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Child Murder in New England

Historians often despair of their ability to write histories of child murder, because the crime was easy to commit and conceal. Even today, coroners can determine only in rare instances whether a deceased infant or newborn was suffocated or died of natural causes (Knight 1996: 441–44, 345–60). No reliable test can determine, once decomposition has begun, whether a deceased newborn ever took a breath; and suffocation, unlike strangulation, leaves no physical marks, unless excessive pressure is applied to the face or lips. A mur-

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derer needed but a few moments to smother a child and could claim that the child was stillborn, had been accidentally overlain, or had died from natural causes. Unwanted pregnancies could be kept from public notice with the help of family or friends, especially pregnancies that came to term in late winter or early spring, when expectant mothers could live quietly out of the public eye or stay wrapped in heavy clothing. In New England, a large proportion of suspected neonaticides—nearly a quarter—occurred in April or early May, “mud season” in the Yankee vernacular, when people emerged from their long winter “hibernation.”

Older children could be neglected, starved, imprisoned, terrorized, raped, and beaten with impunity, as long as parents or guardians were careful not to leave marks of violence on the face, neck, or hands and as long as potential informants such as servants, neighbors, or other relatives did not live in the same house. Siblings of abused children rarely informed on their abusive parents. In a few cases, they joined in the abuse. If public suspicions were not aroused, children who died of abuse could be prepared for burial by their parents and laid to rest publicly like other deceased children.

Add to these problems the limitations of particular historical sources that failed to record certain types of murder, and the study of child murder seems a daunting task. Forensic anthropologists are helping historians overcome some of these problems (Walker 1997). Forensic scientists cannot study soft-tissue injuries, such as those involved in suffocation or drowning, but they can study skeletal injuries. P. L. Walker (forthcoming) examines European, Asian, and North American skeletal remains from ancient times to the present for the telltale injuries of abused children today: repeated, twisting fractures of the upper and lower arm and leg, which occur when infants or young children are grabbed and thrown. Such injuries appear nowhere in skeletal records before the last decades of the nineteenth century, when they appear suddenly and with great frequency in remains gathered from abandoned cemeteries in London, St. Louis, and Cleveland. Of course, researchers must study many more skeletons before they can write a full history of even this one injury, but the evidence is strong that this form of violence against children is an artifact of history, not of the human condition.

The epidemiological evidence that has survived for New England makes the same point—that child murder is neither random nor constant, but an artifact of historical circumstances. Each historical source for studying child murder has its flaws. But together, newspapers, diaries, court records, coro-

ners' reports, vital records, town histories, and other sources can help historians reconstruct the history of child homicides and suspected homicides that came to public attention—a considerable number of cases, given New Englanders' demands that child murder be uncovered and punished. The character and incidence of publicly recognized child murders changed dramatically over time, in ways that make sense in light of the history of abortion, fertility, marriage, illegitimacy, child labor, and adult homicides.

The best evidence on child homicides comes from inquests and examinations of murder suspects before justices of the peace. New Englanders and their public officials acted decisively, especially in the eighteenth and early nineteenth centuries, whenever child murder was suspected. Investigations of the unexplained deaths of older children proceeded on the assumption that murder was a possibility, particularly if children were found dead in streams or wells, or if they died suddenly in their parents' bed. No record of prior abuse was necessary to launch an investigation—the death itself was sufficient. Nearly all proved natural or accidental, but deaths that remained suspect were examined thoroughly. Testimony was recorded and postmortem examinations were performed. Coroners and physicians did not always interpret the evidence they gathered as medical examiners would today. They did not appreciate, for instance, that the skulls of young children are so elastic that they do not fracture from the impact of most fatal head injuries (Knight 1996: 460–61). In the absence of fractures, early medical examiners attributed cerebral hemorrhages routinely to natural causes, particularly “brain fever.” But authorities left sufficient evidence for historians to reconsider such cases and identify probable cases of child murder.¹

By contrast, investigations of the deaths of newborn children proceeded on the assumption that murder was a probability, especially if the child's body had been abandoned or its birth and death concealed. In most cases, the cause of death is difficult to determine. Authorities assumed, for instance, that bruises and scratches on the neck were signs of strangulation. But such injuries could have stemmed from the efforts of mothers to deliver their children themselves. Many cases can be attributed conclusively to murder or stillbirth, but authorities left a substantial record of possible neonaticides. Beyond official investigations, the public in New England took a keen interest in the suspicious deaths of children. Such deaths were the subject of frequent comment in diaries and newspapers, because New Englanders were shocked by child murders and eager to detect and punish those responsible.

Table 1 Estimates from matched lists of the number of homicide victims in New Hampshire and Vermont, 1750–1880

	Neonates	Infants and Children	Adults
Located Only in Court Records	43	4	24
Located Only in Other Sources	60	52	145
Located in Court Records and in Other Sources	24	34	259
Number of Homicides Found	127	90	428
Estimated Number of Homicides	234.5	96.1	441.4
Percentage of Estimated Homicides Found	.54	.94	.97
Standard Error of Estimated Homicides	32.4	4.2	4.8

The surviving evidence (Appendix A) is sufficient to estimate the number of probable murders of infants and children and the number of possible and probable murders of newborns that came to the attention of authorities or the public. Two lists of homicides were created, one drawn from court records (inquests, case files, docket books, and minute books) and the other from unofficial sources (newspapers, diaries, oral tradition recorded in early town histories, etc.). The lists were matched to determine the number of homicides on both lists (C), on the list from court records only (N_c), and on the list from newspapers or other sources only (N_n). Following the method of Chandra Sekar and Deming (1949), the proportion of homicides missed by both lists (X) can be estimated:

$$X = (N_c * N_n) / C.$$

The result can be used to estimate the number of publicly recognized homicides (N) that occurred:

$$N = X + N_c + N_n + C.$$

The standard error of the estimate (s_N) is equal to the square root of

$$(N * q_c * q_n) / (p_c * p_n),$$

where

$$p_c = C / (C + N_n),$$

$$p_n = C / (C + N_c), \text{ and}$$

$$p_c + q_c = p_n + q_n = 1.$$

Table 2 Estimates from matched lists of the number of neonaticide victims in New Hampshire and Vermont, 1750–1880

	1750–93	1794–1827	1828–47	1848–65	1866–80
Located Only in Court Records	11	15	9	6	2
Located Only in Other Sources	0	2	4	13	41
Located in Court Records and in Other Sources	8	3	2	3	8
Number of Homicides Found	19	20	15	22	51
Estimated Number of Neonaticides	19	30	33	48	61.3
Percentage of Estimated Neonaticides Found	1.00	.67	.45	.48	.83
Standard Error of Estimated Neonaticides	0	10.0	17.2	20.4	8.9

The method is robust. It does not require that the evidence from which the lists are drawn be comprehensive or complete, as long as the loss of records and the omissions of record keepers are random. The method requires, however, that the matched lists be statistically independent, an assumption that does not hold for homicides as a whole. Certain homicides are more likely to appear on one list than the other. Neonaticides, for instance, are more likely than other homicides to appear only in court records in the eighteenth century, and more likely to appear only in newspapers in the late nineteenth century. The requirement for independence can be largely met by disaggregating the homicides on the lists into homogeneous groups based on geography, period, age of victim, etc., and by estimating the number of homicides separately for each group (Chandra Sekar and Deming 1949; Crimmins 1980). What interdependence between the lists remains after disaggregation will probably bias the estimates downward in the range of 10% to 15%, but that bias should be consistent over time and is far too small to account for the historic trends that appear in the homicide rates.

The surviving records from New Hampshire and Vermont, 1750–1880, contain evidence on an estimated 94% of infant and child homicides and 97% of adult homicides, but only 53% of neonaticides (Table 1). The estimates for neonaticides differ from period to period (Table 2), and the differences reflect

Table 3 Estimates from matched lists of the number of neonaticide victims in Connecticut, Massachusetts, Maine, and New Hampshire, 1630–1797

	1630–92	1693–1774	1775–83	1784–97
Located Only in Court Records	11	52	11	20
Located Only in Other Sources	4	9	1	6
Located in Court Records and in Other Sources	4	43	2	14
Number of Homicides Found	19	104	14	40
Estimated Number of Homicides	30	114.9	19.5	48.5
Percentage of Estimated Homicides				
Found	.63	.91	.72	.82
Standard Error of Estimated Homicides				
Homicides	9.1	5.4	7.3	5.5

the changing quality of the sources. Vermont's inquests were preserved systematically through 1793, when the supervision of the coroners' system was transferred from the Vermont Supreme Court to the county courts. Inquests were conducted less frequently in both states after 1824, when Vermont and New Hampshire abolished coroners' juries and gave coroners the power to suspend inquests if there was little hope of identifying a cause of death or a criminal suspect. The record of neonaticides improved dramatically after the Civil War, when newspapers began to report such deaths systematically. The estimates of publicly recognized neonaticides are thus more stable statistically for the late eighteenth and late nineteenth centuries than for the intervening period, as reflected in their smaller standard errors.

The estimates for child homicides in all of colonial New England, 1630–1760, are similar (Tables 3 and 4). The surviving record contains evidence of an estimated 86% of publicly recognized murders of infants and children in the seventeenth century, but of only 63% of suspected neonaticides, because of the loss of some court records and abrupt changes in the jurisdiction of courts prior to 1693. The records improve in the eighteenth century, when they captured an estimated 91% of suspected neonaticides.

These estimates can be used to determine homicide rates for neonates, infants, and children, once population figures are adjusted for the underenumeration of young children (Appendix B) and once the birth rates estimated from those revised figures are adjusted for changing levels of infant and child

Table 4 Estimates from matched lists of the number of infant and child homicides in Connecticut, Massachusetts, Maine, and New Hampshire, 1630–1797

	1630–92	1693–1797
Located Only in Court Records	8	24
Located Only in Other Sources	2	8
Located in Court Records and in Other Sources	6	47
Number of Homicides Found	16	79
Estimated Number of Neonaticides	18.7	83.1
Percentage of Estimated Neonaticides Found	.86	.95
Standard Error of Estimated Neonaticides	2.9	2.7

mortality (Appendix C). The study area is large: all of New England except Rhode Island in the colonial and revolutionary period and all of New Hampshire and Vermont in the nineteenth century. That is crucial, because the population at risk of homicide must be large to produce stable estimates of homicide rates in low-homicide areas like New England.

The estimates from New Hampshire and Vermont (Table 5) show that child murder (the murder of children from 1 to 15 years old) was far less common than infanticide (the murder of children older than one day and less than a year old), which was in turn far less common than neonaticide (the murders of newborn children less than a day old). That pattern is nearly universal. Like many species of animals, human beings in every society studied to date are more likely to be murdered on the day they are born than on any other day of their lives (Hausfater and Hrdy 1984: xiii–xxxiii). The murder rate drops dramatically on the second day of life, as parents and guardians bond emotionally with the child. The murder rate continues to drop into the early teens, as parents find it more and more difficult, emotionally and practically, to murder children. Nonrelatives rarely murder children, and when they do, they are usually neighbors, not strangers, driven to violence by mental illness or sexual compulsion, or guardians, teachers, or employers angered by a child who refuses to behave as directed. The historical record from New England fits this pattern, even though child murders were easier to detect than infanticides, and infanticides easier to detect than neonaticides. New Englanders were vigilant about the murders of infants and newborns.

