

Religion, Religiosity, and the Decline of Marital Fertility in the United States, 1850-1930*

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In their introduction to a new edited collection of articles on religion and fertility decline in the Western world, Frans van Poppel and Renzo Derosas lament historical demographers' failure to examine the link between religion and demographic behavior systematically. Because of this failure, "the actual contribution of religion to the changes in the demographic landscape of the West remains obscure." The difficulty, they observe, is not a lack of interest among historians but a lack of data. Although information on religious affiliation, church attendance, and religiosity become increasingly more common in the twentieth century, there is little comparable data on religion and fertility for the period coinciding with the onset of the fertility transition. To overcome data limitations, van Poppel and Derosas suggest that historians "be innovative in their research, and where possible to use indirect indicators for the relevant dimensions." Finally, they encourage researchers to use individual-level data containing biological information, socioeconomic status, education, ethnicity, and other variables so that the interactions between religion and other aspects of a person's position in society can be disentangled (van Poppel and Derosas 2006:10-11).

This paper attempts to follow that advice. It investigates economic, demographic, and religious correlates of marital fertility in the nineteenth-century United States using the recently released 1850 and 1880 IPUMS census samples (Ruggles and Sobek 1997). The censuses were conducted near the onset (in the case of the 1850 census) and midpoint (in the case of the 1880

* Note: This paper remains a work-in-progress. I hope to extend the analysis to the 1860, 1870, 1900, 1910, 1920, and 1930 census years prior to the annual meeting of the Population Association of America March 28-30, 2007. A

census) of the U.S. transition in marital fertility, from an estimated total marital fertility rate of 8.3 in the period 1847-49 to an estimated 6.9 in the period 1877-79 (Hacker 2003). In addition to its excellent coverage by the IPUMS series, the wide diversity of religion in the United States makes it an ideal laboratory to examine the impact of religion on fertility decline. Although the United States census has never asked individuals their religious affiliation, frequency of church attendance, or other measures of religion and religiosity, indirect indicators of religion and parental religiosity can be inferred from the census data. First, county-level census tabulations of “church seats”—the aggregate seating capacities of various church denominations in a given area—can be introduced as contextual variables in regressions modeling marital fertility. Previous studies have shown that counties with a high proportion of church seats held by Congregationalists, Universalists, Unitarians, Society of Friends (Quakers), and Presbyterians were associated with lower child-woman ratios. Because these denominations stressed autonomy of thought, education, and a prominent role for women, it has been suggested that “liberal” religious beliefs may have reduced cultural impediments to limiting family size (Leasure 1982; Smith 1994).

Second, children’s names—available in IPUMS samples before 1940—can be used to construct a proxy of parental religiosity. Studies of early American child-naming patterns suggest that parents invested a great deal of thought into naming their children, and that their choices reflected attitudes about themselves and the underlying values of their society (Zelinsky 1970; Smith 1984; Smith 1985; Smith 1994; Tebbenhoff 1985; Fischer 1986; Main 1996; Rutman 1986; Wyatt-Brown 1982; Lieberman and Bell 1984). This paper assumes that, all else being equal, nineteenth-century parents with a higher proportion of biblically-named children

revised version of the paper will be e-mailed to all session participants prior to the meeting.

were either: (a) more religious than parents with a higher proportion of non-biblically-named children or, (b) were less open than other parents to sources outside of religion for authoritative positions on various topics. This inference is admittedly crude, and is undoubtedly subject to significant measurement error. Perhaps the largest source of error in inferring parental religiosity from children's names is the common practice, well-documented for the colonial period, of naming children after close kin, especially their parents or grandparents. As discussed in more detail later, however, the eighteenth and nineteenth centuries witnessed a dramatic decline in parent- and grandparent-centered naming. With the decline in familial naming, and the absence of any state regulations on the use of names, choices were increasingly free to be driven by cultural and religious values. The popularity of names shifted dramatically, as parents chose names of national figures, characters in popular novels, or simply pleasant sounding names, a shift noted by many nineteenth-century Americans. W.W. Hibben, for example, observed that "One loves a high-sounding appellation—another, one full of romance...while others, with a pious reverence for the noble characters of Bible story, keep up the old immortal names" (1857, p. 608). Despite the changes in fashion, many parents undoubtedly continued to rely on familial names or chose biblical names for reasons other than their religious significance. Nevertheless, enough parents explicitly turned to secular or religious sources to suggest that child-naming data provides a unique opportunity to explore the important topic of religiosity and its impact on demographic behavior, provided we have enough cases for analysis.

Correlates of Fertility Decline in the United States

Scholarly interest in the religious determinants of fertility has waxed and waned across the twentieth century. Although demographers have long been interested in fertility differentials

by religious affiliation—see Bouvier and Rao 1975:2-3 for an overview of early studies—declining Roman Catholic/Protestant differentials had greatly reduced scholarly interest by the 1970s (McQuillan 2004; Kertzer 2006). Standard demographic transition theory, with its heavy emphasis on economic modernization, was the dominant explanation of fertility decline. In the United States, most quantitative work on nineteenth-century fertility decline was conducted by economic historians, who emphasized the U.S. transition from a predominately rural, sparsely populated, agricultural country to an urban, densely populated, industrialized nation. A great deal of effort went into correlating state- and county-level child-woman ratios with population density and various measures of land availability (Easterlin 1976; Forester and Tucker 1972; Leet 1977; Yasuba 1962). As population density increased, the availability of inexpensive farmland declined, making it more difficult for parents to endow each male child in a large family with an adequate farmstead. Couples are believed to have rationally adapted their reproductive strategies to these economic incentives, either by limiting the number of births within marriage or through the Malthusian mechanism of delayed marriage. Social historians, in contrast, while agreeing that the economic transformations of the nineteenth century played a role in declining fertility, tended to stress the importance of social and cultural determinants. Rapid social, religious, and political change following the Revolution and in the early national period led to new ideas about sexuality, health, education, childhood, and the role of women in society and the family. Within this modernizing context, American women redefined themselves as the moral guardians of society and exercised their authority within the domestic sphere to limit their number of children (Degler 1980; Kerber 1980; Nissenbaum 1980; Smith 1974).

In the late 1970s and 1980s the European Fertility Project (EFP) helped refocus the attention of demographers on cultural correlates of historical fertility decline. The EFP famously

concluded that the onset of marital fertility decline in Europe was not correlated (or at best very modestly correlated) with socioeconomic factors (Coale and Watkins 1986). Most nations in Europe experienced the onset of marital fertility within a decade or two of each other, despite wide differences in levels of urbanization, industrialization, and infant mortality. What little variation existed in the timing and pace of marital fertility decline instead appeared to be by linguistic boundaries, suggesting that cultural barriers played a critical role in the adoption of conscious family limitation behavior and small-family norms (Knodel and van de Walle 1979). The work of Ron Lesthaeghe, in particular, suggested an alternative “ideational” model of fertility decline with cultural values and secularization having the primary influence on fertility (Lesthaeghe 1977, 1980, 1983, 1992). Following on the heels of the publication of the EFP summary volume, results from the World Fertility Survey of less-developed countries (Cleland and Wilson 1987)—which also reported weak or insignificant correlations between socioeconomic variable and fertility—provided what Charles Hirschman has characterized as a “double whammy” to standard demographic transition theory (1994).

It was widely recognized, of course, that the problem of ‘early’ fertility decline in the United States might be related to many causal factors; few researchers insist that either economics or culture alone explains the entire transition to smaller families. Most investigators would probably agree with Ansley Coale’s three preconditions of fertility decline, first formulated over forty years ago: (1) there has to be available means of contraception at a reasonable cost, (2) reducing births has to be socially and economically beneficial, and (3) birth control must be culturally acceptable (cited in Parkerson and Parkerson 1988). Efforts have thus been made to integrate economic and cultural explanations of the American fertility decline. Historical demographers, for instance, routinely include a few proxies of culture in their analyses

of fertility differentials, such as state- and county-level measures of literacy, ethnicity, and race. These variables generally have proven to be significant predictors of cross-sectional fertility differentials. States and counties with higher proportions of literate, native-born white women are associated with lower child-woman ratios; those with higher proportions of non-literate, foreign-born, and black women are associated with higher ratios.

