent substitutes committed 68.9% of child homicides. Relative to other Western, industrialized nations, a lower percentage of child homicides in the United States were committed by parents (Wilczynski, 1997). One exception to this pattern was reported by Jason (1983). Using data organized by the Federal Bureau of Investigation’s Uniform Crime Reporting System covering the years 1976 to 1979, Jason (1983) found, for example, that of all child homicides, parents or stepparents were not more likely than others to be the offender. Jason (1983) did find, however, that parents were more likely to be the offenders when the child was under three years old.

Inaccuracies in the Number of Child Homicides

Previous research suggests that there is a gross underestimation of the number of child homicides (Alder & Polk, 2001; Mugavin, 2008; Wilczynski, 1997) and that there are specific factors that contribute to this underestimation (Mugavin, 2008; Wilczynski, 1997). Accordingly, there are several homicide scenarios that are believed to be the basis
for the underestimation of child homicides. I will discuss two of these homicide scenarios. The first is child maltreatment or neglect cases in which the child dies but maltreatment or neglect is not the immediate cause of the child’s death. In such cases, there may not be obvious indications of abuse or neglect which leads to assumption that the child died from some other primary cause. These types of cases are often wrongly regarded as a natural death or an accident (Wilczynski, 1997; Alder & Polk, 2001).

The second basis for underestimation is deaths diagnosed as sudden infant death syndrome (SIDS) when in fact the child’s death may have been intentionally carried out by a parent or parent substitute. The diagnosis of SIDS is reserved for children younger than 1 year. Retrospective examinations of autopsy reports of children diagnosed as having died from SIDS revealed that a noteworthy number of reports contain suggestive evidence that the cause of death indeed could be specified (e.g., homicide) (Meadow, 1989). Although there is considerable debate as to how many SIDS cases are in fact “really” homicides, United States researchers estimate the proportion to be between 1.3% and 4.7% (McClain, Sacks, Froehlke, Ewigman, 1993). English researchers have estimated the proportion of the improper diagnosis of SIDS as being as high as 20%. Several reasons have been implicated for the misdiagnosis of SIDS.

SIDS is often diagnosed because of the inability to diagnose the incident as resulting from any other cause (Wilczynski, 1997). One reason for this inability is the lack of investigative evidence to diagnose otherwise. Emery (1989) suggests that the SIDS diagnosis is one of convenience, especially when there are no obvious external injuries. Researchers corroborated Emery’s (1989) claim by documenting that infant
deaths were not examined as thoroughly as older child deaths and adult deaths. Showers, Apolo, Thomas, and Beavers (1985), for example, found that 53% of child death autopsy reports did not include reports of external physical injury to the child. Cases with no documentation of such external injuries presumably may be actual cases of filicide that have been overlooked.

Classification Systems and Maternal Filicide

*Infanticide* refers to the killing of a child under the age of one year, whereas *neonaticide* (Resnick, 1969; 1970) refers to the killing of a child less than 24 hours old. Prior to the research of Resnick (1969; 1970), child murders by parents were considered either infanticide or filicide. Resnick (1970) documented that, relative to mothers who kill older children, mothers who commit neonaticide are younger, unmarried, less often to have a psychiatric disorder, and less frequently commit suicide following the homicide. In addition to the creation of a new sub-category of filicide—neonaticide—Resnick (1969) developed the first classification system of filicides based on the explanation given by the offender (or motive): unwanted child, acutely psychotic, altruistic (with the subdivisions (a) filicide accompanied by parental suicide and (b) filicide to relieve pain or suffering), accidental, and spouse revenge.

Based on this classification system, Resnick (1970) found that the motives reported by parents who commit neonaticide differed from the motives reported by parents who kill older children. Mothers who commit neonaticide, for example, were more likely to report as a motive not wanting the child, whereas mothers who killed older children were more likely to report as motives “altruistic” reasons, such as
rescuing a child from having to experience an unhappy future. Furthermore, neonaticidal mothers reported killing the newborn so as to avoid the negative social implications for having a child without an investing father. Resnick (1970) also documented that neonaticidal mothers were more likely to be imprisoned, whereas filicidal mothers of older children were more likely to be treated psychiatrically. The classification system created by Resnick (1969) served as a steppingstone for other researchers to examine filicide in terms of classification systems to better understand patterns of maternal filicide.

D’Orban (1979) and Scott (1973), for example, identified a six-category classification system for filicide based on psychiatric records, case records, and personal examination notes gathered from 89 women imprisoned for attempted murder or murder of their natural child: battering mothers, mentally ill mothers, neonaticides, retaliating women, unwanted children, and mercy killing. With modification and the addition of the category neonaticide, D’Orban’s (1979) six-category classification system is an extension of the classification system originally created by Scott (1973). D’Orban’s (1979) classification system differs from Resnick’s (1969) classification system in that each category is based on the apparent impulsivity surrounding the crime, whereas Resnick’s is based on the offender’s stated motive. Consistent with the findings of Resnick (1970), D’Orban also found that, relative to mothers in all other classifications, mothers of neonaticide were younger and unmarried (see also Daly & Wilson, 1988). Furthermore, D’Orban (1970; and see Friedman, Sorrentino, Stankowski, Holden, & Resnick, 2008) also found that mothers who were classified as battering mothers,
retaliating women, mentally ill mothers, and neonaticidal mothers were more likely to have a history of psychiatric treatment (inpatient or outpatient). There were no cases in which filicidal mothers of unwanted children and mothers of mercy killings had a psychiatric history. Are similar patterns found when fathers commit filicide?

**Paternal Filicide**

Most previous research on filicide focused on mother-perpetrated neonaticide (Adinkrah, 2003). Relative to mothers, fathers are less likely to commit neonaticide. The research of Resnick (1970), for example, documented that, of 89 filicides, only two cases involved fathers. Other research documents that fathers (relative to mothers) are more likely to commit filicide when the child is older (Marleau, Poulin, Webanck, Roy, & Laporte, 1999) and that the characteristics and circumstances surrounding the filicide are markedly different from those surrounding maternal filicides.

There are few studies in the literature that specifically investigate paternal filicide. Most of the research that does exist on paternal filicide is found in the psychiatric literature as single-case studies. Although it can be argued that case studies may be limited to qualitative analysis, these types of studies can nevertheless serve as a facilitator for future research on filicide. The fact that fathers are just as likely as mothers to kill a child should be reason enough to value the qualitative nature of the research on paternal filicide.

In order to better understand contexts in which paternal filicide occur, Marleau et al. (1999) obtained a sample of 10 men, representing 26% of offenders for paternal filicides committed in a small community during the years 1982 to 1994. These men
were hospitalized and had killed one or more of their children. Consistent with previous research, Marleau et al. (1999) found that the average age of victims was five years and that most men attempted uxoricide (the killing of a wife) and/or suicide following the attempted or completed filicide. Seventy percent of filicidal men were unemployed and the other thirty percent had just lost a job or had serious financial problems (Marleau et al., 1999). Relatedly, Resnick (1969) noted that fathers are more likely to commit filicide when the child is considered a financial burden and when the father has doubts about his paternity to the child. Ethnographic studies conducted by Daly and Wilson (1988) revealed that, of 112 infanticides, 20 were directly related to questions of paternity. Daly and Wilson (1988) also documented that, in two societies in particular, men married to women who had children from a previous mate often ordered the children to be killed.

Theories of Filicide

Given the historical prevalence of filicide and the ethnographic, demographic and cross-species evidence (Hrdy, 1999; Daly and Wilson, 1988), until recently there has been surprisingly little psychological research on this topic (Silverman & Kennedy, 1988; Wilczynski, 1997). Furthermore, and perhaps more importantly, the research that has been conducted is lacking in theoretical guidance. The foci of historical theories of filicide have included: the mother’s inability to deal with her impulses (Baker, 1902) and the birthing and lactation processes as severe female stressors that cause the mother to become insane (Hopwood, 1927). Psychodynamic approaches to explain filicide have also been documented (e.g., Bender, 1934; Wittels, 1944). Bender (1934), for example,
suggested that filicide is not an expression of hatred toward the child, but rather, it is a “suicidal act as a result of identification processes. It is not primarily an expression of conscious or unconscious hatred against the child” (p. 46). Mothers project their suicidal feelings onto the child and hence feel relief when the child is dead. Wittels (1944) proposed that mothers who commit filicide feel an unconscious hatred toward their daughters who are potential rivals for the attention of their fathers. Although there has been some attempt by researchers to apply theory to the study of filicide, it was the application of evolutionary psychological principles to studying filicide that yielded significant advances in this field of study.

**Evolutionary Psychology and Filicide**

Evolutionary psychology is the study of how and why humans and nonhumans behave the way they do, with special attention to the particular ancestral environments that contributed to the production of the physical and behavioral traits of an organism. Evolutionary psychology is built upon the fact of evolution by natural selection (Darwin, 1859), and asserts that the behaviors that we see today are a result of the mind or brain being shaped by millions of years of evolution (for reviews, see Buss, 2004; Bjorklund & Pellegrini, 2002; Daly & Wilson, 1988; Tooby & Cosmides, 1992). *Inclusive-fitness theory* (Hamilton, 1964) has been used as a guiding theory for understanding how and why a parent might kill a child. Inclusive fitness can be defined as the “sum of an individual’s own reproductive success (classical fitness) plus the effects the individual’s actions have on the reproductive success of his or her genetic relatives” (Buss, 2004, p. 14). Accordingly, the payoff for investment in reproductive currency for an individual is
higher when that recipient of the investment shares genes with the benefactor. In parent-child relationships, for example, a parent will benefit more, reproductively, when investing in a genetic child than when investing in a stepchild. Informed by an evolutionary psychological perspective, Wilson, Daly, and Weghorst (1980) acknowledged there was a large literature on stepfamilies, but none of the previous studies addressed the stepparent as a potential risk factor for child abuse, neglect, and filicide (Daly & Wilson, 1998).

