Are stepchildren over-represented as victims of lethal parental violence in Sweden?

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Evolutionary psychologists have suggested that stepchildren should be over-represented as victims of lethal parental violence compared with children living with their two genetic parents, because of relatively more lapses in parental solicitude among step-parents. In our study, using data over a period of 35 years in Sweden (1965–1999), there was no overall over-representation of stepchildren as victims. For very young stepchildren there was a tendency for over-representation. In families with both stepchildren and children genetically related to the offender, genetic children tended to be more likely to be victims.

Keywords: evolutionary psychology; human infanticide; child homicide; step-parents

1. INTRODUCTION

The evolutionary psychologists Daly & Wilson (1988a,b) have explained, from a Darwinian perspective, that parental feeling should be more readily and more profoundly established with one's own offspring than in the case of stepchildren, because selection 'should have favoured those parental psyches that do not squander it on non-relatives' (Daly & Wilson 1988b, p. 83). As a consequence of the relatively low commitment of parents to stepchildren, step-parents are expected to have more lapses in parental solicitude leading to an over-representation of stepchildren as victims of lethal violence by parents (Daly & Wilson 1988a,b). It was also shown by Daly & Wilson (1988b) that children in stepfamilies in Canada were at a much higher risk of being killed than children living with their two genetic parents. Stepchildren under the age of 3 years were 70 times more likely to be victims and stepchildren from 3 to 5 years were more than 20 times as likely to be victims as children living with both parents to whom they were genetically related (Daly & Wilson 1988b). It was then concluded that evolutionary models enable us to predict and discover risks of lethal violence in society (Daly & Wilson 1988a; Buss 1999; Alcock 2001).

To contribute new data to this topic, Temrin *et al.* (2000) made a study of lethal parental violence against children in Sweden. Their conclusion was that there was no over-representation of stepchildren as victims in their dataset. This study was questioned by Daly & Wilson

(2001), primarily because the rates were computed without regard to the age of the victims; younger stepchildren are less common in the population than older ones and this should be taken into account in the analysis. We have now expanded the Swedish dataset considerably, making it possible for us to consider age in our analyses and putting us in a much better position to test if stepchildren are over-represented as victims of lethal violence by parents towards children in Sweden.

We specifically investigated the prediction of an overall effect of step-relationships on the pattern of parental lethal violence by comparing the frequency of victims in families where children lived with their two genetic parents with the frequency in families where the victims lived with one genetic parent and one step-parent. Since the prediction is that stepchildren should be over-represented as victims because step-parents have relatively low commitment to stepchildren, it is important to identify whether the offender in a stepfamily actually is the step-parent or the genetic parent. We therefore use two categories of stepfamilies in our analyses. In the first (stepfamily¹), we include only victims that were actually killed by the step-parent. In the second category (stepfamily²), we include all victims who lived with a step-parent and a genetic parent irrespective of who was the offender.

2. METHODS

The Central Bureau of Statistics in Sweden provided us with information about the identity of all children in Sweden who died as a result of violence caused by another individual during 1965–1999. We identified the killers with the help of police records and from court sentences. Over a period of 35 years, 258 children were killed by a parent or by a partner living with a parent in 200 incidents (in 43 cases more than one child was killed). In 10 cases, there were two offenders. In table 1, victims of single parents are excluded; i.e. only victims in families with two genetic parents and victims living with a genetic parent and a step-parent are compared. In table 2, and in suicide data, victims in all family situations are included. We also had access to the records from the psychiatric investigations of the offenders after the crime (from the Department of Forensic Psychiatry, Huddinge Hospital, Stockholm).

We have compared the frequencies of victims in different family situations to statistical information on the frequencies in the Swedish population at large from two national surveys, one estimate carried out in 1984 (Statistics Sweden 1992a) and one in 1985 (Statistics Sweden 1992b). The two surveys are different in the methods used but very similar in their results, especially for the youngest children. After consulting people at Statistics Sweden, we have used an average of the two surveys. The two studies were made close to the middle of the time-period used in our study, 1965–1999, where the middle year date was 1982.

Official population statistics define stepfamilies as families where the genetically related parent to the child(ren) lives together with a parent not related to the child(ren). Our classification system follows that definition and is based on the family situation of the victim.

3. RESULTS AND DISCUSSION

For children aged 0–15 years old there was no over-representation in the relative frequency of stepchildren as victims compared with victims in families with two genetic parents in either of the two stepfamily categories (table 1). For the youngest age class (less than 5 years old), there was a significant over-representation for victims in the category stepfamily² compared with victims in families with two genetic parents (table 1). However, when we compare victims in the category stepfamily¹, i.e. where the step-parent was the actual offender, with victims in families with two genetic parents there was only a tendency in the same direction (table 1). It should be noted that one out of the four victims in the category stepfamily¹ was killed

Table 1. The frequencies of victims in different family situations and the corresponding figures for the frequencies in the population at large.

(The actual numbers are given within brackets. Fisher's exact test was used for the statistical calculations.)

	0–15 years old		less than 5 years old ^c		5–9 years old		10–15 years old	
	victims	population	victims	population	victims	population	victims	population
two biological parents	94.7%	93.3%	95.9%	98.3%	93.5%	93.9%	92.6%	88.9%
	(162)	(1 232 788)	(94)	(392 829)	(43)	(374 379)	(25)	(465 580)
stepfamily ^{1a}	5.3%	6.7%	4.1%	1.7%	6.5%	6.1%	7.4%	11.1%
	(9)	(88 675)	(4)	(6 599)	(3)	(24 110)	(2)	(57 966)
all	100%	100%	100%	100%	100%	100%	100%	100%
	(171)	(1 321 463)	(98)	(399 428)	(46)	(398 489)	(27)	(523 546)
two biological parents versus stepfamily ^{1a}	$(p = 0.542)$		$(p = 0.080)$		$(p = 0.757)$		$(p = 0.763)$	
stepfamily ^{2b}	7.4%	6.7%	6.0%	1.7%	10.4%	6.1%	7.4%	11.1%
	(13/175)	(88 675)	(6/100)	(6 599)	(5/48)	(24 110)	(2/27)	(57 966)
two biological parents versus stepfamily ^{2b}	$(p = 0.650)$		$(p = 0.007)$		$(p = 0.213)$		$(p = 0.763)$	

^a Stepfamily¹: victims were killed by the step-parent in the family.

