An Evolutionary Psychological Analysis of Filicide in Norway

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Submitted for the degree of PhD at the
Department of Psychology, Faculty of Social Science, University of Oslo

Series of dissertations submitted to the
Faculty of Social Sciences, University of Oslo
No. 598

ISSN 1564-3991

Cover: Hanne Baadsgaard Utigard.
Print production: Reprosentralen, University of Oslo.

ACKNOWLEDGEMENTS

First and foremost I wish to thank Professor Nils Chr. Stenseth and all my colleagues at the Centre for Ecological and Evolutionary Synthesis (CEES), University of Oslo. Since May 2012, they have given me a supportive, safe and inspiring work environment in which I finally could start all over again, from scratch, with my research on patterns in homicide in Norway, after my previous place of employment in 2010 decided not allow me to finish the work I started on in 2008. The present study would not have happened if not for the opportunities Stenseth and CEES so generously have given me.

I wish to thank The National Crime Investigation Service (NCIS), The National Police Computer and Material Services (NPCMS), and all the police districts for supplying the present study with data, in both rounds of the study. I believe the priority you have given this work is a reflection of the priority child homicide has in your own work. I look forward to continuing our collaboration in the forthcoming study on intimate partner homicide and other, future homicide studies.

In my career as a university student there have been a string of tutors who have supported my (to them) unconventional ambition of exploring the possibilities of combining evolutionary theory, psychology and criminology. I am both impressed and grateful that they took the chance on allowing me to follow my scholarly interests so freely. The academic growth I obtained from freely following my interests prepared me for taking on the great challenge of combining these fields in my own research. For the present thesis, I have been privileged to enjoy the trust, encouragement and patience of Professor Anne-Inger Helmen Borge and Professor Tore Slagsvold. Thank you both, ever so much, and I hope I was not your greatest challenge, as I asked for your comments on less that structured drafts for the work presented in this thesis.

I am further grateful for the interest international colleagues within evolutionary psychology and homicide and violence research have shown my work, findings and interpretations over the years – always treating me like their peer. This has been a great comfort in the lonely endeavour of being a homicide researcher in Norway. In particular, I want to thank Viviana Weekes-Shackelford for accepting my invitation to co-author a paper on the present study's findings (Paper II), and Professor Martin Daly and Professor David Bjorkly for their helpful comments on the manuscripts for Paper I and Paper III for this thesis, respectively, and inspiring discussions.

I want to thank The Norwegian Women and Family Association, who, through the Norwegian ExtraFoundation for Health and Rehabilitation, gave a grant for researching patterns in filicide in Norway, supporting my work 2009-2011. Unfortunately, as my previous place of employment did not allow me to publish my results, the grant did not support the work presented in this thesis.

Perhaps somewhat unusual for a researcher, I want to express my gratitude to media. Since I first began researching patterns in homicide in 2008, media have had a crucial role in raising awareness and urgency among politicians, practitioners, and the general public with regards to homicide in close relationships. Journalists, social commentators and news editors have also highlighted the importance of research on homicide, and have explicitly and repeatedly expressed their support for my work - an unusual and fortunate privilege for any researcher.

And I am also grateful for the enthusiasm and want for knowledge among those who have crucial roles in the prevention or detection, investigation and prosecution of filicides, or in educating future practitioners in Norway. You have helped me keep up the motivation and courage this work has demanded. Finally, I may share my findings in detail with all of you and your students!

My deepest gratitude goes to my parents, Jean and Gunvald, and my friends who never wavered in their belief in the importance of researching patterns in homicide, and my ability to do so. Throughout the years, no matter what the obstacles, and in both rounds of performing the present study, you have supported me in every way you could, and more so than I could ever have asked for. It is because of all of you I had the strength and will to carry on. I am grateful beyond my ability to express it in words and I am deeply, deeply touched.

Oslo, December 2015
Vibeke Kennair Ottesen

SUMMARY

This thesis presents the first study of the characteristics traits of caretaker perpetrated child homicide (filicide) in current day Norway, covering the years 1990–2009. Evolutionary psychological (EP) perspectives on filicide are currently the only theoretical approach that in a comprehensive manner details the underpinning psychological mechanisms of distinct filicide categories and predict what traits will be characteristic of perpetrators, victims and contexts from the respective mechanisms. It was therefore of interest, both from a theoretical and a preventive perspective, to test EP predictions concerning the characteristic traits of filicide in the present study.

A complete national sample was compiled of incidents identified through the homicide index held by the National Crime Investigation Service (NCIS) and indictment records of the National Police Computer and Material Services (NPCMS). Court verdicts were used as the data source in incidents where the perpetrator had been convicted. Data was collected from the NCIS' index for incidents of filicide-suicide.

EP perspectives hold that parental psychology has evolved the ability for discriminant investment in children, which may result in filicide perpetration. Psychological mechanisms underpinning lethal discriminative parental investment are however seldom triggered in a modern, well-developed welfare state, such as current day Norway (paper I). As expected from EP perspectives, the majority of filicide incidents (79.5%) were instead associated with perpetrator psychopathology (Paper II). Consistent with EP predictions, these filicides had older perpetrators and victims and had more often multiple victims than filicides that were not associated with perpetrator psychopathology. Also in accordance with EP predictions, there were no stepparents among perpetrators suffering psychopathology. The present study thus adds current day Norway to the growing list of societies in which EP predictions concerning the characteristic traits of filicide have been empirically confirmed, which lends support to EP perspectives on the underpinning psychological mechanisms of filicide.

Current EP perspectives, however, have a shortcoming in that they do not explicitly account for the apparent variability individuals have in their risk for filicide perpetration. Drawing on evolutionary developmental psychological (EDP) perspectives, I explored possible developmental origins to such variability, and found that according to the empirical literature the majority of filicide perpetrators (63% to 84%) have traumatic childhood experiences of physical, sexual and emotional abuse and abandonment (Paper III).

LIST OF PAPERS

Paper I

Ottesen, V. (2012) A current absence of neonaticide in Norway. *Scandinavian Journal of Forensic Science*, *18*(2), 155 – 163.

Paper II

Ottesen, V. & Weekes-Shackelford, V. Do evolutionary psychology predictions concerning the risk for filicide apply in Norway? (Submitted)

Paper III

Ottesen, V. An evolutionary developmental psychology perspective on the risk for filicide perpetration. (Under review)

1. INTRODUCTION

Homicide is a unique crime in that there is a final loss of human life – a loss not only for the victim but also for their loved ones who are left behind. Homicide is therefore often viewed, both by law and society in general, as more devastating and serious than any other crime. Although stranger-killings and homicides involving acquaintances are the most common homicide categories (e.g. Daly & Wilson, 1988b; NCIS, 2014; Wolfgang, 1958), homicides that occur in close relationships may get more attention, both by the public and by authorities. Perhaps this is because the thought of being killed by someone who loves you is more frightening and more puzzling than the thought of being killed by a stranger. Who would kill someone they love, such as their child or their romantic partner? Why would they do it? Could some of us be at a greater risk than others of such victimisation?

These questions can be answered through research. The answers may be alarming to some, provoking to others. But the answers are necessary for the development of efficient preventive measures that may reduce the number of homicides. This thesis presents the first study of the patterns in characteristic traits of filicide[1] in current day Norway, covering the time period 1990–2009. The findings presented in this thesis may inform on the development of preventive measures in Norway and our theoretical understanding of filicide perpetration.

The scientific field of researching patterns in homicide receives contributions from a range of disciplines, such as history (e.g. Eisner, 2003; 2008), sociology and criminology (e.g. Wolfgang, 1958) and psychiatry (e.g. Resnick, 1969; 1970). The empirical and theoretical work presented in this thesis used an interdisciplinary approach, namely Evolutionary Psychology (EP), which integrates evolutionary biology and psychology. Over the past three decades, EP perspectives have proven to be most successful in guiding the identification of patterns in the characteristic traits of filicide in a multitude of societies, and in contributing towards our theoretical understanding of the psychology underpinning filicide perpetration.

In this chapter, I will give a brief introduction to the field of researching patterns in homicide, before introducing the basic principles of EP and EP perspectives on filicide, as a backdrop for the empirical and theoretical work presented and discussed in this present thesis.

[1] In this thesis, I refer to filicide as caretaker perpetrated child homicide, including neonaticide (when the victim is killed within 24 hours after birth) and infanticide (when the victim is killed within 12 months after birth).

1.1. Researching Patterns in Homicide

The scientific field of researching patterns in homicide is a young discipline. The first detailed work within this field appeared in the 1950s when the criminologist Marvin E. Wolfgang (1958) published his book *Patterns in Criminal Homicide*, which presented his research on the patterns in the characteristic traits of homicides in Philadelphia during the time period 1948-1952.

Wolfgang (1958, p. 3) held that "*[i]f the criminologist is to acquire general principles that are essential to effective control, prevention, and treatment, he must seek patterns, similarities, and repetitions that can become the basis for classifications and generalizations. But these patterns should not be so broad that the resulting generalizations become superficial."* In his own sociological analysis of patterns in homicide, Wolfgang discovered that homicide is not a homogenous crime, and that certain social groups in society have an increased risk for homicide perpetration and victimisation. Wolfgang argued that this type of knowledge could be used in the prevention of homicide. He further advocated for the development of a scientific field of researching patterns in homicide, with further studies bringing an increased nuance to the identification of risk for homicide and to our theoretical understanding of the causes of homicide perpetration.

Soon six decades after Wolfgang's pioneering research, the main ambition within the field of researching patterns in homicide is still to identify meaningful, distinct categories of homicide and their characteristic traits with regards to the perpetrators, victims, and circumstances homicides occur in (Smith & Zahn, 1999). The field continues to uncover consistencies in the patterns in characteristic traits for distinct homicide categories across a multitude of cultures, which suggests that homicide is not a random event. Despite this, there is a relative lack of theories that successfully make generalizations about the causes for homicide or of the psychology underpinning homicide, and there is a dearth of attempts to test theories or even hypothesize or theorize about findings from this research (Bijleveld & Smit, 2006; Corzine, 2011; Kivivuori, Savolainen & Danielsson, 2012).

In arguing for the need for research in patterns of homicide to be theory driven, Wolfgang (1958, p. 328) stated that "*[t]heories of social action should not be in a vacuum, but must begin with observed facts, produce paradigms of reality, hypothesize new associations of facts, test them, and restate interpretations until prediction and control become possible."*

Currently, there is one theoretical approach within the scientific field of researching patterns in homicide that excels at this, namely EP. EP has its theoretical reference in modern evolutionary theory, which is a well-founded theory of how all life, including the human species, has developed. By using evolutionary theory as a meta-theory, EP has an encompassing paradigm of reality, based on observed facts, in which one may explore how and why a species-specific human psychology potentially has evolved. From this paradigm, proponents of EP have drawn a series of hypotheses concerning the possible psychological mechanisms underpinning filicide perpetration that enable the prediction and empirical test of new associations of facts. I will elaborate on this process in the following sections.

1.2. Evolutionary Psychology

Evolution is the process by which all life on Earth has been, and continues to be, developed. The theory of evolution has been confirmed through observations and experiments to such an extent that it is accepted as fact within the field of biology, and it is the guiding meta-theory for the paradigm of selection thinking that unifies the field (e.g. Majerus, Amos & Hurst, 1996; Maynard-Smith, 1998). As Ernst Mayr (2001, p. xxi), a prominent evolutionary biologist, argued, "*[e]volution is the most important concept in biology. There is not a single Why? question in biology that can be answered adequately without a consideration of evolution. But the importance of this concept goes far beyond biology. The thinking of modern humans, whether we realise it or not, is profoundly affected – one is almost tempted to say determined – by evolutionary thinking.*"

Yet the theory of evolution has at best been a weak theoretical reference within psychology until the emergence of EP in the 1980s with the theoretical and empirical works of scholars such as Donald Symons (1987), John Tooby and Leda Cosmides (1987), Martin Daly and Margo Wilson (1988b), and David M. Buss (1989). Together with and an ever-growing number of social scientists, they advocated for the use and versatility of the paradigm of evolutionary selection thinking in studying universal human psychological mechanisms.

Proximate and ultimate levels of explanation

EP perspectives do not necessarily contradict other theoretical perspectives on human psychology and behaviour. It may in fact be argued that all social science is evolutionary psychology in that the ambition is ever to discern and describe human nature and its governing principles (Buss, 2012, p. 47; Daly & Wilson, 1988, p. 8). The crucial difference

between EP and other theoretical approaches in the social sciences is in the level of analysis that is applied. Whereas conventional social science mainly operates at what is termed a *proximate level*, EP additionally applies an *ultimate level* of analysis.

An example that may illustrate the difference between the two levels of analysis in the study of filicide is how the cross-cultural overrepresentation of steppaternal filicide perpetrator is approached. A proximal level of analysis explains the overrepresentation with, for instance, the perpetrators' lack of attachment to the stepchild; jealousy of the attention the stepchild gets from its genetic mother; or impatience with the stepchild (Alder & Polk, 2001; Cavanagh, Dobash & Dobash, 2007; Wilczynski, 1997). EP perspectives additionally investigate the possible evolutionary origin and function of such feelings in association with a lack of genetic relatedness, asking what the reproductive benefits might be for a caretaker to feel differently for a stepchild and a genetically related child (e.g. Daly & Wilson, 1988a; 1988b; 1994).

Exploring the possible evolutionary origin and function of psychological mechanisms when researching patterns in homicide is not merely intellectual folly. It has proven to successfully guide the identification of a list of risk factors for homicide that were otherwise unknown, including the overrepresentation of step-paternal filicide perpetrators (Daly & Wilson, 1988a; 1988b). Other examples of risk factors discovered through applying an ultimate level of analysis include the decreased risk for homicide in association with genetic relatedness in general; the increased risk for intimate partner homicide in association with stepchildren in the household; and an increased risk for intimate partner homicide in association with an increased age difference in the couple, to name a few (see Daly & Wilson, 1988a; 1988b). With the improved ability to identify risk factors for homicide offered by EP perspectives, we achieve a more nuanced picture of who are at risk for homicide and thus stand stronger equipped to prevent homicide.