Theoretical Perspectives on Stepparent-child Relationships

Prior to the research conducted by Wilson et al. (1980), victims of child abuse and neglect were documented to be more frequently found in homes in which a stepparent resided, but this previous research did not address how or why the presence of a stepparent might increase the risk of child abuse and neglect. Gil (1970), for example, found that 22% of child abuse victims lived with a stepparent, but offered no discussion of this powerful finding.

Models that integrate factors at the level of the individual and social contexts are referred to as socio-situational models (Azar, 2002). Belsky (1980) proposed that there are four levels that can be influenced and hence increase the risk of child abuse: Individual characteristics (e.g., parental IQ), family-level factors (e.g., marital satisfaction), community dynamics (e.g., SES), and cultural factors (e.g., moral values). According to Azar (2002), models of this type are used in assessing child outcomes and are not very useful in intervention efforts for already abusive parents because these factors can both act as mediators and moderators of child abuse risk as well as other
child risks.

Previous research has proposed that the role of the stepparent is vaguely defined by society (Cherlin, 1978, Marsiglio, 1992). Because stepparental behavioral and legal responsibilities to stepchildren are fewer than the behavioral and legal responsibilities of genetic parents to their children, stepparents are at increased risk for abusing their stepchildren (Fine, 1994, White, 1994). This logic does not provide a complete explanation for why the risk of abuse is higher in stepfamilies. Although previous research has found that a stepfather reports feeling unprepared for his new parental duties (Fine, Coleman, & Ganong 1999), stepchildren have been documented to feel adamant about a stepparent not “filling the shoes” of their genetic parent (Fine et. al, 1999). If the role of a stepparent is ambiguous, then stepchildren as well should not be clear on the role of the stepparent. The data suggest that stepchildren are clear about at least one aspect of the stepparental role—it is not that of a genetic parent. Furthermore, abuse does not occur in most stepfamilies suggesting that stepparental role ambiguity does not fully explain why stepparents are at increased risk for abusing their stepchildren. Daly and Wilson (1988) argue that it is not that stepparents do not know what their role is as a stepparent, rather it’s that they do not want to do what is expected of them—invest in children unrelated to them without receiving the benefits associated with investing in children of their own.

Research conducted using family systems theory as a foundation stresses that family relationships function as a set of systems and subsystems (Hetherington & Stanley-Hagan, 2000). The formation of a stepfamily creates a disruption of this system
and hence leads to negative outcomes. There is a complexity to stepfamilies because of particular factors. Vague role responsibilities and within-family alliances across members of the stepfamily may contribute to this complexity (Hetherington & Stanley-Hagan, 2000).

Using an evolutionary psychological perspective, Wilson et al. (1980) provided a clear theoretical rationale and directed hypotheses for the increased risk of child abuse and neglect for children living with stepparents. As discussed above, and according to inclusive fitness theory (Hamilton, 1964), a parent will invest more in genetic offspring because they are carrying copies of their genes. Because stepparents do not share genes with their stepchildren, stepparents may display less solicitude toward their stepchildren than genetic parents do toward their genetic children. Wilson et al. (1980) found support for their evolutionarily informed hypothesis. Residence with a stepparent was the single best predictor of child abuse and neglect, even after controlling for potential confounds such as socioeconomic status (see also Daly & Wilson, 1985, 1988, 1998). Does the increased risk of a stepparent harming a child extend to filicide?

**Stepparents and Filicide**

Daly and Wilson (1988) investigated the risk of filicide by stepparents and by genetic parents. They found that, in an American sample, children younger than two years of age living with one stepparent and one genetic parent were 100 times more likely to be killed than were children living with two genetic parents. The results of the study were replicated using a Canadian database of homicides (Daly & Wilson, 1988). Canadian children under two years of age were 70 times more likely to be killed by a
stepparent than by a genetic parent. This increased risk of abuse and filicide by stepparents has been documented across diverse cultures (see Bjorklund & Pellegrini, 2002, and Daly & Wilson, 1988, 1998).

Genetic parents more than stepparents experience emotional rewards throughout a child’s development (Duberman, 1975; see also Daly & Wilson, 1988). Stepparents report less “parental” feeling toward stepchildren than is reported by genetic parents toward their children, and fewer stepparents than genetic parents report that they experience “parental love” toward their wards (Duberman, 1975). Stepparents also spend less money on stepchildren, relative to genetic parents’ monetary expenditures on their children (Anderson, Kaplan, & Lancaster, 1999). Because some stepparents sometimes do not reap emotional benefits of investing in genetically unrelated children, feelings of bitterness and resentment toward the stepchild may develop. At the extreme, such bitterness might motivate physical abuse and the killing of a child. Filicide also is committed by genetic parents, but the motives for these killings may be different than when stepparents kill their wards (Daly & Wilson, 1994). One manifestation of this difference may reside in the methods by which genetic parents and stepparents commit filicide.

**Methods of Filicide**

Previous research on the methods of filicide is typically theoretically unguided and is limited to the provision of descriptive information. In general, the methods by which children are killed are less violent than the methods by which other types of homicide occur (see Stanton & Simpson, 2002). Research examining the methods used
to commit neonaticide has produced conflicting results. Some research indicates that neonaticide is more often characterized by less violent methods such as neglect or by accident (see Marks & Kumar, 1993; Resnick, 1970). Other research reports contrary findings. D’Orban (1979), for example, reported that neonaticides were more likely to be characterized by more violent methods, such as battering and bludgeoning. Researchers investigating filicide have found that women are more likely than men to use methods such as drowning and suffocation, whereas men are more likely to use methods such as shooting and stabbing (Cheung, 1986; Resnick, 1970). Using an English sample, Wilczynski (1997) found that a higher percentage of men relative to women, 65% and 11%, respectively, used methods to commit filicide such as assault and shaking. None of the aforementioned studies reporting on the methods of filicide differentiated between methods used by genetic parents and methods used by stepparents.

Using Canadian and British databases, Daly and Wilson (1994) examined the methods by which stepfathers and genetic fathers commit filicide. Consistent with an evolutionary psychological hypothesis, Daly and Wilson (1994) found, across both databases, that stepfathers more often committed filicide by prolonged beatings and bludgeoning, whereas genetic fathers more often committed filicide by shooting and asphyxiation—methods that often produce a quicker and less painful death. Similarly, using a United States national-level database of over 400,000 homicides, Weekes-Shackelford and Shackelford (2004) found that a higher percentage of filicides committed by stepfathers (relative to genetic fathers) were perpetrated by beating and bludgeoning. Genetic fathers, in contrast, were more likely than stepfathers to shoot or
asphyxiate their wards. Weekes-Shackelford and Shackelford (2004) also included in their analyses mothers and stepmothers, which paralleled the results for fathers and stepfathers. A higher percentage of filicides committed by stepmothers (relative to genetic mothers) was perpetrated by beating and bludgeoning. Genetic mothers, in contrast, were more likely than stepmothers to asphyxiate their wards. Following previous research and argument, I treat the method of filicide as indicative of the underlying motive of the perpetrator (see Daly & Wilson, 1988, 1994, for review; see also related literature on instrumental versus expressive aggression as indicative of underlying motivation: Daly & Wilson, 1988; Thijssen & de Ruiter, 2011).

Study 1 of the current research extends previous research conducted by Weekes-Shackelford and Shackelford (2004) by including an exploration of the method of filicide for victims older than five years. Furthermore, the Chicago Homicide Database used in the current research provides detailed information that is not available in the national-level database used by Weekes-Shackelford and Shackelford, allowing for novel exploratory analyses. The victim-offender relationship “mothers’ boyfriend,” for example, is included in the database analyzed in the current research, but there was no such relationship code in the database used by Weekes-Shackelford and Shackelford. In addition, the Chicago Homicide Database provides codes for over 300 weapons used for filicide, whereas the database used in Weekes-Shackelford and Shackelford provided codes for only 13 methods. This more detailed information surrounding filicide allows for a richer exploratory investigation of filicidal parental psychology.
Dissertation overview

This dissertation focuses on using one tangible component of filicide, the method or weapon used by a parent to kill a child, as a means by which to understand parental psychology. An evolutionary psychological perspective (e.g., Buss, 2004; Bjorklund & Pellegrini, 2002; Daly & Wilson, 1988; Tooby & Cosmides, 1992) can provide insight into our understanding of filicide. Questions that have not been asked by previous researchers may come to fore by using an evolutionary perspective as a guide for investigating filicide and its surrounding circumstances and contexts. I next present the results of three empirical studies using archival data on filicides recorded in Chicago, Illinois. In Study 1, I present the results of an investigation of parental psychological differences evidenced by the methods of filicide, for filicides recorded between 1965 and 1994. In Studies 2A and 2B, I present the results of an investigation using the 1965-1994 dataset as well as a dataset of filicides-suicides recorded between 1870 and 1930. In the final chapter, I discuss the key results, identify limitations of the current research, and present several future directions for research.
CHAPTER 2: STUDY 1: DIFFERENCES IN FILICIDAL PARENTAL PSYCHOLOGY AND IN FILICIDES ACROSS CHILDREN’S AGE GROUPS

Method

Database and Procedures

The Chicago Homicide Database (CHD) is distributed by the Inter-University Consortium for Political and Social Research (ICPSR). The CHD is a compilation of all homicides recorded by the Chicago Police Department from the years 1965 through 1994. It provides victim-level information on 22,988 homicides. The dataset included variables such as the age and sex of the victim and offender, the relationship between the victim and the offender, and the type of weapon used to commit each filicide.