Publicly recognized neonaticides, infanticides, and domestic child mur-

Table 5 Age-specific homicide victim rates in Vermont and New Hampshire, 1775–1880 (per 100,000 persons at risk per year)

	1775–93	1794–1827	1828–47	1848–65	1866–80
Husbands and Wives and Third Parties Intervening in Marital Disputes (over age 25) ¹	.10	.09	.34	.48	.59
Teens and Adults (over Age 15)					
Relatives, not Including Husbands or Wives or Third Parties Intervening in Marital Disputes	.00	.08	.12	.16	.26
Nonrelatives: male	2.70	1.03	1.04	2.54	2.88
Nonrelatives: female	.13	.05	.11	.18	.35
Children (Age 1–15)					
Relatives	.00	.10	.15	.26	.42
Nonrelatives	.00	.03	.11	.18	.26
Infants (Age 1 Day to 1 Year)	.00	.20	2.15	3.03	5.89
Neonates	9.17	5.28	8.82	15.68	26.04

¹Includes husbands killed by third parties intervening in marital disputes. The divisor is twice the estimated number of males over the age of 25, a proxy for the number of adult men and women at risk of marital violence.

ders (the murders of children by relatives) declined dramatically for the white population from the early seventeenth century to the early eighteenth century and remained low until the 1820s, when they rose again (Figures 1 and 2). The pattern differs in significant ways from the patterns of adult murders and nondomestic child murders. Adult and nondomestic child murder rates changed abruptly. Spouse murders were rare until the late 1820s, when the rate at which husbands murdered their wives jumped nearly tenfold (Roth 1999: 65–93). Nondomestic homicides of adults and children were common in the seventeenth century through the mid-1670s, then dropped sharply. Adult homicides were common in the Revolutionary era, and were common again in the 1850s, 1860s, and 1870s, but were otherwise rare. The evidence suggests that different relationships became violent at different times for different reasons.

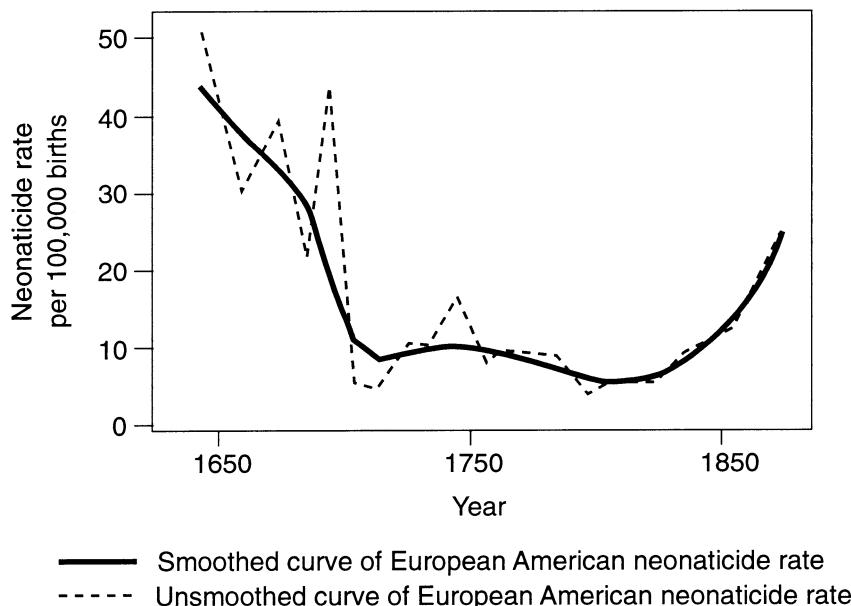


Figure 1 New England Neonaticide Rate, 1630–1880

The Decline in Child Murder, 1630–1800

It is difficult to determine in particular why neonaticide declined among white New Englanders between the early seventeenth and the mid-eighteenth century, given that the rates of most kinds of murder fell across North America and northwestern Europe (Lane 1997: 33–66; Lachance 1984: 34–7, 73, 129–32; Sharpe 1999: 59–63, 77–90). The smoothed curve of colonial and Revolutionary New England's white neonaticide rate is a mirror image, however, of the curve for New England's white birth ratio (Figure 3)—that is, the ratio of the number of children (ages 0 to 9) to the number of women of child-bearing age (ages 16 to 44).² The complementarity of these curves suggests that demographic forces may have set the stage for the sharp decline in neonaticide rates. The neonaticide rate declined by 90% in the seventeenth century and early eighteenth century, while the birth rate rose by a third.³ The rise of a stable, diversified, market-oriented economy based on free labor and on farming and household manufacturing made child labor important to a family's economic success and gave young parents the means to support their

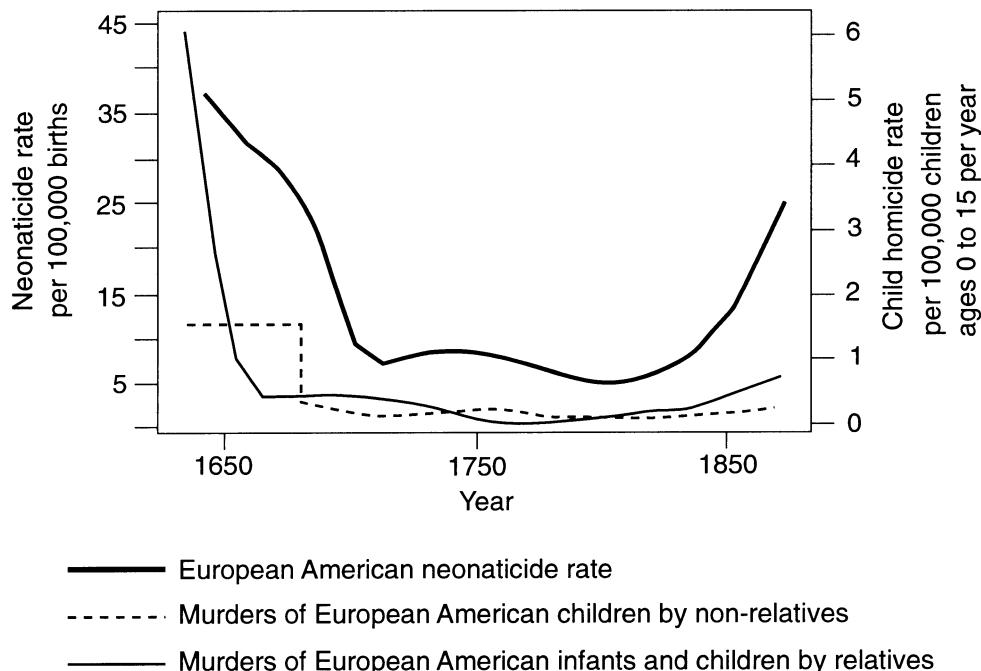


Figure 2 New England Neonaticide and Child Homicide Rates, 1630–1880

children. Large families were an economic asset as long as land prices remained low, clothing was homespun, and farms needed to be cleared and improved. The average age at which women bore their first child declined in New England by two and a half years between the mid-seventeenth century and the mid-eighteenth century (Figure 4; Wahl 1992: 408, 402), and the proportion of firstborn children conceived out of wedlock rose from 8% to 27% (Figure 5; Hindus and Smith 1975: 651; see also Roetger 1984: 254). Prospective parents faced fewer constraints on marriage, fertility, and sexuality.

Prosecutions for neonaticide spiked in the 1690s and in the 1740s, amid the campaigns for moral reform that surrounded the Salem witchcraft trials and the Great Awakening (Figure 1). These deviations from the smoothed downward trend in neonaticides lend support to P. C. Hoffer and N. E. H. Hull (1981: x–xi, 23–31, 56). Many women accused of neonaticide during the 1690s and the 1740s were probably innocent of murder, the victims of a short-lived campaign against sexually precocious women, the rising tide of pre-

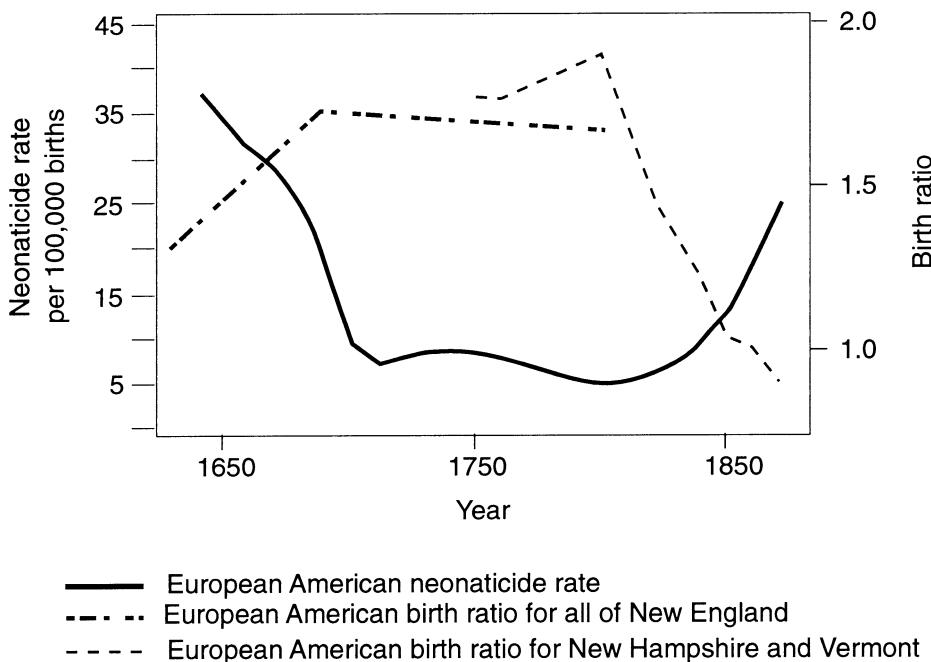


Figure 3 European American Neonaticide Rate and Birth Ratio, 1630–1880

marital pregnancy, and the perceived breakdown of traditional values. In the long run, however, the stigma of giving birth to illegitimate children waned, prosecutions for fornication declined, and unmarried women felt freer to acknowledge pregnancy and were more confident of help from parents, employers, and potential suitors (Ulrich 1990: 147–60; Smith and Hindus 1975; Dayton 1995: 157–230; Thompson 1986: 19–33). The proportion of women who eventually married reached 98% by the mid-eighteenth century (Wahl 1992: 402), a sign that premarital pregnancy by then had little impact on a woman's prospects of marriage.