The ability to successfully predict and identify specific patterns in the characteristics for distinct homicide categories when using EP perspectives is due to EP's firm positioning within the paradigm of evolutionary selection thinking. The following section is a short introduction to this paradigm.

A paradigm of evolutionary selection thinking

Meta-theory

There is a hierarchy of levels of theoretical analysis within the paradigm of evolutionary selection thinking (Buss, 2012). The first level is the general theory of evolution, which is the

meta-theory and unifying framework for the paradigm. Charles Darwin (1859) is considered the architect of modern evolutionary theory, as he identified key mechanisms by which evolution occurs. One such mechanism is *natural selection*.

Natural selection is the process whereby the genetically heritable traits of reproductively successful individuals in a given population spread to successive generations, while the heritable traits of reproductively unsuccessful individuals do not. If the challenges to survival and reproductive success in the population's environment are stable over several generations, the population may become increasingly adapted to its environment for every generation, as the genes supporting survival and reproductive success spread in the population. In this way, natural selection shapes the traits of a species as a whole.

There are three main products of evolutionary selection processes, namely adaptations; by-products; and random effects. An adaptation is a heritable trait that during the period it evolved had a specific function in increasing the individual's ability to overcome challenges associated with survival and reproduction. A by-product is a trait that has not had a specific function, but was carried along with an adaptation. Since the adaptation was functional and thus selected for, and the by-product is coupled with the adaptation, the by-product also spreads in the species. Random effects are the result of mutations, responses to novel changes in the environment, or other "accidents" in the development of the individual. As long as by-products and random effects are neutral or only weakly negative to the individual's ability to survive and reproduce, they will not be selected for or against. Should they however at some point become functional to individuals over several generations, they may become adaptations in their own right through natural selection if they are heritable.

Mid-level theory

On the basis of evolutionary theory, one may generate mid-level theories. This constitutes the second level of analysis in the paradigm of evolutionary selection thinking. Mid-level theories must be compatible with general evolutionary theory, but they must also stand or fall on their own merits. Darwin (1859) argued that not only morphological and physiological traits but also behavioural and psychological traits are selected for, or against, and thus evolve. Following this notion, some mid-level theories consider the specifics of how evolution may shape behavioural and psychological traits.

One example of such a mid-level theory is William D. Hamilton's (1964) theory of inclusive fitness and kin selection. Hamilton proposed that genes should be understood as the ultimate unit of selection in evolution and not individuals or groups, as genes are passed on,

or not, across generations. With genes being the unit of selection, Hamilton argued that altruistic behaviour could evolve through what he termed *kin selection*. Kin selection occurs when individuals who have similar genes aid the transferral of these genes to the next generation, such as through helping or cooperating with each other. The increase in the kin's reproductive benefit from the act should however not exceed any reductions in the reproductive success of the individual performing the given act. *Discriminative* altruism and cooperation between individuals who share genetic similarities may thus spread in social species, including humans.

A second example of a mid-level theory that considers how evolution may shape behavioural and psychological traits is concerned with parent-offspring conflict over parental investment. As reproduction is the *sine qua non* of evolution, the notion of conflicts concerning whether and how much the caretaker should invest in the offspring might at first seem counterintuitive. However, there are circumstances in which parental investment (e.g. presence, care, and sharing physical and financial resources) in a given offspring could potentially compromise the individual's *lifetime reproductive success*. For instance, if the prospects of the offspring reaching reproductive maturity are poor, parental investment could, in reproductive terms, potentially be a waste of finite resources. Individuals who decrease – or even withhold – investment in such circumstances can save their resources for investment in future offspring, when circumstances might be more promising. Evolutionary biologist Robert L. Trivers (1974) therefore argued that individuals who were able to invest discriminately would potentially have a greater lifetime reproductive success than those who invested indiscriminately in every single offspring in their care.

Specific hypotheses and predictions

Mid-level theories form the basis for deriving hypotheses about specific psychological mechanisms that may have evolved. This is the third level of analysis in the paradigm of selection thinking, and is the level where EP operates (Buss, 2012). Psychological mechanisms are highly vulnerable to evolutionary selection processes for two reasons. First, the neurological networks that underpin our psychological mechanisms have a biological and thus genetic foundation. Second, neurological networks create biases in what information the individual takes in, how information is processed and what reactions are elicited, including emotional and behavioural reactions. Assuming that certain biases have been more beneficial than others with regards to enabling individuals overcome recurring challenges to survival and reproductive success in our ancestral past, the beneficial biases would naturally be

selected for over the less beneficial biases. The beneficial biases are then evolved psychological mechanisms, and the "[...] *causal link between evolution and behaviour is made through psychological mechanisms*" (Tooby & Cosmides, 1987, p.287).

From a hypothesis of that a given psychological mechanisms has evolved, one may derive specific predictions concerning how the given mechanisms may be manifested. As will be returned to in section *1.3 Evolutionary psychological perspectives on filicide* (pp. 7-16) in this thesis, the mid-level theories of Hamilton and Trivers have successfully been used to derive hypotheses concerning the potential psychological mechanisms underpinning filicide perpetration. These hypotheses have in turn led to the derivation of specific predictions concerning how the evolved mechanisms will manifest themselves in the patterns of characteristic traits for filicide.

Currently there is no one evolutionary theory of human psychology. Rather, alternative hypotheses derived from the paradigm of selection thinking concerning potentially evolved psychological mechanisms may be put forward and tested against each other (Daly & Wilson, 1988b, p. 13). The predictions derived from a given hypotheses make it explicit what would disprove the hypotheses when empirically tested. As hypotheses and predictions gain - or fail in gaining – empirical support, the theoretical understanding within the paradigm develops. If a set of data should not coincide with the predictions derived from the hypothesis, this will naturally put the validity of the hypothesis in question. This is a self-critical and self-correcting process, not a sign of fabricating "just-so" stories or a lack of scientific founding for the hypotheses. Rather, it is a process one should expect in all scientific enquiries and paradigms.

1.3. Evolutionary Psychological Perspectives on Filicide

In their book *Homicide,* Daly and Wilson (1988b) presented what is considered ground-breaking work in the field of researching patterns in homicide. Drawing on the paradigm of evolutionary selection thinking, they developed a comprehensive theoretical understanding of the psychology underpinning homicide perpetration. By referring to principles from mid-level theories concerning selection pressures for behavioural and psychological traits and potential challenges to survival and reproductive success in our ancestral past, Daly and Wilson identified possible *reproductive conflicts* between individuals (i.e. when two parties have conflicting reproductive interests, or one party somehow impairs the other party's

reproductive opportunities) and hypothesised that such conflicts could elicit homicides. From this hypothesis, Daly and Wilson derived predictions concerning the specific characteristic traits for a range of homicide categories, including filicide, siblicide (i.e. when an individual kills a sibling), parricide (i.e. when an individual kills a parent), intimate partner homicide and homicides involving strangers and acquaintances.

Informed by mid-level theories of how natural selection inevitably sculpts a discriminant parental psychology that adjusts the level of investment in accordance with the potential reproductive benefit the caretaker may expect from such investment (Alexander, 1979; Hamilton, 1964; Trivers, 1974), Daly and Wilson (1980; 1988a; 1988b) noted that it would not be theoretically sound to expect the human species to have been immune to such selection forces. Humans are singular with regards to the amount of resources needed to raise offspring to reproductive maturity. And, as Buss (2005, p. 165) remarked, "[i]*ronically, it is precisely because our investment in children is so great that we must be extraordinarily choosy about the very few on whom we lavish our finite resources."*

Daly and Wilson (1988a; 1988b; Wilson, Daly & Daniele, 1995) argued that filicide occurs when discriminant parental investment is *accidentally* reduced to lethal levels. The perpetration of filicide is then understood as a by-product, an epiphenomenon, of otherwise non-lethal psychological mechanisms for discriminant investment. More recently, Joshua Duntley and David M. Buss (2008; 2011; Buss, 2005) have argued that that there are psychological mechanisms which have been selected for the specific function of eliciting filicide perpetration, and thus are adaptations. Such mechanisms would be favoured by evolutionary selection processes, they argued, because filicide ensures a more abrupt and lasting prevention of any potential waste of finite resources than a mere non-lethal reduction in parental investment would.

The two EP perspectives agree however on the hypothesis that filicide results from reproductive conflicts and evolved discriminant parental investment, and that the pattern of characteristic traits of filicide will therefore follow an adaptive logic. As will be presented in the following sections, the two perspectives have disaggregated filicide into similar subcategories, and derived similar predictions concerning what will characterise the perpetrators, victims and circumstances of the respective subcategories.

1.3.1. Disaggregating filicides to identify patterns in characteristics

The aforementioned dearth of theory driven research on patterns in homicide is echoed in research on patterns in filicide (Alder & Polk, 2001; Friedman, Cavney & Resnick, 2012; Haapasalo & Petäjä, 1999; Harris, Hilton, Rice & Eke, 2007). Conventional attempts at identifying meaningful and distinct subcategories of filicide and their associated characteristics are empirically based and performed in a non-theoretical context (e.g. Bourget & Gagne, 2002; d'Orban 1979; Resnick, 1960; 1979). It is then perhaps not surprising that homicide researchers Christine Alder and Ken Polk (2001, p. 168) concluded that filicides "*are so varied that it seems to us that it is unlikely that a single, unitary theory of homicide will provide a meaningful understanding*." Their conclusion is however misguiding.

Unlike any other theoretical approach to human psychology and behaviour, EP perspectives offer a unitary theoretical approach for understanding the psychology underpinning the perpetration of a range of homicide categories, including filicide. And further, EP perspectives *predict* that filicide will not be to be a heterogeneous homicide category. From the hypothesis that filicide will occur in the context of reproductive conflict over parental investment, proponents of EP perspectives detail the potential underpinning psychological mechanisms of distinct subcategories of filicide and predict their respective characteristic traits, dependent on the perpetrators' sex, genetic relationship to the victims and presence of psychopathology.

Disaggregating genetic parents and stepparents as perpetrators

As genes are the unit for evolutionary selection, the reproductive value of an offspring to a caretaker is, at least in part, conditional on their genetic relatedness. The greatest potential for reproductive conflict may therefore be in the absence of genetic relatedness (Alexander, 1979; Hamilton, 1964). From EP perspectives it has therefore been hypothesised that caretakers will experience a greater reluctance towards investing in stepchildren than in children they are genetically related to (Buss, 2005; Daly & Wilson, 1980; 1988a; 1988b; 1994; 2001; Duntley & Buss, 2008; 2011). From this hypothesis, specific predictions have been derived concerning the traits of filicides perpetrated by genetic parents and stepparents respectively.

One prediction is that children living in stepparental households will be at an increased risk for filicide victimisation compared with households with two genetic parents. Further, it is predicted that stepparental perpetrated filicides will be characterised by the caretaker's

hostility towards the victim and lapses in parental solicitude. It is therefore an associated prediction that stepparents will typically perpetrate filicide by fatal abuse. In contrast, genetic parents are predicted to more often have altruistic motives for their filicides, and thus be more likely to perpetrate their filicides by methods that limit the victims' suffering.

Not all studies disaggregate stepparents and genetic parents as filicide perpetrators (e.g. McKee & Shea, 1998). Studies that do, however, empirically support the above EP predictions. For instance, Daly and Wilson (1994) found in a national sample from Canada 1974-1990, that filicide victims were 60 times more likely to be killed by a stepparent than a genetic parent, and further that stepparental perpetrators were 120 times more likely to beat the victims to death than genetic parents were. Genetic parents were more likely to shoot or asphyxiate the victims. Similar findings are confirmed in other samples from Canada (Daly & Wilson, 1988a; 1988b; Harris et al., 2007; Wilson et al., 1995); the US (Daly & Wilson, 1988b; Lucas, Wezner, Milner, McCanne, Harris, Monroe-Posey & Nelson, 2002; Weekes-Shackelford & Shackelford, 2004); Australia (Alder & Polk, 2001); the UK (Brookman & Nolan, 2006; Cavanagh et al., 2007; Flynn et al., 2013; Daly & Wilson, 1994; Wilson et al., 1995); the Netherlands (Liem & Koenraadt, 2008a); Finland (Vanamo, Kauppi, Karkola, Merikanto & Räsänen, 2001); and Sweden (Daly & Wilson, 2001; Nordlund & Temrin, 2007; Somander & Rammer, 1991; Temrin, Nordlund & Sterner, 2004; Temrin, Nordlund, Rying & Tullberg, 2011).

The research that has tested EP predictions concerning the respective characteristics of filicides by stepparents and genetic parents has most often used samples of paternal perpetrators. Samples of stepmaternal perpetrators will necessarily be smaller than that of steppaternal perpetrators, as there are fewer stepmothers than stepfathers in the general population. This is due to that mothers may give birth after an intimate relationship dissolves, and there has also been a culturally prevalent convention that mothers receive main custody of shared children after the dissolution of relationships in the societies where the respective characteristics and rates of filicides perpetrated by stepparents and genetic parents have been explored. One may however expect similarities in filicides perpetrated by female and male stepparents, and that living with a stepmother may pose an equal, if not greater, risk for filicide victimisation to that of living with a stepfather (Harris et al., 2007). As mothers make greater parental investment in children than fathers, in terms of both direct physical resources and therefore also time, the reproductive cost of investing in a genetically unrelated child may be greater for women than for men. The potential for reproductive conflict over parental investment may thus be greater when the caretaker is female than when male.

Two studies that included stepmaternal perpetrators have been performed on a national sample of filicides from Canada, 1997-2003, (Harris et al., 2007) and a national sample from the US 1976-1994 (Weekes-Shackelford & Shackelford, 2004). Both studies found an overrepresentation of both stepmaternal and steppaternal perpetrators compared to genetic parents. Further, in the Canadian study, Harris and colleagues (2007) had access to data that revealed that children victimized by their stepmothers had experienced harsher treatment prior to the filicide compared to children victimised by stepfathers or genetic parents of either sex.

The next section details further how sex-differentiated reproductive challenges may have resulted in the evolution of sex-differentiated psychological mechanisms underpinning maternal and paternal filicide perpetration.