Contrasts between the method of killing and the parent-child relationship were examined for both younger and adult victims. Throughout the target years of the CHD, there were 548 homicides in which the offender-victim relationship was a genetic parent, a stepparent, or a mother’s boyfriend. There were 392 filicide victims who were 19 years or younger and 149 victims who were 20 years and older.

In a first set of analyses, I focus on victims younger than 5 years. Whereas other studies have examined methods of filicide for only children 5-years of age and younger, this is the first study to investigate methods of filicide as a function of victim’s age: 5 years and younger, 5-9 years, and 10-19 years. This focus on differences in method of filicide as a function of victim’s age is inspired by and showcases a developmental
perspective. The first set of analyses included filicide cases that met three criteria. First, following previous research, only victims 19-years of age or younger were included. Second, only victims who were killed by a genetic parent, by a stepparent, or by a mother’s boyfriend were included in the analyses. The primary reason for targeting these three relationship codes is to better understand parental homicidal psychology, and these three parent groups are sufficient to reach that goal. It is noteworthy to mention that in the CHD, adoptive parents were not coded separately from genetic parents. Adoptive parents were coded as genetic parents. Although adoptive parents are not distinguished from genetic parents, it is not expected that the results of this study would differ if in fact adoptive parents were coded in the CHD. According to Hoier and Rohde (2002), the parental psychologies of adoptive and genetic parents may parallel each other in terms of conflict over parental investment. Where there is an asymmetry in the degree of relatedness to a child between parents (as is between stepparents), greater conflict is expected. Because the degree of relatedness to a child for an adoptive mother and father is the same and the degree of relatedness to a child for a genetic mother and father is the same, less conflict is expected in these parental types compared to stepparents (Hoier & Rohde, 2002).

The third inclusion criterion for the first set of analyses was that the cases must have been coded as a single offender/single victim homicide. This criterion minimizes the likelihood of including cases that involve other homicide contexts in which filicide may occur (e.g., familicide, filicide-suicide, and spousal homicide). Consistent with the idea that the operation of homicidal psychology may vary according to homicide context,
including only single offender/single victim cases allows for an isolation of the parental psychology of filicide from other types of homicides in which parental psychology may be embedded.

Following previous research that supports the idea that the methods by which a parent kills a child may vary according the relationship between the child and the parent or parent substitute (Daly & Wilson, 1988; Daly & Wilson, 1994; Weekes-Shackelford & Shackelford, 2004), four categories of method of filicide were created. The CHD includes more than two hundred codes for the type of weapon (or method) used to commit homicide. Of the over two hundred types of weapons used to commit homicide, 34 different types of weapons were used to commit filicide. These 34 methods were categorized into four groups (beat, shoot, suffocate-drown-strangle, other). The first category was labeled beatings, which included filicides that were committed by methods coded as club or blunt instrument, belt, and hands, fist, or feet. The second category was labeled shooting, which included filicides committed by methods coded as automatic, handgun (non-automatic), and shotgun (non-automatic). The third category was labeled suffocation-drowning-strangling, which included filicides committed by methods coded as suffocation (including pillow, plastic bag, and toilet paper) drowning, and strangulation (including electrical cord, rope, and strip of cloth). The fourth category was labeled other, which included filicides committed by methods coded as a knife or a sharp instrument, arson, caustic agent, drugs, exposure, hot grease, hot water, malnutrition, thrown from high place or window, and other miscellaneous weapons.

Previous research indicates that the type and frequency of conflicts between
parent and child may vary in accordance with the child’s age (Laursen & Collins, 2009; Smetana, 1989) and the genetic relatedness of the parent and child (Daly & Wilson, 2000; Hetherington & Stanley-Hagan, 1999). Psychological and physical anthropological research (e.g., Piaget, 1953; Bogin, 1999, respectively) indicate that children’s development can be characterized into psychological and physical stages. These age stages may vary depending on the theoretical perspective from which the research is derived. Accordingly, analyses included an assessment of the relationship between child’s age and the method of filicide. The variable for child’s age was categorized into the following age categories: younger than 5 years (infancy and childhood), 5 to 9 years (the juvenile period), and 11 to 19 years (adolescence).

**Results**

There were 392 cases in which a child 19 years of age or younger was killed by a genetic parent, by a stepparent, or by a mother’s boyfriend. Of these, 293 were cases in which a genetic parent committed filicide (167 by mothers and 126 by fathers), 45 were cases in which a stepparent committed filicide (2 by stepmothers and 43 by stepfathers), and 54 were cases in which a mother’s boyfriend committed filicide (see Table 1). Overall, 70.0% of the filicides were committed by beating or bludgeoning, 5.6% were committed by shooting, 8.9% were committed by asphyxiation, and 15.3% were committed by other methods.

An initial analysis was performed contrasting the method of filicide as a function of genetic relationship (genetic parent versus non-genetic parent) across the entire sample (i.e., collapsing across the age of the child). The results of a 2 (genetic versus non-genetic
parents) x 4 (method of filicide) chi-square test was significant, $\chi^2 (3, N = 392) = 12.04, p < .05$, Cramer’s V = .18. While overall (i.e., non-genetic and genetic parents combined), beating was the method of filicide used most often, the percentage of filicides committed by non-genetic parents by beating significantly exceeded the percentage of filicides committed by genetic parents, 81.9% vs. 66.2%; $\chi^2 (1, N = 392) = 7.88, p < .05$). In contrast, the percentage of filicides committed by non-genetic parents by asphyxiation was significantly less than the percentage of filicides committed by genetic parents, (2.0% vs. 11.3%; $\chi^2 (1, N = 392) = 6.68, p < .05$). There were no differences in the percentages of filicides committed by non-genetic and genetic parents for shooting (6.1% vs. 5.5%; $\chi^2 (1, N = 392) = .01, p > .05$), or by other methods (10.1% vs. 17.1%; $\chi^2 (1, N = 392) = 2.28, p > .05$).

Effects of Child’s Age on Method of Filicide

In order to examine how filicide methods vary as a child gets older, I compared the percentages for each of the four categories of filicide methods across three age groups: (a) 4 years and younger, (b) 5 to 9 years, and (c) 10 to 19 years, by non-genetic and genetic parents (see Table 2). As shown in Table 2, the majority of filicides were found in the youngest age group (4-years and younger, 85.6%). Approximately 6% of all childhood filicides in the database were for children 5- to 9-years old, and 8% for children 10- to 19-years old. Due to the small number of cases in some cells, expected values were at times less than 5. As such, Fisher-Yates exact probabilities were reported when this was the case.

*Children 4 years and younger.* For this age group, there were 79 victims of
filicide by a non-genetic parent and 256 by a genetic parent (see Table 2). The proportion of filicides committed by non-genetic parents by beating significantly exceeded the proportion of filicides committed by genetic parents, 91.1% vs. 74.2%; \( z = 3.19, p < .05 \).

In contrast, genetic parents committed filicide by asphyxiation more often than non-genetic parents (11.3% vs. 0.0%; Fisher-Yates exact probability = .002). There were no significant differences between genetic and non-genetic parents for filicides by shooting, (1.27% vs. 1.57%) and other methods (12.9% vs. 7.6%, Fisher-Yates exact probabilities > .233).

*Children 5- to 9-years old.* For this age group, there were 9 victims of filicide by a non-genetic parent and 16 victims of filicide by a genetic parent (see Table 2). Similar to the results for children 4-years and younger, the results in this age group indicated that non-genetic parents were more likely than genetic parents to commit filicide by beating, (77.8% vs. 25%; Fisher-Yates exact probability = .017). In contrast, genetic parents were somewhat more likely than non-genetic parents to commit filicide by other methods, (50.0% vs. 11.1%, Fisher-Yates exact probability = .089). Differences between genetic and non-genetic parents did not reach significance for asphyxiation (25.0% vs. 11.1%; Fisher-Yates exact probability = .621). There were no filicides by shooting, for either the genetic or non-genetic parents.