Coale's third precondition for fertility decline—that birth control must be culturally acceptable—has directed several scholars to investigate the relationship between religion and fertility. The Bible, after all, frequently repeats God's injunction to be fruitful and multiply. High fertility is equated with God's blessing, barrenness with his displeasure. Of particular interest is the account in Genesis of Onan, who reportedly “spilled [his ‘seed’] on the ground” to avoid impregnating his brother's wife. God's subsequent execution of Onan can be read as an admonition to avoid *coitus interruptus*, the most accessible and perhaps most frequently used method of birth control in the preindustrial era (Santow 1995). While we cannot be certain that early Americans interpreted the Bible as forbidding family limitation strategies, it is perhaps noteworthy that opponents of birth control in the nineteenth century labeled the practice of withdrawal as “conjugal onanism” (Brodie 1994, p. 59).¹ Moreover, as Janet Brodie highlights in her excellent history of contraception and abortion in the nineteenth-century United States, antebellum advocates of contraception and their apparent audience were religious liberals or atheists. Robert Dale Owen, Charles Knowlton, Abner Kneeland, Frederick Hollick, and Edward Bliss Foote, for example, all considered themselves freethinkers and were among the leading advocates of birth control. Knowlton was arrested for obscenity for the publication of *Fruits of Philosophy* (1832), which advocated douching with a spermicidal solution (Brodie 1994). (The book was later at the center of the well-known 1877 Bradlaugh/Besant obscenity trial in England

when Charles Bradlaugh, a free thinker elected to Parliament, and Annie Besant, a writer who rejected conventions of marriage, intentionally published the book to challenge existing obscenity laws.) The prominence of religious freethinkers in the early promotion of contraception techniques and the support of their right to publish by religious liberals has led Daniel Scott Smith to conclude that “traditional religious sentiments were an obstacle to the public discussion and possibly the private means of family limitation” (1994b).

Certainly, the relationship of religion, birth control, and fertility has been well established in the twentieth-century United States. A fertility differential between Roman Catholics and Protestants was documented as early as the 1920s and remained significant until Catholic adherence to the church’s traditional position against contraception declined in the 1960s and 1970s (Groat, Neal, and Knisely 1975; Westoff and Jones 1979).² The baptismal rate of members of the Lutheran Church-Missouri Synod, one of the three major Lutheran bodies in the United States, was also appreciably higher than the national birth rate for most of the twentieth century. Perhaps not coincidentally, spokesmen for the Synod vigorously opposed all forms of birth control through the 1930s and did not officially condone the use of contraceptives until the 1960s (Graebner 1969).³ Finally, the fertility of Hutterites, a small Anabaptist sect in the United States and Canada, was also noted as being distinct in the twentieth century, due in part to Hutterite religious convictions against the use of contraceptives (Eaton and Mayer 1954).⁴ Although there was reduced interest in religious determinants of demographic behavior after fertility differentials between Catholics and Protestants narrowed in the 1960s and 1970s, social scientists have recently returned to the study of religion’s influence on fertility and other demographic behavior. This newer research emphasizes the multiple pathways through which religion may influence demographic behavior (Lehrer 2004; McQuillan 2004; Lynch 2006).

Much of this new research has been influenced by the work of Calvin Goldscheider, who suggested that observed correlations between religion and fertility were often spurious, a result of the groups' different socioeconomic characteristics, not religion. This spurious nature of this "characteristics approach" often becomes apparent when education, income, and residence are controlled in multivariate approaches. Even if differences in fertility persisted after controlling for socioeconomic factors, Goldscheider warned against a too easy identification of fertility differentials with particular church teachings on birth control and childbearing (what Goldscheider termed a "particularized theology" hypothesis). Indeed, Goldscheider argues that the direct role of religious theology in promoting pronatal ideology or discouraging the use of contraception likely is of secondary importance to the indirect role of religion in reinforcing family values and segregated gender roles (2006).

Unfortunately, there are few reliable data on the relationship between religion and fertility before the twentieth century. One exception is the detailed genealogical and church records compiled by the Church of Later Day Saints. These data show a positive association between religious affiliation with the Mormon church and completed family size, especially among women born in the first half of the nineteenth century. The importance of Mormon pronatalism became relatively less important among women born in the later half of the century, however, as growing urbanism led to a long-term increase in the importance of socioeconomic factors (Bean, Mineau, and Anderton 1990). Another exception to the lack of reliable data on the relationship between religion and fertility in the nineteenth century is a remarkable 1885 city directory for St. Charles, Illinois, which details each woman's religious affiliation and number of children ever born. Using these data, Parkerson and Parkerson found significant differentials between women of "liturgical" and "pietistic" religious orientations, even after controlling for

age, occupation of spouse, age at marriage, and nativity.⁵ They reason that Pietists' belief in individual free will "nurtured a secular individualism offering women both an alternative to the domestic environment and a realistic option to limit their fertility." This individualistic focus was completely at odds with conservative liturgical groups, such as Roman Catholics, whose emphasis on structured prayer and adherence to church hierarchy "reinforced traditional ideas of deference and the acceptance of an ascribed position in the secular world." Moreover, the emphasis of Pietistic faiths on the need to nurture their children to a state of grace resulted in a movement to have fewer children but of "greater spiritual quality" (1988).

Several studies have introduced proxies of religious sentiment into quantitative analyses of aggregate census data, an approach that this study will extend to the individual-level with the 1850 and 1880 IPUMS samples. J. William Leasure noted that the proportion of "church seats" held by five selected religious groups in 1850 was easily the most powerful predictor of change in state child-woman ratios between 1800 and 1860. The five denominations—Congregational, Unitarian, Universalist, Presbyterian, and Society of Friends—were chosen because they tended to be less dogmatic, more tolerant, and more democratic than other groups, such as Roman Catholic and Episcopalian, which were more hierarchical, and Baptist and Methodist, which were more socially restrictive. Leasure reasoned that membership in the five selected denominations should indicate groups of people who were more receptive to a sense of control in their lives, and that this feeling of control gradually extended to include their reproductive lives (1982; 1983). Unlike Parkerson and Parkerson's distinction of pietistic and liturgical faiths, the five denominations identified by Leasure correspond with known regional variations in child-woman ratios. Congregational, Unitarian, and Universalist churches were especially prominent in New England, the region with the lowest child-woman ratios, and weakest in the South and

West, the regions with the highest ratios. Presbyterians were relatively stronger in the Midwest, the region associated with the second lowest child-woman ratios.

In a recent analysis of cross-sectional variations in the 1860 child-woman ratio, Daniel Scott Smith also relied on the proportion of church seats held by individual denominations as independent contextual variables. Smith's study improves on Leasure's by treating selected denominations separately, adding additional independent variables, and shifting the analysis to the county-level, thereby reducing the potential covariance of religious denominations with other state-level variables. The results suggest that denominations most clearly identified with New England—the Universalists, Unitarians, and Congregationalists—had the largest impact on child-woman ratios. Counties with higher proportions of Presbyterians also had lower child-woman ratios in the Old Northwest (Midwest), where Presbyterians closely cooperated with Congregationalists. Surprisingly, the prevalence of the Society of Friends (Quakers)—the fifth religious denomination identified by Leasure as stressing autonomy of thought and an active role for women—was not significantly correlated with lower fertility, suggesting to Smith that it was the “Yankee” religious and cultural tradition that was associated with fertility decline (1994b).