These changes dramatically lessened the pressure on unwed mothers to commit infanticide. Pregnancy, once discovered, still meant moral censure and, if the mother were a domestic servant, dismissal. But by the early eighteenth century, few women were whipped or publicly humiliated for becoming pregnant out of wedlock (Roetger 1984: 250–53), and servants found it easier to quit and marry before their pregnancies were discovered. Even

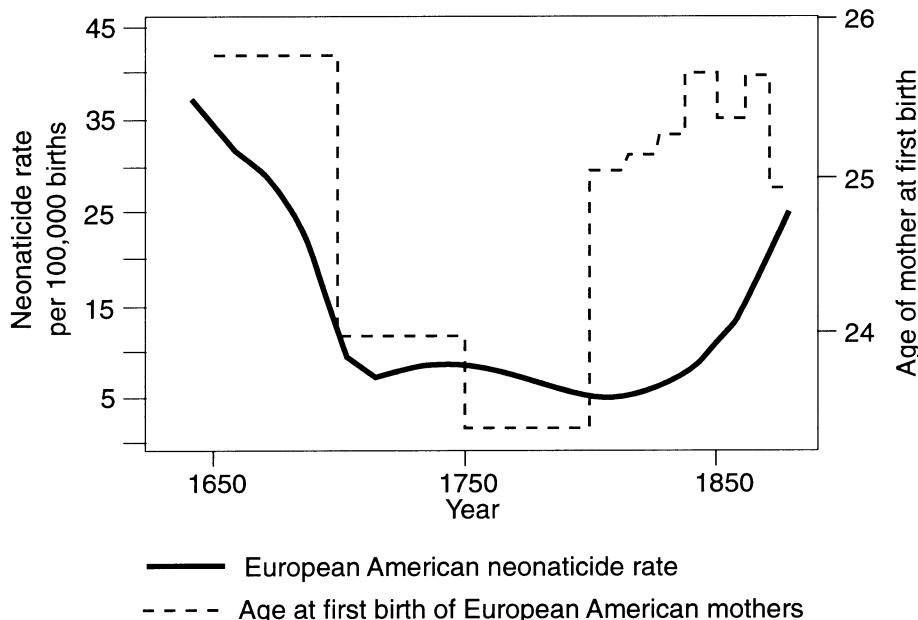


Figure 4 New England Neonaticide Rate and Age of Mother at First Birth, 1630–1880

when pregnancies were discovered and punished, “the taint of scandal eventually dissipated” in most cases (Dayton 1995: 204). That is probably the major reason why domestic servants comprised a smaller proportion of neonaticide suspects in New England than in England (Hoffer and Hull 1981: 110).

White women in New England who did murder their newborn children often faced special circumstances. Esther Rogers of Newbury and Ann Bussell of Salem had conceived mulatto children by enslaved men. Elizabeth Oliver of Hogg Island, New Hampshire, had conceived a child by a married neighbor before she married her husband, a fisherman. She concealed her pregnancy from her husband and stifled the child when it was born while her husband was away at sea. Ruth Briggs of New Haven was estranged from her husband, yet unable by law to divorce. She was so destitute after his desertion that she turned to theft to support herself and her nine-year-old daughter. When she became pregnant by a neighbor, she tried to destroy the fetus by taking savin, a poison; when that failed, she gave birth to the child

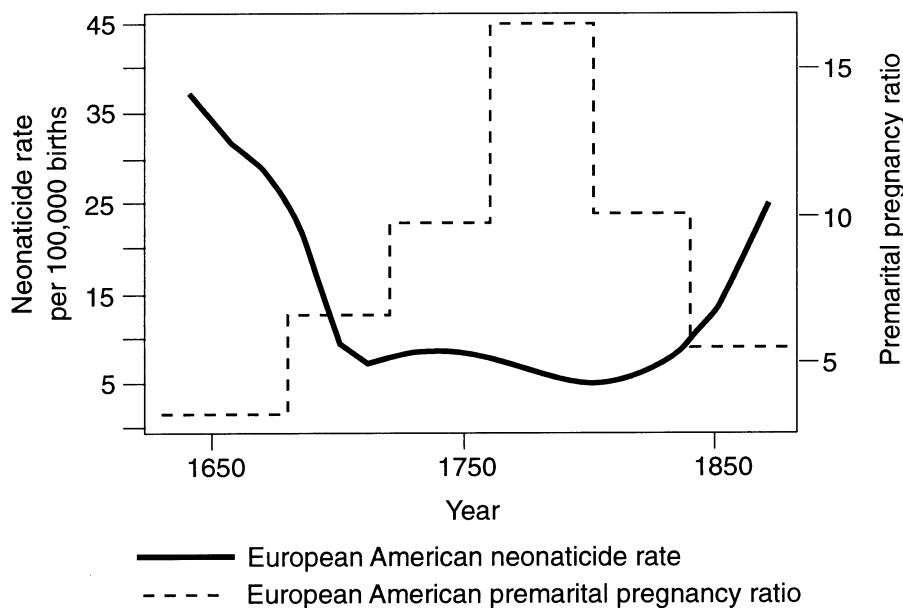


Figure 5 New England Neonatocide Rate and Premarital Pregnancy Ratio, 1630–1880

and secretly buried it in a swamp. Sarah Smith of Deerfield faced a public scandal when she conceived a child in the absence of her husband, who by then had been held captive by the Indians for five years. To hide her infidelity, she strangled her child at birth. Elizabeth Emerson of Haverhill had already given birth to an illegitimate child and was still at home with her parents, because she was unable to find a husband in the wake of her failed paternity suit against the alleged father, whose defense left her reputation in tatters. When she became pregnant a second time five years later, she decided to conceal it, fearful of her father and desperate not to disappoint her mother. When her twins arrived, she sewed them in a bag and buried them in the garden.⁴

Such women could not be helped by improved economic and demographic circumstances. They could not solve their problems by marrying eligible men, because they were already married or had damaged their reputations irreparably. The unusual nature of their cases, however, underlines the fact that improved circumstances diminished the pressure on most young white women to commit infanticide.

Most women, however, who committed neonatocide did not face such

special circumstances: poverty and isolation alone drove them to desperate measures. Young unwed servants were always more likely to commit neonaticide than other women. Those who murdered newborns were usually from poor families, and a good number had migrated from England, Scotland, or Ireland as indentured servants, so they had fewer familial resources to draw upon if they became pregnant. Unwed servants also remained, as poor women, the targets of what prosecutions for fornication and bastardy occurred in the eighteenth century, long after authorities ceased prosecuting women from middling or upper-income families who became pregnant out of wedlock (Dayton 1995: 12). Even so, the dramatic improvement in the economic circumstances and marital prospects of young women led to a steep decline in neonaticide, even among the poor.

Opportunity also played a role in colonial neonaticides. 70% of suspected neonaticides in colonial New England occurred between December and the first two weeks of May. Women who came to term during cold weather had a better chance of concealing unwanted pregnancies and of delivering children privately. The pattern suggests that neonaticide was often premeditated, the final act of a prolonged effort to terminate an unwanted pregnancy. It suggests as well it was nearly impossible to conceal a pregnancy from neighbors in the summer or fall.

It is striking that homicide rates for white infants and children declined more quickly than the rate for neonates (Figure 2). White infant and child murders reached historic lows by the mid-1670s, four decades before neonaticide rates did. That suggests that the circumstances of frontier life, rather than demographic factors, played a decisive role in elevating infant and child homicide rates in the early seventeenth century. Every child or infant murdered by a relative in the frontier period from the 1630s through the 1650s was killed by a deranged or depressed parent. Every child murdered by a non-relative from the 1630s through the mid-1670s was killed by a master who owned the child's labor or by a Native American bent on revenge against the child's parents or community. Such murders occurred throughout the colonial period, but their incidence dropped as soon as social, economic, and political stability emerged on the frontier. So did murders of white adults by mentally ill relatives or by masters who owned their labor or by Native Americans. The fact that these murders declined sharply for both children and adults suggests that the stress of frontier life and the struggle to define

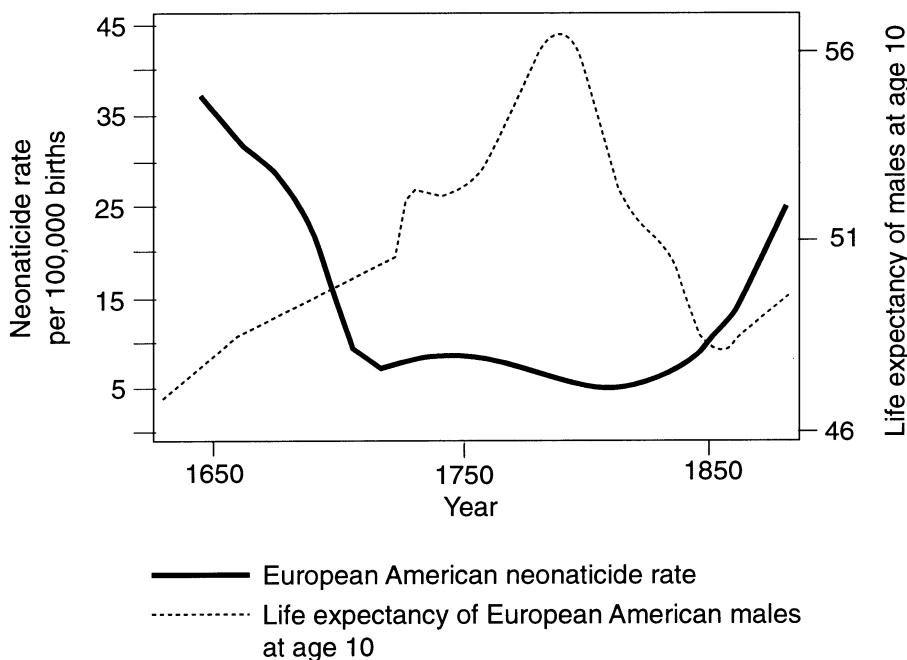


Figure 6 New England Neonaticide Rate and Life Expectancy, 1630–1880

labor and race relations lay behind such murders in the seventeenth century, rather than the demographic forces that determined fertility and marriage rates.