*Children 10 to 19-years old.* For this age group, there were 11 victims of filicide by a non-genetic parent and 21 victims of filicide by a genetic parent. As indicated in Table 2, whereas a majority of the filicides occurred by beatings for children 4-years and younger (78%) and was the most frequent method of filicide for children 5- to 9-years old
(44%), it occurred infrequently for children 10 to 19-years of age (6% of all filicides). The two filicides by beatings that did occur for this age group were committed by non-genetic parents (18.2% of all filicides for this group). An overall 2 x 4 Fisher-Yates exact test contrasting genetic and non-genetic parents by type of filicide approached significance, $p = .094$. Although no specific contrasts between genetic and non-genetic parents were significant for this age group, as shown in Table 2, filicides by non-genetic parents by beating exceeded the proportion by genetic parents. However, the difference was not significant, (18.2% vs. 0%, Fisher-Yates exact probability = .139). There were no significant differences between genetic and non-genetic parents in the incidence of filicide by shooting (57.1% vs. 45.5%; Fisher-Yates exact probability = .712), asphyxiation (9.1% vs. 0%; Fisher-Yates exact probability = .364), or by other methods, (42.9% vs. 27.3%, Fisher-Yates exact probability = .464).

Filicide methods in adulthood. In addition to examining method of filicide by genetic and non-genetic parents for children, I also examined filicides for adult offspring, defined here as individuals 20 years and older. There were 68 filicide victims older than 19 years, 18 committed by a non-genetic parent and 50 committed by a genetic parent (see Table 2). The pattern of results was similar to that of the 10 to 19 year olds. Of the 68 filicides in this age group, only two were by beating (one for genetic and one for non-genetic parents). Contrasts between genetic and non-genetic parents for each form of filicide failed to produce any significant differences, all $ps \geq .198$. The overall pattern for adult filicide victims was similar in general form to that of children 10 to 19 year olds, and different from that of filicide victims who were 9-years and younger. This raises the
possibility that filicidal psychology operates similarly with adolescent and adult victims. Accordingly, the next set of analyses was conducted collapsing the 10 to 19 year olds with the adult victims.

There were 100 filicide victims older than 10 years. Non-genetic parents were more likely than genetic parents to commit filicide by beating, (10.3% vs. 1.4%), and this difference approached significance, Fisher-Yates exact probability = .072. The difference between the proportion of filicides by shooting for genetic (73.2%) and non-genetic (55.2%) parents also approached significance, Fisher-Yates exact probability = .099. Differences between genetic and non-genetic parents were not significant for filicide by other methods, (25.3% vs. 31.0%, Fisher-Yates exact probability = .817). There were only two cases of asphyxiation, both committed by non-genetic parents, making any statistical analysis inappropriate.

**Relationship between Other Factors and Filicide Methods**

*Paternal versus maternal effects.* The next set of analyses examined how filicidal psychology operates differently among genetic mothers and genetic fathers. Non-genetic parents were excluded from these analyses because there were statistically too few filicides by non-genetic mothers to allow for appropriate comparisons. There were 126 filicides by genetic fathers and 167 by genetic mothers. For all children, 19 and younger, an overall 2 x 4 chi-square indicated a relationship between parental sex and the type of method used to commit filicide, $\chi^2 (3, N = 293) = 24.82, p < .05$, Cramer's $V = .27$. The proportion of filicides committed by fathers by beating significantly exceeded the proportion of filicides committed by mothers, (74.6% vs. 59.3%; $z = 2.73, p < .05$).
Fathers were also more likely than mothers to commit filicide by shooting, 10.3% vs. 1.8%; $\chi^2 (1, N = 293) = 8.52, p < .05$. On the other hand, mothers were more likely than fathers to commit filicide by asphyxiation, 15.6% vs. 5.6%; $\chi^2 (1, N = 293) = 6.24, p < .05$. Mothers were also more likely than fathers to commit filicide by other methods, 22.7% vs. 10.3%; $\chi^2 (1, N = 293) = 6.89, p < .05$.

Including only genetic parents in this set of analyses further reduced the cell sample sizes disallowing for appropriate statistical comparisons to be conducted across the original victim age groups. However, because a similar pattern of results were revealed in analyses conducted earlier for the age groups 4 and younger and 5 to 9, I created a dichotomous age variable (younger victims and older victims). The younger group was comprised of victims 0 to 9 years and older group was comprised of victims 10 years and older. Fathers of younger children were more likely than mothers to commit filicide by beating, 83.9% vs. 62.5%; $\chi^2 (1, N = 272) = 13.76, p < .05$. For older children, there were no cases in which a genetic or non-genetic parent killed by beating. Fathers and mothers of younger children were equally likely to commit filicide by shooting (2.7% vs. 0.63%; Fisher-Yates exact probability = .309). Fathers of older victims, in contrast, were more likely than mothers to commit filicide by shooting, 83.3% vs. 41.2%; $z = 3.42, p < .05$. Mothers of younger victims were more likely than fathers to commit filicide by asphyxiation, 16.3% vs. 6.3%; $\chi^2 (1, N = 272) = 6.18, p < .05$, and there were no older victims killed by a genetic or non-genetic parent killed by asphyxiation. Mothers of both younger, 20.6% vs. 7.1%; $\chi^2 (1, N = 272) = 9.35, p < .05$, and older, 71.4% vs. 28.6%, Fisher-Yates exact probability = .073, children were more likely than fathers to commit
Filicide by other methods.

*Fathers, stepfathers, and boyfriends.* Previous research indicates differences in filicide methods between stepparents and genetic parents (Daly & Wilson, 1994; Weekes-Shackelford & Shackelford, 2004). Previous research also indicates that women who cohabit with a romantic partner (i.e., a mother’s boyfriend) are at increased risk of being killed by their partner (see Daly & Wilson, 1988). Accordingly, the next set of analyses examined how filicides committed by mother’s boyfriends differ from filicides committed by stepfathers and genetic fathers by age group (see Table 3).

To increase statistical power, I focus on victims aged 9 years and younger rather than on several specific age categories younger than 9 (each one of which include relatively few victims). For victims 9 years of age and younger, a nominally greater percentage of filicides by mothers’ boyfriends were committed by beating (90.4%) compared to stepfathers (88.2%) and genetic fathers (83.9%). The differences were not significant however: boyfriends vs. stepfathers, $\chi^2 (1, N = 86) = .101, p > .05$; boyfriends vs. genetic fathers, $\chi^2 (1, N = 164) = .751, p > .05$; stepfathers vs. genetic fathers, $\chi^2 (1, N = 146) = .116, p > .05$. Percentages of filicides by shooting, asphyxiation, and other methods were all low in frequency and comparable between genetic fathers, stepfathers, and boyfriends (see Table 3).

Table 3 shows that for victims 10 and older, most filicides were committed by mother’s boyfriends (65%) whereas only about 9% were committed by genetic fathers. This is in contrast to the 9 and younger victims where the reverse findings emerged—most filicides were committed by genetic fathers (56.6%) whereas only 26.3% were
committed by mother’s boyfriends. In terms of the method of filicide for older children, a
greater percentage of filicides by stepfathers were committed by beating (14.3%)
compared to genetic fathers (1.9%) and boyfriends (0.0%). However, this difference only
approached significance for genetic fathers vs. stepfathers, Fisher-Yates exact probability
= .064. A greater percentage of filicides by mother’s boyfriends were committed by
shooting (83.3%) compared to stepfathers (47.6%) and genetic fathers (75.0%). However,
only one comparison was significantly different, stepfathers vs. genetic fathers, Fisher-
Yates exact probability = .003. The other two comparisons did not yield statistical
differences: Fisher-Yates exact probability greater than .540. There were no significant
differences between genetic fathers, stepfathers, and mother’s boyfriends for filicides by
asphyxiation or by other methods, all Fisher-Yates exact probabilities > .106.

**Discussion**

Overall, for children 19 years and younger, filicides by non-genetic parents
(relative to genetic parents) were more likely to be comprised of methods that suggest
bitterness and rage, namely beating or bludgeoning a child to death. When the sample
was examined by age group, the same pattern appeared for the younger age group (4
years and younger) and for the middle age group (5 to 9 years).

Whereas the children in the younger age groups were more likely to be killed by
beating, children of the older age group (10-19 years) were not more likely to be killed by
beating. Nevertheless, analyses in this age group indicated that non-genetic parents were
more likely than genetic parents to kill a child by beating, but these results were not
statistically significant. Despite the low frequency of beating, when this older age group
was combined with adult filicides, the difference approached significance.

I proposed that percentage of filicides by beatings would be greatest for mother’s boyfriends, followed by stepparents, and lowest for genetic parents. The results suggest that the parental psychology of filicidal mother’s boyfriends may be different from the parental psychology of filicidal genetic parents. In fact, this may be most apparent with the 10 years and older group. There were strikingly more filicides by mother’s boyfriends compared to genetic fathers and stepfathers. Because filicides by mother’s boyfriends (relative to stepparents) were not more likely to be committed by beating, it may be the case that, in the context of filicide, the parental psychology of mother’s boyfriends and stepparents operate similarly.

In the final chapter (General Discussion and Concluding Remarks), I discuss the results of this research and identify several limitations of this research. In addition, I highlight several directions for future research.
CHAPTER 3: STUDIES 2A & 2B: THE CONTEXTS AND PREDICTORS OF FILICIDE-SUICIDE

In this chapter, I provide a literature review of filicide-suicide. The review consists of the various contexts in which filicide-suicide occurs with some emphasis on the previously documented predictors of filicide-suicide. This chapter also includes the results of two studies and a general discussion of both studies.