BIBLICAL NAMING PATTERNS IN AMERICA, 1630-1880

Early American historians have documented that New England Puritans radically broke from English child-naming customs in the early seventeenth century, switching from a pool of Teutonic and Old English names, such as William, George, Robert, Agnes, and Catherine—to a naming system that drew almost exclusively from the Bible—such as John, Joseph, Benjamin, Samuel, Mary, Rebecca, Sarah, and Ruth. Over 90 percent of children born in seventeenth-century Hingham, Massachusetts, for example, had a name mentioned in the Bible, a figure that

did not fall significantly until the second half of the eighteenth century (Smith 1985). In contrast, just 39 percent of children born in Virginia between 1650 and 1709 were given biblical names (Rutman and Rutman 1986). Biblical names were not chosen randomly; New England parents favored names associated with pious individuals possessing strong moral qualities (Fischer 1986).

Although the revolution in naming practices initiated by early New Englanders indicates the importance of the Bible to migrating Puritans, the continued high usage of biblical names in subsequent generations may have had more to do with familial than religious reasons. Daniel Scott Smith has observed that 90 percent of first-born daughters and 79 percent of first-born sons in seventeenth-century Hingham received the names of either their parents or grandparents, virtually assuring that their name would be of biblical origin (1985). Hingham may have been somewhat exceptional in its emphasis on parent-centered naming, as Gloria Main has recently shown in a study of New England genealogies. Even so, her results indicate that only 24 percent of first-born children of parents married between 1655 and 1674 were given names other than those of their parents or grandparents (1996). Children in colonial Virginia also received a high percentage of familial names, but in contrast to the pattern found in New England, Virginia children were more likely to be named after a grandparent than a parent (Rutman and Rutman 1986). Although the focus on first-born children probably accentuates the importance of parent- and grandparent-centered naming, the results suggest that given names in the late seventeenth and early eighteenth centuries are best viewed as familial rather than cultural indicators.

The eighteenth and nineteenth centuries witnessed a dramatic decline in parent- and grandparent-centered naming, however. Before 1770, roughly 80 percent of parents in Concord, Massachusetts gave their first name to one of their children; by 1810, the figure had fallen to less

than 30 percent. The use of grandparents' names also declined significantly. Before the mid-eighteenth century, 52 percent of grandparents' names were used again. After 1811, only 20 percent were passed on to the third generation (Fischer 1986). Data from Hingham, Massachusetts suggests a similar decline. Between 1861 and 1880, less than 25 percent of first-born daughters and 50 percent of first-born sons received the names of their parent or grandparents, down significantly from the levels observed in the seventeenth century (Smith 1985). Main's data do not extend into the nineteenth century, although the shift away from parent- and grandparent-centered naming is evident from the beginning of the eighteenth century. By the end of the eighteenth century, the number of first-born children given names other than their parents or grandparents had more than doubled (1996). No comparable data exist for other regions, although anecdotal evidence suggests that the practice of familial naming remained somewhat stronger in the nineteenth-century South, especially with male children, reflecting the importance of family lineage and the strength of the patriarchal order (Wyatt-Brown 1982, pp. 120-25).

With the decline in familial naming, parents' choices were free to be driven by cultural and religious values. Increasingly, names reflected secular influences, as parents bestowed their children with the names of war heroes, politicians, kings and queens, and even characters in popular novels. Some of the desire for change may have arisen out the rapid demographic growth of the colonies and the need to distinguish among individuals of the same surname (Smith 1994a). Osborne Howes, for instance, lamented in 1873 that there were nearly one thousand men named John Smith in New York City, "enough to prove the worth of this name...has been sadly diminished" (1873).⁶ The shift in child-naming practices was accompanied with a marked decline in the use of biblical names. Again, Hingham,

Massachusetts provides an example. Over 90 percent of the children born to parents married before 1701 in Hingham received biblical names. The figure fell to less than 60 percent of children born to marriages contracted between 1781-1820, and to less than 20 percent of children born to marriages from 1861-1880 (Smith 1985).

Analysis of names obtained from the 1850 and 1880 IPUMS samples suggests that the nineteenth-century decline in biblical names was not confined to New England. Figure 1, which reports the percentage of male and female biblical names among native-born whites of native parentage, charts a dramatic decline in the use of biblical names between 1780 and 1880.⁷ The percentage of males with biblical names plummeted from 67 percent in the 1780 birth cohort to well under 30 percent by 1880.⁸ The percentage of females given biblical names fell to less than 20 percent by 1880, although from a lower initial value (just over 50 percent) and on a more irregular trajectory.⁹ Figure 2, which plots the percentage of biblical names among white men of native-parentage born in New England and the original southern states, indicates that the decline in biblical names was not uniform across regions. The use of biblical names collapsed so quickly in the North that by the early nineteenth century a greater percentage of parents in the South were giving their sons biblical names. The differential between North and South reached its peak in 1860, just prior to the Civil War.¹⁰ Interestingly, the growing divergence of biblical names between New England and the South parallel regional trends in child-woman ratios.

Although the sustained drop in the use of biblical names supports an interpretation of secularization, the consensus on nineteenth-century religiosity is mixed. Religious historians have come to regard clerical lamentations of religious declension—once cited as proof of secularization—with growing suspicion. Indeed, many historians now stress the growing vitality of religion in all aspects of American's lives, especially in the period following the so-called

Second Great Awakening.¹¹ Recent studies suggest that the vast majority of nineteenth-century Americans regularly took part in religious services and, in marked contrast to Europe, rates of church attendance and membership were actually increasing throughout most of the century (Butler 1990, pp. 1-4; Finke and Stark 1992).¹² While valuable, church membership data do not discriminate between nominal and devoted members. Clearly, organized religion changed dramatically in the nineteenth-century America, often in ways more akin to secularization than “christianization.” R. Laurence Moore has noted that organized churches lost their ability to enforce moral sanctions during the century, even against their own church members. Moore also contrasts religion’s near monopoly over culture and public discourse during the colonial period to the dramatic growth of secular influences during the antebellum period. Plummeting printing costs led to an outpouring of non-religious reading material, including almanacs, advice literature, political pamphlets, newspapers, and romantic novels, which were eagerly consumed by an increasingly literate society. The sermon, once the principal form of public discourse, fell in status relative to new forms of public culture, including political speeches, concerts, theatre, circuses, and lyceum lectures. Although religious influences eventually established themselves in many of these new forms of commercial culture, religion was compartmentalized and in some contexts marginalized (1989; 1994). These changes were most evident in New England, the region experiencing the first and most dramatic decline in fertility.

At least one nineteenth-century minister felt that the revolution in child-naming reflected declining parental religiosity. Writing in the late 1850s, Reverend S. Phillips argued that

Christians now are too much under the influence of irreligious fashion. Instead of giving their children those good old religious names which their fathers bore, and

which are endeared to us by many hallowed associations, they now repudiate them with a sneer as too vulgar and tasteless. They are out of fashion, too common, don't lead us into a labyrinth of lovescrapes and scenes of refined iniquity, and are now only fit for a servant.

Hence instead of resorting to the bible for a name, these sentimental parents will pore over filthy novels, or catch at some foreign accent, to get a name which may have a fashionable sound, and a claim upon the prevailing taste of the times, and which may remind one of the battles of some ambitious general, or of the adventures of some love-sick swain, or of the tragic deeds of some fashionable libertine! (1865, p. 136).