It is clear, however, that demographic and economic forces supported low rates of white infant and child murder in the eighteenth century. Children who survived birth enjoyed longer, healthier lives by the mid-1700s, as food supplies increased and the agricultural economy stabilized. Life expectancy of white males at age 10 rose from 46 to 56 years between 1630 and 1780, an upward trend that is paralleled by the fragmentary data that has been gathered to date on life expectancy at birth and at age 5 (Figure 6; Archer 1990: 495; Fogel 1986: 510–12; see also Anderson 1975: 16–22, 105, 110–14). The adult height of white males averaged 172.5 centimeters by the mid-eighteenth century (Figure 7; Fogel 1986: 510–12), a further sign of good nutrition and of a relatively low incidence of debilitating respiratory and gastrointestinal diseases during childhood and adolescence. Older children,

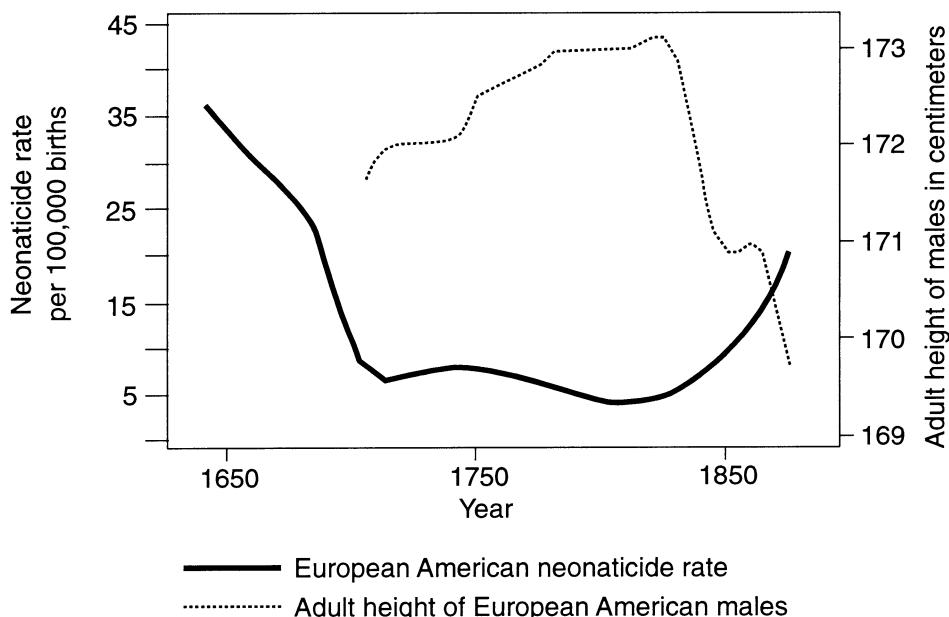


Figure 7 New England Neonaticide Rate and Adult Male Height, 1630–1880

like newborns, faced a more hospitable world by the eighteenth century. Every social indicator—including the homicide rate—suggests that they were valued by their parents and by society as a whole.

Black and mulatto children were far more likely than white children to be victims of murder in the colonial period (Table 6). The murder of mulatto neonates by white mothers comprised a fifth of all black and mulatto neonaticides, but the balance of suspected neonaticides was committed by black or mulatto women, all of them enslaved. The high rate of neonaticide stemmed from the peculiar hostility of New England masters to enslaved women of childbearing age. Because plantation agriculture was confined to a few large farms in Rhode Island and Connecticut (which produced foodstuffs for the West Indies), female slaves in New England labored almost exclusively as domestic servants. They were expected to devote all their time and energy to serving their masters' families. For that reason, New England masters routinely sold slaves who were pregnant or likely to become pregnant, as well as the infant children of such slaves, because masters did not want to lose

Table 6 Homicide victims in New England, 1677–1797 (per 100,000 persons in the population)

	Neonates	Infants and Children
Whites	.37	.16
Blacks and Mulattoes	2.60	.90
Indians	3.00	1.57

“the attention and labor of servants preoccupied with their own families.” (Piersen 1988: 19; McManus 1973: 37–38; Greene 1942: 213–16). Enslaved women, fearful that they or their babies would be sold, restricted their fertility. That fear, together with the refusal of many masters to sanction slave marriages, was responsible for the extraordinarily low birth rate and high neonaticide rate among African Americans in New England. Among African Americans infants and children were also more likely to be murdered than their white counterparts, not only because of the stress under which their parents lived, but because they were targets of abuse from white masters and of random violence from genocidal whites. By the mid-eighteenth century, however, murder rates for black and mulatto children of all ages had also declined (Figure 8). The black birth rate had risen and more black and mulatto women, both enslaved and free, were able to form families, which suggests that the pressures that had led to neonaticide and child murder had eased. Fertility and family formation, however, were still restricted for blacks and mulattos, relative to whites, in the mid-eighteenth century, and their rates of child murder were correspondingly higher.

Native American children were also more likely to be victims of neonaticide in New England than white children (Table 6). But murder rates for Native American children, unlike those for African American and European American children, increased during the eighteenth century. Economic and demographic circumstance may again have been crucial. Several Native American victims of neonaticide or child murder were the children of enslaved mothers, who faced the same pressures as enslaved African American mothers. But most victims were the children of free mothers. The available data suggest that the neonaticide and child murder rate among Native Americans rose dramatically from 1725 through 1760 (Figure 8)—precisely the time

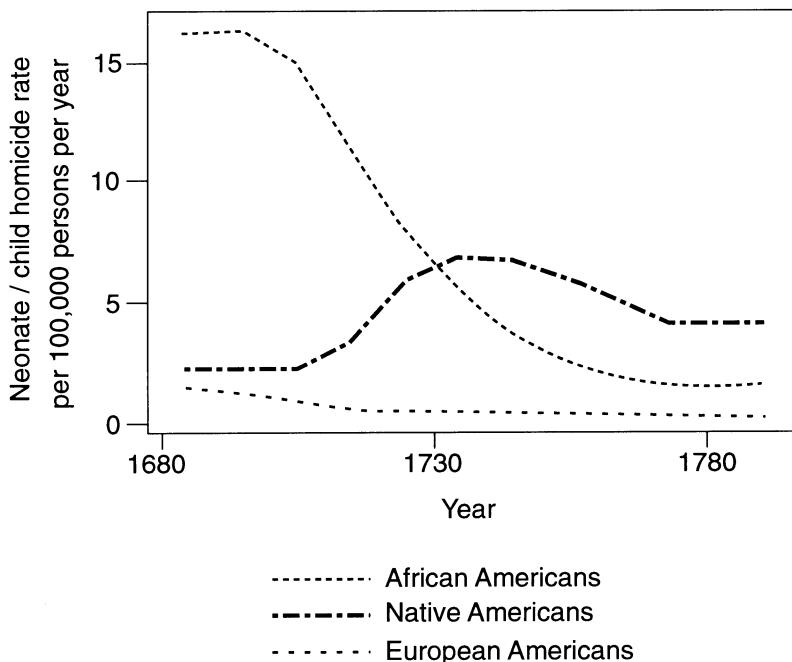


Figure 8 New England Neonaticide and Child Homicide Rate, 1677–1797

when most Native American enclaves in southern New England lost their autonomy and their land to white encroachment, and when Native American men enlisted in disproportionate numbers in whaling fleets and military expeditions, many never to return. These years marked the end of the half-century of relative peace and stability that Native American communities enjoyed in southern New England in the aftermath of King Philip's War (Mandell 1996: 117–63, 182–96; O'Brien 1997: 153–56). Native American communities were impoverished, and native women found it difficult to find native husbands. The ratio of native women to men stood at 4 to 3 in Massachusetts in 1764, and at 3 to 2 in Connecticut in 1774. By then, native women and African American men, who were themselves in surplus, had begun to intermarry. Nonetheless, unmarried native women had fewer resources to raise their children and a lesser chance of finding husbands to help them (Piersen 1988: 19–20), which probably led to the higher rate of child murder. By the time of the Revolution, as Native Americans and African Americans

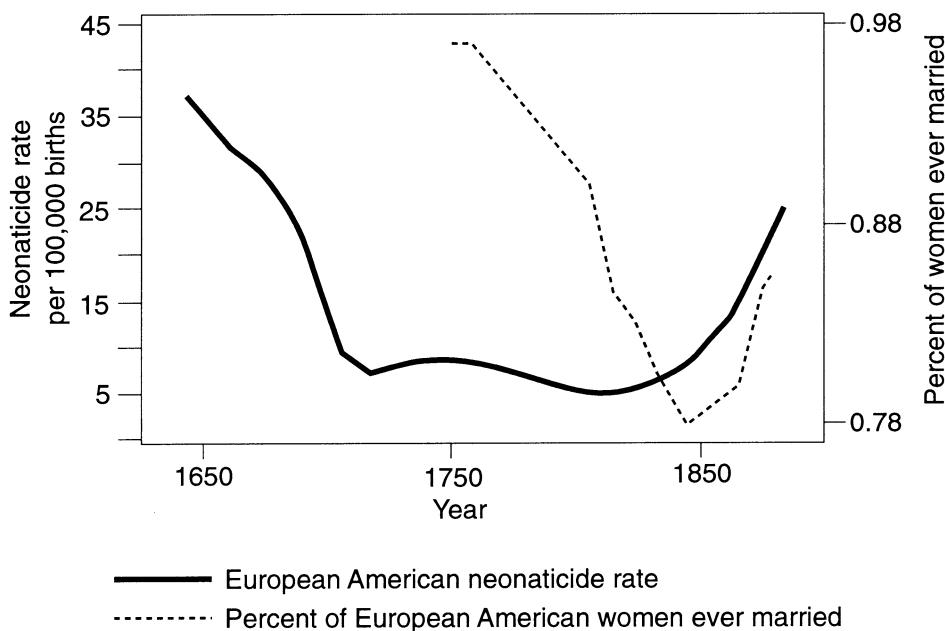


Figure 9 New England Neonaticide Rate and Proportion of Women Ever Married, 1630–1880

intermingled and intermarried, and as discrimination forced them together into an oppressed, undifferentiated nonwhite laboring caste, their child murder rates converged.

The Rise of Child Murder, 1800–1900

Neonaticide, infanticide, and domestic child homicide were rare in New England by the late eighteenth and early nineteenth centuries, but they increased steadily in New Hampshire and Vermont from the late 1820s through the 1870s (Figures 1 and 2). Child murder rates again mirrored, albeit with some delay, declines in the birth rate (Figure 3), the illegitimacy rate (Figure 5), life expectancy (Figure 6), adult height (Figure 7), and the proportion of women ever married (Figure 9). Child murder rates rose together with abortions and reported abortion deaths (Mohr 1978), and with the age at which women first gave birth (Figure 4). Child murder rates rose fivefold as social

pressures on young unwed mothers intensified and as the quality of life declined for most children.

Per capita income rose for nearly all families in the first half of the nineteenth century. But the decline of household textile production and the rise in land prices, capital costs, and educational costs made children an economic liability for most families (Craig 1993; Craig and Field-Hendrey 1993; Ginsberg 1989; Golden and Sokoloff 1982; Lindert 1978; Zelizer 1985). Children had less value as productive resources, just as the cost of raising them to maturity rose. These facts weighed heavily on young unwed mothers and fathers who had yet to accumulate the economic resources to start their own households and who had yet to develop the emotional maturity necessary for parenthood. Children were at risk once their parents or guardians viewed them as an emotional and economic burden. The rising tide of child homicides and abortions suggests that more and more parents viewed them as such. The Second Great Awakening compounded the problem by inspiring a spirited and successful campaign to restigmatize out-of-wedlock pregnancies and sexual relations outside of marriage.

Family limitation may well have encouraged families with fewer children to value their children more in an emotional sense, as study after study of the Victorian middle-class family suggests (Dye and Smith 1986). Indeed, family limitation may have been motivated by the desire of middle-income parents to give the fewer children they did have a higher quality life: better nutrition, more education, a more substantial inheritance (Wahl 1986: 416–21). But such considerations put children who came too soon or in too great a number at risk. The risks were compounded by a loss of economic security for poor young women and poor young couples who worked outside the rural and small-town economy, in cities and factory towns, where they often had less social support and access to public or familial assistance in time of need, and where food, shelter, and other necessities cost more. The risks to children were further compounded, as Wheeler (1997) argues, by an increase in geographical mobility. Expectant mothers could arrive in strange towns via flatboat or railroad, conceal the births and deaths of their children, and leave town before the public was alerted. These changes were the most likely causes of the rise in neonaticides and domestic child murders.