A filicidal parent sometimes commits suicide after killing his or her ward. Although less frequent than filicides not accompanied by suicide, these filicide-suicides are doubly tragic, producing a special grief among the remaining family members (Daly & Wilson, 1988). Filicide-suicide has not been a topic of focused empirical work. Based on previous research, however, it appears that genetic parents and stepparents may be differently at risk for killing themselves after killing their ward. Using a province-level Canadian database, Cooper and Eaves (1996) reported that 15 of 26 filicides (58%) perpetrated by a genetic parent were followed by the offending parent’s suicide, compared to just one out of nine filicides (11%) perpetrated by a stepparent. Based on data for 391 Canadian filicides reported by Daly and Wilson (1988), 20% of filicidal genetic parents committed suicide, compared to just 10% of filicidal stepparents. Analyzing a national-level Swedish database, Somander and Rammer (1991) reported that 29 of 58 filicides (50.0%) perpetrated by a genetic parent ended in the offender’s suicide, compared to just one of four filicides (25.0%) perpetrated by a stepparent.
Finally, in a national-level British database analyzed by Daly and Wilson (1994), 29 of 235 filicidal genetic fathers committed suicide (12%), compared to just two of 131 filicidal stepfathers (1.5%).

Felicidal genetic parents apparently are more likely to commit suicide than are filicidal stepparents, and this difference might reflect different psychological processes and motivations operating in genetic parents and in stepparents (see, e.g., Daly & Wilson, 1988, 1998). There is no clear explanation as yet for this apparent difference in filicide-suicide by genetic parents and by stepparents. If stepparental psychology motivates behaviors such as filicide to dispose of a resource-draining ward to which the person is not genetically related (e.g., Daly & Wilson, 1998), then it would make little adaptive sense for the filicidal stepparent to subsequently kill himself or herself, in which case the stepparent would not reap any benefits associated with eliminating the ward.

**Predictors of Filicide-suicide**

Previous research has investigated a few other factors that might predict suicide following filicide. These factors include the number of victims killed in the incident, the sex of the offender, the age of the victim (for single-victim incidents), and the age of the offender. Each of these possible predictors of filicide-suicide is briefly discussed.

Felicidal parents occasionally kill more than one child, in addition to their spouse—a crime known as familicide. Using a Canadian database, for example, Daly and Wilson (1988) found that 26 of 290 filicides (9.0%) were familicides. Sometimes the familicidal parent kills himself or herself. In a national-level Canadian database, for example, Wilson, Daly, and Daniele (1995) reported that familicidal perpetrators were
more likely to commit suicide than were perpetrators of uxoricide and perpetrators of single-victim filicide (50.9%, 25.3%, and 25.3%, respectively).

Although the risk of filicide decreases with the child’s age (see, e.g., Daly & Wilson, 1988, 1998), the risk of filicide-suicide increases with the child’s age. Parents who kill older children are more likely to commit suicide than are parents who kill younger children (see Daly & Wilson, 1988). According to parental investment theory (Trivers, 1972), parents value an offspring more as that offspring ages and, therefore, approaches reproductive maturity. Filicide of an older child (who is closer to reproductive maturity) therefore may be partly attributable to the parent’s abnormal psychological functioning, and, accordingly, be more likely to be followed by the offending parent’s suicide. The data corroborate this hypothesis. Using a Canadian database, Daly and Wilson (1988), for example, found that 15 of 95 filicidal mothers committed suicide, compared to just two of 88 mothers who killed an infant. Fifty-eight percent of maternal filicide perpetrators were labeled by the investigating officer as mentally incompetent or “insane,” but only 35% of maternal infanticide (the killing of a child less than one year of age) perpetrators received this label. As with mothers, fathers who killed older children killed themselves more often than did fathers who killed infants (44 of 101 versus just four of 38, respectively). Paternal filicide perpetrators also were more likely to be labeled mentally incompetent or insane (20.8%) than were paternal infanticide perpetrators (15.8%). Parents who kill older children (compared to those who kill younger children) therefore may be more troubled psychiatrically, and suicide following filicide may be a byproduct of this pathology.
Previous research suggests that, not only are the victims of filicide-suicide older than the victims of filicide, but also that the offenders of filicide-suicide are older than the offenders of filicide. Working from an evolutionary perspective, Daly and Wilson (1988) suggested that “normal” older parents tend to value their children more than do “normal” younger parents, because older parents have lower “residual reproductive value” (expected future reproduction) than do younger parents. Filicide by an older parent therefore might be more likely to be accompanied by psychiatric problems than filicide by a younger parent. These psychiatric problems, in turn, may include depression and other correlates of suicide. Daly and Wilson (1988) analyzed a Canadian database and presented evidence that corroborated this hypothesis: Infanticidal mothers who committed suicide were significantly older (mean age = 29.5 years) than infanticidal mothers who did not commit suicide (mean age = 22.5 years). Similarly, infanticidal fathers who committed suicide were significantly older (mean age = 30.5 years) than infanticidal fathers who did not commit suicide (mean age = 25.8 years).

There is some evidence that filicidal fathers are more likely to commit suicide than are filicidal mothers. Using a province-level Canadian database, for example, Cooper and Eaves (1996) reported that 13 of 23 paternal filicides (56.5%) were followed by suicide, whereas only three of 11 maternal filicides (27.3%) were followed by suicide. Analyzing a national-level Swedish homicide database, Somander and Rammer (1991) reported that 24 of 39 filicidal fathers (61.5%) committed suicide, compared to just six of 23 filicidal mothers (26.1%). In a national sample of Canadian homicides, Daly and Wilson (1988) reported that 75 of 177 fathers (42.4%) killed themselves following
Based on the filicide studies discussed, there appears to be sufficient evidence for one to conclude that filicidal parental psychology may differ based on whether the parent is a genetic or non-genetic parent. In this following series of studies, I investigate deeper the extent to which the method of filicide unveils novel information about filicidal parental suicide psychology. Specifically, studies 2A and 2B provide the foundation for testing the following hypotheses:

*Hypothesis 1*: Filicidal genetic parents are more likely to commit suicide than are filicidal stepparents.

*Hypothesis 2*: Filicides that include multiple victims are more likely to end in the offender’s suicide than are filicides that include a single victim.

*Hypothesis 3*: Parents will be more likely to commit suicide following a filicide of an older child than following a filicide of a younger child.

*Hypothesis 4*: Older parents, relative to younger parents, will be more likely to commit suicide following a filicide.

*Hypothesis 5*: Fathers, relative to mothers, will be more likely to commit suicide following a filicide.

These hypotheses will be tested using Chicago derived archival databases. Study 2A will examine precipitating contexts for filicide-suicide during the years 1965-1994. Study 2B will also examine precipitating contexts for filicide-suicide, but for the time period 1870-1930, allowing for cross-time comparisons of the differences and similarities among various contexts of filicide-suicide.
STUDY 2A: FILICIDE-SUICIDE IN CHICAGO, 1965 – 1994

Method

Database and Procedures

The Chicago Homicide Database provides incident-level information on 22,988 homicides recorded in the murder analysis files of the Chicago Police Department for the years 1965 through 1994 (Block & Block, 1996). There were 459 cases in which a child was killed by a stepparent or by a genetic parent. Three hundred ninety-six of these filicides were committed by a genetic parent (209 men, 187 women). Twenty-four filicidal genetic parents (20 men, four women) committed suicide. Sixty-three filicides were committed by a stepparent (60 stepfathers, three stepmothers). Four filicidal stepparents committed suicide, and in each case this was a stepfather.

Results

According to Hypothesis 1, filicidal genetic parents are more likely to commit suicide than are filicidal stepparents. The results did not support the hypothesis. The percentage of filicidal genetic parents who committed suicide (6.1%; 24 of 396) did not differ significantly from the percentage of filicidal stepparents who committed suicide (6.3%; 4 of 63), $\chi^2(1, N = 459) = 0.01, p > .05$.

Previous work indicates that a key predictor of child abuse, neglect, and filicide is residence with a stepparent (see, e.g., Daly & Wilson, 1985; 1988; 1998; Wilson, Daly, & Weghorst, 1980; Wilson & Daly, 1987). For tests of Hypotheses 2 through 5, I first conducted the relevant analysis for all filicides (i.e. collapsing across filicides committed by stepparents and genetic parents). I then conducted parallel analyses separately for
genetic parents only and for stepparents only, where possible. Although there were just four cases of stepparental filicide-suicide, I nevertheless conducted the analyses for stepparents only (where possible), to allow for a qualitative comparison with the results of analyses for genetic parents only.

According to Hypothesis 2, filicides that include multiple victims are more likely to end in the offender’s suicide than are filicides that include a single victim. The results supported the hypothesis, across all filicides and for filicides committed by genetic parents and by stepparents. Across all filicides, 38% (19 of 50) of parents who killed multiple victims subsequently killed themselves, whereas just 2.2% (9 of 409) of parents who killed a single victim subsequently killed themselves, \( \chi^2 (1, N = 459) = 99.68, p < .05 \), Cramer’s V = .47. For genetic parents, a greater percentage of filicides that included multiple victims (37.2%; 16 of 43) ended in the offender’s suicide, compared to filicides that included a single victim (2.3%; 8 of 253), \( \chi^2 (1, N = 396) = 82.21, p < .05 \), Cramer’s V = .44. For stepparents, a greater percentage of filicides that included multiple victims (42.9%; 3 of 7) ended in the offender’s suicide, compared to filicides that included a single victim (1.8%; 1 of 56), \( \chi^2 (1, N = 63) = 17.65, p < .05 \), Cramer’s V = .53.

