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Siblicide and Genetic Relatedness in Chicago, 1870-1930

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Abstract

Using a sample of siblicides committed in Chicago from 1870 through 1930, we tested two predictions heuristically guided by an evolutionary perspective. We predicted a greater proportion of siblicides of half-siblings, stepsiblings, and in-law siblings will be perpetrated by beatings, relative to the proportion of siblicides of full siblings. This difference did not reach statistical significance although it was in the predicted direction. We found, as predicted, that a significantly greater proportion of accidental deaths occurred with siblicides of full siblings relative to the proportion of siblicides of half-siblings, stepsiblings, and in-law siblings. Discussion addresses limitations of this research and the need for a national-level database that codes for the genetic relationship between the siblicide victim and offender to capitalize on greater statistical power.

Key words: siblicide, genetic relatedness, sibling-in-law, evolutionary psychology

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Siblicide—the killing of one sibling by another—is rare relative to other types of homicide. Underwood and Patch (1999) reported that, of 65,390 total homicides coded in the Supplementary Homicide Reports (SHRs) of the Federal Bureau of Investigation (FBI) for the years 1993 through 1995, only 572 (0.9%) were cases in which the offender and victim were siblings. Even including only intrafamilial homicides, siblicide is infrequent, with just 996 of 13,105 (7.6%) coded as siblicide in the Uniform Crime Reports of the FBI for the years 1992 through 1996 (Underwood & Patch, 1999). Although siblicide is rare relative to other homicides, violence between siblings is the most frequent form of intrafamilial non-lethal violence (Gelles & Strauss, 1988; Wiehe, 1997). The study of siblicide may provide insight into sibling relationships and non-lethal sibling conflict.

An evolutionary perspective has been applied profitably to the study of homicide (see Buss, 2004, and Daly & Wilson, 1988), and to siblicide, in particular (Russell., Michalski, Shackelford, & Weekes-Shackelford, 2006; Daly, Wilson, Salmon, Hiraiwa-Hasegawa, & Hasegawa, 2001; Sulloway, 1996). Research generated from an evolutionary perspective suggests that differences may exist in the contexts and circumstances of siblicides of full siblings and siblings-in-law.[1] This is because genetic relatedness may be an important moderator of conflict and homicide among family members, including siblings (Russell et al., 2006; Daly et al., 2001, Daly & Wilson, 1988, 1998).

Russell et al. (2006) conducted the first investigation of siblicide as a function of the genetic relatedness between the victim and offender. Using the Chicago Homicide Database (CHD) for the years 1965 through 1994, the researchers found that a greater proportion of siblicides of full siblings were single-victim siblicides, relative to the proportion of siblicides of half-siblings and stepsiblings. Russell et al. also found that a greater proportion of siblicides of half-siblings and stepsiblings were perpetrated by beatings, relative to the proportion of siblicides of full siblings. The patterns of results were as predicted, but did not reach statistical significance, perhaps due to relatively small sample sizes (few *n*s > 30) and, therefore, inadequate statistical power (Cohen, 1988).

As a methodological extension of Russell et al. (2006), we include in the current study siblicides perpetrated by siblings-in-law to capitalize on greater statistical power offered by their inclusion and to yield more robust data distinguishing full, genetic siblings from other siblings. Siblings may be less likely to kill a full sibling, for example, because the evolutionary "fitness" costs associated with the death of a full sibling (with whom the perpetrator shares 50% of his or her genes) are higher than the fitness costs associated with the death of a sibling-in-law (with whom the perpetrator shares 0% of his or her genes). In addition, the psychological processes involved might be different for siblicides of siblings-in-law, relative to siblicides of full siblings.

Stepparents are more likely to use a more brutal method of killing their wards than genetic parents, which is arguably a manifestation of feelings of bitterness and resentment in stepparents not present to the same degree in genetic parents (Daly & Wilson, 1994; Weekes-Shackelford & Shackelford, 2004). In the current study, we define "beating" as a relatively brutal method of killing that includes the use of a blunt instrument or the use of one's hands, fists, or feet, following Daly and Wilson (1994; and see Russell et al., 2006, Weekes-Shackelford & Shackelford, 2004). Parental investment in half-siblings, stepsiblings, or siblings-in-law may be viewed by a sibling as "wasted" investment, relative to investment in full siblings (who share more genes with the sibling). This "misdirected" investment may lead to feelings of jealousy and indignation toward half-siblings, stepsiblings, and siblings-in-law that are not present to the same degree toward full siblings. Following this logic, we offer the following prediction:

Prediction 1: A greater proportion of siblicides of siblings-in-law will be perpetrated by beatings, relative to the proportion of siblicides of full siblings.