In a book on manners published a few years later, Robert Tomes also equated parental piety with the use of biblical names, noting that “The pious are apt to turn to the Bible for a choice, and affix to their children, with an almost superstitious hope of sanctification, the names of some patriarch, saint, or apostle.” Tomes also identified romantic novels as the source of many new names, such as Olivia, arguing that “The sentimental are apt to be guided by the last novel thing they have read, and to borrow the name of a favorite hero or heroine for the beloved son or daughter of their house.” Patriotic parents, on the other hand, turned to national names, such as “Patrick in Ireland, George in England, Andrew in Scotland, Hermann in Germany, Louis in France, and Washington and Franklin in the US” (1873, pp. 257-8).¹³

Despite this qualitative support, the available evidence suggests that the use of biblical naming practices should be viewed as a crude indicator of parental religiosity. Michael Haan has observed that the use of biblical names in Canada were only weakly correlated with

“conservative” and “liberal” denominations (Haan 2005). Moreover, some names, such as John, Thomas, Mary, and Elizabeth, were traditional English names and were arguably so common that they had lost their religious connotations (Main 1996, pp. 17-20). The desire of parents to name their children after themselves or other kin—though significantly reduced by the mid nineteenth century—was also a factor in the choice of some names. The presence of these and myriad other factors will result in some parents of “low” religiosity using biblical names for their children and others of “high” religiosity using non-biblical names.

Measurement error can be reduced by simply eliminating children named John, Thomas, Mary, and Elizabeth and children named after their parents before calculating the proportion of children biblically named. There are a few risks in doing so, however. Removal of these names will increase the importance of those remaining, potentially emphasizing factors that cannot be measured with census data, such as the practice of naming children after their grandparents. Removing names from the analysis also has the negative effect of reducing the number of cases available for analysis. The following analysis of marital fertility, therefore, separately observes the impact of the proportion of own children biblically named using three different definitions. First, all own children with valid names are used to calculate the proportion biblically named. Children named John, Thomas, Mary, and Elizabeth are then eliminated from the calculation and, finally, children named after their parents are also eliminated.

We should also bear in mind that few historical variables, including most of the independent variables used by historical demographers for the assessment of fertility determinants, measure exactly what researchers wish. We must often settle for proxies: Literacy substitutes for education, occupation for income, land ownership stands for wealth, and the ratio of improved to unimproved farm land approximates the availability of cheap farm land. Parents’

choice of biblical names for their children need only indicate high parental religiosity more often than it represents low parental religiosity for the biblical name variable to have some analytical power. The evidence suggests that it does.

DETERMINANTS OF MARITAL FERTILITY, 1850 AND 1880

The following analysis of marital fertility relies on ordinary least squares regression of a subsample of women present in the 1850 and 1880 IPUMS samples.¹⁴ The study is restricted to native-born white women of native parentage, the first subgroup of the population known to significantly reduce their fertility. Because the analysis focuses on marital fertility and relies on children's names and the sex of the eldest child as independent variables, I further limit the study to women ages 20-39, who are currently married to native-born spouses of native parentage, have children with valid names present in the household, and whose eldest child is between the ages of 5 and 9.¹⁵ The samples are therefore limited to fecund women. The universe is perhaps overly restrictive, but it has the benefit of minimizing potential biases in census data, which record only family members currently present in the household.

The dependent variable is the number of own children present under age 5. This figure does not reflect infant and childhood mortality or the probable underestimation of children in the census; it is therefore a lower-bound estimate of marital fertility and may incorporate unknown biases. The actual biases are probably small, however. While only a few studies have investigated determinants of infant and childhood mortality in the mid-nineteenth century, they find only small or insignificant differentials (Davin 1993; Steckel 1988).¹⁶ Preston and Haines report significant urban/rural differentials in infant mortality in the late nineteenth century, however, so we should remain cautious that differentials in marital fertility between urban and

rural areas may simply reflect differentials in infant and childhood mortality (1991). Finally, it should be noted that some of the potential effects of mortality biases on the other covariates can be alleviated by including dichotomous variables for region and urban/rural residence in the regression equations.

As discussed earlier, a number of variables have been correlated with state- and county-level child-woman ratios, and many of these are included in the regression analyses that follow. The independent variables include four dummy variables for wife's age group (not in age group equals zero, in age group equals one), wife's literacy (cannot read and/or write equals zero, can read and write equals one), dummy variables for husband's occupation (professional, farm, other), land ownership (no real estate owned equal zero, greater than zero dollars of real estate owned equals one), the proportion of own children with biblical names, sex of the eldest child (female equals zero, male equals one), eldest child attending school (not attending school equals zero, attending school equals one), urban residence (rural equals zero, urban equals one), and dummy variables for census region. County-level contextual variables include the proportion of church seats held by selected religious denominations, the ratio of improved farm acreage to total farm acreage, and the log of the county's population density.¹⁷ The model specifications aim to control as much of the structural variation in marital fertility as possible, thereby allowing the impact of religion on fertility to be more precisely estimated.

It is expected that coefficients on age groups younger than the age 35-39 reference group will be positive, reflecting the age-profile of "natural" fertility. Women who are literate are expected to have fewer children, as are women who live in New England, in urban areas, or who have husbands that have non-farm occupations and children in school. Because many agricultural societies exhibit a preference for male children, it is hypothesized that parents whose

eldest child is female are less likely to limit fertility. Following the logic that traditional religious beliefs may act as an impediment to adopting family limitation practices, parents who chose a higher proportion of biblical names for their children are expected to have higher marital fertility. Women who live in areas with a high proportion of church seats held by “liberal” religious denominations, in contrast, are expected to have lower marital fertility. There was no expectation of signs on the remaining county-level contextual variables, as these variables may relate more directly to age at marriage and proportions marrying than to fertility limitation within marriage.

Mean values of the dependent and independent variables are summarized for the 1850 IPUMS sample in Table 1 and the 1880 sample in Table 2. The dependent variable—the number of surviving children ages 0-4—fell from 1.45 to 1.31 (10 percent) between 1850 and 1880, suggesting that the nineteenth-century decline in child-woman ratios was related, at least in part, to a decline in marital fertility.¹⁸ Dramatic differences in the dependent variable are evident among regions, with New England having the lowest number of children ages 0-4, and the South having the highest number in each census year. The mean values of the independent variables used in the analysis also vary widely among regions. In general, New England is distinguished from the other regions by a lower proportion of married women in the younger age groups, a higher literacy rate, a lower proportion of biblically named children, and a higher proportion of Congregational, Unitarian, and Universalist church seats. The South is characterized by a higher proportion of married women in the younger age groups, a higher proportion of spouses engaged in farming, a lower level of population density, a higher proportion of biblically named children, and a higher proportion of Methodist and Baptist church seats. The mean values for most independent variables in the Mid-Atlantic and Midwest are between those observed in New

England and the South, with mean values of independent variables in the Mid-Atlantic typically closer to those in New England.

Regression equations are estimated for each census year. Table 3 depicts the results of four models for women in the 1850 IPUMS sample, and Table 4 shows the results of similar models for women in the 1880 sample. Models 1 and 2 calculate the proportion of biblically named children using all own children age 0-9 with valid names present in the household. Model 3 eliminates all children named John, Thomas, Mary, and Elizabeth from the calculation, resulting in a slightly smaller population of women with validly named children. Model 4 also eliminates all children named after a parent.