^b Stepfamily²: victims had a step-parent in the family and were killed either by the step-parent or the genetic parent.

^c Out of the four cases of stepchildren included in this age class, one was killed by both the step-parent and the genetic parent in the family and another was killed by a 'step-parent' who lived with the family occasionally.

Table 2. Victims per million children per year in Sweden and Canada.

(Victims killed by their 'genetic' parents (including single parents) and those killed by step-parents. For Canada, the number of victims are from Daly & Wilson (1984, p. 499). The actual number of victims is given within brackets.)

victims per million children per year	all	genetically related victims	stepchildren ^a (including victims of foster parents)	number of years
Sweden ^b	4.63 (257)	4.43 (246)	0.20 (11)	35
Canada ^c	4.51 (554)	4.02 (494)	0.49 (60)	19

^a Victims of foster parents were included in this category in Canada, therefore we have included the two cases of foster children being killed in Sweden in our dataset.

^b Children aged 0–14 years old are compared since this is the age class it is possible to calculate from Daly & Wilson (1984, p. 499). There is a significant difference between Sweden and Canada in the frequency of stepchildren as victims in relation to genetically related victims (Fisher's exact test $p = 0.002$). Note that we have not considered the number of stepchildren in relation to the frequency in the population, since this is not known for Canada. Instead, the estimates are based on all children aged 0–14 years old. Our comparison of frequencies of stepchildren as victims is then based on the assumption that the frequency of stepchildren in the population at large is approximately the same in Sweden and Canada.

^c There were 1 586 000 children aged 0–14 years old in Sweden 1982 (Statistics Sweden 1984) and 6 467 000 in Canada 1970 (Statistics Sweden 1972), which are the middle years of the studies on which the estimates are based.

by the step-parent and the genetic parent together. In the other age classes (i.e. victims aged 5–9 years old and those aged 10–15 years old), children in stepfamilies were not over-represented as victims.

Comparisons between different family situations may be difficult because of confounding variables when investigating the effects of genetic relationship. Single families are omitted in our primary comparison because confounding variables may be evident, for example, problems in raising children on your own and in many cases having a conflict with the former partner and parent of the child(ren) (Gelles 1997; Hetherington & Stanley-Hagan 1997). Single parents also, on average, have a relatively bad economic situation compared with two-parent families. It is noteworthy, however, that 32.2% of all children killed by parents in our dataset (83 out of 258) were victims of single parents to whom they were genetically related. This figure could be compared with the frequency of children living with single parents in the population at large, which was 12.6%.

Confounding variables are also evident when comparing stepfamilies and families with two genetic parents. One such variable is an often ongoing conflict in stepfamilies with the former partner and parent of the child(ren) (e.g. Buehler & Ryan 1994). Confounding variables have, however, been claimed to be non-significant because in families with both genetic children and stepchildren, only stepchildren are killed (Daly & Wilson 2001). This was not true for our dataset. In eight families, the offenders had both stepchildren and genetic children in the family. Only the genetic children were killed in seven cases and only the stepchild in one case. There was, therefore, a tendency that the genetic children of the offenders were killed in families with both stepchildren and genetic children (binomial two-tailed test $p = 0.07$).

It has also been claimed that Sweden is the wrong country in which to test the hypothesis of a 'Cinderella effect', since Sweden has a much lower child homicide rate than Canada (Barrett *et al.* 2002). Comparing the frequencies in the two countries and taking the difference in

population size into account demonstrates, on the contrary, that the frequencies are very similar (table 2). The only difference between the countries in this respect is that the frequency of stepchildren being killed was significantly higher in Canada (table 2). It has also been claimed that Sweden is the wrong 'assay' to test the hypothesis of an effect of genetic relationship because lethal beatings are almost non-existent in Sweden (Daly & Wilson 2001). This means that the predictive value of the hypothesis would only be relevant for certain countries where the killing of children is, to a large extent, the result of beating the children, and not relevant to other situations. It may be true that the rate of beatings in child killing is higher in Canada than Sweden, since there are indications in the data of a difference in the background to the killings. In Sweden, 46% of the offenders (93 out of 200) committed suicide, while the corresponding figure was 21% in Canada (65 out of 314; Daly & Wilson 1988b, pp. 78–80). The difference between the two countries is statistically significant ($\chi^2 = 19.560$, $p < 0.0001$).

A recent report by UNICEF (2003) compared deaths from child maltreatment in 23 OECD (Organization for Economic Cooperation and Development) countries and estimates Sweden to have a close to average rate. A study by Gelles & Edfeldt (1986), which specifically made a cross-cultural comparison of violence towards children in Sweden and the US, found that Swedish parents reported using relatively less violence. There was, however, no significant difference between the two countries in the rate of reported severe or abusive violence. The reported frequencies of child maltreatment in Sweden compared with other countries are therefore ambiguous and more studies are needed on this topic before any firm conclusions can be drawn. What we can conclude so far is that there is no significant over-representation of stepchildren as victims of lethal parental violence in Sweden.

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