Because a greater evolutionary "fitness" cost is associated with the death of a full sibling relative to the death of a half-sibling, stepsibling, or sibling-in-law, deliberate and intentional siblicides may be more frequent among half-siblings, stepsiblings, and siblings-in-law than among full siblings. Accidental siblicides (such as children playing with a loaded firearm when the weapon is suddenly discharged) between full siblings may be committed with greater regularity than among half-siblings, stepsiblings, or

siblings-in-law, who may be more inclined towards purposeful and contemplated siblicides. We present the following prediction as a test of this logic:

Prediction 2: A greater proportion of accidental deaths will occur with siblicides of full siblings relative to the proportion of siblicides of siblings-in-law.

Predictions 1 and 2 are replications of predictions tested by Russell et al. (2006) using a different database, and Prediction 3 is an extension of that previous study. We use a city-wide homicide database covering a 60-year period to test these predictions.

Method

The Chicago Historical Homicide Project (CHHP) provides incident-level information on 11,018 homicides recorded in the murder analysis files of the Chicago Police Department for the years 1870 through 1930 (Bienen & Rottinghaus, 2002). The CHHP is the only historical database known to the authors that codes for the genetic relationship between the siblicide victim and offender. We selected for analysis the 134 cases in which one sibling killed another sibling. Sixty-four of these siblicides were committed by full siblings. A total of 70 siblicides were committed by persons other than full siblings. Two of these cases were coded as half-siblings, two cases as stepsiblings, and 66 cases as siblings-in-law. Only siblicides perpetrated by a siblings-in-law were included in this study because of the lack of a meaningful sample size of siblicides by half-siblings and stepsiblings and to refine predictions specifically comparing full sibling and sibling-in-law siblicides. The overwhelming majority of siblicide offenders and victims were male (96.3% of the offenders and 81.3% of the victims) and between the ages of 12 and 44 years (75.0% of the offenders and 81.6% of the victims). Following Daly and Wilson (1994), Weekes-Shackelford and Shackelford (2004), and Russell et al. (2006), we combined the weapon variable coded as “club or blunt instrument” with the weapon variable coded as “hands, fists, or feet” to form the category “beating.” We tested the third prediction (regarding accidental siblicides) using the variable coded as “accidental” (as reported or inferred from the initial crime entry).

Results

See Table 1 for demographic information on the siblicides in the CHHP. The victims of siblicides, the mean age of full sibling victims was 25.1 years (*SD* = 13.1 years) and the mean age of sibling-in-law victims was 31.4 years (*SD* = 9.0 years). The mean age for full sibling siblicide offenders was 13.6 years (*SD* = 7.5 years) and the mean age of sibling-in-law offenders was 24.0 years (*SD* = 4.2 years). Sixty-two (96.9%) of the full sibling offenders were male and 67 (95.7%) of the offenders in siblings-in-law were male. Fifty-seven (89.1%) of the full sibling victims were male and 52 (74.3%) of the victims in siblings-in-law siblicides were male.

Prediction1 stated that a greater proportion of siblicides of siblings-in-law will be perpetrated by beatings, relative to the proportion of siblicides of full siblings. Three (4.5%) of the siblicides committed by siblings-in-law were coded as beatings, compared to two (3.1%) of the siblicides committed by full siblings. This difference was in the predicted direction but did not reach statistical significance, χ^2 (1, N = 130) = .18, $p > .05$. Prediction 2, therefore, was not statistically supported. Several exemplary case descriptions of siblicides perpetrated by brothers-in-law appear below:

> "Kelly, David, shot dead, 329 Center St., by Charles Foster, his brother in law, whom he assaulted with a club. Foster was arrested and held by Coroner's Jury July 17. Acquitted by Jury in C.C. (Judge Neeley) Nov. 21, 1900. 40th Prect."
>
> Case Number 1180; July 16, 1900
>
> "Sharples, Beatrice - Age 21 - Strangled to death in her home by her brother-in-law, Thos. Catherwood, who robbed her. On 11/23 Catherwood was held by the Coroner. 21 Dist. 1/20/22 to Joliet Pen for life - Fitch."
>
> Case number 7010; November 1, 1921