Disaggregating maternal and paternal perpetrators

When a species has two sexes that contribute different levels of parental investment and face different challenges in securing reproductive success, heritable sex-differentiated traits may evolve (Darwin, 1871; Trivers, 1972). Evolutionary psychologists therefore take into account the unique challenges that faced ancestral women and men respectively to fully understand universally sex-differentiated psychological mechanisms. In this way they explore whether the differences between the two sexes may have had an adaptive function, and thus could be evolved adaptations (Buss, 2012). EP perspectives on filicide also take this approach to identifying possible sex-differentiated psychological mechanism that may underpin perpetration and to predicting what will characterise filicides with female and male perpetrators respectively.

To secure the highest potential reproductive success across a life span, individuals calculate how much parental investment to allocate in present versus future offspring. Such calculations may be conscious, but they may also be performed on a level the individual is not conscious of and influenced by processes the individual is not aware of. For example, a biological condition argued to affect the individual's calculation of whether to invest heavily in current offspring or save investment for potential future offspring, is the individual's *residual reproductive potential* (Daly & Wilson, 1988a; 1988b). As reproductive fecundity decreases with age, the potential for having or replacing an offspring also decreases. From this biological fact, proponents of EP perspectives have hypothesised that genetic parents will be less discriminant in their investment in children with age. From this hypothesis they have further predicted that a caretaker's young age will be associated with an increase in the risk

for filicide perpetration (Daly & Wilson, 1988b). Because reproductive fecundity declines at an earlier age for women than for men, it has further been predicted that maternal filicide perpetrators will be younger than paternal filicide perpetrators (Daly & Wilson, 1988b).

There is empirical support for the above EP predictions. For instance, in a national sample of filicides that occurred in Fiji, 1993–1996, the mean age of maternal perpetrators was 25 years whereas the mean age of paternal perpetrators was 30. 3 years (Adinkrah, 2000; 2001; 2003). Similar findings have been confirmed in samples from the US (Friedman et al., 2005); the UK (Brookman & Nolan, 2006); the Netherlands (Liem & Koenraadt, 2008a); and Finland (Kauppi et al., 2010; Vanamo et al., 2001).

As women gestate and nurse, they make more direct and heavy investment in the youngest children. It has therefore been predicted from EP perspectives that the youngest children will be at an increased risk for filicide victimisation by their mothers (Buss, 2005; Daly & Wilson, 1988a; 1988b; Duntley & Buss, 2011). There is empirical support for this prediction cross-culturally. For instance, in a national sample of filicides in Finland, 1970-1994, mothers perpetrated 90% of the filicides where the victim was killed during their first year of life (Kauppi et al., 2010). Similar findings have been confirmed in other Finnish samples (Lehti et al., 2012; Vanamo et al., 2001), and in samples from the US (Overpeck et al., 1998); Canada (Harris et al., 2007); the UK (Brookman & Nolan, 2006; Flynn et al., 2007; 2013; Marks & Kumar, 1993; 1996); Fiji, (Adinkrah, 2000; 2001; 2003); the Netherlands, (Liem & Koenraadt, 2008a); Denmark (Laurssen, Munk-Olsen, Mortensen, Abel, Appleby & Webb, 2011); and Sweden (Nordlund & Temrin, 2007; Somander & Rammer, 1991).

Considering the amount of resources required to foster a child to reproductive maturity, one may expect that it would have more often than not required two parents in our ancestral past. Further, having a child from a previous union may have been an impediment for future relationships, as potential new partners could perceive a stepchild as a reproductive burden. From EP perspectives it has therefore been hypothesised that single parenthood may increase the risk for a reproductive conflict between the caretaker and child (Buss, 2005; Daly & Wilson, 1988b; Duntley & Buss, 2011). From this hypothesis it has been predicted that children will be at an increased risk for filicide victimisation in households with a single caretaker compared to children living in households with two genetic parents.

Theoretically, single parenthood may be an important cue for discriminative parental investment for women and men equally. And a population study of filicides in Sweden 1965-1999, that did not disaggregate between maternal and paternal perpetrators, found that 32.2% of the victims lived with a single parent, yet only 12.6% of the children in the general

population in Sweden during that time period lived with a single parent (Temrin et al., 2004). However, the rates of single mothers in the general population will be greater than rates of single fathers, for reasons mentioned earlier. There is cross-cultural empirical support for that single parenthood is characteristic of maternal filicide perpetrators. For instance, in a national sample of infanticides in England and Wales 1996– 2001, less than half the mothers were either married or co-habiting with a partner at the time of perpetration (Flynn et al., 2007). Similar findings have been confirmed in samples from the US (Friedman et al., 2005; Lewis & Bunce, 2003; Overpeck et al., 1998; Stone et al., 2005); Canada (Daly and Wilson 1988b; Harris et al., 2007); Australia (Alder & Polk, 2001); Fiji (Adinkrah, 2000; 2001); and Italy (Camperio Ciani, 2012).

A reproductive challenge that has been singular to ancestral men is the potential uncertainty as to whether or not a child in their care was their own genetic offspring. It has therefore been argued from EP perspectives that evolutionary selection would favour psychological mechanisms among men that may protect them against being cuckolded. Such mechanisms are hypothesised to include a heightened sensitivity to cues of and concern with a partner's sexual infidelity and proprietary feelings towards their partner. From the hypotheses of a heightened sensitivity to potentially being cuckolded among men, it has been predicted that there will be sex-differentiated motives for intimate partner homicide. Specifically, it has been predicted that there will be an increased risk for male perpetrated intimate partner homicide when the woman has left or intends to leave the relationship (Buss, 2005; Daly & Wilson, 1988b; Shackelford, Buss & Weekes-Shackelford, 2003). There is empirical support for this prediction as sexual jealousy and female initiated relationship dissolution is the context in which intimate partner homicides most frequently occur (e.g. Campbell, Glass, Sharps, Laughon & Bloom, 2007; Daly & Wilson, 1988b; Dawson & Gartner 1998; Hotton, 2001; Johnson & Hotton, 2003; Shackelford, Buss & Weekes-Shackelford, 2003; Wilson & Daly, 1993).

From the same reasoning, it has further been predicted that familicide (i.e. homicides where a current or former intimate partner and one or more children are killed) will predominantly be perpetrated by men, and occur in the context of the woman actually or potentially leaving the relationship (Harris et al., 2007; Wilson et al., 1995). There is empirical support for these predictions cross-culturally. For instance, 93% of familicides in Canada 1974–1990 and 96% of familicides in the UK 1977–1990 had male perpetrators (Wilson et al., 1995). Further, the children were rarely the objects of conflict that elicited the familicide. Rather, the familicide was elicited by a relationship dissolution initiated by the

woman. Similarly findings have been confirmed in other Canadian and UK samples (Brookman & Nolan, 2006; Daly & Wilson, 1988b; 1994; Harris et al., 2007) and in samples from the US (Friedman et al., 2005); Australia (Alder & Polk, 2001); Fiji (Adinkrah, 2001; 2003); the Netherlands (Liem & Koenraadt, 2008b); Finland (Kauppi et al., 2010; Lehti et al., 2012); and Sweden (Norlund & Temrin 2007).

It has further been predicted that men may perpetrate filicide as part of their attempt to control and punish their current or former partner at a higher rate than women (Harris et al., 2007; Wilson et al., 1995). There is empirical support for this prediction cross-culturally. For instance, in a national sample of filicides in Sweden during the years 1965-1999, 72% of the cases that occurred during interpersonal conflict where the motives appeared to be jealousy or revenge on a current or former partner had a male perpetrator (Nordlund & Temrin, 2007). Similar findings have been confirmed in other Swedish samples (Somander & Rammer, 1991; Temrin et al., 2000), and in samples from Canada (Harris et al., 2007); Australia (Alder & Polk, 2001); the UK (Wilczynski, 1997); the Netherlands (Liem & Koenraadt, 2008b); and Finland (Kauppi et al., 2010).

From an EP perspective it has further been hypothesised that the proprietary feelings men may have towards their partners and children may be associated with their ancestral role as the main providers for the family (Harris, et al., 2007; Wilson et al., 1995). From this hypothesis it has been predicted that men will be more likely than women to perpetrate filicide and familicide in association with their role as a provider being threatened. There is empirical support for this prediction. In the above-mentioned Swedish study, all but one of the filicides that appeared to be motivated economic hardship had a male perpetrator (Nordlund & Temrin, 2007). In four of the seven incidents, the male perpetrator killed the whole family. Similar findings have been confirmed in other Swedish samples (Somander & Rammer, 1991) and samples from Canada (Daly & Wilson, 1988b); the US (Friedman et al., 2005); and Fiji (Adinkrah, 2001; 2003).

Disaggregating perpetrators with and without psychopathology

From an EP perspective, psychopathology may be understood as mental states in which the individual no longer perceives or acts in accordance with his or her reproductive interest (Daly & Wilson, 1988b; Wilson et al., 1995). From this perspective one may infer the hypothesis that filicides that contradict adaptive logic will be associated with perpetrator psychopathology (e.g. psychosis or suicidal ideation) at a higher rate than those filicides that

do not contradict this form for logic (Daly & Wilson, 1988b; Duntley & Buss, 2008; Stone et al., 2005). A series of predictions concerning the characteristics of filicides associated with perpetrator psychopathology follow from this hypothesis.

As the potential reproductive value of a child partly depends on the genetic relationship to the caretaker, one may predict from an EP perspective that there will be a higher rate of psychopathology among genetic parents than among stepparents who perpetrate filicide. There is empirical support for this prediction cross-culturally. For instance, in a Swedish national sample of filicides in the time period 1971–1980, half of the genetic parents committed suicide in conjunction with the filicide (29 of 58) whereas only a quarter of stepparents did so (one of four) (Somander & Rammer, 1991). Similar findings have been confirmed in other Swedish samples (Nordlund & Temrin, 2007), and in samples from the US (Freidman et al., 2005; Shackelford et al., 2008); Canada (Daly & Wilson, 1988b; 1994; Harris et al., 2007; Wilson et al., 1995); the UK (Daly & Wilson, 1994; Flynn et al., 2013; Wilson et al., 1995); and Finland (Kauppi et al., 2010).

However, in a study of filicides in Chicago 1965–1994 there was no significant difference in the rate of suicide among stepparents and genetic parents (Shackelford et al., 2005). According to Shackelford and colleagues, this is the only known filicide study where there is no significant difference between the two perpetrator categories in their rate of suicide. Shackelford and colleagues attributed their finding to the small percentage of genetic parents that commit suicide in their sample.

The potential reproductive value of an offspring to its caretaker increases as it reaches reproductive maturity (Alexander, 1979; Trivers, 1972). Killing an older child is therefore potentially a greater compromise to a caretaker's reproductive success than filicide of a younger child. One may therefore, from EP perspectives, predict that there will be a higher rate of psychopathology among filicide perpetrators with older victims than younger victims (Stone et al., 2005). There is empirical support for this prediction cross-culturally. For instance, whereas the rate of lifetime history of mental disorder found among perpetrators of infanticide in England and Wales 1996-2001 was similar to that of the general population, there was a correlation between an increased risk for suicide and an increase in the victims' age (Flynn et al., 2007; 2013). Similar associations between perpetrators' psychopathology and victims' age are confirmed in other samples from the UK (d'Orban, 1979) and from the US (Friedman et al., 2005; Lucas et al., 2002; Shackelford et al., 2005; 2008; Stone et al., 2005); Canada (Bourget & Gagné, 2005; Daly & Wilson, 1988b; Harris et al., 2007);

Australia (Alder & Polk, 2001); Fiji (Adinkrah, 2000; 2001; 2003); Italy (Camperio Ciani & Fontanesi, 2012); and Finland (Haapasalo & Petäjä, 1999; Kauppi et al., 2010).

As an individual's residual reproductive potential is reduced with age, one may predict from EP perspectives that an increase in the filicide perpetrators age will be associated with an increased probability for perpetrator psychopathology (Stone et al., 2005). There is empirical support for this EP predicted association cross-culturally. For instance, in a sample of filicides in Chicago from the time period 1965-1994, Shackelford and colleagues (2005) found that, among genetic parents, there was a greater percentage of perpetrators who were 26 years or older who commit suicide in conjunction with the filicide than perpetrators who were younger (10.8% and 1.5% of the two age groups, respectively). Similar findings have been confirmed in other samples from the US (Friedman et al., 2005; Lewis & Bunce, 2003; Shackelford et al., 2008; Stone et al., 2005) and in samples from Canada (Daly & Wilson, 1988b; Harris et al., 2007); Australia (Alder & Polk, 2001; Nielssen, Large, Westmore & Lackersteen, 2009); the UK (d'Orban 1979; Flynn et al., 2007; 2013); Italy (Camperio Ciani & Fontanesi, 2012); and Finland (Kauppi et al., 2010; Lehti et al., 2012).

A final EP prediction concerning filicides associated with psychopathology is that they will be more likely to have multiple victims than filicides without such an association. There is empirical support also for this prediction cross-culturally. For instance, in Canadian national sample, 1974-1990, Wilson and colleagues (1995) found that familicidal perpetrators commit suicide more often than single-victim perpetrators (50.9% and 25.3% respectively). Similar findings have been confirmed in other samples from Canada (Bourget & Gagné, 2005; Daly & Wilson, 1988b) and in samples from the US (Freidman et al, 2005; Shackelford et al., 2005; 2008; Lewis & Bunce, 2003; Lucas et al., 2002; Stone et al., 2005); Australia (Alder & Polk, 2001); the UK (d'Orban, 1979; Flynn et al., 2013; Wilson et al., 1995); Finland (Kauppi et al., 2010); and Denmark (Laursen et al., 2010); and Sweden (Nordlund & Temrin, 2007; Somander & Rammer, 1991).

To summarise, EP perspectives give a theoretical framework for disaggregating filicides into meaningful categories, which enable identifying predictable patterns in the characteristics of filicides - including filicides associated with perpetrator psychopathology. Filicide is thus not a wholly unpredictable event when approached from EP perspectives. Despite this fact, EP perspectives are not commonly used in homicide research and, as will be presented in the next section, there are critical voices concerned with the validity of EP perspectives on the underpinning psychology of filicide perpetration and the existing cross-cultural empirical support for EP predictions.