The results show that most expectations were met although a few were not. Marital fertility generally followed the expected age profile. Married women younger than the age 35-39 reference group had more surviving children under age of 5 present in the household, although coefficients were larger and more significant in 1880, possibly suggesting an increasing tendency among native-born white women to terminate childbearing at older ages. Wife's literacy was a significant determinant of marital fertility in 1880 but not in 1850. The dummy variables for husband's occupation yielded the expected negative coefficients and were significant in both census years, indicating lower marital fertility among women whose husbands had non-farm occupations.¹⁹ The coefficients on the proportion of county farmland improved also had the expected negative sign in all models, but are significantly different from zero only in the 1850 regressions. Interpretation is complicated, however, by the inclusion in the model of urban residence, husband's occupation, and the log of the county's population density, which are somewhat intercorrelated with land availability. Coefficients on the variables eldest child attending school and eldest child's sex had the expected signs, but were significantly different

from zero in only a few models.²⁰

The church seating variables showed mixed results. The presence of Congregationalists, Unitarians, and Universalists resulted in negative coefficients in both census years, even when region is held constant, suggesting a possible relationship between these liberal denominations and lower marital fertility. With the exception of the presence of Universalists in 1850, however, only the coefficients for the Congregational seats variable are significant. The presence of Quakers, Presbyterians, Methodists, Episcopalians, and Roman Catholics produced no significant results, despite Quakers and Presbyterians (in the Midwest) being occasionally associated with lower marital fertility and Catholics being associated with higher fertility. The selection of only native-born women in 1850 and native-born women of native parentage in 1880, however, probably removes most Catholic women from the study. The presence of Lutherans was positive and significant in both census years, indicating higher levels of marital fertility. As mentioned earlier, spokesmen for the Missouri Synod, one of the largest Lutheran groups in the nation, vigorously opposed all forms of family limitation in the late nineteenth and early twentieth centuries. Synodical leaders argued that birth control was at odds with the purpose of marriage and the status of women derived from *Schoepfungsordnung*, the divine order of nature established by God at creation. Opposition was more muted and scattered in the mid nineteenth century, but it may have been a factor in the relatively late adoption of family limitation strategies by the Lutheran laity. C. F. W. Walther (1811–1887), the Synod’s founding patriarch, publicly condemned the use of birth control on a few occasions, and an anonymous tract against contraception was published by the Synod in 1868 (Graebner 1969). Despite official opposition, however, by 1908 the Lutheran Witness was forced to admit the fact that “the Lutheran portion, German and otherwise, is no longer exempt [from the movement to small

families]” (quoted by Smith 1994b, p. 6).

The regional clustering of some religious denominations may influence the results. Removal of the county-level church seating variables from the regression equations, in fact, strongly affects the dummy variable for New England residence in both census years. Despite being the region with the lowest level of marital fertility, the coefficient for New England in Model 1 is positive in 1850 and insignificant in both years. Removal of the church seating variables in regression Model 2 causes the coefficient to switch to the expected negative sign in 1850 and become significant in both census years. It may be that because of New England’s unique religious composition—it contained no Lutheran congregations and was home to the vast majority of Congregation, Unitarian, and Universalist congregations—the inclusion of church seating variables work in the regression as a proxy for region.²¹ Other variables collinear with region in 1850, such as literacy and biblical name, are similarly affected. One could conclude that what was unique about New England was its religious culture, and that its unique religious outlook was responsible for creating an environment in which ideas about family limitation could take root and grow. Other interpretations are also possible. Perhaps some unmeasured variable strongly correlated with region but unrelated to religion was ultimately responsible for the New England’s lower fertility.

Finally, the biblical name variable yielded strong results. Coefficients were positive and significant in all regressions in both census years, confirming expectations that parents’ choice of biblical names for their children was associated with higher fertility. The variable remained a significant correlate of marital fertility in regression Models 3 and 4, which eliminated common religious names and names of children named after their parents, reducing concerns that familial naming practices may bias the results. The coefficients were somewhat smaller in Models 3 and

4, however, providing indirect evidence that parents who continued to rely on traditional or familial names were also less likely to control their fertility. One could hypothesize that parents who relied on unique forenames saw their children as individuals, while parents who relied on traditional or familial names saw their children more as members of a lineage or family, and that the later conceptualization of children was associated with higher marital fertility. Census data, unfortunately, do not allow us to determine if children's names had familial sources beyond the immediate family, so we cannot determine whether the practice of naming children after more distant kin, such as grandparents, aunts, and uncles, significantly bias the coefficients. Given the continued significance of the results in Model 4, and the decline in familial naming in the nineteenth century, however, it is unlikely that lineal-familistic attitudes sufficiently explain the robust relationship observed between biblical naming and family size. Instead, the results support the hypothesis that child-naming practices are a reasonable proxy of parental religiosity, and that parental religiosity played an important role in determining marital fertility in nineteenth-century America.

CONCLUSION

Demographic historians have long suspected that cultural factors played an important role in the decline of fertility in the United States. Unfortunately, "culture" is difficult to define and even more difficult to measure. This study attempted to integrate one component of culture, religion, into a quantitative analysis of marital fertility in 1850 and 1880. While no direct assessment is available of parents' religious affiliation or religiosity, indirect measures proved to be significantly correlated with the marital fertility of women in samples of the 1850 and 1880 IPUMS samples. Analysis of county-level church seating capacities indicated that the presence

of Congregationalists was associated with lower marital fertility while the presence of Lutherans was associated with higher marital fertility. Congregational churches have been identified by religious historians as among the most “liberal” denominations in the nation, and Lutheran churches, particularly members of the Missouri Synod, among the most “conservative,” suggesting that liberal religious beliefs reduced cultural impediments to adopting family limitation strategies. The fact that early advocates of birth control in antebellum America were religious liberals or freethinkers further supports this conclusion.

Naming data included in the IPUMS samples also suggests a close relationship between religion and marital fertility. Parents who chose a higher proportion of biblical names for their children were found to have higher marital fertility, even after controlling for other variables, such as age, occupation, literacy, land availability, and region. The results support evidence that individuals with traditional religious beliefs often opposed the public discussion and private use of contraception. Despite some lingering concerns that the proportion of biblically named children may reflect familial naming practices—thus conflating parental religiosity with a lineal-familistic orientation—the evidence indicates that parental religiosity was an important determinant of marital fertility in nineteenth-century America.

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¹ Daniel Scott Smith recounts a divorce suit in 1710 Massachusetts, in which a woman charged that her husband practiced Onan's "abominable sin because he feared the charge of children" (1994b). Susan Klepp has noted that biblical terms such as "fruitful" were frequently used by early American men and women to describe the pregnant body, and that these terms fell out of use in the early Republic, when birth rates began their sustained decline (1998).

² The fertility differential between Catholic and non-Catholics was often noted before the 1920s but never systematically studied. Janet Farrell Brodie, for example, observes that the late nineteenth century physician Horatio Storer "attributed the large families of immigrants to their religion and commended the Catholic church for its watchfulness concerning birth control, explicitly contrasting it with the silence of the Protestant clergy" (1994, p. 154).

³ Despite its name, the Missouri Synod is a national group and the ninth largest religious body in the United States. It was of nineteenth-century German immigrant origin, and was the most conservative of the three major Lutheran bodies (Graebner 1969).

⁴ Joseph Eaton and Albert Mayer documented an intense hostility to birth control among the Hutterites in the 1950s, who referred to the practice as "murder." One Hutterite woman argued that "'worldly' people who engage in the practice will have to face on the Judgement Day the hundreds of unborn children whom they have 'killed'." Eaton and Mayer contend that the Hutterite taboo against birth control "is strongest against the use of mechanical or pharmaceutical birth control devices," although "coitus interruptus is also regarded as sinful" (1954, pp. 48-50). Hutterite fertility is among the highest ever reliably recorded, and, as a result, has proven useful to demographers as a baseline of "natural fertility" (Henry 1961).

⁵ The small number of cases probably explains Parkerson and Parkerson's reliance on two broad denominational categories, which may obscure important differences among the various pietistic and liturgical faiths.

⁶ Another nineteenth-century observer indicated that the proliferation of common names such as *John Smith* may have created problems in delivering the mail, suggesting a practical reason for a shift in names (Hooper 1872).

⁷ The use of census returns as a source of naming data presents some unusual challenges. One drawback is the possible enumeration of nicknames, "pet" names, initials, and other non-standard forms (see, however, the comments by the editor of *The Ladies Repository*, who believed that many children were actually being christened with diminutive names (Unknown 1867)).