The circumstances under which children were murdered reflected these economic, demographic, and cultural changes. One widely known case in

northern New England was that of Kate Poole, a young Scottish immigrant and factory worker from Haverhill, New Hampshire, who on a snowy night in November 1851 threw her eleven-week-old baby from a train as it crossed a high trestle south of Manchester. Poole had been raised in Haverhill, where she had worked and attended school, but when she became pregnant, she left to find work in Lowell, Massachusetts, where the child was born. Unable to continue work in Lowell, she returned to Haverhill, but found no welcome or employment there. She saw no choice but to return to Lowell, where she was headed with her baby. Poole said that “she did not remember lifting it to throw it out” from the platform at the end of the saloon car, “but that she shall never forget seeing it fly through the air—it seemed to go like a feather.” As soon as she saw it was gone, she screamed “O God what I have done, so loud that she supposed that they would hear her in the Cars.” She “left the saloon & went out & sat down by another woman & cried,” and “afraid that people would think she looked guilty . . . she left the cars at Nashua.” She proceeded the next day to Lowell and would have escaped, had she not been overcome by remorse and by worry that her child would not receive a proper burial. When her child’s frozen body was found by railroad workers two days later, Poole returned to Manchester to claim the body and confess her crime. She pled guilty to second-degree murder and was sentenced by the court to life in prison, but the governor pardoned her in July 1852, after she had served only two months of her sentence. Poole moved to Lawrence, Massachusetts, and lived under the name “Jenny Bell” until she was arrested in February 1853 for larceny of clothing. She again confessed and was sentenced to six months in jail.⁵

In July 1844, Lucy Merrill of Reading, Vermont, beat her infant daughter, Eley Ann Foster, with a stone and threw her off a cliff into a river, where her body was found some days later. Merrill, like Poole, was poor and despondent. Her husband Charles had been sentenced to four years in prison for larceny just two months before their daughter’s birth. Lucy divorced him soon after he entered prison, but found herself with few resources, emotional or otherwise, to care for their child. “Public sentiment” was divided on her case. She was indicted and tried in county court, but the jury, accepting her defense that her hard life had driven her partially insane, found her not guilty.⁶

In October 1867, Lydia Pratt, a young weaver in a factory in Cavendish, Vermont, gave birth to an illegitimate child. She and the child’s father, Ebe-

nezer Kingsbury, a fellow factory worker, left town when the child was two weeks old and abandoned it in a remote forest a few townships away. Unfortunately for the murderers, they were well known in the area and were forced to explain the disappearance of their child after they returned home to Jamaica, Vermont. They confessed and escorted authorities to the site of the crime. Kingsbury was found guilty of manslaughter and sentenced to ten years in prison, but a separate jury found Pratt not guilty, believing that she would have kept her child had Kingsbury not pressured her to get rid of it.⁷

Infanticide had been remarkably rare. From 1700 to 1827 there were only two recorded cases of infanticide (as opposed to neonaticide) in New Hampshire and Vermont—one by an insane mother and the other by the abusive father of an illegitimate child. Then, suddenly, from the late 1820s through the 1870s, mothers and fathers began to murder at a substantial rate children with whom they had had time to bond. Of the two dozen infanticides and attempted infanticides that occurred in those decades, one was a case of manslaughter, in which a foundling left at night on a doorstep in winter froze to death, and two were caused by the manic (or demonstrative, nondepressive) insanity of a parent (both of which occurred before Vermont and New Hampshire opened public asylums for the insane in the 1840s). Only three cases, the last in 1844, involved chronic abuse. The rest were “belated” neonaticides, in which a desperate parent or parents disposed of an illegitimate child they felt they could not care for, or murder-suicides, in which a parent, suffering from depression, marital problems, and economic troubles, and probably from a nondemonstrative form of mental illness, took her or his own life and that of her or his children. Murder-suicides played an important role in the increase in child murders. Thirteen of the murders and attempted murders of children that occurred after 1848 were murder-suicides committed by parents who were depressed, but not demonstrably insane.

These murder-suicides are nearly impossible to interpret. In nearly every case there were no coroners’ inquests, court proceedings, or testimony. Spare mentions of these tragedies appeared in newspapers and town histories. Half of the murder-suicides involved the deaths of legitimate children, but nearly all occurred in families that lived in factory towns or villages and that were not affluent. That does not fit the general pattern of suicides in Vermont and New Hampshire in several respects, in that suicides were disproportionately aged, isolate, and/or well off financially. Marital problems may have been an

issue in some cases, or postpartum depression, as was apparent in the case of young Mary Binfield of Chester, New Hampshire, a suicidal mother who in 1852 cut off the head of her two-week-old daughter with an ax but was prevented from destroying herself. Binfield was poor, raised from childhood by her aunt, Dolly Hoit, with whom Mary and her husband of five months, Jeremiah, lived. How the strain of an out-of-wedlock pregnancy, a marriage of necessity, and an inability to afford her own household had affected Mary is unknown. She exhibited no signs of mental illness before the murder, but she was depressed in the days that immediately preceded it. When her aunt entered her room two days before the murder, she discovered a butcher knife on her niece's pillow: "I asked what she intended to do with the knife, she answered nothing—I asked her if she was going to kill her babe, she said no. I asked her if she was going to kill herself she answered I wish I was dead." The day after the murder, Binfield told a physician appointed to assess her psychological condition that she "could say nothing" about the murder, though she remembered hitting her baby with the ax and told a family friend that she had killed it because "she could not take care of it." The inquest pronounced her "in a state of partial insanity" at the time of the murder, and she was not indicted.⁸

Again, it is difficult to know for certain why infanticides appeared suddenly in considerable numbers in the mid-nineteenth century. But the common threads seem to have been desperation, depression, and nonfarm occupations, compounded by the fact that the child was illegitimate or its parents' marriage unstable.

Neonaticide was a different sort of crime than infanticide, because in neonaticide cases, parents or near relatives killed children before they had had time to bond with them. Indeed, umbilical cords and placentas were often still attached to the bodies. Panic and desperation played a role in some of these murders. Rhoda Sanborn of Corinth, Vermont, seemingly lost control when she delivered illegitimate twins alone in a field near her home in May 1830. Rather than smother or strangle her children, she crammed dirt and sand into their mouths to suffocate them, and when that failed, she grabbed a stick and beat them brutally. She pled guilty to reduced charges and served two years in the state prison.⁹ In 1879, two passersby discovered a bundle in a meadow by a warehouse in Bennington, which contained the remains of a clubfooted newborn who had been similarly brutalized. The skin and ear had been torn

from the right side of the infant's head, her skin and muscles torn from the back side of her thigh, and a one-inch stake driven through her breastbone into her chest.¹⁰ In such cases, the brutal and haphazard method of killing suggests desperation and a lack of clear thinking and preparation.

Some neonaticides appear to have been premeditated, however. A young native-born woman, far advanced in her pregnancy, was seen standing in freezing weather outside the west end of the Boston and Maine train station in Rollinsford, New Hampshire, in January 1854. The station agent, who had sold her a ticket to Maine an hour before, asked her if she needed help and if she were in pain, and suspected (from her odor and the fact that her shoes were wet) that she was in labor, but she refused help. A passerby urged her to enter the station and escape the cold, but she would not speak and remained crouching by the station. She left on the next train. It was discovered two days later that she had delivered her child as the train arrived, and that she had strangled it with her bare hands and covered it and the afterbirth with snow before she made her escape. She was never found.¹¹

It is hard to escape the conclusion that most neonaticides, like the one at the Rollinsford station, were willful murders, belated terminations of unwanted pregnancies. Babies were delivered in privies and dropped into the sewage below to drown. They were thrown in wells, abandoned in factory yards, buried in manure piles, deposited in the trash (only to be discovered by workers at city dumps), and drowned in rivers and ponds. Most neonaticides occurred in a town or city with frequent train service, confirming the theory of K. H. Wheeler (1997), based on evidence from nineteenth-century Ohio, that the transportation revolution played a critical role in increasing the number of neonaticides. From the 1830s on, authorities found it increasingly difficult to identify the mothers of murdered neonates, who arrived in town anonymously on a canal boat or railroad, gave birth to their children, murdered them, and fled before an alarm could be given.

Not all neonaticides conformed to this new, brutal pattern. A number still involved young unmarried women who tried with more or less success to conceal their pregnancies from their parents or employers and to give birth privately and silently in their rooms, in outbuildings, or in the woods. But more and more neonaticides looked like abortions in their physical violence. That may help explain why neonaticides followed the same pattern as abortion deaths, rising steadily from the beginning of the nineteenth century and

exploding after the Civil War (Mohr 1978). Neonaticide and abortion may have been driven by the same imperatives.

The rarest of all kinds of child murder, the murders of unrelated children were also more frequent from the mid-1850s to the early 1870s. The reason is clear: children started to kill children. In 1855, Nancy Plummer, a thirteen-year-old girl from Grafton, Vermont, gave arsenic-laced candy to several younger children, one of whom, seven-year-old Emma Heath, died. Plummer confided to a confederate before the crime that she was curious to watch the children die, and she exhibited “no feeling” of remorse.¹² In 1860, in Proctorsville, Vermont, a young French boy thrashed a six-year-old Irish boy so severely in a fight that the latter died.¹³ In 1865, in Hinsdale, New Hampshire, the eight-year-old son of P.W. Taylor grabbed his older brother’s loaded gun and told an Irish girl, who was playing in the front yard, “to go in the house or he would shoot her.” She refused, and when she failed to obey after he repeated his demand, he fired, “the whole charge taking effect in the girl’s head, killing her instantly.”¹⁴ In 1866, in St. Albans, Vermont, a ten-year-old boy beat a six-year-old to death in a fight,¹⁵ and in 1867, in Newport, Vermont, a boy was thrown to the floor at school during a scuffle at recess and beaten to death with his chair.¹⁶ The violence was clearly imitative. It occurred in the very decades that the nondomestic adult homicide rate tripled in northern New England (Table 5), and perhaps in the nation at large. Children, both immigrant and native-born, poisoned, shot, and beat their peers to death for seemingly trivial reasons, usually to settle a small quarrel. The causes of the midcentury surge in nondomestic violence require a separate analysis, but it is important to note that nondomestic child homicides followed the pattern of nondomestic adult homicides, just as neonaticides, infanticides, and domestic murders of children followed abortions. These patterns are clear and nonrandom.

Much work, quantitative and comparative, remains before historians can speak with complete confidence about the history of child murder. Questions remain, including why child murders, like most kinds of murder, were rarer in New England than elsewhere in the United States. But the history of child murder can be written, as long as historians consult a variety of sources and pay close attention to the changing character and circumstances of the murderers they discover.

Appendix A: Homicide Estimates

The data on homicides are drawn from a variety of sources: newspaper articles, diaries, letters, local histories, coroners' reports, vital records, court records, and court case files. Some important documents have not survived, but thanks to the overlap of various records, enough information remains to offer a fairly complete count of the homicides and suspected homicides that drew public notice in New England. Murders, except for those of newborn children, were difficult to conceal, and once suspected, they attracted the attention of relatives, neighbors, coroners, reporters, and magistrates. Homicides thus left more traces in the historical record than other violent assaults.