1.3.2. Criticism of evolutionary psychological perspectives on filicide

Criticism against EP perspectives on filicide has mostly focused on whether the overrepresentation of stepparental perpetrators confirmed cross-culturally reflects objective realities and, if so, what alternative explanations than current EP perspectives might there be for this overrepresentation. One of the more prominent critics of EP, the philosopher David Buller (2005), has argued that the overrepresentation may be due to a systematic bias whereby stepfathers are more likely to be detected and reported for filicide perpetration than genetic fathers. However, as Daly and Wilson (2005, p. 1) noted, Buller's conclusion is highly unrealistic considering the number of undetected filicides it implies. With "*estimated rates of fatal batterings of Canadian children under 5 years of age in 1974-1990 at 2.6 deaths per million child-years at risk for those residing with and killed by their (presumed) genetic fathers (based on 74 deaths in 28.3 million child-years at risk) vs 321.6 per million child-years at risk for those residing with and killed by stepfathers (55 in 0.17 million child-years at risk). The latter rate is more than 120 times higher than the former. To give Buller's argument its best chance, suppose for the moment that stepfathers were always caught whereas genetic fathers often got away with murder; even so, for the "true" rate of fatal batterings by genetic fathers to equal that for stepfathers, there would have to have been more than 500 undiscovered paternal murders each year in addition to the annual average of 4 that were detected."*

Buller's unlikely conclusion might have been due to a lack of calculation of the extent the potential detection bias against stepparent would have to be to annul their overrepresentation. Other critics have based their conclusion of a lack of overrepresentation of stepparental perpetrators on calculation errors. This was the case for Temrin and colleagues (2000) who concluded that stepparents were not overrepresented as filicide perpetrators in Sweden 1975-1995. Daly and Wilson (2001) corrected this error, and found that stepparents were in fact overrepresented as filicide perpetrators in Sweden, albeit to a lesser extent than that found in previous studies in other types of societies.

Daly and Wilson (2001) further criticised Temrin and colleagues for not presenting their finding, assuming it had been correct, as a local exemption, but rather as disproving the hypothesis of discriminant parental investment depending on genetic relatedness, and thus ignoring the overwhelming support the hypothesis has received cross-culturally (see also Temrin et al., 2011 for similar conclusion). A local exemption for the level of risk for stepparental perpetrated filicide in a modern welfare society, such as Sweden, would be more

theoretically sound than that an evolved human parental psychology would not be discriminant depending on genetic relationship.

Temrin and colleagues (2001) conclusion concerning a lack of significance of genetic relationship for parental investment may have been due to a theoretical misunderstanding of EP perspectives in general as advocating determinism. It is crucial to note that the proposal of evolved psychological mechanisms is not a proposal of determinism. With its theoretical foundation firmly placed in modern evolutionary biology, EP stresses an interaction between the individual's environment and genetic make-up (i.e. the genotype) in the realisation of traits (i.e. the possible phenotypes) (Buss, 2012; Tooby & Cosmides, 1989). In other words, the expression of evolved psychological mechanisms, including mechanisms for discriminant parental investment and those underpinning filicide perpetration, are context specific – triggered and manifested only under evolutionary salient cues in the environment.

From an EP perspective, one therefore does not argue for invariant rates of filicide between societies, or for invariant rates of filicide by different caretaker categories in different societies. Rather, it is expected to be cross-national variations in the magnitude of risk stepparents represent for filicide victimization in accordance with the variance in cues for extreme discriminative parental investment (Daly & Wilson, 2001). It is therefore not a threat to the validity of EP perspectives on filicide that different societies do show different rates for such risk. It is actually more to be expected that, for example, whereas the risk for filicide victimisation by a stepfather was 100 times higher than the risk for victimisation by a genetic father in the US in 1972, and 70 times higher in Canada 1974–1983 (Daly & Wilson, 1988a; 1988b), the risk was reduced in Sweden 1965–2009 to a rate where perpetrators per million parents per year was 1.9 for genetic parents and 3.2 for stepparents (p=0.008) (Temrin et al., 2011).

Daly and Wilson (2001) argued that a possible explanation for why stepparents were not overrepresented as filicide perpetrators to the same extent in current day Sweden as in other types of societies is the alleviation of pseudoparental obligation of stepparents in modern, well-developed welfare societies. As parental investment required from stepparents is reduced in such societies, this will in turn alleviate potential reproductive conflicts in step-relationships, thus decreasing the risk for filicide perpetration. Daly and Wilson (2001) further argued that as fatal abuse is less likely to occur in societies where corporal punishment of children is illegal, such as in current day Sweden, filicide perpetration by fatal abuse might be an inappropriate assay for measuring discriminant parental investment in such societies.

A second example of a possible theoretical misunderstanding concerning determinism by critics of EP is seen in homicide researchers Alder and Polk's (2001) suggestion that the fact that not *all* stepparents perpetrate filicide somehow undermines EP perspectives on stepparental perpetrators. As in most psychological research and research on the patterns in characteristic traits of homicide, EP perspectives search for tendencies on group levels. The proposed predictions concerning the patterns for filicide presented in this thesis are therefore not expected to be absolute – one does not from an EP perspective expect every single family who shares the characteristic traits listed to be associated with an increased risk for filicide to be *determined* for filicide. Just as explanations on a proximate level for the overrepresentation of stepparental filicide perpetrators, such as jealousy or lack of attachment to a stepchild, does not imply that filicide is determined to occur in the context of such emotions. It is merely a prediction of what contexts might increase the risk for filicide perpetration.

A truly comprehensive theory for understanding filicide should however account for the apparent individual differences caretakers have in their risk for filicide perpetration. Only a small fraction of caretakers who find themselves in circumstances associated with an increased risk actually perpetrate filicide, and current EP perspectives lack an explicit account of why individuals would differ in this way in similar circumstances.

It is an ambition of the work presented in this thesis to contribute towards the development of current EP perspectives on filicide. The third paper presented in this thesis is therefore a first attempt at exploring the potential origins of individual differences in the risk for filicide perpetration from an evolutionary developmental psychological (EDP) perspective. EDP explores the process of how nature and nurture interact to produce alternative patterns of development which result in individual differences, and whether these may be predictable, adaptive responses to environmental pressures (Bjorklund & Pelligrini, 2000).

First, however, the thesis will present the study where patterns in characteristic traits of filicide in current day Norway are mapped, and EP predictions concerning such patterns are tested.

2. THE PRESENT STUDY

2.1. Aims

The aim of the present study was twofold. The first aim was to identify the patterns of characteristic traits in filicide in Norway 1990-2009. The second aim was to contribute towards our theoretical understanding of the psychology of filicide perpetration. To achieve these two aims, I chose to use EP perspectives as a theoretical framework for the study. EP perspectives have successfully guided the identification of risk factors for filicide in every society where they have been tested. This was promising for achieving the same success in Norway.

With the exception of a series of tests using Swedish national samples (Daly & Wilson, 2001; Nordlund & Temrin, 2007; Temrin et al., 2000; 2004; 2011), EP predictions concerning the characteristic traits of filicide have mainly been tested, and established, in societies very different from current day Norway. These societies include a range of hunter-gatherer societies (Daly & Wilson, 1988a; 1988b) and in official records of filicide in Chicago during the periods 1870–1930 (Shackelford, Weekes-Shackelford & Beasley, 2008) and 1965–1994 (Shackelford, Weekes-Shackelford & Beasley, 2005); a Mid-Hudson Forensic Psychiatric Hospital during the period 1978-2000 (Stone, Steinmeyer, Dreher & Krisher, 2005); the US during the period 1976–1994 (Weekes-Shackelford 2004); Canada during the periods 1974–1983 (Daly & Wilson, 1988a; 1988b); 1974–1990 (Daly & Wilson, 1994; Wilson et al., 1995); and 1996–2003 (Harris, Hilton, Rice & Eke, 2007); England and Wales during the period 1977–1990 (Daly & Wilson, 1994; Wilson et al., 1995); Italy during the period 1976–2010 (Camperio Ciani & Fontanesi, 2012), It was therefore of interest to test further whether EP predictions would be confirmed in a modern and well-developed welfare society, thus testing the universal validity of EP perspectives on filicide.

2.2. Expected Findings

As there are clear cross-cultural patterns in the characteristics of filicide, including the underpinning psychology of perpetration, one may expect the same patterns in Norway. It is nevertheless crucial that the specific realities of filicide in Norway are investigated. As with any other social problem, the prevention of homicide should be based on factual knowledge

and not assumptions. Further, although the characteristics of filicides are cross-cultural, the prevalence of families who share these characteristics is not necessarily stable between societies, or even within a society over time. Thus the level of risk for the respective subcategories of filicide may differ in current day Norway from those found in other societies, and may also differ from the last scientific study of the patterns of filicide in Norway, which covered the time period 1950–1979 (Grünfeldt & Steen, 1984).

Few young victims

From EP perspectives, the youngest children are predicted to be at an increased risk for filicide victimisation, because the reproductive value of a child to their caretaker increases with age as the child reaches reproductive maturity; the youngest children demand the highest levels of parental investment; and the sooner a caretaker curtails investment, the less investment is potentially lost (Buss, 2005; Daly & Wilson, 1980; 1988a; 1988b; Duntley & Buss, 2011). The need for extreme discriminative parental investment for achieving an optimal lifetime reproductive success may however be reduced through an elimination of unwanted births and an alleviation of potential social and financial burdens of parental investment that could otherwise elicit reproductive conflicts.

The youngest children are in fact at the greatest risk for filicide victimisation cross-culturally. For instance, in a population study of infanticide in England and Wales 1996-2001, over 40% of the infants were victimized within the first three months of their lives (Flynn et al., 2007). Similar findings have been confirmed in other samples form the UK (Brookman & Nolan, 2006; Cavanagh et al., 2007; d'Orban, 1979; Flynn et al., 2013; Marks & Kumar, 1993; 1996), and in samples from the US (Overpeck et al., 1998; Daly & Wilson, 1988b; Shackelford et al., 2005; 2008; Weekes-Shackelford & Shackelford, 2004); Canada (Borget & Gagné, 2005; Daly & Wilson, 1988a; 1988b; Harris et al., 2007); Fiji (Adinkrah, 2000; 2001; 2003); Australia (Alder & Polk, 2001; Nielssen et al., 2009); Italy (Camperio Ciani & Fontanesi, 2012);); Finland (Kauppi et al., 2010; Vanamo et al., 2001); Sweden (Somander & Rammer, 1991); and Norway (Grünfeldt & Steen, 1984).

However, as the rates of filicide have been decreasing in westernized countries since the mid 20th century, the decrease has been the greatest among the youngest victims. The decrease is argued to largely be a consequence of women's increased access to safe abortion and effective birth control, and the improved social acceptance of and state issued financial

support to single mothers (Grünfeldt & Steen, 1984; Lehti et al., 2012; Pritchard, 2012; Resnick, 1970; Somander & Rammer, 1991; Vanamo et al., 2001).

Current day Norway has a relatively high rate in the use of birth control by women. In a population survey in 2005 among women aged 20-44 who were not planning a pregnancy, 90% of women had used at least one form of birth control within the past three months (Skjeldestad, 2007). Further, in 1978, Norway implemented the lawful and unconditional right for women to have an abortion within the first 12 weeks of pregnancy. In a study of the demographic details of women who living in Oslo, the capital of Norway, who had undergone an abortion during 2001-2002, it appeared as if the women were terminating their pregnancies to secure the best timing and number of children with regards to how many children they already had and their educational and career options (Eskild, Nesheim, Busund, Vatten & Vangen, 2007).

Few incidents of fatal abuse and stepparental perpetrators

As Daly and Wilson (2001) suggested might the case for current day Sweden, pseudoparental obligation of stepparents is relatively low in current day Norway. It is a social custom that genetic parents share custody upon relationship dissolutions, and genetic parents are lawfully obligated to contribute with financial support to their children – an obligation that continues also upon either of the genetic parents remarrying.

As listed in section *1.3.2. Criticism of evolutionary psychological perspectives on filicide* (pp. 17-19) in the present thesis, the respective rates for filicides perpetrated by stepparents and genetic parents respectively will differ as a function of method of killing. As Daly and Wilson noted (2001), when physical abuse in a society is rare, fatal abuse may also be rare. Fatal abuse is the most common method of filicide in the US, with up to 80% of filicides being committed through abuse (Cavanagh et al., 2007; Friedman et al., 2009; Lucas et al., 2002; Overpeck et al., 1998; Weekes- Shackelford & Shackelford, 2004). Studies from other societies also confirm fatal abuse as a main method for filicide, but not to the same extent. For instance, in a sample of filicides in New South Wales 1991– 2005, reported that 59 of 165 filicides (36%) were incidents of lethal abuse (Nielssen et al., 2009). Similar findings have been confirmed in other Australian samples (Alder & Polk, 2001), and in samples from the Netherlands (Liem & Koenraadt, 2008b) and the UK (Cavanagh et al., 2007; d'Orban, 1979; Flynn et al., 2007; 2013).

Sweden implemented a law in 1979, stating that children should not be subjected to corporal punishment. It has been argued that the law has changed the public's attitude toward

corporal punishment in Sweden, and lowered the threshold for intervention from child protections services; and lowered the rate of fatal child abuse, which currently is relatively rare in Sweden (Durrant, 1999; Durrant & Janson, 2005; Somander & Rammer, 1991). Similar effects have been argued to follow from a similar law in Finland, where filicide by fatal abuse is also relatively rare, despite relatively high rate of filicides (Haapasalo & Petäjä, 1999; Lehti et al., 2012; Vanamo et al., 2001). Norway too implemented a similar law in the 1980s[2], and one may expect that it had a similar effect in this society as well (Pritchard, 2012).

In sum, there are sociopolitical structures in current day Norway that alleviate single parents and stepparents from historically significant strains to their reproductive success. From an EP perspective, this may lower the risk for filicide due to extreme discriminative parental investment. It was therefor expected that some other mechanism(s) would underpin the majority of filicides in current day Norway.