Perhaps the greatest challenge facing the researcher is the need to standardize multiple spelling variations. Many names appear to have been spelled phonetically or simply misspelled, and difficult to read handwriting and typing mistakes during data entry adds to a dizzying variety of names that appear unique but are, in fact, the same. I have attempted to standardize the most obvious misspellings and simple diminutives were standardized to their non-diminutive form. Thus *Jno*, *Johnn*, *Jonh*, and *Johnnie* were standardized to *John*. My approach was generally conservative. *Lizzie* became *Liz*, but *Eliza*, *Beth*, *Libby*, *Betsy*, *Betty*, *Lizabeth*, and *Liz* do not become Elizabeth. Illegible names, initials, and infants not yet named were excluded from the analysis. To determine which names were biblical, I relied on a list of “scripture proper names” in *Young’s Analytical Concordance to the Bible* (Young 1982) and Hanks and Hodges’s *A Dictionary of First Names* (1990).

⁸ A similar trend is obtained when limiting religious names to names that appear only in the Old Testament.

⁹ Gloria Main has observed a growing whimsy in the choice of girl’s names in eighteenth-century New England, as indicated by the growing formalization of diminutives and a tendency to use literary allusions. Naming sons, however, “remained a serious matter” (1996). Lieberson and Bell observed similar gendered naming patterns two hundred years later in their study of naming practices in New York between 1973 and 1985. Girls names tended to be more decorative, open to fashion, less concentrated and subject to more turnover (1992). Naming data from the 1850 and 1880 IPUMS samples show that the female naming pool was expanding faster than the male naming pool in the nineteenth century. Roughly half of all native-born white men born at the beginning of the nineteenth century shared one of 10 names, a figure that did not drop significantly until 1880, despite some turnover among the ten most popular names. Half of all native-born white women born in 1800 also shared one of ten names. The figure fell steadily over the course of the nineteenth century, however. By 1880, only 25 percent of all women shared one of the ten most popular names.

¹⁰ Unfortunately, census data can only shed limited light on whether the relative stability of biblical naming patterns in the South was related to a greater stability in familial naming practices. Too few children in the sample can be conclusively linked to their grandparents to determine regional levels of grandparent naming with any confidence. The level of parent naming, however, can be readily compared and indicates only small differences between the South and North. In 1850, among native-born white boys less than 10 years of age, with valid names, eldest siblings less than 10, and linked to native-born parents with valid names, only 10.3 percent shared their father’s name in the South, compared to 11.5 percent in the North. The respective percentages for white girls were even lower: 6.8 percent shared their mother’s name in the South compared to 8.3 percent in the North. In 1880, the percentages fell slightly. Of native-born white boys less than 10 years of age, with valid names, eldest siblings less than 10, and linked to native-born parents of native parentage with valid names, 7.9 percent shared their father’s name in the South, compared to 10.2 percent in the North. Again, the percentages of white girls sharing their mother’s name were lower: 3.9 percent in the South, and 5.3 percent in the North.

¹¹ Political historians have discovered that religious identification was an important determinant of voting behavior, and social historians emphasize the role of evangelical religion in the reform movements of the 1830s and 1840s (see, for example Ryan 1981).

¹² The shift in historiography corresponds with religious historians’ shift of subject from New England—where the theme of religious declension in most apt—to the frontier, which was characterized by enthusiastic revivals and the dramatic growth of evangelical religious denominations (Hatch 1989).

¹³ There was a noticeable increase in the number of boys named *Washington* and *Franklin* (George Washington and Benjamin Franklin) in the early national period, *Andrew* (Andrew Jackson) after Jackson’s election in 1828, and even *Lafayette* following the Marquis de Lafayette’s visit to the United States on the fiftieth anniversary of the Revolution. There was, however, no increase in the use of *Abraham* after Lincoln’s election or assassination, suggesting that the name had become too old-fashioned for parents to contemplate.

¹⁴ Other researchers have found ordinary least squares regression to be an appropriate technique when the dependent variable is number of own children (Haines and Guest 1995).

¹⁵ Unfortunately, the 1850 census did not enumerate parental birthplace. The 1850 IPUMS sample is therefore restricted to only native-born women with native-born spouses. Non-valid names include initials, illegible names, and infants not yet named.

¹⁶ Steckel detected small differences in the number of children appearing in linked samples of the 1850 and 1860 censuses. Losses (presumably through non-survival) among children ages 1 to 4 in 1850 were somewhat higher on the frontier than in other areas, but not for children age 0 (less than 1 year of age). Wealth did not appear to have a significant impact on survival. Survival was marginally lower for children age 0 of unskilled workers, but not for children ages 1-4. These results may themselves be biased, however, by uncertainties surrounding children’s work and living arrangements. Davin found no significant differentials in infant mortality by wealth in late-nineteenth-century Pittsburgh, leading him to characterize the period as an era of “egalitarian death.”

¹⁷ Because no aggregate statistics on church seats by denomination are available for 1880, I relied on the county tabulations included in the 1870 census. Roger Fink and Rodney Stark have shown that the relationship of church seats to members varied by denomination in 1890, when the census tabulated both variables (1986). I elected not to rely on their regression estimates to convert church-seating capacities into members, however, for several reasons. First, the regression estimates were made at the state level and therefore lose precision with smaller geographic units. Second, the denomination whose membership was most underrepresented by church seats, and would therefore be most affected by the regression estimates, was the Roman Catholic Church, which was composed largely of recent immigrants. The unadjusted count of church seats, therefore, probably more closely reflects the religious composition of native-born whites.

¹⁸ Temporal variations in infant mortality and under-enumeration of children probably bias direct comparisons of the number of surviving children ages 0-4 per married woman between 1850 and 1880.

¹⁹ In a recent study of northern farm women using the 1850 IPUMS sample, Charles Wetherell detected no clear evidence of family limitation, suggesting that the decline in marital fertility was initially confined to women whose husbands were engaged in non-farm occupations (1996).

²⁰ It is possible that rather than indicating parental preference for male children, the sex of eldest child variable reflects differences in sex-specific migration of families according to the mix of their children. Families with more male children are hypothesized to have been more likely to migrate to frontier/farming areas where fertility was higher (Hammel, Johansson, and Ginsberg 1983).

²¹ An old saying claimed that Unitarian preaching was limited to “the fatherhood of God, the brotherhood of man, and the neighborhood of Boston” (Smith 1994b, p. 17). In a recent study of 1881 Canada, Michael Haan found no impact of religious identification as Congregationalist, Unitarian, and Universalist on marital fertility (2005).

Figure 1. Percent biblical forenames, native-born whites of native parentage, by sex and birth cohort.

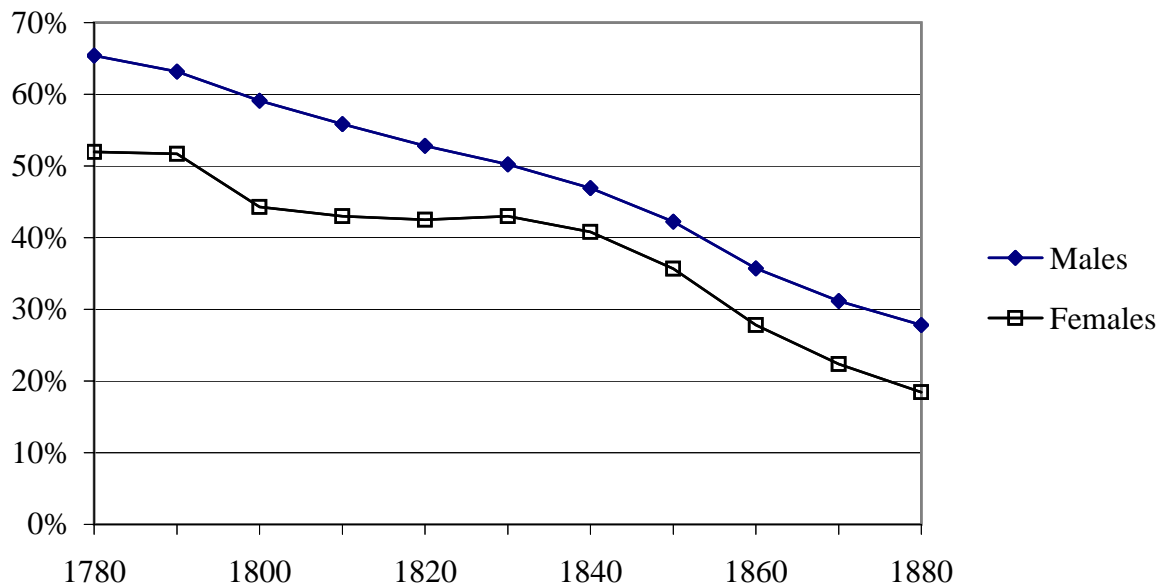


Figure 2. Percent biblical forenames, native-born white males of native parentage, by selected region and birth cohort.