According to Hypothesis 3, parents will be more likely to commit suicide following a filicide of an older child than following a filicide of a younger child. To test this hypothesis, I defined older children as six years or older and younger children as five years or younger. Previous analyses of filicide risk make a similar distinction between older children and younger children (see, e.g., Daly & Wilson, 1988; 1994), and I elected to define child ages accordingly to retain consistency with this previous work. Redefining
child age according to the definitions used in Study 1 of this dissertation (in which younger children are defined as four years and younger rather than as five years and younger, and older children are defined as five years and older rather than as six years and older) does not substantively change the pattern of results. Older filicide victims comprised 28.1% (129 of 459) of filicide cases, and younger filicide victims comprised 71.9% (330 of 459) of filicide cases. The results supported Hypothesis 3, across all filicides. A greater percentage of filicidal parents of older victims (12.4%; 16 of 129) than of younger victims (3.6%; 12 of 330) subsequently killed themselves; $\chi^2 (1, N = 459) = 12.44, p < .05$, Cramer’s $V = .17$. When I conducted the analyses for genetic parents only and for stepparents only, the results supported Hypothesis 3 for genetic parents. A greater percentage of filicidal genetic parents of older victims (12.9%; 13 of 101) than of younger victims (3.7%; 11 of 295) subsequently killed themselves, $\chi^2 (1, N = 396) = 11.05, p < .05$, Cramer’s $V = .17$. The same trend was evident for stepparents, but the difference did not reach statistical significance: 10.7% (3 of 28) of filicidal stepparents of older children subsequently killed themselves, whereas just 2.9% (1 of 35) of filicidal stepparents of younger children killed themselves, $\chi^2 (1, N = 63) = 1.62, p > .05$.

According to Hypothesis 4, older parents, relative to younger parents, will be more likely to commit suicide following filicide. To test this hypothesis, I first conducted a median split of the data for offender age. I defined “older” parents as 26 years or older and “younger” parents as 25 years or younger. Older parents comprised 52.1% (239 of 459) of filicide offenders, and younger parents comprised 47.9% (220 of 459) of filicide

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offenders. The results supported Hypothesis 4, across all filicides (see Table 4). A greater percentage of filicidal older parents (10.5%; 25 of 239) than filicidal younger parents (1.4%; 3 of 220) subsequently killed themselves, $\chi^2 (1, N = 459) = 16.55, p < .05$, Cramer’s $V = .19$. The results also supported Hypothesis 4 for analyses conducted on genetic parents only. A greater percentage of older filicidal genetic parents (10.8%; 21 of 194) than younger filicidal genetic parents (1.5%; 3 of 202) subsequently killed themselves, $\chi^2 (1, N = 396) = 15.16, p < .05$, Cramer’s $V = .17$. For stepparents, 8.9% (4 of 45) of older filicidal stepparents subsequently killed themselves. There were no cases in which a younger filicidal stepparent subsequently killed himself or herself; thus, I could not conduct the parallel analysis for stepparents.

According to Hypothesis 5, fathers, relative to mothers, will be more likely to commit suicide following filicide. The results supported Hypothesis 5, across all filicides. A greater percentage of filicidal fathers (8.9%; 24 of 269) than filicidal mothers (2.1%; 4 of 190) subsequently killed themselves, $\chi^2 (1, N = 459) = 9.03, p < .05$, Cramer’s $V = .14$. The results also supported Hypothesis 5 for analyses conducted on genetic parents only. For genetic parents, a greater percentage of filicidal fathers (9.6%; 20 of 209) than filicidal mothers (2.1%; 4 of 187) subsequently killed themselves, $\chi^2 (1, N = 396) = 9.57, p < .05$, Cramer’s $V = .14$. For stepparents, 6.7% (4 of 60) of filicidal stepfathers subsequently killed themselves. There were no cases in which a filicidal stepmother subsequently killed herself; thus, I could not conduct the parallel analysis for stepparents.

In the next study, Study 2B, I replicate tests of the hypotheses investigated in Study 2A using an historical database of Chicago homicides recorded during the years
1870-1930. Following presentation of Study 2B, I then offer a discussion of the results of both studies.

STUDY 2B: HISTORICAL EXPLORATION OF FILICIDE-SUICIDE IN CHICAGO, 1870 - 1930

Study 2B replicates Study 2A with an historical dataset. I tested the hypotheses investigated in Study 2A about filicide-suicide using a database that includes incident-level information on 11,018 homicides committed in Chicago during the years 1870-1930.

Method

Database and Procedures

The Chicago Homicide Record Index provides incident-level information on 11,018 homicides recorded in handwritten files by the Chicago Police Department for the years 1870 through 1930 (Bienen, 2004). I selected for analyses the 232 cases in which a child was killed by a genetic parent or by a stepparent. Two hundred twenty-two of these filicides were committed by a genetic parent (76 men, 145 women). Seventy-three filicidal genetic parents (26 men, 47 women) committed suicide. Ten filicides were committed by a stepparent (8 men, 2 women). One filicidal stepparent committed suicide, and in this case it was a stepfather.

Results

According to Hypothesis 1, filicidal genetic parents are more likely to commit suicide than are filicidal stepparents. The results provided some support for this hypothesis. The percentage of filicidal genetic parents who committed suicide (32.9%; 73
of 222) was greater than the percentage of filicidal stepparents that committed suicide (10.0%; 1 of 10), and this difference was marginally significant, \( \chi^2 (1, N = 232) = 2.31, p < .10 \) (for analyses that include expected values less than 5, I also report Fisher-Yates exact probability. Fisher-Yates exact probability for the first analysis = .117).

Previous work indicates that a key predictor of child abuse, neglect, and filicide is residence with a stepparent (see, e.g., Daly & Wilson, 1985; 1988; 1998; Wilson, Daly, & Weghorst, 1980; Wilson & Daly, 1987). For tests of Hypotheses 2 through 5, I first conducted the relevant analysis for all filicides (i.e., collapsing across filicides committed by stepparents and genetic parents). I then conducted parallel analyses separately for genetic parents only and for stepparents only, where possible. There was just one case of stepparental filicide-suicide and, therefore, for particular comparisons I could not conduct relevant statistical analyses.

According to Hypothesis 2, filicides that included multiple victims are more likely to end in the offender’s suicide than are filicides that include a single victim. The results supported the hypothesis; across all filicides, 76.4% (42 of 55) of parents who killed multiple victims subsequently killed themselves, whereas just 18.1% (32 of 177) of parents who killed a single victim subsequently killed themselves \( \chi^2 (1, N = 232) = 65.62, p < .05, \) Cramer’s V = .53. The results also supported the hypothesis for genetic parents: a greater percentage of filicides that included multiple victims (79.2%; 42 of 53) ended in the offender’s suicide, compared to filicides that included a single victim (18.3%; 31 of 169), \( \chi^2 (1, N = 222) = 67.81, p < .05, \) Cramer’s V = .54.

According to Hypothesis 3, older parents, relative to younger parents, are more
likely to commit suicide following filicide. To test this hypothesis, I first conducted a median split of the data for which the offender age was coded (14 cases). The median age was 25.5. Accordingly, I defined “older” parents as older than 25.5 years and “younger” parents as 25.5 years or younger. Older parents comprised 50.0% (7 of 14) of filicide offenders, and younger parents comprised 50.0% (7 of 14) of filicide offenders. The results supported Hypothesis 3, across all filicides. A greater percentage of filicidal older parents (42.9%; 3 of 7) than filicidal younger parents (0.0%; 0 of 7) subsequently killed themselves, $\chi^2 (1, N = 14) = 3.82, p < .05$ (Fisher-Yates exact probability = .096). The results also supported Hypothesis 3 for genetic parents only. A greater percentage of older filicidal genetic parents (50.0%; 3 of 6) than younger filicidal genetic parents (0.0%; 0 of 7) subsequently killed themselves, $\chi^2 (1, N = 7) = 4.55, p < .05$ (Fisher-Yates exact probability = .069).

According to Hypothesis 4, parents are more likely to commit suicide following a filicide of an older child than following a filicide of a younger child. To test this hypothesis, I defined older children as six years or older and younger children as five years or younger. Previous analyses of filicide risk make a similar distinction between older children and younger children (see, e.g., Daly & Wilson, 1988, 1994; Shackelford et al., 2005). Older filicide victims comprised 30.6% (71 of 232) of filicide cases, and younger filicide victims comprised 69.4% (161 of 232) of filicide cases. The results supported Hypothesis 4, across all filicides (see Table 5). A greater percentage of filicidal parents of older victims (49.3%; 35 of 71) than of younger victims (24.2%; 39 of 161) subsequently killed themselves, $\chi^2 (1, N = 232) = 14.26, p < .05$, Cramer’s $V = .26$.  

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When I conducted the analyses for genetic parents only, the results supported Hypothesis 4 for genetic parents. A greater percentage of filicidal genetic parents of older victims (54.0%; 34 of 63) than of younger victims (24.5%; 39 of 159) subsequently killed themselves, $\chi^2 (1, N = 222) = 17.72, p < .05$, Cramer’s $V = .30$.