High proportion of psychopathology

The rate of individuals suffering psychopathology who commit homicide is relative invariant between societies. In societies with low homicide rates, there is therefore a higher proportion of perpetrators who suffer from psychopathology (Daly & Wilson, 1988b; 2001; Flynn et al., 2007; 2013; Lehti et al., 2012; Sturup & Granath, 2015). It was therefore expected that a high proportion of filicides in current day Norway would be associated with perpetrator psychopathology. As listed in the section *Disaggregating between perpetrators with and without psychopathology* (pp. 14-16) of this thesis, there is a series of EP predictions concerning the characteristics of filicides associated with perpetrator psychopathology, and these predictions were expected to be particularly relevant to current day Norway and the present study.

2.3. Methodological aspects

The following sections detail four crucial methodological aspects of the present study, namely the definition of filicide, identifying filicide incidents, choice of data sources and ethics.

[2] The Child and Parent Act, chapter 5, §30, 3rd section.

2.3.1. Defining filicide

As stated in the introduction to this thesis, filicide refers to caretaker perpetrated child homicide. But, as I shall explore in the following, each of these words need further qualifications. The specific qualifications of each of these words are conventionally not discussed in scholarly articles on patterns in filicide. The general lack of discussions surrounding definitions may give the appearance that there is a pragmatic approach within the field of homicide research, whereby the definitions inherent in the source of data available to the researchers are accepted unconditionally. There is, however, as Wolfgang (1958, p. 16) held "*more than a semantic problem involved in use of the term 'criminal homicide"*". As in any scientific field, the definition of concepts are crucial for the trust one may have in the given filicide study's findings, and for the conclusions one may draw from them.

Homicide – a discussion of fatality and intentionality

By the broadest definition, homicide is "*death caused by the behaviour of someone other than the person killed*" (Wolfgang, 1958, p. 20). This broad definition bares further specifications. At first glance, including fatality in the definition of homicide may seem obvious. However, this excludes attempted homicides. The difference between a fatal homicide and an attempted homicide may, for instance, be the victims' access to medical assistance and not a real difference in the traits of the perpetrators, victims, circumstances, or the underpinning psychology of perpetration (Haapasalo & Petäjä, 1999). Attempted homicides may therefore arguably be of interest to the study of the patterns in homicide. Despite the possible similarities of attempted and fatal homicides, few studies include attempted filicides in the samples (e.g. d'Orban, 1979; Haapasalo & Petäjä, 1999; Liem & Koenraadt, 2008a; Stone et al., 2005; Stroud, 2007).

Limiting the definition of homicide to fatal incidents can be defended with that fatal homicide is the crime category considered least likely to suffer from dark numbers (i.e. not officially registered incidents). This does not necessarily extend to attempted homicides (Daly & Wilson, 1988b; Wilson et al., 1995). There may be some bias in what incidents of attempted homicides come to the attention of the officials as, for instance, surviving victims may chose not to report the incident. The same type of bias may not exist for fatal homicides - assuming the victims' bodies are found. Further, as will be elaborated on in the following, assessing a perpetrator's intention to kill, and not merely cause their victim severe harm, is challenging. The assessment of the intent to kill might be especially challenging in incidents

of attempted homicide. The present study therefore limits the definition of homicide to fatal incidents.

A second problem with broadly defining homicide as "death caused by the behaviour of someone other than the person killed", is that it may lead to an inclusion of accidents. Genuine accidents should of course not be included in samples when researching patterns in criminal homicide, or attempting to understand the underpinning psychology of such homicides. However, including the perpetrator's intent to kill in the definition of homicide is problematic. How may we reliably assess whether or not a given homicide was perpetrated with intent or was an accident? Filicide perpetrators may not always confess to being guilty of killing their victims, let alone admit that they intended to kill their victim (Brookman & Nolan, 2006; McKee & Shea, 1998). Not even after being found guilty beyond reasonable doubt by the courts (Crimmins, Langley, Brownstein & Spunt, 1997). Only including incidents where the perpetrators admit both to committing the filicide and to the intent to kill their victim would undoubtedly result in a biased sample.

Cavanagh and colleagues (2007, p. 743) argued for acknowledging a difference in the psychology of the perpetrator who intends to cause their victim severe but non-fatal harm, such as in the context of corporal punishment of the child, and the perpetrator who intends to kill their victim. However, they further argued that to understand the psychology underpinning filicide we need to focus on the presence of an intention to cause severe harm, rather than the absence of an intention to kill. Cavanaugh and colleagues stated that while some perpetrators in their sample of men serving lifetime sentences for child murder for filicide by fatal abuse "*may not have explicitly planned to kill a child, their abuse behaviours prior to the event indicated an intention to discipline and/or punish the child through violence and, by implication, the exercise of choice. If such choices had previously included violence perpetrated against their children, which happened in all but one of these 26 cases, then definitions and descriptions of these killings as "unintentional" would appear to ignore the obvious purposefulness of such acts and mask the meaning of these acts to perpetrators*" (2007, p. 741).

Including incidents of fatal abuse in the definition of homicide resonates with EP perspectives on filicide. Daly and Wilson (1988a; 1988b; 1994; 2001; Wilson et al., 1995) argued that filicides are a consequence of an over-activation of psychological mechanisms selected for eliciting non-fatal lowering in parental investment. Fatal abuse may be a prime example of how otherwise non-lethal psychological mechanisms and behaviour may at times have lethal consequences by accident. By including fatal abuse in their studies, Daly and

Wilson not only identified that this method is a characteristic of stepparental perpetrated filicides, but also that living with a stepparental was the main risk factor for filicide in their samples. Although Duntley and David Buss (2008; 2011; Buss, 2005) argued that our species has evolved psychological mechanisms specifically for inducing homicide, they further suggested that the psychological mechanisms inducing filicide might not always be conscious. The perpetrator's conscious and admitted intent to kill may then be secondary when identifying the characteristic traits and underpinning psychology of filicide perpetration to the fact that fatal violence and neglect have an increased risk of occurring in contexts that elicited reproductive conflicts in our ancestral past.

Following the convention of studies of patterns in filicide (e.g. Adinkrah, 2000; 2001; 2003; Cavanagh et al., 2007; Daly & Wilson, 1988; 1994; Grünfeldt & Steen, 1984; Harris et al., 2007; Somander & Rammer, 1991; Weekes-Shackelford & Shackelford, 2004), and EP perspectives on filicide, the present study included fatality in the definition of homicide and a demonstrable intention to cause the victim severe harm.

Perpetrators – a discussion of legal guilt

The perpetrator is of pivotal interest in the study of patterns in homicide, and it is crucial to identify the perpetrator as accurately as possible. Despite this, homicide researchers sometimes use data sources that potentially identify the wrong perpetrator, such as indictment registers, as their sole source (e.g. Daly & Wilson, 1988b; Wolfgang, 1958).

When a crime comes to the attention of the police, they record the incident in an indictment register. These registers are maintained for operational purposes, yet are not necessarily updated as the investigation of a given case proceeds. If, for instance, a given incident is dismissed before reaching the courts, or if the courts acquit the indicted individual, the case may still lie dormant in the indictment register. Whether the individual actually is guilty of the homicide they are indicted for will then remain unknown to the researcher using the register as a data source.

Using indictment records, Daly and Wilson (1988b) identified an increased risk for filicide victimisation among children living in stepparental households. The indictment records may certainly have identified the perpetrators correctly, but it is worth noting that a Swedish population study, where court verdicts were used to identify the perpetrators, revealed that although victims living in step-parental households were overrepresented, it was occasionally the genetic parent who committed the filicide or the genetic parent committed

the filicide together with the stepparent (Temrin et al., 2004). If the indictment registers used by Daly and Wilson suffered from the usual lack of continuous updating in such registers as investigations proceed, their sample might have also included more genetic parents as perpetrators than they realised.

The same problem of potentially identifying the wrong perpetrator is inherent in homicide studies that use pre-trail forensic psychiatric evaluations as the sole data source, as it is not the mandate of such evaluations to identify the perpetrators.

The best gage modern societies have for correctly identifying homicide perpetrators is the judicial system. The judicial system is specifically developed to discern between those who are guilty of a given crime and those who are not. Through court proceedings a prosecution and defence present presumptive final evidence from police investigations, including forensic autopsies, results from crime scene investigations and witness testimonies, and a judge or jury uses this information as a foundation for giving a verdict concerning guilt.

Daly and Wilson (1988b, pp. 14–15) argued that practices such as plea-bargaining and the lack of prosecuting "justifiable" homicides (e.g. homicides in self-defence) made setting court conviction as inclusion criteria too strict and limiting for researching patterns in homicide. These two practises do not exist in Norway. There are however homicide incidents in Norway that do not appear before the courts, or where the defendant does not necessarily get convicted for their crime, despite an indisputable identification of the perpetrator.

In Norway, both the prosecution and the defence may request that the suspect under investigation for a given crime undergoes a pre-trial forensic psychiatric examination to determine whether or not he or she is legally sane and can be held criminally responsible. The psychologists and psychiatrists who perform such examinations advise the police investigation and the courts on their conclusion, but neither the police nor the courts are obliged to follow the advice. If the suspect is found not to be criminally responsible (i.e. not legally sane), the prosecution may decide not to prosecute the suspect. If the suspect is prosecuted, the court makes an independent judgement of the accused's legal sanity based on the advise of the psychologists and psychiatrists. If there is reason to believe the suspect adjudicated to not be legally sane may be of further threat to themselves or others, he or she will be sentenced to compulsory psychiatric care (the Criminal Procedure Act § 44). If there is no reason to believe that the defendant adjudicated not to be legally sane will be a further threat to anyone, no sanction is given.

The lack of legal responsibility does not undermine the accuracy of the identification of the filicide perpetrator through police investigations or court proceedings. It merely

dictates the following sanction. This too is the case in homicide-suicide incidents. The police investigation in homicide-suicide incidents is often curtailed compared with other homicides, as there is no one to prosecute for the crime. Police investigations, including the forensic autopsies that identify by what methods the respective individuals at the crime scene were killed, nevertheless identify conclusively who the perpetrator in such incidents was.

To ensure that the present study is a trustworthy study of the characteristic traits of filicide perpetrators, only individuals officially identified as perpetrators were included as perpetrators in the present study, whether this identification came through being deemed guilty through court verdicts; being indisputably identified as perpetrators, but adjudicated not to be legally sane at the time of their crime; or identified as perpetrators who commit suicide in conjunction with the filicide.

Caretakers – a discussion of categories

Prior to the pioneering work of Daly and Wilson (1988b) on filicide, stepparents were not considered a distinct category of filicide perpetrators. Currently it has become commonplace to include stepparental perpetrators and to disaggregate stepparents and genetic parents in studies of patterns in filicide. There are however different inclusion criteria for stepparents as a caretaker category in the respective studies worth noting. For instance, Daly and Wilson (1988a; 1988b; 1994; 2001) defined stepparents as those married to or living with the genetic parent, but excluded dating relationships such as boyfriends and girlfriends. More recently, Cavanagh and colleagues (2007, p. 736) included dating relationships in their definition of stepparents in a study of paternally perpetrated filicide in Britain.

A stepparent may be defined as someone who is in a relationship with a genetic parent, and who is acting as a parent to his or her partner's child (Cavanagh et al., 2007). This type of pseudoparental obligation may not always exist in a dating relationship. However, a dating relationship may potentially lead to entering such obligations. From an EP perspective one may therefore expect filicides perpetrated by boyfriends and girlfriends of genetic parents to have similar characteristics of filicides perpetrated by stepparents. The present study therefore followed the broad definition of perpetrator categories of Cavanagh and colleagues (2007), and included dating relationships.

As detailed in section *1.3.2. Criticism against evolutionary psychological perspectives on filicide* (pp. 17-19) in the present thesis, the overrepresentation of stepparental filicide perpetrators is not argued from EP perspectives to be a determined reaction to a lack of

genetic relationship. Rather, a real or potential investment has to be experienced as a reproductive burden by the stepparent. Daly and Wilson (1988b, p. 84) did not include adoptive or foster parents in their filicide studies, arguing that adoptive and foster parents are eager to invest in their adopted children, and also have the choice to return the child. Daly and Wilson did therefor not expect lethal levels of discriminant parental investment to be triggered in households with *two* adoptive parents. There is some empirical support for this argument. For instance, a Dutch study of child maltreatment years found an elevated risk for victimisation among children living with a stepparent but not among children living with two adoptive parents (van IJzendoorn, Euser, Prinzie, Juffer & Bakermans-Kranenburg, 2009). And in a national population study of filicides in England and Wales 1997-2006, no adoptive parents perpetrated filicide (Flynn et al., 2013). To explore the risk of filicide by genetically non-related caretakers further, the present study will include filicide incidents perpetrated by adoptive and foster parents in the sample.

Victims – a discussion of age

Studies of patterns in filicide differ in the age range of victims that are included. Some studies are limited to neonaticide, other studies are limited to infanticide, and at times it may appear random what cut–off age a given study operates with. For instance, the last study of filicide in Norway had a cut-off age for victims at 14 years, but offered no reason for this (Grünfeldt & Steen, 1984). A more recent Swedish population study had a cut-off age for victims at 15 years, and again no reasons were offered (Temrin et al., 2004). Other authors, however, list their reasons for a given cut-off ages, such as in a study of male perpetrated filicide in Britain, where the cut-off age for victims was 16 years (Cavanagh et al., 2007). This specific cut-off age was chosen because British legislation identifies 16 year olds as having an adult status, permitting the individual to leave school; commence paid employment; and marry (in Scotland).

Similarly, 16 year olds are permitted to leave school; commence paid employment; and marry in current day Norway. Nevertheless, complete adult status and independence from parents and parental investment is first recognised at 18 years of age. As the theoretical framework for the present study is EP perspective on filicide, which hold that filicide is an extreme result of discriminative parental investment in dependent children, the cut-off age for victims in the present study was <18 years.

2.3.2. Identifying filicide incidents

Currently there is no homicide index intended for research in Norway. A comprehensive, national sample of filicide incidents therefor had to be compiles to study the characteristic of filicide.

As discussed in section *2.3.1. Defining filicide* (pp. 22-24), the present study defines homicide as fatal incidents where the perpetrator demonstrably intended to kill the victim or to cause the victim severe harm. Three paragraphs in the Norwegian penal code were identified as capturing this definition of homicide. These were the paragraphs that deal with incidents of 1) premeditated killing or intended on killing (§233); 2) severe violence, where the third section deals specifically with incidents that have lethal outcomes (§229, 3rd section); and 3) neonaticide by mothers (§234).