The goal has been to estimate the number of deaths that resulted, intentionally or unintentionally, from assaults. The data thus include homicides that resulted from assaults that were legally justified (that is, committed in self-defense or in the execution of official duties) and that caused death indirectly (that is, by inducing a fatal coronary seizure or the drowning of a victim fleeing from an assault). At the same time, the data do not include all cases in which persons were indicted or convicted of homicide, because the surviving evidence reveals in several cases that the deaths were the result of suicide, accident, or natural causes. Uncertain cases, where homicide was the possible but not probable cause of death, are not included in the homicide data (except in cases of neonaticide), although they will be included in the data files that will be archived over the next few years with the Inter-University Consortium for Political and Social Research and with the National Institute of Justice, so that scholars can make their own decisions about how to classify such cases. Most uncertain cases concern victims of drowning, who may have suffered severe bodily injuries before or after they drowned, and victims of poisoning, who may have killed themselves or have been killed by others. The number of uncertain cases is small compared to the number of probable and certain homicides. Their inclusion would not alter the trends in the data.

The most important sources for studying homicides in New Hampshire and Vermont are court records, case files, and inquests. The records of Hillsboro, Grafton, Merrimack, Rockingham, Strafford, and Sullivan Counties in New Hampshire are at the New Hampshire State Archives, Concord, New Hampshire; the records of Addison and Orange Counties in Vermont are at the Department of Public Records, Middlesex, Vermont; and some records of

Chittenden County, Vermont, are at Special Collections at the University of Vermont Library, Burlington, Vermont. The records of the Council of Safety of Vermont, July 1777 to March 1778, are in Walton 1873. The other surviving court records are at their respective county courthouses in New Hampshire and Vermont.

New York courts had jurisdiction in Vermont from 1764 to 1774. The records of Albany County are at the Albany County Hall of Records, Albany, New York; the records of Charlotte County are at the New York State Library, Albany, New York; the records of Cumberland County are at the Windham County courthouse, Newfane, Vermont. The records of Gloucester County are published in the *Proceedings of the Vermont Historical Society* (1926).

The court records are not in perfect condition. The court records of Bennington County, Vermont, were destroyed by fire in 1850, and the records of Coos County, New Hampshire, in 1885. The early records of Washington County, Vermont, were poorly kept, and the records of Carroll County, New Hampshire, 1840–61, have been lost. Most of these deficits can be addressed through other sources, such as the annual journals of the General Assembly of Vermont, which in the early nineteenth century reported the charge and the defendant in every felony case that was brought before a grand jury during the preceding year, whether or not the bill was found. The loss of the Coos County records, however, cannot be made up from other sources until after the Civil War, so the data do not include homicides in Coos County from the county's founding in 1805 through 1865. Gaps of two to eight years appeared in the records of all but one county court during the Revolution. These gaps also cannot be made up, because other sources neglected all but politically motivated homicides. The gaps in the Coos County and Revolutionary-era records were addressed by reducing the populations at risk of homicide by the appropriate amounts.

Coroners' inquests did not survive systematically in Vermont after 1793 and in New Hampshire after 1824. Complete or near-complete runs survive thereafter for some counties, however, so the estimation techniques below can be used. The surviving inquests reveal that inquests were seldom the sole surviving record of homicides, and when they were, the homicide was invariably a neonaticide or the murder of an adult by a relative who was mentally ill.

The court records, inquests, and case files of colonial Connecticut (in-

cluding New Haven) and Massachusetts (including Maine) are described in Hoffer and Hull 1981 and in Dayton 1995. A portion of the records have been lost for Connecticut, 1650–60, and for Massachusetts, 1644–92, but substantial evidence remains from even those periods. The data on Connecticut were compiled by Cornelia Dayton of the University of Connecticut, and the data on Massachusetts by Cornelia Dayton and me, with the assistance of Robb Haberman and Brian Carroll of the University of Connecticut, Alexis Antracoli of Brandeis University, and Eliza Clark of Harvard University.

Newspapers were the other important source of data on homicides. The study relies on a systematic reading of the surviving issues of the following newspapers:

- Boston Gazette*, 1719–97
Boston News-Letter, 1704–76
Burlington (Vt.) Free Press, 1822–80
(Hartford) Connecticut Courant, 1764–97
(New Haven) Connecticut Gazette, 1755–90
Amherst (N.H.) Farmer's Cabinet, 1803–20
Walpole (N.H.) Farmer's Museum, 1793–1810
(Portsmouth) New Hampshire Gazette, 1756–1820
(Concord) New Hampshire Patriot, 1818–80
Dover (N.H.) Phoenix [and successors], 1793–1829
Rutland (VT.) Herald, 1792–1880
(Bennington) Vermont Gazette [various titles], 1783–1820

Additional newspapers from Vermont and New Hampshire were consulted in the search for more information on particular cases, which more than doubled the number of newspapers read systematically from the mid-1790s to 1880. Newspapers were the best sources for studying homicide, particularly after 1840, when they replaced the courts as the primary recorder of suspicious or violent deaths, in most every case with the full cooperation of legal authorities, including coroners, prosecutors, and attorneys for the defense. More than half of all households in northern New England subscribed to a weekly newspaper by 1830 (Gilmore 1989: 193–95, 447 n. 11). Such newspapers employed a large number of informants and correspondents to report on local events, correct erroneous reports, and so on. Some newspaper accounts of homicide proved sensationalized or false, but contemporaries recognized

with some humor that nearly every one of those reports came from a single source—the *Boston Globe*, whose correspondents were paid by the piece and who competed for space in the newspaper.

Vital records proved the most disappointing sources for locating homicides. Every homicide identified in the vital records was already identified in another source, which made it impossible to generate an independent list of homicides to complement those drawn from court papers and from newspapers. The vital records for New Hampshire, 1850–80, are at the Bureau of Health Statistics, Department of Health, Concord, New Hampshire. The vital records for Vermont, 1857–80, are at the Department of Public Records, Middlesex, Vermont.

Appendix B: Population Estimates

Raw population totals for New Hampshire and Vermont from 1790 through 1900 are taken from the published volumes of the U.S. Census, supplemented by information on the age and gender distribution of foreign-born whites available in the Integrated Public Use Microdata Series (IPUMS) samples of the 1850, 1860, and 1870 censuses. Population totals for New Hampshire and Vermont prior to 1790 are from Holbrook 1981: 10; 1982: xii. Totals for the black population prior to 1790 are from Bureau of the Census 1975: 2: Series Z 1–19. The age and gender distribution of the population before 1790 is determined by extrapolation and interpolation, using the 1800 census for the white population and the 1820 census for the black population, together with the Vermont census of 1771 (Holbrook 1982: xviii) and the New Hampshire censuses of 1767 and 1773 (Bureau of the Census 1909: 149–54). The results of the extrapolations to 1760, 1770, and 1780 were constrained for the white population, so that the ratio of male to female children aged 0 to 9 did not exceed 1.06. The gender imbalance was remedied by moving surplus males to the age 10 to 15 cohort, a plausible move, given that the surplus of males aged 0 to 15 was likely caused by a surplus of male farm laborers aged 10 to 15 on the Vermont and New Hampshire frontier. The gender imbalance among children was not corrected for the black population, given the preference of New England slaveowners for purchasing male children (Piersen 1988: 14–22) and the small size of the black population, which made wide swings in gender ratios more common and statistically plausible. The population of foreign-

born whites was estimated at 1% of the white population in 1830 and 2% in 1840, with the same age and gender distribution as the population of foreign-born whites in 1850.

Most studies of homicide rates in British North America and in the United States use the raw population totals from published censuses to determine the population at risk of homicide. That approach has merit. The British colonial censuses of the 1760s and 1770s and the U.S. censuses from 1790 through 1920 were remarkably complete, given the logistical challenges that census takers faced (Wells 1975: 32–35; Rutman 1975; Parkerson 1991: 514–15; King and Magnuson 1995: 460; Magnuson 1995). Population totals derived from these censuses can be reproduced easily and checked for accuracy.

Each of these censuses, however, suffered to some degree from underenumeration (i.e., the failure to list particular individuals or households) and from overenumeration (i.e., the listing of particular individuals or households two or more times). Scholars have yet to reach a consensus on the extent of underenumeration or overenumeration. They agree, however, that census takers were more likely to overlook the members of certain groups: infants, the poor, the foreign-born, African Americans, Native Americans, the geographically mobile, older women (especially if unmarried, divorced, or widowed), persons living in large cities or remote rural areas, and persons living in communities experiencing rapid population growth (Parkerson 1982: 107; 1991: 514; Steckel 1988; 1991: 594; King and Magnuson 1995: 460–64). Differences in the rates at which the members of different social groups were enumerated can confound comparisons of homicide rates over time and among social groups. It is thus important for scholars who study homicide over long periods of time or among various social groups to consider the potential effect of enumeration errors.

Scholars employ two basic methods to determine the degree of underenumeration and overenumeration in past U.S. censuses. The first is demographic. Coale and Zelnick 1963, Coale and Rives 1973, and Hacker 1999 use stable population theory to reconstruct the native white population from 1880–1950, the black population from 1880–1970, and the native white population from 1850–1880. They use life tables, estimates of mortality and fertility, and adjustment factors for age heaping to determine enumeration rates for males and females at each age. The three studies find that the net rates of underenumeration were low. From 1880 through 1920, they varied from 6.5%

to 7.5% for native-born whites and from 9% to 16% for blacks (Coale and Zelnick 1963: 179–80; Coale and Rives 1973: 21). From 1850 through 1880, they varied from 6.4% to 9% for native-born whites.

The censuses showed a slight improvement in 1880. That was the year in which the Census Bureau improved the organization of the census by transferring supervision of the census from federal marshals to census supervisors, who were appointed, trained, and supervised by the Census Bureau itself. The censuses showed no improvement in enumeration rates from 1880 through 1920, which is consistent with the findings of historians of the census (Knights 1991: 518; Magnuson and King 1995: 27–29; M. J. Anderson 1988: 78–115; King and Magnuson 1995: 460; Magnuson 1995: 107–78, 238). Infants and older women were most likely to be undercounted.

The second method scholars use to determine the extent of under- and overenumeration is record linkage. D. P. Davenport (1985), C. A. Ginsburg (1988), P. R. Knights (1991), J. M. Adams and A. B. Kasakoff (1991), and others compile lists of known residents from tax lists, maps, genealogies, and other sources. They then determine the proportion of the residents (usually adult white males) on those lists who can be traced to the nearest census. These studies find much higher rates of underenumeration than do demographic studies: 11% to 15% for native-born adult males in the Northeast, one of the best enumerated groups in the entire population (Steckel 1991: 588). Enumeration rates are far lower in the Midwest, in the South, among unmarried women over the age of 20, and among African Americans (Adams and Kasakoff 1991; Pleck 1979: 215; Davenport 1985: 10–11).