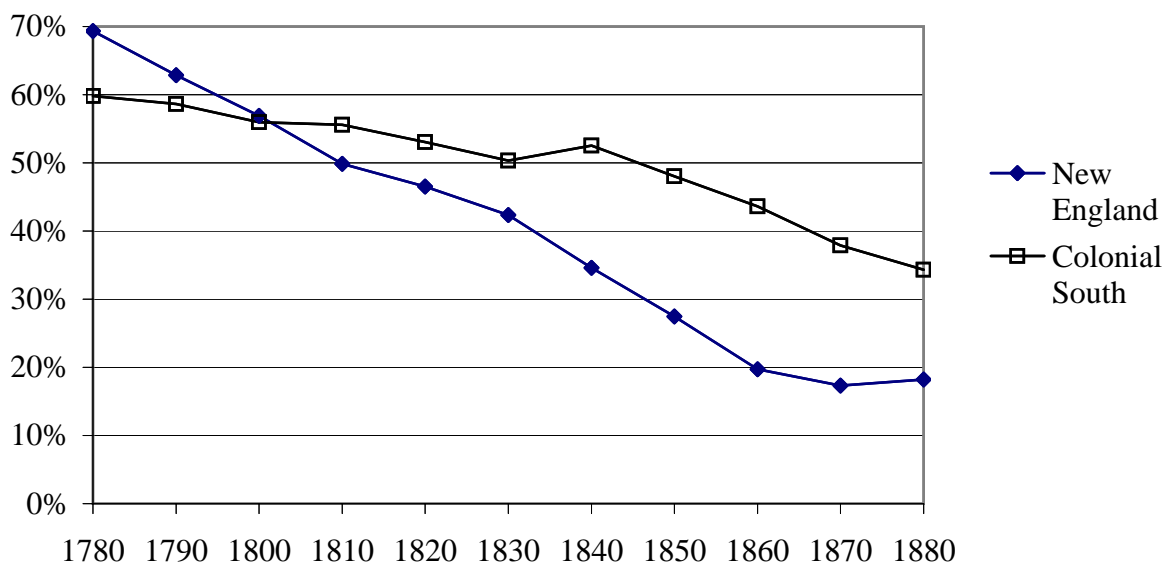


Table 1. Mean values of dependent and independent variables in 1850, by region.

Region	All regions	New Eng.	Mid-Atl.	Midwest	South
Dependant variable					
Number of children ages 0-4	1.45	1.10	1.33	1.54	1.64
<u>Wife's characteristics</u>					
Age					
20-24	0.15	0.08	0.13	0.16	0.20
25-29	0.46	0.37	0.45	0.50	0.46
30-34	0.30	0.41	0.33	0.26	0.26
35-39	0.09	0.14	0.09	0.08	0.08
Literate	0.87	1.00	0.96	0.86	0.76
<u>Husband's characteristics</u>					
Occupation group (1950 classification)					
<i>Professional, Technical</i>	0.03	0.03	0.02	0.03	0.03
<i>Farmer</i>	0.55	0.37	0.40	0.65	0.66
<i>All others</i>	0.42	0.59	0.58	0.32	0.30
Land ownership	0.55	0.57	0.50	0.62	0.53
<u>Children's characteristics</u>					
Proportion biblically named	0.42	0.33	0.40	0.44	0.48
Proportion biblically named, excluding John, Thomas, Mary & Elizabeth	0.31	0.25	0.30	0.32	0.34
Proportion biblically named, excluding above names and children named after parents	0.30	0.23	0.30	0.31	0.34
Eldest child male	0.51	0.53	0.51	0.50	0.52
Eldest child in school	0.54	0.84	0.67	0.52	0.31
<u>Geographic contextual variables</u>					
Urban residence	0.13	0.46	0.15	0.05	0.05
Population density (log 10)	1.60	1.83	1.96	1.45	1.33
Pct. county farm acreage improved	0.50	0.62	0.67	0.45	0.36
New England residence	0.13	----	----	----	----
Mid-Atlantic residence	0.27	----	----	----	----
Midwest residence	0.29	----	----	----	----
South residence	0.30	----	----	----	----
West residence	n.a.	n.a.	n.a.	n.a.	n.a.
<u>Religious composition of county</u>					
<i>Percent Congregational seats</i>	0.06	0.31	0.03	0.04	0.00
<i>Percent Unitarian seats</i>	0.01	0.06	0.00	0.00	0.00
<i>Percent Universalist seats</i>	0.02	0.06	0.01	0.01	0.00
<i>Percent Presbyterian seats</i>	0.15	0.02	0.21	0.17	0.14
<i>Percent Soc. Friends (Quaker) seats</i>	0.02	0.02	0.03	0.02	0.00
<i>Percent Methodist seats</i>	0.31	0.16	0.25	0.35	0.38
<i>Percent Baptist seats</i>	0.22	0.22	0.14	0.17	0.36
<i>Percent Episcopalians seats</i>	0.04	0.04	0.06	0.02	0.03
<i>Percent Lutheran seats</i>	0.04	0.00	0.08	0.04	0.02
<i>Percent Catholic seats</i>	0.04	0.03	0.05	0.06	0.03

Source: 1850 IPUMS sample (Ruggles and Sobek 1998).

Table 2. Mean values of dependent and independent variables in 1880, by region.