The National Criminal Investigation Service (NCIS) hold a national index of incidents of premeditated and intended homicides (§233) dating back to 1990, including incidents where the perpetrator was adjudicated as not legally sane, and homicide-suicide incidents. The NCIS provided the present study with a list of filicide incidents, guaranteeing for that their index is comprehensive.

All potentially criminal incidents that are reported to or by the police in Norway are registered in an electronic indictment register. Information from this register is automatically transferred to the central penal register (Strasak). Five years after an incident is registered it is deleted from Strasak and transferred to an archive (Sansak). The National Police Computing and Material Services (NPCMS) supplied the present study with a list of possible cases of filicide by fatal abuse (§ 229, 3.) and neonaticide (§234) identified in Strasak and Sansak by their staff. Due to the nature and registration practices of the registers, it was not possible for the staff at NPCMS to guarantee that all incidents listed by them were in fact such filicide incidents.

Based on the respective lists from NCIS and NPCMS, the police districts where the filicide incidents occurred were contacted in order to access the court verdicts. Some of the incidents listed by the NPCMS were not confirmed by the police districts as filicides. Sometimes the victims were adults, or the incidents were non-fatal, or the incidents turned out to be registered under the wrong code. Further, as presented in Paper I of the present thesis, two incidents were abandoned neonates and not officially confirmed neonaticides (Ottesen, 2012).

Due to coding errors typically found in indictment registers, it is important to note that it is possible that there were incidents of fatal abuse and neonaticide registered under the

wrong code for such offenses, and thus missed by the staff at NPCMS. Upon contacting the respective police districts the staff was therefore asked to consider whether there were possible filicide incidents in their district during the time period 1990–2009 that were not listed by the NCIS and the NPCMS. No additional incidents were identified in this manner. Further, filicide incidents potentially missed by the NCIS and the NPCMS were sought in a publicly accessible internet-based archive for court verdicts in Norway (http://www.lovdata.no). No additional incidents were identified in this manner. Lastly, two extensive stories from media that listed individual incidents of filicides[3] and severe caretaker perpetrated violence against children[4] respectively in Norway during similar time periods to that covered in the present study, did not uncover incidents missed by the NCIS and the NPCMS.

2.3.3. Data sources

In Norway, court verdicts report on the defendants' and victims' socio-demographic information. Further, they include detailed narratives of the circumstances surrounding the crime in question, and significant incidents leading up to the crime, as presented by both the prosecution and the defence. Court verdicts are considered to be both a reliable and valid source of data within homicide research, and are therefore a common source of data (e.g. Biljeveld & Smit, 2006). Court verdicts were therefore chosen as the data source in the present study for filicide incidents where the perpetrators were prosecuted.

The perpetrator is not prosecuted in homicide-suicide incidents in Norway. The investigation into the circumstances surrounding such incidents is therefore somewhat curtailed compared to incidents where a perpetrator may be prosecuted. However, basic socio-demographic data concerning the perpetrators and victims is systematically collected through police investigations and recorded in the NCIS homicide index. This information includes the involved parties' age, sex, relationship, nationality, employment status and previous convictions. Further, information about the incident in question, such as the methods of the homicide and suicide, motive (as understood by police investigation), location and whether the parties were intoxicated are also recorded for each individual incident in the NCIS homicide index, along with narratives of the circumstances for the crime. The NCIS provided

[3] http://www.vg.no/nyheter/innenriks/foreldrevold/33-barn-drept-og-doedelig-mishandlet-av-sine-foreldre/a/10004899/

[4] http://www.nrk.no/norge/lave-straffer-for-vold-mot-barn-1.12000956

the present study with the details for all filicide-suicide incidents listed in their homicide index.

Pre-trial forensic psychiatric examinations are perhaps the most commonly used source of data in studies of patterns in filicide. Such examinations are intended to determine the mental health of a suspect at the time he or she may have committed the given crime. The reports from such examinations include the suspects' clinical history, if such a history exists; details from the suspects' life history that the psychologists or psychiatrists performing the evaluation find relevant to understanding the suspect's state of mind at the time of the alleged offence; and an evaluation of the risk for repeated offences.

From a research perspective, such reports are highly informative towards an understanding the psychology of filicide perpetration, finding cues for preventive action, and for the exploration of possible developmental origins to the risk of filicide perpetration. However, at the time of designing the present study, the precedence set by the National Committee for Medical and Health Research Ethics in Norway (NEM) was that reports from pre-trial forensic psychiatric examinations could only be used upon the consent from perpetrators. For ethical considerations elaborated on in the following section, NEM's condition of informed consent prevented the use of such evaluations in the present study. The third paper presented in this thesis is therefore a theoretical paper, where the hypothesis of a possible developmental origin to apparent individual differences in the risk for filicide perpetration is explored through the empirical findings of studies performed in countries where such evaluations, and other data sources that inform on filicide perpetrators' childhood experiences, are a conventional data source in homicide research – without the consent from surviving perpetrators.

2.3.4. Ethics

The Norwegian Personal Data Act states that personal data about individuals is not to be used without their consent. However, sections §8 d) and §9 h) of the act state that under certain conditions exceptions from the rule of consent can be made. These conditions are when avoiding consent is necessary to perform a task that is of public interest; when the processing of personal data is necessary for statistical and scientific purposes; and when the public interest clearly exceeds the disadvantages it may entail for the respective individuals to have personal data used without their consent. As will be discussed in the following, the use of

personal data without consent from surviving perpetrators in the present study arguably meets these three conditions.

It appears to be an unquestioned standard for the scientific field of researching patterns in homicide that the use of personal data and samples of homicide incidents are not based on consent. For obvious reasons, one may not approach victims for their consent, nor perpetrators of homicide-suicide or deceased perpetrators. But it is further not a practise in researching patterns in homicide to request consent from surviving perpetrators. This is an established standard, adhered to internationally and accepted to the extent of there being a range of countries that have official national homicide indexes intended for researching patterns in homicide, and the development of such patterns over time, which include data on perpetrators, victims and the circumstances of the homicide. The range of countries includes, for instance, Australia; Scotland; England and Wales; and the US – which has several such homicide indexes.

To my knowledge, the methodological and ethical aspects of this practise are not discussed in the literature from the field of homicide research (examples of lengthy works on researching patterns in homicide where practical or ethical issues concerning consent are not touched upon are Daly & Wilson, 1988b; Liem & Pridemore, 2012; Smith & Zahn, 1999; Wolfgang, 1958). The potential ethical problems with strictly adhering to a rule of consent in medical science studies are however continuously discussed. A series of arguments from such discussions concerning why wavering the rule of consent from participants in certain medical studies may be ethically justifiable, lend themselves to the field of researching patterns in homicide, and thus to the present study. I will therefore present these arguments in the following, and apply them to the context of homicide research.

Avoiding a biased sample

It may at first seem contradictory, but within medical science it has been argued that wavering the rule of consent for participation in research may be an ethical necessity. One argument for wavering the rule is that for a medical science study to be considered to hold a high ethical standard, the study should also hold a high methodological quality, so as to allow confidence in the findings. Basing the use of data on consent may cause a bias in the sample of participants. If the findings from a medical study are from a biased sample, this inevitably undermines the confidence one may have in the findings. In turn, this also undermines the ethical standard of the study (Emanuel, Wendler & Grady, 2000; Hansson, 2010).

To conduct research on patterns in homicide without asking surviving perpetrators for their consent is equally essential to avoiding a reduced and, arguably, a potentially biased sample. In a study of the patterns of filicide using a sample of women referred to a forensic psychiatric hospital after being charged with murdering their children, over a third (35%) of the perpetrators did not confess to the crime they later were convicted for (McKee & Shea, 1998). One may arguably expect that individuals who do not perceive themselves – or do not want to be perceived by others – as guilty of a filicide would decline participating in a study of the characteristics of filicides and filicide perpetrators. Following the standard of the field of homicide research, McKee and Shea did not base their sample on consent from the perpetrators. A potential bias due to a refusal of participation among those claiming innocence, or for any other reason, was thus avoided.

Only one of the studies referred to in this thesis based its sample on informed consent from surviving filicide perpetrators, and illustrates the potential degree of drop-out that may occur when contacting surviving filicide perpetrators for their consent. The study was a qualitative interview study concerning female filicide perpetrators' childhood experiences (Crimmins et al., 1997). Initially, 443 women were identified as having committed a homicide in New York in the years 1992-1993. Of these, the researchers failed to get in touch with 143 women. Of the remaining 300 women, there were only 215 women who agreed to be contacted further to participate in the study. Of these women, 86 had been convicted of filicide perpetration, and less than half of them (42) agreed to participate in the study.

The amount of perpetrators that were not included in Crimmins and colleagues' study, and the potential bias in what perpetrators were not included, is not necessarily a detriment to the validity of the findings for a qualitative study where the ambition is to explore the lived experiences among an unspecified selection of filicide perpetrators. The knowledge gained is valid for the group included in the study, and the ambition is not to generalize to other filicide perpetrators. For a quantitative study, such as the present study, where the ambition is to identify similarities and repetitions that can be taken for representing reliable patterns and become the basis for valid classifications and generalizations for filicide as a phenomenon, the representativeness of the sample is essential.

Avoiding the social identification of perpetrators

A second argument for a need to waver the rule of consent in certain medical science studies is that contacting vulnerable groups, identifying and contacting them on an individual level in

association with extremely sensitive issues, is not necessarily giving them the best protection of their privacy and ethically correct. Instead, it may be exposing them and forcing them to face a social identity and reality they may suffer from (Essex, 2007).

Of the literature on research on homicide patterns referred to in this thesis, only two studies make a brief reference to potentially contacting surviving filicide perpetrators in association with the research, listing that contact between the researchers and perpetrators was denied by committees for research ethics (Kauppi et al., 2010; Stroud, 2007). Stroud (2007, p.487) noted that an ethics committee precluded interviewing perpetrators because the potential that perpetrators might be forced to relive the offence – purely for research – was too risky, and thus not ethically defensible. As more than adequate substitute, the researcher used forensic psychiatric reports, and thus had access to the full context of the filicide and the perpetrators' life history and psychological history.

In studies of the patterns in homicide there is a range of reliable and informative data sources that are used for information concerning the perpetrators, their victims and the circumstances of the homicide. Examples of such sources include indictment records; pre-trial forensic psychiatric evaluations; case files from the police, prisons, psychiatric institutions, and social workers; and court verdicts. In other words, the standard in the field of researching patterns in homicide is at times to use confidential, even patient identifiable information without consent from perpetrators. Due to the informative nature of these sources, there is no need to contact the perpetrators in order to obtain necessary information.

In the respective lists of filicide incidents from the NCIS and the NPCMS, the dates of the incidents and the date of the court verdicts identified the individual filicide incidents. All names, dates of birth for perpetrators and addresses were removed from the verdicts by the staff at the police departments prior to handing them over to the study. If the present study were to contact the surviving filicide perpetrators to request their consent to use data from the court verdicts, this would require information such as the perpetrators' name; social security number; and home address. In other words, the perpetrators would be identified on an individual level in association with a tragic and severe crime from their past.

Through the Freedom of Information Act in Norway, which upholds the principle of public access, court processes and court verdicts in Norway are publicly accessible. It is then conceivable that identifying the individual perpetrator and contacting them as filicide perpetrators to request their consent could be perceived as a greater invasion of their current privacy than the use of data from court verdicts without their consent.

Priority of the most vulnerable party

A third argument in the discussion concerning the need to waver the rule of consent in medical science studies for ethical reasons, that may be relevant to research in homicide patterns, is that although it may be ethically problematic setting aside the privacy rights of individuals by using their personal data without their consent, choosing *not to implement research* so as to protect privacy rights is not necessarily tantamount to being an ethically correct practice (Dawson, 2004).

There is a need for research-based knowledge about what characterizes filicides in Norway. Filicide is arguably one of the most serious and most tragic forms of crime in our society, as young lives are lost at the hands of their trusted caretakers. The crime is far too serious a social and individual problem to forego researching possible patterns that may inform on preventive measures. The absence of research-based knowledge of the characteristic traits of filicide in Norway is a clear and great disadvantage for the prevention of filicide. Without research-based knowledge of the characteristic traits of filicides, individuals who are at risk for either victimization or perpetration may not be detected.

The rule of consent from participants in research is intended to protect what is assumed to be the weaker party, and thus the party in need of protection by and from authorities. However, the rule of consent appears ill suited for research on patterns in homicide if protecting the weaker party entails that surviving homicide perpetrators reign over the use of crucial information concerning the vulnerability for homicide victims, or even potential future homicide perpetrators. The characteristics of homicide perpetrators, such as their age, sex, relationship to the victim, life circumstances, mental health, motive, and intoxication, are a crucial part of their victims' vulnerability. It is therefore highly ethically problematic, even ethically questionable, that homicide perpetrators may decide whether publicly accessible information can be used to provide research-based knowledge about the circumstances and groups of individuals who have an increased vulnerability for homicide victimisation.

Re-contextualising information

In addition to the fact that court processes and court verdicts accessible to the general public, homicides, and in particular homicide in close relationships, get extensive media coverage in current day Norway. In sum, the present study would thus not have access to information that is not already publicly accessible. However, the information would be re-contextualised in the

present study through its use in research. This re-contextualisation without the consent from surviving perpetrators could be perceived as a disadvantage to their right for privacy.

A re-contextualisation of publicly accessible information is however necessary for achieving research-based knowledge of the patterns in filicide in Norway. The type of answers the present study can give as to what the characteristics of filicide in Norway are is a crucial contributions towards the Norwegian societies realistic understanding of filicide and thus ability to tailor effective preventive measures. The benefit of a re-contextualisation of publicly available information may then be a greater gain to society than the disadvantage of such re-contextualisation for the individual filicide perpetrator.

Practical implications of ethical considerations

After the above ethical considerations, the present study arguably meets the three requirements the Norwegian Personal Data Act sets for an exception from the rule of consent from the individual for the use of their personal data. Permission to use court verdicts as data sources in the present study without surviving perpetrators' consent was granted from the Council of Confidentiality and Research, the Director of Public Prosecutions, and the Norwegian Social Science Data Service (NSD). This allowed the present study to follow the standard of the research field it belongs to with regards to the inclusion of incidents and use of data without any condition of obtaining consent from surviving perpetrators.