The differences between the low estimates of demographers and the higher estimates of historians stem from differences in method (King and Magnuson 1995). Actual enumeration rates are higher than those found in record linkage studies. Errors in censuses or other lists can make linkage impossible, as can the intervention of migration (or death) between the taking of a census and the creation of the list with which the census is compared. But demographic studies also have limits. Their accuracy depends on the accuracy of their assumptions. Coale and Zelnik 1963 and Coale and Rives 1973 assume that mortality was constant from 1850 to 1900, the year from which they draw their earliest mortality data. Recent studies indicate, however, that mortality was considerably higher in the mid-nineteenth century than in 1900 (Haines 1998; Pope 1992; Preston and Haines 1991; Fogel 1986). That sug-

Table B1 Enumeration factors for native-born whites, male and female, in the United States: Adams and Kasakoff 1850; and Hacker, North and South 1850

Ages	A&K WM	H WM N	H WM S	A&K WF	H WF N	H WF S
0–4	0.784	0.875	0.876	0.773	0.861	0.851
5–9	0.821	0.935	0.956	0.774	0.928	0.890
10–15	0.822	0.945	0.992	0.876	0.958	0.993
16–25	0.813	0.969	0.961	0.858	0.974	0.986
26–44	0.783	0.913	0.936	*	0.856	0.891
45+	0.855	0.993	0.953	*	0.892	0.802

gests that the mid-nineteenth century censuses missed fewer people in the nineteenth century than these demographic studies indicate.

J. D. Hacker (1999) improves dramatically on the enumeration estimates of other demographic historians. Hacker takes advantage of improved mortality tables and of the Integrated Public Use Microdata Series (IPUMS) samples of the 1850, 1860, 1870, and 1880 censuses to develop precise estimates of under- and overenumeration for the native-born white population in the North and South.

Table B1 compares the estimates of net underenumeration (underenumeration less overenumeration) of the native-born white population in 1850 from Adams and Kasakoff 1991 (529, 530, 537), the most comprehensive genealogical record-linkage study to date, with the estimates from Hacker 1999: 124–25 for the native-born white population, North and South. Hacker finds that enumeration levels for males and females were nearly equal up to age thirty, but that older females were less well enumerated than older males. Hacker's findings are consistent with those of previous studies. He cautions, however, that the enumeration differential between older females and males may be overstated, if women were more likely to die in the nineteenth century in their thirties and forties than model life tables currently allow. Adams and Kasakoff's estimates show the same rough equality in enumeration for males and females up to age 30. Adams and Kasakoff are not able, given their genealogical sources, to calculate underenumeration factors for married women, so their enumeration factors for older women are not comparable to Hacker's. Adams and Kasakoff conclude, however, as does Hacker, that older women were the most likely people to be missed by census takers.

The enumeration estimates in this study for the population in northern New England are based on Hacker's estimates for the Northern native-born white population and Cole and Rives's estimates for the native-born black population. Enumeration estimates based on Adams and Kasakoff's estimates were also calculated to determine whether the higher estimates of underenumeration in linkage studies altered the shape of the homicide curves. They did not.

The estimates from the demographic studies of Hacker and of Cole and Rives must be used, however, in conjunction with estimates from linkage studies to determine enumeration levels for foreign-born whites and for regions within the North, such as northern New England. Demographic studies must trace cohorts from birth, so they cannot study the foreign-born. They must also confine cohorts over the course of their lives to specific geographical regions. Because few native-born inhabitants of the United States migrated to other countries and because native-born Northerners and Southerners migrated almost exclusively within their home regions in the nineteenth century, it is possible to estimate their enumeration levels. But demographic studies cannot yet estimate enumeration levels for subregions within the North, such as northern New England, because so many natives left each subregion and so many non-native Northerners moved in.

It is necessary nonetheless to adjust the estimates of Hacker and of Cole and Rives to account for three things: the high levels of enumeration in northern New England, relative to other regions in the North; the lower levels of enumeration for the foreign-born; and the lower levels of enumeration for African Americans in the North than in the South. Linkage studies, because of their methods, overstate regional and nativity differentials in enumeration. That is why this study halves the differentials found in those studies. But linkage studies can estimate the direction and relative magnitude of those differentials.

The enumeration factors for native-born whites in the North and for blacks are multiplied by 1.031 to account for the high level of enumeration in northern New England (Table B2). Adams and Kasakoff (1991: 535) find that enumeration rates were highest in northern New England. According to their linkage study, males and females were 6.2% more likely than the national average to be enumerated in northern New England and 2.5% more likely in southern New England (Table B2). The resulting enumeration rates for

Table B2 Regional and nativity multipliers

	Linkage Study Estimates	Revised Estimates
Region: Whites		
Northern New England	1.062	1.031
Southern New England	1.025	1.013
Mid-Atlantic	.994	.996
Old Midwest	.962	.981
Region: Blacks		
North	.9	.95
Nativity	.9	.95

native-born adult males in southern New England estimated by their study are consistent with the findings of other linkage studies. Ginsburg (1988: 77) locates 81.5% of the adult male taxpayers on the 1870 census in the seven towns she studied in Franklin County, Massachusetts (84% if the results from the poor census in Montague, Massachusetts are dropped). Knights (1991: 520–1) finds 85.3% to 89% of a sample of native-born adult male residents of Boston, Massachusetts in the censuses of 1860 and 1870.

Adams and Kasakoff have few individuals in their genealogical sample from the Midwest or the West, but the data they do have suggest that underenumeration rates were highest in those regions. Adams and Kasakoff's estimates of regional differences within the North are consistent with Parkerson 1982: 103–5, 107. D. H. Parkerson found that “rapidly growing communities” had the highest rates of underenumeration in mid-nineteenth century New York state, because of “ineffective record keeping, large concentrations of immigrants with unusual names and language problems, enumerators who were unfamiliar with large segments of the population, and great intra-city residential movement,” a pattern that Parkerson discovered was borne out by studies of frontier communities in Illinois, Oregon, and California. Crimmins 1980 finds similar regional differences in mortality registration.

The enumeration factors for foreign-born whites in northern New England were calculated by multiplying the unenumeration factors for native-born whites in each age and gender category by .95 (Table B2), an estimate based on Knights 1991: 521, which finds that enumeration levels for native-

Table B3 Enumeration factors, northern United States, 1850

Ages	n-b WM	f-b WM	NWM	n-b WF	f-b WF	NWF
0–9	.902	.857	.793	.891	.847	.791
10–15	.945	.898	.865	.958	.910	.860
16–25	.969	.920	.846	.974	.925	.834
26–44	.913	.867	.792	.856	.813	.806
45+	.993	.943	.940	.892	.847	.710

Note: The enumeration factors in this table must be multiplied by the regional factors in Table B2 to obtain the factors for specific subregions within the North, such as northern New England.

born white males varied in Boston from 85% to 89%, and for foreign-born white males from 77% to 80%. The relative rates at which men and women of various age categories were underrepresented in the census may have been different for the foreign-born, but to date no research is available to determine if that was the case.

The factors for blacks in northern New England were calculated by multiplying the median enumeration factors for the black population, 1880–1920, in Coale and Rives 1973: 21, by .95—the same multiplier used to arrive at the factors for foreign-born whites (Table B2). The resulting rates of enumeration for northern New England are higher, as expected, than those in the linkage studies of Pleck (1979: 215) for Boston and of Davenport (1985: 10–11) for rural New York state. The rates are consistent, however, with the findings in linkage studies that blacks were less likely to be enumerated than whites and less likely to be enumerated in the North than in the South (with the possible exception of the 1870 census).

The resulting enumeration factors for 1850 appear in Table B3. The factors for 1850 are used for all earlier censuses, because the basic organizational structure of the census remained the same.

The estimates for the white population of colonial New England, 1630–1760, are modified from Bureau of the Census (1909: 9), following R. Thomas and T. Anderson (1973), who find that growth rates did not vary as widely from decade to decade as assumed in Bureau of the Census (1975: 2: series Z1–Z8). The estimates were further modified from 1700 to 1760, so that New England's white population would by 1790 and 1800 match the totals for the federal censuses of those years, corrected for underenumeration. The age and gender distribution of the population is interpolated between the dis-

tributions for 1690 (Thomas and Anderson 1973: 654) and 1800 (the federal census corrected for underenumeration). The interpolated age and gender distributions match those in the colonial censuses of the 1760s and 1770s (corrected for underenumeration) to within .1%. The age distribution between 1630 and 1690 is interpolated between the distributions for 1620–49 (Archer 1990: 480) and 1690 (Thomas and Anderson 1973: 654). The gender distribution of the population cannot be calculated prior to 1690, however, because the male/female ratios in Archer 1990: 480 are 1.5 or higher at all ages, even among young children.

The estimates of the black and Native American populations of colonial New England are less precise. The estimates for the black population are from Bureau of the Census 1975: 2: series Z1–Z8, multiplied by 1.213 to correct for underenumeration (based on the level of underenumeration of nonwhites in the 1820 census, the first to report age-specific populations for nonwhites). The estimates for the Native American population are from Snow 1980: 31–42, Snow 1988, Cronon 1983, Ghere 1997: 257, and the colonial censuses of the 1750s, 1760s, and 1770s (Bureau of the Census 1909: 150–83). The latter censuses were also multiplied by 1.23, and the population loss during King Philip's War, 1675–6, was estimated at 25%. The data are too sparse to attempt reliable estimates of the age and gender distributions of the black and Native American populations.

The homicide rates in this essay are based on the revised population estimates. It is important to note, however, that the same historic trends would appear if the homicide rates were based on raw population figures from the Bureau of the Census. Historic rises and declines in homicide rates are too large to attribute to enumeration errors.

Appendix C: Estimates of the Population of Newborns and Infants

Estimates of the populations of newborns and infants at risk of homicide are more difficult to calculate than estimates of older populations. Raw population totals must be corrected not only for underenumeration, but for mortality, given the large number of children under the age of 10 who died between census years. It is understandable, given the limits of historical knowledge about child mortality, that studies of neonaticide and infanticide have not

taken mortality into account. Recent studies of mortality including Preston and Haines 1991, Haines 1998, Fogel 1986, Kunze 1979, and Pope 1992 suggest, however, that adult mortality—and in all likelihood child mortality—declined dramatically from the early seventeenth century to the late eighteenth century, and rose again by the mid-nineteenth century, only to begin a long, steady decline after 1880. If these changing levels of child mortality are not taken into account, neonaticide and infanticide rates will be systematically inflated in periods of high mortality and deflated in periods of low mortality.

The only mortality series available for the entire period, 1760–1900, estimates the life expectancy of white males who reached age 10 (e_{10}). That series can be created by joining the series of Haines 1998 (158–60) and Fogel 1986 (511) in 1860, the year in which the series overlap and intersect. The Fogel-Haines e_{10} series parallels the e_0 and e_{10} series of Kunze 1979 (113), 1800–1885; the e_{20} series of Pope 1992 (277), 1780–1900; and the U.S. model and West model e_0 series of Haines 1998, 1850–1900. R. W. Fogel (1986: 512) notes that his preliminary e_0 and e_5 series parallel his e_{10} series through the 1860s. It appears that for white males, infant and child mortality varied together over time with adult mortality.