Prediction 2 stated that a greater proportion of accidental deaths will occur with siblicides of full siblings relative to the proportion of siblicides of siblings-in-law. Seventeen (26.6%) of the siblicides committed by full siblings were coded as accidental deaths, whereas two (2.9%) of the siblicides committed by siblings-in-law were coded as accidental deaths. This difference was in the predicted

direction and did reach statistical significance, χ^2 (1, N = 130) = 14.42, p < .001. Prediction 3, therefore, was supported. Several exemplary case descriptions of accidental siblicides appear below:

> "Lundstrom, Franz. 7 ys. old. Shot dead at home 2190 W. North Av. by his 11 yr. old brother, Ranzor,. They were playing with a shot gun. 37 pct. Exonerated by coroner's jury."
>
> Case number 1380; November 26, 1907

> "Hofsia, Maymie - Age 15 - Accidentally shot to death in kitchen of her home, 1733 @W. 106th Place, when her brother, William, dropped a revolver which he was cleaning. Revolver discharged upon striking the floor. William was exonerated by the Coroner. 10th Pct."
>
> Case number 6161; January 24, 1921

Discussion

Guided heuristically by an evolutionary perspective, we tested two predictions about siblicides committed by siblings-in-law, using a city-level Chicago database of homicides committed during the years 1870 through 1930. We found that a non-significantly greater proportion of siblicides of siblings-in-law were perpetrated by beatings, relative to the proportion of siblicides of full siblings. Finally, we found that a significantly greater proportion of accidental deaths occur among siblicides of full siblings relative to the proportion of siblicides of siblings-in-law. The greater proportion of accidental deaths among full sibling siblicides relative to the proportion of accidental deaths among sibling-in-law siblicides may be interpreted to reflect a lesser degree of rage or resentment present between full siblings.

This study has several limitations. Similar to the results reported by Russell et al. (2006), the failure of the first two predictions to reach statistical significance might be attributable to limited statistical power (Cohen, 1988). A clear problem of tests of the current predictions is the lack of a large, national-level homicide database that codes for the genetic relationship between siblicide victim and offender. In the absence of such a database, analyses comparing full siblings to siblings-in-law are limited to smaller databases that do have such codes. The Chicago Historical Homicide Project (CHHP) does code for this relationship, but is not without limitations. One limitation of the CHHP is that, for the majority of cases, the ages of the siblicide perpetrator and victim are not coded.

Despite these limitations, the current research offers several small but notable contributions to the literature on siblicide. The current research provides a replication and extension of the first investigation of siblicide as a function of the genetic relatedness between the victim and offender, conducted by Russell et al. (2006). The current research drew from a database of over 11,000 homicides committed in Chicago during the years 1870 through 1930 to test predictions about the contexts and circumstances of siblicide. The results might be interpreted conservatively as providing preliminary qualitative evidence of the potential value of differentiating genetic relationship in siblicide research (see Farr, 2002, for a recent argument regarding the value of small-sample, qualitative research). The patterns of results of the current research and of Russell et al. (2006) provide qualitative (and limited quantitative) support for the two predictions tested using data for Chicago siblicides occurring over a century, suggesting that these patterns of siblicides may not be unique to a specific or recent time period.

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Footnotes

[1] Siblicide patterns also indicate birth order patterns indicative of sibling rivalry predicted from an evolutionary perspective. Although not the focus of this paper, other researchers (See Daly et al. 2001) find that older siblings are more likely to be perpetrators of siblicides early in life because of the jealousy of parental channeling of resources towards a younger sibling. In later life, younger siblings become more likely to be perpetrators of siblicides than older siblings because of an opportunity to secure resources (e.g., inheritance) that might otherwise go to favored older siblings.

Table 1

Demographic information for victim and offenders of siblicides perpetrated by full siblings and by siblings-in-law

	Victim			Offender		
Sibling relationship	Male	Female	Overall	Male	Female	Overall
Full siblings						
Age in years (*SD*)	26.29 (12.09)	13.40 (18.52)	25.09 (13.13)	14.75 (7.40)	6.50 (3.54)	13.57 (7.50)
N	49	5	54	12	2	14
Siblings-in-law						
Age (*SD*)	32.36 (8.33)	28.36 (10.54)	31.36 (9.00)	27.00	21.00	24.00 (4.24)
N	42	14	56	1	1	2

Note. *N*s based on the subsample of cases with information on ages not on the complete sample of siblicides.