A similar study to the present one on intimate partner homicide that occurred in Norway during the time period 1980–2008 was not accepted by NEM in 2009[5], because it intended on using pre-trial forensic psychiatric evaluations as a data source in addition to court verdicts and NCIS' homicide suicide index, without asking surviving perpetrators for their consent. Although pre-trial forensic evaluations are collected for legal purposes and thus are to be considered legal documents and not medical documents, NEM nevertheless referred to the Norwegian Health Research Act in their discussion of whether or not to accept the use of such evaluations without the consent of perpetrators (Sletnes & Halvorsen, 2010). Whereas the Personal Data Act opens for balancing the scientific value and the Norwegian society's interests against the potential disadvantage it may hold for the individual to have personal data used without their consent, the Health Research Act holds that these two aspects should be considered separately. Whereas ethical committees in other westernised countries waver the rule of consent listed in their national health acts for the priority of homicide research,

[5] The letter of rejection authored by NEM may be found online here: https://www.etikkom.no/globalassets/documents/vedtak-i-klagesaker/sak-2009-97-partnerdrap-i-norge.pdf

NEM concluded that although research on intimate partner homicide is of value, the integrity of the surviving perpetrators would be threatened by the use of pre-trial forensic psychiatric evaluations without their consent, as would the general publics trust in the integrity of pre-trail forensic psychiatric evaluations and research. When I designed the present filicide study in 2012, reports from pre-trial forensic psychiatric examinations were therefore not included as a possible data source.

Findings from pre-trail forensic psychiatric evaluations are discussed during publicly accessible court proceedings in Norway, as they are of clear relevance to understanding the perpetrators' motive and state of mind at the time of the criminal event – to which life history experiences are considered to play a part – and the perpetrators' clinical history and probability of repeat offending. Details from such evaluations may therefore often be included in the court verdicts. However, details from the perpetrators' life history and mental health history are not listed as fully and systematically in verdicts as in the reports from the forensic psychiatric evaluations. This makes court verdicts a less optimal data source to answer questions concerning the developmental and psychiatric history of perpetrators. The present study could thus not answer a range of questions of theoretical and preventive urgency.

3. MAIN FINDINGS

Paper I

The present study uncovered a complete absence of officially confirmed neonaticide incidents in Norway 1990–2009. Two incidents were recorded in the NPCMS' penal register as possible neonaticides. The first incident was however a discarded stillborn, and although the mother was identified through police investigations, she was not prosecuted for any offence. The second incident was an abandoned newborn, and circumstances made it hard to determine whether the neonate was stillborn or died through exposure. The mother was not identified through police investigations. The objective of the first paper was to discuss the lack of confirmed neonaticide incidents in current day Norway in light of EP perspectives on filicide and the empirical literature on neonaticide.

According to the empirical literature, neonaticide is a distinct category of filicide with specific characteristics of the perpetrator and the circumstances in which the filicide occurs. In accordance with predictions from EP perspectives, neonaticide perpetrators are almost exclusively the victim's mother and are younger, more often unmarried, and less likely to suffer mental illness than filicide perpetrators where the victim is older. A second category of neonaticide perpetrators was identified as increasing in proportion in the more recent literature. In accordance with EP perspectives, these perpetrators may be older but often have children of a dependent age and fear losing their current partner due to the prospects of another child.

Although the international literature on filicide states that the youngest children are at the greatest risk for victimisation by their caretakers, it is expected from an EP perspective that the youngest children will have a reduced risk for filicide victimization in modern well-fare states, such as Norway, compared to other societies. As (young) women have means for family planning, and as single parents receive both a social acceptance and state issued economic support, they are alleviated from salient cues for extreme discriminant parental investment in the youngest children.

Paper II

It was expected from an EP perspective that in a modern and well-developed welfare state, such as current day Norway, where caretakers are alleviated from evolutionary salient cues for and prevented from opportunities of exercising extreme discriminant parental investment, the majority of filicides will be associated with perpetrator psychopathology. This expectation was supported as of the 39 filicide perpetrators in Norway 1990-2009, 7 (18%) suffered a psychosis at the time of the offence, and 24 (61.5%) committed or attempted suicide in conjunction with the filicide. In accordance with EP predictions, there were no stepparents among the perpetrators who were either psychotic or committed suicide in association with the filicide (p = 0.09%, one-sided Fisher's exact test).

Combining the 31 filicide incidents perpetrated by genetic parents in association with psychopathology and comparing them with the four incidents perpetrated by genetic parents without such an association, allowed for a test of the EP hypothesis that filicides associated with perpetrator psychopathology will be characterised by traits that contradict adaptive logic.

The paper presents the systematic ways in which filicides perpetrated in association psychopathology differ from filicides without such an association. In accordance with EP predictions, filicides perpetrated in association with psychopathology have older perpetrators (37.5 vs. 33.5 years old); older victims (71% vs. 25% of the victims above the cut-off age of four years old); and have more often multiple victims (39% vs. 0% of the incidents) than filicides without such an association.

Further, the EP predictions concerning the varying risk for filicide victimisation in association with different household composition was also supported. In the whole sample, children killed by a single parent were overrepresented compared with their presence in the general population (p=0.0002%). In the sample of eight filicides without an association with perpetrator psychopathology, children killed by a stepparent were overrepresented (p=0.21%). Children killed by a genetic parent living with the other genetic parent were underrepresented in both samples (p=0.06% and p=0.037%, respectively).

Paper III

Only a fraction of those who find themselves in circumstances associated with a risk for filicide perpetration actually commit filicide. Yet current EP perspectives do not explicitly

account for this apparent variability individuals have in their risk for filicide perpetration. In deducting what circumstances may increase the risk for filicide, EP perspectives have focused on the caretakers' assessment of immediate and future conditions that may influence the reproductive benefits and costs of parental investment in a given child. The objective of this paper was to explore whether the apparent individual differences in such assessments may, at least in part, have developmental origins.

Drawing on theoretical and empirical work from evolutionary developmental perspectives (EDP), I hypothesized that because parental investment is discriminative depending on the reproductive challenges in the environment, among other variables, childhood experiences of parental investment might be vital cues to the developing child of the level of challenges in their environment. In the case of childhood experiences of extremely low parental investment, the individual may develop a negative bias in their assessment of their environment. A negative bias may in turn render the individual at an increased susceptibility for curtailing or lowering parental investment to lethal levels. I therefore predicted that filicide perpetrators would often have childhood experiences of extremely low parental investment. I further hypothesised that the influence of childhood experiences is sex-differentiated, and predicted that female perpetrators more often than male perpetrators will have experienced low parental investment from opposite-sex parents. Finally, I hypothesised that the influence may also be sex-specific, and predicted that both female and male perpetrators will have experiences of low parental investment with same-sex parents.

As forensic psychiatric evaluations were not available as a data source to the present study, I explored the readily available, empirical literature from the past 30 years that reports on the childhood experiences of filicide perpetrators in westernised countries. The literature confirmed that the majority of filicide perpetrators (63% to 84%) have experienced a core set of interpersonal traumas, including physical, sexual and emotional abuse; neglect; and abandonment at the hands of their caretakers. The reports in the literature were not detailed enough to test the specific predictions concerning sex-differentiated influence of experiences of parental investment. However, there was some careful support for an association with sex-specific experiences of extremely low parental investment, as both female and male filicide perpetrators reportedly had such childhood experiences with their same-sex parents.

4. DISCUSSION

The empirical and theoretical work presented in this thesis testifies to the explanatory and predictive power of an evolutionary informed approach to filicide. First, the empirical study of the characteristic traits of filicide in Norway 1990–2009 supports EP predictions concerning such traits. This further lends support for EP hypotheses concerning the underpinning psychology of filicide perpetration. Second, as the third paper presented in this thesis exemplifies, integrating EDP perspectives cater to the need for exploring the origin of individual differences in the risk for filicide perpetration, thus enhancing the already impressive nuance of current EP perspectives on filicide.

4.1.Strengths and limitations

The empirical support the present study lends to the universal validity of EP perspectives on filicide is only as strong as the study itself. In the following sections, I discuss the potential limitations of the study due to dark numbers and the strengths of the positive identification of the perpetrators and the use of a comprehensive population sample.

Dark numbers

A limitation of the study is that, inevitably, there are incidents of filicide that occurred in Norway during the time period covered in the study that were not included in the sample. The main reason for this is the criteria of an indisputable identification of the respective filicide perpetrators by officials for the inclusion of an incident in the sample.

When choosing to include in the sample of the present study only incidents where a caretaker was officially and indisputably identified by investigative and judicial processes as having perpetrated a filicide, the quality of the results from the present study are at the mercy of the quality of these processes. In assessing the findings presented in this thesis one therefore has to ask how good are the processes that lead to the identification of filicides and their perpetrators in Norway. According to official statistics from the time period covered in the present study, 97% of reported cases of homicide in Norway are solved by police investigations (NCIS, 2007; 2008). However, filicides, and in particular neonaticides and incidents of lethal abuse, are more likely to go undetected by authorities than other homicides (Alder & Polk, 2001; Byard & Rognum, 2010; Brookman & Nolan, 2006; Camperio Ciani &

Fontanesi, 2012; Harris et al., 2007; Wilczynski, 1997). Neonaticide victims may not be reported as missing, as their mothers concealed the pregnancy; their corpses are not always found, as they often are hidden; and deterioration of their corpses prior to being found may complicate the possibility of determining the cause of death of the neonate. In filicides by lethal abuse, the cause of death may be wrongly identified as an accident. The absence of officially confirmed neonaticide incidents in Norway 1990-2009, as presented in Paper I, may then not be a valid measurement of a complete absence of such filicides, although it most likely reflects a very real and historically low incident rate of such filicides in current day Norway (Ottesen, 2012).

Even when a filicide is detected and it has been determined that a child has died at the hands of a caretaker, the prosecution may nevertheless not been able to confidently identify the perpetrator if there was more than one caretaker present. The death of an eight months old infant who was in the care of his mother and her boyfriend in Norway in 2004 exemplifies the difficulty of identifying the perpetrator confidently, which leads to dark numbers. The boyfriend was charged with lethal abuse, and convicted in two court proceedings. Due to a procedural error in association with the second court proceeding, the case was prosecuted a third and last time in 2009, when the boyfriend was acquitted. According to the verdict, the jury acquit the boyfriend because they could not determine whether he or the child's mother subjected the child to the final and lethal incident of abuse[6]. This incident is therefore not included in the present study's sample.

Early death scene investigations are at times crucial for uncovering the cause for death of a child, and further which caretaker might be the perpetrator. Despite this simple and unquestionable fact, it has not been mandatory to initiate immediate criminal investigations when a child dies unexpectedly in Norway since 1991. As a reaction to the growing awareness of sudden infant death syndrome, and a concern that grieving parents could be wrongly accused of filicide, the police were directed by the Director of Public Prosecution not to get involved when children died unexpectedly (Rognum, 2010; Rognum, Wille-Sveum, Arnestad, Stray-Pedersen & Vege, 2010). Instead, the health care services were to follow up on such incidents.

According to the Norwegian Act for Health Care Personnel, §36, any death that is unexpected and without an apparent and natural cause is to be reported to the police immediately. The police are obliged by the national prosecution instructions to investigate

[6] The court verdict reference is "Borgarting lagmanssrett LB-2007-723". The verdict is publicly accessible at http://lovdata.no.

any suspicious deaths reported to them. The police may thus only be involved in the unexpected death of the youngest children upon the explicit concerns of health care personnel or autopsy reports that advise that the death was suspicious. And there is reason to suspect that this system may at times fail when young children die unexpectedly.

During the years 2001–2004, a research project that offered parents a death scene investigation in the occurrence of unexpected deaths among children 0 – 3 years of age, was carried out in the Southeast of Norway (Rognum et al., 2010). The team performing the investigations consisted of a forensic pathologist who performed the autopsy and a co-ordinator with education and experience from tactical police investigation. The cases were then discussed with the police, the paediatricians and nurses present on the admission of the dead child, radiologists, microbiologists and neuropathologists, so as to form a conclusion on the cause of death.

In a population of 2.5 million, there were 69 deaths among children in the selected age range, of which 52 families were offered a death scene investigation, and 46 families accepted the offer. In incidents where the police had initiated a criminal investigation upon the unexpected death of a child, families were not offered participation in the project. Among the 46 incidents, there were seven incidents where the team recommended the police initiate a criminal investigation, due to a suspicion that the child had died from gross negligence or thoughtlessness on the behalf of the caretakers. Yet the police did not follow up the team's recommendation in any of these cases (report for the Director of Public Prosecution (2004)). If there were seven such cases among parents who accepted the offer of an optional death scene investigation, this begs the question of how many filicides go by unnoticed during the current arrangement of there being no mandatory investigation of the death scene when the youngest children die unexpectedly[7].

Finally, through prosecutionary discretion, the district attorney in Norway may order that a possible homicide case is closed without anyone being prosecuted (Andenæs, 2004). In the present study's sample of 39 filicide incidents, there were two incidents where the prosecution first closed the cases and later re-opened them in association with pressure from the public. It is unknown how many other possible filicide incidents during the years 1990–

[7] Currently, it is mandatory to offer parents a death scene investigations, where children <5 years of age die unexpectedly, as a voluntary health service (Rognum, 2010). The parents may decline, unless the police have probable cause for a homicide investigation.

2009 in Norway have had the investigation closed, but could potentially have led to the prosecution and conviction of a perpetrator if investigations had continued or been adequate[8].

The vulnerability filicides have to go undetected or to not be prosecuted is not singular to Norway. There is an international consensus that the investigation of filicide, and in particular neonaticide and fatal child abuse, is often suboptimal, and that this leads to an under-ascertainment of such incidents and compromises the identification of the perpetrator in (Alder & Polk, 2001; Brookman & Nolan, 2006; Jenny & Isaac, 2006). Although it is reasonable to assume that there were filicides that occurred in Norway during the years 1990–2009 that are not included in the present study's sample, this is not an altogether unforgiveable limitation, as long as there is no reason to assume there is a systematic bias that may have produced the findings from the study. There is currently, to me, no known or apparent reason to believe that Norway would necessary have a greater likelihood for dark numbers in filicide incidents, or more systematic biases in the detection or in the prosecution of filicide incidents than other societies. One may therefore be as confident in the validity of the findings from the present study as findings from studies from other societies with similar inclusion criteria.