These series are national in scope, but they rest heavily on data on New Englanders and their descendants prior to 1850. The series thus reflect early mortality trends in New England, as demonstrated by the regional breakdown in Pope 1992 (286). By the mid- to late nineteenth century, however, mortality in New England exceeded that in the rest of the nation because of the density and urbanity of New England's population (Preston and Haines 1991). But mortality in northern New England was lower than in southern New England and close to the national average for the white population. Using the method of Bureau of the Census 1921 (338–42), federal census and state mortality statistics can be used to determine age-specific mortality rates (q_x) for male and female children in Vermont and New Hampshire, 1900–1902 (Table C1). S. H. Preston and M. R. Haines (1991) find the method effective in estimating child mortality for the white population in states that met the requirements for inclusion in the federal Death Registration Area—an effective proxy for total child mortality in New Hampshire and Vermont, given the small size of the states' nonwhite population. These mortality rates are slightly above the national average for white newborns and slightly below the national average

Table C1 Age-specific child mortality rates in New Hampshire and Vermont, 1900–1902

Age	Males $q(x)$	Females $q(x)$
0	.147208	.121606
1	.027664	.023077
2	.015368	.013589
3	.007683	.009011
4	.005945	.007404
5	.004529	.004783
6	.003925	.003833
7	.003565	.003370
8	.003349	.003153
9	.003279	.003083
5–9	.018647	.018222

for white children aged 1 through 9, according to Haines's U.S. model and West model of mortality (Haines 1998: 160, 164–65).

The spliced Fogel-Haines series for life expectancy at age 10 can be extended to the seventeenth and early eighteenth centuries by interpolating between that series and the estimate by Archer (1990: 495) of life expectancy at age 10 for white males born in New England between 1620 and 1649.

The combined Archer-Fogel-Haines series for life expectancy of males at age 10 (Figure 6) and the corresponding Model West life tables from Coale et al. 1983 were used to approximate infant and child mortality for white males and females from 1760 through 1900. The resulting mortality tables were then employed, using the method of Shapiro 1982 (598–600), to estimate the number of children born in the decade previous to each census from the number of native-born children aged 0 to 9 reported in each census (who represented the survivors among the native children born in the previous decade). The mortality tables were used to estimate the factor by which the number of surviving children should be multiplied to obtain a mortality-adjusted accurate count of the number of births in the preceding decade (Table C2). The number of infants (under age 1) at risk of infanticide in the previous decade was estimated by a similar method, assuming that infants died at a lower rate from month to month during the first year of life, following the life table in Bureau of the Census 1921 (343). The number of

Table C2 Multipliers for determining the number of neonates and infants at risk of homicide from decadal census counts of white children aged 0–9

Year(s)	e_{10}	Male Neonates	Male Infants	Female Neonates	Female Infants
1630–59	46.90	1.257	1.136	1.231	1.127
1660–69	47.66	1.242	1.127	1.217	1.119
1670–79	48.43	1.227	1.119	1.203	1.111
1680–89	49.19	1.212	1.110	1.190	1.104
1690–99	49.96	1.197	1.102	1.177	1.096
1700–1709	50.72	1.182	1.093	1.163	1.087
1710–19	51.49	1.168	1.085	1.149	1.079
1720–29	52.25	1.155	1.078	1.136	1.072
1730–39	51.60	1.166	1.084	1.147	1.078
1740–49	52.60	1.149	1.075	1.131	1.068
1750–59	52.70	1.147	1.074	1.129	1.067
1760–69	53.80	1.130	1.064	1.112	1.058
1770–79	55.00	1.112	1.054	1.095	1.048
1780–89	56.45	1.092	1.043	1.076	1.037
1790–99	56.05	1.097	1.046	1.081	1.040
1800–1809	54.10	1.126	1.062	1.108	1.055
1810–19	52.10	1.158	1.079	1.139	1.073
1820–29	51.25	1.173	1.088	1.153	1.082
1830–39	50.60	1.185	1.095	1.165	1.089
1840–49	48.45	1.227	1.119	1.203	1.111
1850–59	47.85	1.238	1.125	1.213	1.117
1860–69	49.50	1.206	1.107	1.185	1.101
1870–79	48.93	1.218	1.113	1.195	1.106
1880–89	48.95	1.217	1.113	1.195	1.106
1890–99	50.19	1.193	1.099	1.173	1.094
1900	50.43	1.188	1.096	1.168	1.091

infants at risk of infanticide was thus determined by adding .31 times the estimated number of children who died during the first year of life to the estimated number of children who survived to age 1.

Because periods of high white child mortality coincided with periods of high white neonaticide and periods of low white mortality with periods of low white neonaticide, the neonaticide curve in Figure 1 is less steeply sloped than the curve would have been if changing levels of child mortality not been taken into account. The curve indicates nonetheless that white neonaticide

Table C3 Multipliers for determining the number of neonates and infants at risk of homicide from decadal census counts of black children aged 0–9

Year(s)	Male Neonates	Male Infants	Female Neonates	Female Infants
1760–69	1.181	1.092	1.158	1.085
1770–79	1.156	1.077	1.134	1.071
1780–89	1.128	1.062	1.107	1.054
1790–99	1.135	1.066	1.114	1.059
1800–1809	1.175	1.089	1.152	1.081
1810–19	1.220	1.113	1.196	1.107
1820–29	1.240	1.126	1.216	1.121
1830–39	1.257	1.136	1.233	1.131
1840–49	1.316	1.171	1.286	1.163
1850–59	1.331	1.179	1.300	1.172
1860–69	1.286	1.153	1.261	1.149
1870–79	1.303	1.162	1.275	1.156
1880–89	1.303	1.162	1.275	1.156
1890–99	1.303	1.162	1.275	1.138
1900	1.303	1.162	1.275	1.134

rates changed dramatically over time. The changes in white neonaticide rates are not statistical artifacts of changing levels of child mortality.

It is more difficult to estimate infant and child mortality rates for blacks. Studies to date have consistently found higher rates for blacks than for whites, but little is known about black mortality prior to 1880 (Preston and Haines 1991: 81–85, 134–36; Steckel 1986; Ewbank 1987). Black mortality rates, unlike white mortality rates, did not improve from 1880 to 1900 (Preston and Haines 1991: 83–84); but given the absence of earlier data, it is impossible to know if black and white mortality trends diverged before 1880. The West model tables for 1900 in Haines 1998 (165–66) can be used to calculate the ratio of black to white mortality multipliers in 1900. The resulting black multipliers can be held constant back to 1880. Prior to 1880, however, there is no alternative but to have the black multipliers follow the white multipliers at the ratios established for 1880. The resulting multipliers for determining the number of black neonates and infants at risk of homicide appear in Table C3. Given the impossibility of determining with any precision the age and gen-

der structure of the Native American population and of the African American population prior to 1760, their decadal birth rates could not be determined.

Notes

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- 1 See, for example, the inquests in the case files of the Rockingham County courts, A: 4075, 5188, 10018, and of the Hillsborough County courts, 542112, at the New Hampshire State Archives; and *St. Johnsbury Caledonian*, 27 December 1867 and 1 January 1868.
- 2 The smoothed curves in this essay were created by using the default resistant smoother in the statistical package MINITAB. On resistant smoothers, see Velleman and Hoaglin 1981 (159–81); McNeil 1977 (119–30); and Roth 1998 (21–23).
- 3 Note that the relationship between the curves for neonaticides and birth rates is too strong to be a statistical artifact of increases and decreases in the proportion of all children who are firstborn. To the degree that the birth rate increases because of an increase in family size, the proportion of all children who are firstborn will decline. Since firstborn children are at greatest risk of being murdered at birth, a rise in the birth rate because of increasing family size will produce a proportionate decrease in the neonaticide rate if the proportion of firstborn children who are murdered remains constant. Such an effect could account at most, however, for a third of the decline in the neonaticide rate in the seventeenth and early-eighteenth centuries. And the actual impact of that effect on the neonaticide rate is less, given that many widows and women separated from their husbands committed neonaticide against children who were not firstborn, and that the birth rate increased in part because of an increase in the proportion of women who bore children. At any rate, the longterm decline and rise in neonaticide rates persists if the rates are calculated in relation to the number of women at risk of committing neonaticide (either women of childbearing age, aged 16 to 44, or young women, aged 16 to 25), rather than in relation to the number of newborn children.
- 4 On Esther Rogers, see Rogers 1701; Suffolk File 52: 5073, at the Massachusetts State Archives; Thomas 1973 (1:451); and Cohen 1993 (59–66). On Ann Bussell, see records of the Massachusetts Superior Court of Judicature, 1721–25: 62, at the Massachusetts State Archives, and Suffolk File 141: 15710. On Elizabeth Oliver, see

- Hammond 1943 (293–4, 191, 199, 289, 346, 419). On Ruth Briggs, see Connecticut Archives (microfilm collection of legislative papers), Crimes and Misdemeanors, Ser. 1, I:32–33, Connecticut State Library, Hartford; Bradstreet 1855 (44); and Norton 1996 (29–37). On Sarah Smith, see Mather 1699 (103–5); records of the Massachusetts Superior Court of Judicature 2: 193–94; Marshall 1884 (153); and Williams 1699. On Elizabeth Emerson, see Mather 1699 (99–102); Noble 1901 (1:357); records of the Massachusetts Superior Court of Judicature 1:50; Thomas 1973 (1:282, 310); Suffolk File 31: 2636; and Ulrich 1982 (195–201).
- 5 State v. Kate Poole, Court of Common Pleas (Hillsborough County), Records, v. 1851–2: 440, and Files, April term 1852; and *New Hampshire Patriot*, 5 May, 2 June and 23 February 1852.
 - 6 State v. Lucy A. Merrill, Windsor County Court, Records, 2d series, v. 1: 149; Vermont Supreme Court (Windsor County), Divorces, v. 1 (February 1840–59): 65; and Davis 1874 (92).
 - 7 State v. Ebenezer Kingsbury and State v. Lydia Pratt, Windham County Court, Records, v. 21: 15, 78, 170; and *Burlington Free Press*, 11 May 1868, and 30 April and 5 May 1869.
 - 8 State v. Mary Jane Binfield, Rockingham County Court, Files, C: 1556.
 - 9 Orange County Court Records, v. 12: 132.
 - 10 Inquest on the body of a dead infant, 13 April 1879, Bennington County Court, Files, 1879–80.
 - 11 Inquest on the body of an infant, 30 January 1854, Court of Common Pleas (Strafford County), Files, 1853–57.
 - 12 *Burlington Free Press*, 24 July 1855; and *Bellows Falls Vermont Phoenix*, 21 July 1855.
 - 13 *Burlington Free Press*, 21 June 1860.
 - 14 (*Concord*) *New Hampshire Patriot*, 12 April 1865.
 - 15 *Rutland (Vt.) Daily Herald*, 17 December 1866.
 - 16 *St. Johnsbury (Vt.) Caledonian*, 4 October 1867; and *Burlington (Vt.) Free Press*, 9 October 1867.

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