According to Hypothesis 5, fathers, relative to mothers, are more likely to commit suicide following filicide. Hypothesis 5 was not supported. There was no significant difference between the percentage of filicidal fathers (32.1%; 27 of 84) and the percentage of filicidal mothers (32.0%; 47 of 147) who killed themselves, $\chi^2 (1, N = 232) = 0.47, p > .10$.

**Discussion**

Filicide is the killing of a ward by a parent. Relative to many other types of homicide, filicide is an infrequent event. Filicide followed by the offender’s suicide is less frequent still. The contexts and circumstances surrounding filicide-suicide may nevertheless provide insight into parental psychology. Some research suggests, for example, that filicidal genetic parents are more likely to commit suicide than are filicidal stepparents. Study 2A tested five hypotheses using a database that includes incident-level information on over 22,000 homicides committed in Chicago during the years 1965–1994. Findings do not support the hypothesis of differential risk of suicide following filicide by genetic parents and stepparents. Previous work is replicated, indicating that: (1) filicides that include multiple victims are more likely to end in the offender’s suicide than are filicides that include a single victim, (2) parents are more likely to commit suicide following a filicide of an older child than a filicide of a younger child, (3) older
parents, relative to younger parents, are more likely to commit suicide following filicide, and that (4) fathers, relative to mothers, are more likely to commit suicide following filicide.

Study 2B replicates Study 2A using a database including incident-level information on 11,018 Chicago homicides during 1870-1930. The results provide some support for the hypothesis of differential risk of suicide following filicide by genetic parents and stepparents and replicate previous research indicating that filicides with multiple victims are more likely to end in the offender’s suicide than are filicides with a single victim; parents are more likely to commit suicide following the filicide of an older child than of a younger child; and older parents, relative to younger parents, are more likely to commit suicide following filicide.
CHAPTER 4: GENERAL DISCUSSION AND CONCLUDING REMARKS

Previous research indicates that younger children incur the highest risk of being killed by a parent or parent substitute (Daly & Wilson, 1988). Because of this fact, most of the research on filicide targets young child victims. While younger children are certainly at higher risk for being targets of filicide and are more vulnerable than older children, older children are nevertheless targets of filicide and thus the investigation of differential parental psychology in older children is warranted.

Using national-level Canadian and British homicide databases Daly and Wilson (1994) predicted and found that stepfathers—arguably acting out of greater rage—are more likely than genetic fathers to kill wards by beating. The current study also found that a higher percentage of filicides by stepparents (relative to genetic parents) were committed by beating, thus replicating previous research suggesting that feelings of bitterness, resentment, frustration, and anger may be revealed in the method by which a stepparent commits filicide.

Do the effects of differential psychology, as evidenced by filicide method, extend beyond the younger years? The current study suggests that it does, to some degree. Overall, for all children 19 and younger, filicides by non-genetic parents (relative to genetic parents) were more likely to be comprised of methods that suggest bitterness and rage, namely beating or bludgeoning a child to death. When the sample was examined by age group, the same pattern appeared for the younger age group (4 years and younger)
and for the middle age group (5 to 9 years). For both groups, non-genetic parents were more likely to kill by beating a child, whereas genetic parents were more likely to kill a child by shooting or asphyxiation. This suggests that the interplay between parent and child psychologies, within a filicidal context, is similar between these two age groups.

For the older age group (10 to 19 years), on the other hand, the results indicated a non-significant relationship between parental type and filicide method. Whereas the children in the younger age groups were more likely to be killed by beating, children of this age group were not more likely to be killed by beating. Nevertheless, analyses in this age group indicated that non-genetic parents were more likely than genetic parents to kill a child by beating, but these results were not statistically significant. Despite the low frequency of beating, when this older age group was combined with adult filicides, the difference approached significance. Analyses also revealed a marked increase, for both genetic and non-genetic parents, in the proportion of filicides by shooting. There were 17 filicides by shooting in the older group (5 by a non-genetic parent and 12 by genetic parents), only 5 filicides by shooting in the younger age group, (1 by a non-genetic parent and 4 by genetic parents), and no filicides by shooting in the middle age group. The current findings suggest that filicides of older children tend to take on a more general homicidal pattern, in terms of shooting as the method of choice. Based on data collected by the Federal Bureau of Investigations (FBI) Uniform Crime Reports (UCR) for the years 1976 to 1994, roughly 66% of homicides were committed by shooting. In addition, shooting was the most commonly used method across all homicides recorded in the CHD for the years 1965 to 1995. Analyses of adult filicides also revealed that shooting was the
most commonly used method. Using a gun to kill an adult may be the most effective way to carry out an adult filicide.

I proposed that percentage of filicides by beatings would be greatest for mother’s boyfriends, followed by stepparents, and lowest for genetic parents. Although the hypothesis was not fully supported, the results nevertheless suggest that the parental psychology of filicidal mother’s boyfriends may in fact warrant itself as distinguished from the parental psychology of filicidal genetic parents. In fact, this may be most apparent with the 10 years and older group. There were strikingly more filicides by mother’s boyfriends compared to genetic fathers and stepfathers.

Relative to genetic parents, a slightly greater proportion (although not significantly) of filicides by mother’s boyfriends (relative to genetic parents) were committed by beating (90.4% vs. 83.9% for victims 9 years and younger), which suggests that the filicides by mother’s boyfriends are more likely to be accompanied by feelings of hatred or bitterness towards the child. According to Daly and Wilson (1988), parental psychology is sensitive to cues of non-relatedness and produces an increased likelihood of a child being abused and being killed. The methods by which filicide is committed may reveal parental motivational differences. Because filicides by mother’s boyfriends (relative to stepparents) were not more likely to be committed by beating, it may be the case that, in the context of filicide, the parental psychology of mother’s boyfriends and stepparents operate similarly.

The sexes appear to share aspects of filicidal parental psychology yet maintain a point of departure. For both mothers and fathers, a higher percentage of filicides of
younger children were committed by beating. This suggests that although there is clear evidence for motivational differences as a function of relatedness, in order to commit filicide there may be some emotional threshold that must be reached. Alternatively, beating may be the easiest and most convenient way to carry out the act. If this alternative explanation is true, one might have expected the percentage of filicides by beatings to be much higher for mothers, or to have at least closer approach the percentage of beatings by fathers.

Daly and Wilson (1994) proposed that filicide methods such as asphyxiation or shooting may produce a quicker and less painful death which suggests that the motivation for filicide may be characterized by fantasies of rescuing the child from living in “this” world. In the current study, filicides by asphyxiation comprised a higher percentage of filicides by mothers than by fathers. This suggests that by using the methods of filicide as a means to better understand differences between the parental psychology of genetic parents and parent substitutes, has the added benefit of providing insight into the parental psychological differences between mothers and fathers.

The current research provides corroborative support for differences in the filicidal psychologies of genetic parents and non-genetic parents. There are several limitations of the Chicago Homicide Database worth noting, however. City-level census information could not be obtained, so the prevalence rates of filicide as a function of family type (i.e. in-tact versus blended families) could not be determined. Furthermore, familial variables such as the child age at which a stepparent enters a family and the presence of step-siblings are not available in the Chicago Homicide Database. These variables may
provide useful information regarding risk of filicide (see Daly & Wilson, 1988).

Using databases that included over 22,000 homicides committed in Chicago for the years 1965 through 1994 (Study 2A) and over 11,000 homicides committed in Chicago for the years 1870 through 1930 (Study 2B), Studies 2A and 2B tested the hypotheses that (1) filicidal genetic parents are more likely to commit suicide than are filicidal stepparents, (2) filicides that include multiple victims are more likely to end in the offender’s suicide than are filicides that include a single victim, (3) parents will be more likely to commit suicide following a filicide of an older child than following a filicide of a younger child, (4) older parents, relative to younger parents, will be more likely to commit suicide following filicide, and that (5) fathers, relative to mothers, will be more likely to commit suicide following filicide. I present empirical support for four of the five hypotheses, relying primarily on data for genetic parent filicides and filicide-suicides.

Previous research indicates that filicidal genetic parents are more likely to commit suicide than are filicidal stepparents. I did not find support for this hypothesis in Studies 2A or 2B. An approximately equal percentage of filicidal genetic parents and filicidal stepparents committed suicide (Study 2A: 6.1% and 6.3%, respectively; Study 2B: 32.9% and 10.0%, respectively). The percentage of filicidal stepparents who committed suicide in the current studies is reasonably consistent with parallel figures provided by previous research, including research conducted with English, Canadian, and Swedish data (ranging from 1.5% to 25.0%, averaging 11.9%; Cooper & Eaves, 1996; Daly & Wilson, 1988; 1994; Somander & Rammer, 1991). The percentage of filicidal genetic parents who
committed suicide in the current studies was smaller, however, than observed in previous databases (ranging from 12.0% to 58.0%, averaging 35.0%; Cooper & Eaves, 1996; Daly & Wilson, 1988; 1994; Somander & Rammer, 1991).

The failure of the current analyses to replicate previous findings on the differential risk of filicide-suicide by stepparents and genetic parents therefore appears to be attributable to the relatively small percentage of filicidal genetic parents in the current data who committed suicide. I cannot offer a clear explanation for this apparent discrepancy with previous work, although I note that the current analysis is the first to include data collected on United States filicide-suicides. Filicidal genetic parents residing in the United States may be less likely to commit suicide than filicidal parents residing in other countries and cultures. Future work might first attempt to replicate the current results in another United States homicide database. If the current results are replicated, subsequent research will then need to investigate a cause for what might be a unique feature of filicides committed by genetic parents residing in the United States.