Positive identification of the perpetrator

One way to limit the for potential dark numbers in a study of patterns in filicide is to use autopsy reports that confirm filicide, as was done by Overpeck and colleagues' (1998) in their study of patterns in filicide in the US 1983-1991. However, their study suffered a great disadvantage by not having information concerning the perpetrator. A second problem in studies of patterns in filicide, as mentioned earlier, is not being certain that the perpetrator is correctly identified.

In discussing how to define homicide, perpetrator and victim in his study of patterns in criminal homicide in Philadelphia, USA, Wolfgang (1958, p. 16) asserted that "*it may be argued, no homicide is technically criminal until it has been so designated by a court of record; no suspect is an offender until convicted; and no person a victim of criminal homicide until a court so decides.*" Nevertheless, Wolfgang claimed pragmatism in his own research, and used the definition of these three crucial concepts inherent in his data source, namely

[8] As of 2015, after the apparent failure to adequately investigate the death of an eight years old girl in 2011, the district attorney may only close the investigation of unexpected deaths among young children, or refrain from prosecuting a suspect, upon reporting to the Director of Public Prosecution for permission (http://www.aftenposten.no/nyheter/iriks/Nye-regler-for-henleggelser-etter-Monika-saken-7815142.html).

police indictment records, with the potential biases in the sample; limitations in conclusions possible to draw from his results; and ethical issues that entailed from including potentially innocent individuals in a sample. A study of outcomes in filicide incidents that occurred in England & Wales 1995-2002, exemplifies the level of uncertainty in identifying filicide perpetrators (Brookman & Nolan, 2006). Of 298 filicide incidents listed in a national homicide index, 48 (16%) were later reclassified. Of the 48 re-classified incidents, 67% of the defendants were acquitted by a jury after a full court proceeding; 20% were not prosecuted upon the Director of Public Prosecution's conclusion that the evidence was too weak or that it was not in the public's interest to prosecute; and 12% were downgraded to a lesser criminal event. This type of information is usually not available unless the study refers to sources beyond indictment records or pre-trial forensic examinations.

The present study therefore followed Wolfgang's principled assertion of what qualifications are necessary to deem an incident a criminal filicide and a caretaker a perpetrator rather than his claim of pragmatism. This may be an overly strict operationalization to some homicide researchers (e.g. Daly & Wilson, 1988b), but is also a preferred standard by respected researchers within the field (e.g. Bijleveld & Smit, 2006; Flynn et al., 2007; 2013).

Homicides do not occur in a social vacuum. The relationship between the perpetrator and the victim is essential in homicide, perhaps more so than in most other crimes (Wolfgang, 1958, pp. 7, 203-204). As reviewed in section *1.3.1 Disaggregating filicides to identify patterns in characteristics* (pp. 9-16) in this thesis, the perpetrator's sex, age, relationship to the victim, life circumstances, psychopathology etc., influence the level of risk for filicide perpetration. The strict inclusion criteria the present study operated with has in all likelihood led to the exclusion of filicide incidents in the sample, but the benefit of the strict inclusion criteria lies in the confidence in the positive identification of perpetrators, and this is a crucial strength of the present study.

National sample

A second crucial strength of the present study is that it compiled a comprehensive national sample of filicide incidents consisting of perpetrators from both from prison and psychiatric populations, including those who committed filicide-suicides. There are few studies that have been able to explore the association between filicide and mental illness, and in particular the

association with suicide, in the context of a comprehensive national sample (Flynn et al., 2007; 2013; Friedman et al., 2005).

By including incidents perpetrated by all three populations in the present study, it was possible to test the EP hypothesis that filicides associated with psychopathology will contradict adaptive logic. By testing the predictions derived from this hypothesis, it was possible to confirm the hypothesised distinction between the two respective filicide categories, and successfully discern their specific patterns of characteristics.

4.2. Theoretical implications

The present study's sample included no incidents of neonaticide and only four (<10% of the incidents) incidents of fatal abuse. These findings stand in stark contrast to the empirical literature from the field of researching patterns in filicide, which states that newborns are at the greatest risk for victimisation cross-culturally and that fatal abuse is a common method for filicide perpetration. But the findings comply with the expectations detailed in section *2.2 Expected findings* (pp. 20-22) of the present thesis, and support the EP hypothesis that when caretakers are alleviated from cues for reproductive conflict, psychological mechanisms that underpin extreme discriminant parental investment will not be activated, which in turn reduces the risk for filicide *specifically* among the youngest children and through lethal abuse.

Due to an alleviation of cues for reproductive conflict and extreme discriminative parental investment in current day Norway, it was expected that psychopathology would underpin the majority of filicides in current day Norway. This expectation was also supported, as 79.5% of the perpetrators in the sample, constituting 89% of the genetic parents, were either adjudicated psychotic at the time of the filicide or attempted or committed suicide in conjunction with the filicide. Further, all the EP predictions concerning the characteristics of filicides associated with perpetrator psychopathology, which state that such filicides will be characterised by traits that contradict adaptive logic, were confirmed, lending support to the EP hypothesis that evolved psychological mechanisms may not function as they were selected for in association with psychopathology (Daly & Wilson, 1988b; Stone et al., 2005; Wilson et al., 1995).

Conventional EP has focused on identifying universally shared, albeit sometimes sex-differentiated, trait in our species' psychology (Tooby & Cosmides, 1989). This focus has neglected the possible origin and adaptive function of individual differences in the realisation

of psychological mechanisms. Paper III addressed this short-coming in current EP perspectives on filicide through exploring the potential for integrating EDP perspectives on the origin and adaptive functions of individual differences to explain and predict the apparent variation caretakers have in their risk for filicide perpetration.

In sum, the original empirical and theoretical work presented in this thesis support EP perspectives on filicide, and contribute further insight and nuance to our understanding of the psychology of filicide perpetration.

The work presented in this thesis holds implications not only for the status of EP perspectives on filicide within the scientific field of homicide research, it may also improve our ability to identify vulnerable families and meet their needs so as to prevent filicide.

4.3.Implications for prevention

It is important to note that the absolute risk of filicide in current day Norway is very low. Filicide is an extremely rare event, despite the number of families one may assume share the traits that characterise a risk and vulnerability for filicide. The clinical use of the data from the present study may therefore be limited, as it does not cater for an accurate prediction of risk on an individual level (Laursen et al., 2010; McKee & Shea, 2003). The conclusion from the international, scholarly literature on filicide is therefore that, considering the gravity and human loss filicide, it is advisable to be over-inclusive and attentive to families at risk, with regards to preventive measures (Freidman et al., 2005). Prevention strategies then require both broad public health approaches, in addition to targeting specific sub-populations of families at risk (Flynn et al., 2013).

A decline in filicides in Sweden from the time period 1990–1996 to 2002– 2008, has been attributed to the decline in filicide-suicides among both maternal and paternal perpetrators, which in turn has been attributed to an improved treatment of mentally ill patients and an increase in the prescription of anti-depressants (Sturup & Granath, 2015). Finland also saw a decline in filicides between the time periods 1960-1974 and 2003-2009, attributing this decline to a drop in the rate of paternally perpetrated filicide-suicide (Lehti et al., 2012). These tendencies in neighbouring countries are promising with regards to the possibility of reducing filicides in Norway even further as well.

First, it is apparent from the present study that families where a caretaker suffers from psychotic episodes or suicidal ideation, and in particular suicidal fathers, who constituted 46%

of the perpetrators in the sample, have a greater vulnerability for filicide perpetration than other families in current day Norway. Preventive measures should therefore focus on such families. Second, preventive measures should further take into account that the characteristics of filicides associated with perpetrator psychopathology differ in systematic and predictable ways from filicides without such an association. The present study reveals that it is not arbitrary when filicides occur in Norway. Not even when they are perpetrated in association with perpetrator psychopathology. Rather, as predicted by EP perspectives, they are characterised by traits that contradict adaptive logic.

The international empirical literature suggests that there may be an urgent need to take an active initiative towards those groups who are at greatest risk for filicide perpetration. As researchers in other countries have access to pre-trial forensic psychiatric evaluations and similar informative records, they have been able to reveal that perpetrators may often see a psychiatrist shortly before the filicide, but present themselves with complaints unrelated to their children (Friedman et al. 2005; 2008; McKee & Shea, 1998; Stroud, 2008). A recent population study in the UK revealed that although the filicide perpetrators may have suffered from serious mental illness, such as affective disorder or schizophrenia, not all had been under the care of mental health services or been in contact with such services in the 12 months prior to the filicide (Flynn et al., 2007). The preventive advice drawn by the authors of such studies, is to encourage caretakers to seek help if they are struggling with symptoms of mental suffering or as caretakers, and for clinicians to not only routinely inquire about suicidal thoughts and plans, but should also what a caretakers' plans are for her or his child(ren) (e.g. Flynn et al., 2007; 2013; Kauppi et al., 2010; McKee & Shea, 1998). It may further be that this advice should not be limited to clinicians, but also extend to primary care physicians (Liem & Koenraadt, 2008a).

As Paper III of this thesis presented, filicide perpetrators often have childhood experiences where trust has been broken, often repeatedly. These experiences may have rendered the potential filicide perpetrator unable to rely on others, and may explain why they are unsuccessful in seeking help (Crimmins et al., 1997; Stroud 2008). This makes the need to build a trusting relationship to caretakers who are struggling perhaps the most crucial step towards the prevention of filicide.

4.4. Future research

Beyond noting the high percentage of perpetrators in the present study's sample that suffered from psychosis or suicidal ideation in association with the filicide, it was not possible to explore what contact the perpetrators had with mental health services or social services prior to their filicide. As listed in the section *2.3.4 Ethics* (pp. 32-37), of the present thesis, this is a consequence of that at the time of writing the research proposal for the present study NEM did not permit the use of forensic psychiatric evaluations in homicide research without the consent of the perpetrators. It is recommendable that forensic psychiatric evaluations are used homicide research in the future, as knowledge of psychiatric antecedents and perpetrators' contact with psychiatric and other healthcare services and social services is essential for informing preventive measures (e.g. Flynn et al., 2007; 2013).

The childhood experiences of filicide perpetrators are a neglected area in both the empirical and theoretical literature on filicide, seldom reported on in either empirical studies or review articles on the characteristics of filicide perpetrators, and certainly not in great detail. As presented in Paper III of this thesis, it is a promising avenue to explore the childhoods of filicide perpetrators for possible developmental origins to an increased vulnerability for filicide perpetration. Such research may benefit from testing more specific, EDP informed hypotheses and predictions than current publications allowed. Again, forensic psychiatric evaluations would be an ideal data source for such a study, as they include information on the perpetrator's family background and childhood.

The findings presented in this thesis however do not exhaust the list of possible analyses of the data collected that may inform on our theoretical understanding of the psychology underpinning filicide perpetration and preventive measures. Through the court verdicts and the NCIS homicide index the present study has access to narratives of the events leading up to and the context in which the filicide incidents. This information may also hold clues as to what pre-emptive measures may be taken and/or how to identify caretakers and children who are vulnerable for filicide (Ottesen, in preparation).

Over a quarter (11 of 39) of the incidents in the present study were familicides. Familicides are often "hidden" in studies of filicide and intimate partner homicide, as the respective homicide categories are not disaggregated. Two studies, using samples from Canada and the UK (Wilson et al., 1995) and the Netherlands (Liem & Koenraadt, 2008b) have found that familicides have more commonalities in the characteristics of the perpetrators and contexts and motives of the homicide with intimate partner homicide than filicide, and

might thus best be understood as a subcategory of intimate partner homicide. At the time of writing, I am communicating with the National Police Directorate and awaiting their permission to allow the NCIS, NPCMS and the respective police districts to release the necessary data for performing a similar study of the patterns in characteristic traits of intimate partner homicide in Norway 1990-2009. It is of theoretical and preventive interest in future analyses to disaggregate filicides, familicides and intimate partner homicide and test EP prediction concerning possible similarity and differences between the respective homicide categories.

Because there is currently no homicide index intended for research in Norway, the present study was dependent on compiling an original sample of filicide incidents. The data collected in the present study will eventually be deleted in compliance with conditions set by the NSD. Future research on the characteristics of filicide in Norway will therefore have to go through the same time consuming process of applying the appropriate permissions for data collection and data registration. Further, if definitions used and the variables registered differ in future studies, this may limit the possibility for following the development of what traits characterise filicides in Norway. It is therefore recommendable that a homicide index intended for research is created in Norway. Such an index will improve and secure access to data for several researchers from various scientific fields. The index should include information from other multiple sources, and a bare minimum would be information from pre-trial forensic psychiatric examination and police investigations, confirmed through court verdicts where possible, to cater sufficiently detailed information to identify risk factors that can guide the development of both theory and preventive measures.

4.5.Conclusion

EP perspectives on homicide are singular in that they in a comprehensive manner can offer both possible explanations for the underpinning psychology of perpetration and predict the specific characteristics traits for a range of homicide categories, including filicide (Buss, 2005; Daly & Wilson, 1988a; 1988b; Friedman et al., 2012). It was therefore of interest to explore whether EP perspectives on filicide were valid in current day Norway.

With an understanding of human parental psychology firmly situated within the paradigm of evolutionary selection thinking, EP perspectives on filicide provide a theoretical

foundation for disaggregating filicides into meaningful subcategories. Following EP perspectives, the present study disaggregated the sample of filicides depending on whether or not the perpetrator suffered from psychopathology (psychosis or suicide), and successfully identified the distinct patterns in characteristic traits for the two respective subcategories.

The present study adds current day Norway to the growing list of societies in which EP predictions concerning the characteristic traits of filicide have been confirmed, lending support to EP perspectives that argue for a universally shared psychology underpinning filicide perpetration. Thus the work presented in this thesis caters both factual knowledge and theoretical understandings of filicide, which are crucial contributions towards the prevention of one of the gravest crimes in our society.

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