Region	All regions	New Eng.	Mid-Atl.	Midwest	South	West
Dependant variable						
Number of children ages 0-4	1.31	0.87	1.08	1.24	1.57	1.30
<u>Wife's characteristics</u>						
Age						
20-24	0.15	0.07	0.10	0.14	0.20	0.22
25-29	0.45	0.34	0.43	0.47	0.45	0.46
30-34	0.28	0.37	0.31	0.28	0.25	0.25
35-39	0.12	0.22	0.15	0.11	0.10	0.07
Literate	0.88	0.99	0.94	0.94	0.78	0.82
<u>Husband's characteristics</u>						
Occupation group (1950 classification)						
<i>Professional, Technical</i>	0.04	0.03	0.05	0.04	0.03	0.03
<i>Farmer</i>	0.51	0.31	0.25	0.57	0.65	0.44
<i>All others</i>	0.45	0.76	0.71	0.39	0.32	0.53
Land ownership	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
<u>Children's characteristics</u>						
Proportion biblically named	0.23	0.13	0.20	0.20	0.30	0.17
Proportion biblically named, excluding John, Thomas, Mary & Elizabeth	0.15	0.09	0.13	0.13	0.20	0.11
Proportion biblically named, excluding above names and children named after parents	0.15	0.08	0.13	0.13	0.19	0.12
Eldest child male	0.52	0.52	0.53	0.51	0.52	0.53
Eldest child in school	0.45	0.73	0.58	0.53	0.27	0.32
<u>Geographic contextual variables</u>						
Urban residence	0.16	0.57	0.28	0.13	0.05	0.16
Population density (log 10)	1.69	2.07	2.14	1.64	1.48	0.91
Pct. county farm acreage improved	0.58	0.62	0.75	0.69	0.40	0.60
New England residence	0.07	----	----	----	----	----
Mid-Atlantic residence	0.18	----	----	----	----	----
Midwest residence	0.35	----	----	----	----	----
South residence	0.38	----	----	----	----	----
West residence	0.02	----	----	----	----	----
<u>Religious composition of county</u>						
<i>Percent Congregational seats</i>	0.04	0.28	0.02	0.03	0.00	0.07
<i>Percent Unitarian seats</i>	0.00	0.04	0.00	0.00	0.00	0.00
<i>Percent Universalist seats</i>	0.00	0.04	0.00	0.00	0.00	0.00
<i>Percent Presbyterian seats</i>	0.13	0.00	0.17	0.14	0.11	0.09
<i>Percent Soc. Friends (Quaker) seats</i>	0.01	0.00	0.01	0.01	0.00	0.00
<i>Percent Methodist seats</i>	0.33	0.18	0.26	0.34	0.39	0.38
<i>Percent Baptist seats</i>	0.22	0.21	0.13	0.16	0.34	0.09
<i>Percent Episcopalian seats</i>	0.03	0.06	0.05	0.01	0.03	0.05
<i>Percent Lutheran seats</i>	0.04	0.00	0.09	0.04	0.02	0.00
<i>Percent Catholic seats</i>	0.07	0.09	0.07	0.08	0.03	0.23

Source: 1880 IPUMS sample (Ruggles and Sobek 1998).

Table 3. OLS Regression of selected characteristics on the number of own children present under age 5 in 1850: Native-born white women, ages 20-39, having native-born spouses, eldest child between the ages of 5 and 9, and one or more children with valid names.

Model	(1)	(2)	(3)	(4)
Constant	1.501 ***	1.613 ***	1.691 ***	1.706 ***
<u>Wife's characteristics</u>				
Age (reference age 35-39)				
20-24	0.117	0.128 *	0.133 *	0.120 *
25-29	0.142 **	0.151 **	0.142 **	0.135 *
30-34	0.093	0.102	0.101	0.093
35-39	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>
Literate	-0.026	-0.050	-0.055	-0.052
<u>Husband's characteristics</u>				
Occupation group (1950 classification)				
Professional, Technical	-0.319 ***	-0.323 ***	-0.334 ***	-0.343 ***
Farmer	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>
All others	-0.091 **	-0.0762 *	-0.0841 *	-0.080 *
Land ownership	-0.068	-0.048	-0.063 *	-0.590
<u>Children's characteristics</u>				
Proportion biblically named	0.112 *	0.156 ***	0.143 **	0.143 **
Eldest child male	-0.011	-0.014	-0.034	-0.023
Eldest child in school	-0.017	-0.035	-0.059	-0.063 *
<u>Geographic contextual variables</u>				
Urban residence	-0.106	-0.114 *	-0.998	-0.075
Population density (log 10)	0.091	0.048	0.038	0.033
Pct. county farm acreage improved	-0.333 *	-0.325 *	-0.270 *	-0.276 *
New England residence	0.091	-0.345 ***	-0.353 ***	-0.347 ***
Mid-Atlantic residence	-0.184 **	-0.172 **	-0.187 ***	-0.188 ***
Midwest residence	-0.036	-0.053	-0.052	-0.056
South residence	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>
<u>Religious composition of county</u>				
Percent Congregational seats	-0.915 ***			
Percent Unitarian seats	-0.679			
Percent Universalist seats	-1.557 *			
Percent Presbyterian seats	0.068			
Percent Soc. Friends (Quaker) seats	0.139			
Percent Methodist seats	0.140			
Percent Baptist seats	<i>ref.</i>			
Percent Episcopalian seats	-0.252			
Percent Lutheran seats	0.714 ***			
Percent Catholic seats	-0.153			
Model adjusted R-Square	0.072	0.060	0.062	0.060
Number of cases	3,417	3,480	3,406	3,360

*p<0.05 **p<0.01 ***p<0.001

Source: 1850 IPUMS sample (Ruggles and Sobek 1998).

Note: Model 3 eliminates children named John, Thomas, Mary, or Elizabeth from the calculation of the proportion of children biblically named. Model 4 eliminates children named John, Thomas, Mary, or Elizabeth from the calculation, and also removes all children named after their parents.

Table 4. OLS Regression of selected characteristics on the number of own children present under age 5 in 1880: Native-born white women of native parentage, ages 20-39, having native-born spouses, eldest child between the ages of 5 and 9, and one or more children with valid names.

Model	(1)	(2)	(3)	(4)
Constant	1.511 ***	1.507 ***	1.522 ***	1.560 ***
<u>Wife's characteristics</u>				
Age (<i>reference age 35-39</i>)				
20-24	0.384 ***	0.389 ***	0.387 ***	0.386 ***
25-29	0.318 ***	0.334 ***	0.325 ***	0.317 ***
30-34	0.180 ***	0.190 ***	0.189 ***	0.186 ***
35-39	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>
Literate	-0.106 **	-0.102 **	-0.108 **	-0.114 **
<u>Husband's characteristics</u>				
Occupation group (1950 classification)				
<i>Professional, Technical</i>	-0.246 ***	-0.238 ***	-0.244 ***	-0.228 ***
<i>Farmer</i>	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>
<i>All others</i>	-0.144 ***	-0.137 ***	-0.139 ***	-0.135 ***
<u>Children's characteristics</u>				
Proportion biblically named	0.209 ***	0.201 ***	0.174 ***	0.159 ***
Eldest child male	-0.047 *	-0.354	-0.040	-0.032
Eldest child in school	-0.058 *	-0.052 *	-0.046	-0.051 *
<u>Geographic contextual variables</u>				
Urban residence	-0.086 *	-0.087 *	-0.092 *	-0.088 *
Population density (log 10)	-0.065	-0.064 *	-0.061 *	-0.058
Pct. county farm acreage improved	-0.031	-0.029	-0.021	-0.021
New England residence	-0.122	-0.404 ***	-0.429 ***	-0.428 ***
Mid-Atlantic residence	-0.302 ***	-0.269 ***	-0.283 ***	-0.273 ***
Midwest residence	-0.221 ***	-0.235 ***	-0.250 ***	-0.255 ***
South residence	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>	<i>ref.</i>
West residence	-0.0207	-0.148	-0.158	-0.165
<u>Religious composition of county</u>				
<i>Percent Congregational seats</i>	-0.578 **			
<i>Percent Unitarian seats</i>	-0.805			
<i>Percent Universalist seats</i>	-1.267			
<i>Percent Presbyterian seats</i>	0.136			
<i>Percent Soc. Friends (Quaker) seats</i>	-0.339			
<i>Percent Methodist seats</i>	-0.030			
<i>Percent Baptist seats</i>	<i>ref.</i>			
<i>Percent Episcopalian seats</i>	0.304			
<i>Percent Lutheran seats</i>	0.650 ***			
<i>Percent Catholic seats</i>	-0.204			
Model adjusted R-Square	0.105	0.099	0.099	0.095
Number of cases	5,633	5,877	5,795	5,737

*p<0.05 **p<0.01 ***p<0.001

Source: 1880 IPUMS sample (Ruggles and Sobek 1998).

Note: Model 3 eliminates children named John, Thomas, Mary, or Elizabeth from the calculation of the proportion of children biblically named. Model 4 eliminates children named John, Thomas, Mary, or Elizabeth from the calculation, and also removes all children named after their parents.