In Studies 2A and 2B, I replicated the finding that filicidal parents are more likely to commit suicide following a multiple-victim filicide than following a single-victim filicide. There is no clear explanation for why multiple-victim filicides are more likely to be followed by suicide than are single-victim filicides. I speculate that psychiatric illness, notably depression, is more prevalent among perpetrators of multiple-victim filicides than among perpetrators of single victim filicides. One correlate of psychiatric illness—particularly depression—is increased risk of suicide (see Daly & Wilson, 1988). Future research will need to assess empirically this speculation.
According to Trivers’ (1972) parental investment theory, parents value an offspring more as that offspring ages and, therefore, approaches reproductive maturity. Filicide of an older child therefore may be partly attributable to parental psychopathology (e.g., depression) and, accordingly, be more likely to be followed by the offending parent’s suicide. Analyses in the current studies of filicidal genetic parents corroborate this hypothesis. I do not know whether parents who killed older children in fact suffered from psychiatric problems to a greater extent than did parents who killed younger children. I speculate that this is the case, as has been found in previous work (see, e.g., Daly & Wilson, 1988). Future analyses of filicides and filicide-suicide would benefit from gaining access to the psychiatric history of the offender to help to clarify this speculation and related speculations about the offender’s mental health.

Some previous research indicates that older parents, relative to younger parents, are more likely to commit suicide following filicide (Daly & Wilson, 1988). I replicated in Studies 2A and 2B this finding using data on filicides committed by genetic parents. Daly and Wilson (1988) argued that “normal” older parents may value their children more than do “normal” younger parents, because older parents have less residual reproductive value than do younger parents. Filicide by an older parent therefore might be more likely to coincide with the parent’s psychiatric problems than filicide by a younger parent. These psychiatric problems may include key correlates of suicide, such as depression. Future work will need to empirically address these speculations for the greater likelihood of suicide by filicidal older parents than by filicidal younger parents.

Across several different homicide databases, filicidal fathers are more likely than
filicidal mothers to commit suicide (Cooper & Eaves, 1996; Daly & Wilson, 1988; Somander & Rammer, 1991). I replicated this finding for filicidal genetic parents in Study 2A but not in Study 2B. One speculation for the greater risk of suicide for filicidal fathers than for filicidal mothers is that this finding is a byproduct of men’s greater likelihood of committing suicide. The American Association for Suicidology (2000) reports that, in the United States in 1990, men killed themselves at a rate of 20.4 per 100,000 men. Women, in contrast, killed themselves at a strikingly lower rate of 4.8 per 100,000 women. The fact that filicidal fathers are more likely than filicidal mothers to kill themselves therefore may be a byproduct of the fact that men are more likely to commit suicide than are women.

Studies 2A and 2B indicate that filicide-suicide may not be an event that is wholly unpredictable, but that instead it may be more likely to occur in certain contexts (e.g., multiple-victim killings) and in certain circumstances (e.g., following paternal filicide). With some previous work, the current results begin to shed light on when and why filicide-suicide occurs and, in principle, provide a starting point for determining how to reduce the occurrence of this tragic crime.

An evolutionary psychological perspective (e.g., Buss, 2004; Bjorklund & Pellegrini, 2002; Daly & Wilson, 1988; Tooby & Cosmides, 1992) can provide insight into our understanding of filicide. Questions that have not been asked by previous researchers may come to the fore by using an evolutionary perspective as a guide for investigating filicide and its surrounding circumstances and contexts.

This dissertation focused on using one tangible component of filicide, the method
or weapon used by a parent to kill a child, as a means by which to understand parental psychology. I presented the results of three studies using archival data on filicides recorded in Chicago, Illinois. In Study 1, I presented the results of an investigation of parental psychological differences evidenced by the methods of filicide, for filicides recorded between 1965 and 1994. In Studies 2A and 2B, I presented the results of an investigation using the 1965-1994 dataset as well as a dataset of filicides-suicides recorded between 1870 and 1930. The results of the studies presented in this dissertation indicate the predictive value of an evolutionary psychological perspective, and provide evidence that the method by which a filicide is committed may provide information about parental psychology.
Table 1. Filicide method by genetic relatedness for children 19 years and younger.

<table>
<thead>
<tr>
<th>Weapon/method</th>
<th>Relationship</th>
<th>Non-genetic parents</th>
<th>Genetic parents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Beating</td>
<td>81</td>
<td>81.9</td>
<td>194</td>
</tr>
<tr>
<td>Shooting</td>
<td>6</td>
<td>6.1</td>
<td>16</td>
</tr>
<tr>
<td>Suffocate-drown-strangle</td>
<td>2</td>
<td>2.0</td>
<td>33</td>
</tr>
</tbody>
</table>

*Note.* Percentages were calculated by dividing the number of filicides by a particular weapon/method by the total number of filicides for a given relationship.
Table 2. Filicide method by genetic relatedness and child age group.

<table>
<thead>
<tr>
<th>Weapon/method</th>
<th>Relationship</th>
<th>Non-genetic parents</th>
<th>Genetic parents</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>4 years &amp; younger (n = 79)</td>
<td></td>
<td>72</td>
<td>91.1</td>
<td>190</td>
</tr>
<tr>
<td>Beating</td>
<td></td>
<td>1</td>
<td>1.3</td>
<td>4</td>
</tr>
<tr>
<td>Shooting</td>
<td></td>
<td>0</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Suffocate-drown-strangle</td>
<td></td>
<td>6</td>
<td>7.6</td>
<td>33</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>5</td>
<td>6.3</td>
<td>16</td>
</tr>
<tr>
<td>5 – 9 years (n = 9)</td>
<td></td>
<td>7</td>
<td>77.8</td>
<td>4</td>
</tr>
<tr>
<td>Beating</td>
<td></td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Shooting</td>
<td></td>
<td>1</td>
<td>11.1</td>
<td>4</td>
</tr>
<tr>
<td>Suffocate-drown-strangle</td>
<td></td>
<td>1</td>
<td>11.1</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>1</td>
<td>11.1</td>
<td>0</td>
</tr>
<tr>
<td>10 - 19 years (n = 11)</td>
<td></td>
<td>2</td>
<td>18.2</td>
<td>0</td>
</tr>
<tr>
<td>Beating</td>
<td></td>
<td>5</td>
<td>45.5</td>
<td>12</td>
</tr>
<tr>
<td>Suffocate-drown-strangle</td>
<td></td>
<td>1</td>
<td>9.1</td>
<td>0</td>
</tr>
<tr>
<td>Method</td>
<td>20 years &amp; older</td>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n = 18)</td>
<td>(n = 50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beating</td>
<td>1 5.6</td>
<td>1 2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shooting</td>
<td>11 61.1</td>
<td>40 80.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suffocate-drown-strangle</td>
<td>0 0</td>
<td>0 0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>6 33.3</td>
<td>9 18.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Percentages were calculated by dividing the number of filicides by a particular weapon/method by the total number of filicides for a given relationship.
Table 3. Filicide method by parental relationship (males only) for children 9 years and younger and 10 years and older.

<table>
<thead>
<tr>
<th>Weapon/method</th>
<th>Relationship</th>
<th>Mother’s Boyfriends</th>
<th>Step fathers</th>
<th>Genetic fathers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>9 &amp; younger</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beating</td>
<td>47</td>
<td>90.4</td>
<td>30</td>
<td>88.2</td>
</tr>
<tr>
<td>Shooting</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Asphyxiation</td>
<td>1</td>
<td>1.9</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>7.7</td>
<td>3</td>
<td>8.8</td>
</tr>
<tr>
<td>10 &amp; older</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beating</td>
<td>1</td>
<td>1.9</td>
<td>3</td>
<td>14.3</td>
</tr>
<tr>
<td>Shooting</td>
<td>45</td>
<td>83.3</td>
<td>10</td>
<td>47.6</td>
</tr>
<tr>
<td>Asphyxiation</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>4.8</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>14.8</td>
<td>7</td>
<td>33.3</td>
</tr>
</tbody>
</table>

*Note.* Percentages were calculated by dividing the number of filicides by a particular weapon/method by the total number of filicides for a given relationship. Analyses excluded female offenders.
Table 4. Study 2A: Filicide and filicide-suicide and child age

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Non-genetic parents</th>
<th>Genetic parents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>5 years &amp; younger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filicide only</td>
<td>34</td>
<td>97.1</td>
</tr>
<tr>
<td>Filicide/suicide</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>6 and older</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filicide only</td>
<td>25</td>
<td>89.3</td>
</tr>
<tr>
<td>Filicide/suicide</td>
<td>3</td>
<td>10.7</td>
</tr>
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</table>
Table 5. Study 2B: Filicide and filicide-suicide and child age

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Non-genetic parents</th>
<th>Genetic parents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>5 years &amp; younger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filicide only</td>
<td>1</td>
<td>50.0</td>
</tr>
<tr>
<td>Filicide/suicide</td>
<td>1</td>
<td>50.0</td>
</tr>
<tr>
<td>6 and older</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filicide only</td>
<td>8</td>
<td>100.0</td>
</tr>
<tr>
<td>Filicide/suicide</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>
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