Five Early Pennsylvania Censuses

One of the great hindrances to the study of seventeenth- and eighteenth-century Pennsylvania history is the lack of census data. As J. Potter said,

Throughout the eighteenth century, Pennsylvania was the most populous of the middle colonies. It was also the most cosmopolitan. . . . It is therefore particularly regrettable that the demographic information available for Pennsylvania is even sparser than that for other colonies.

While recent work has uncovered population data for the city of Philadelphia and for the Quakers, little is known of the population characteristics of the majority of Pennsylvanians who resided in the countryside. Census data would be valuable, of course, for the demographer, but would also aid the historian of the family, the economy, agriculture, religion and society.¹

Scattered through the records of the Swedish Lutheran Church in Pennsylvania are five censuses dated 1693, 1697/98, 1743, 1753, and 1755.

A fellowship from the Philadelphia Center for Early American Studies gave me the time to do this research. I would also like to thank Richard Dunn and Scott Wilds of the William Penn Papers for their suggestions and help.


Studies hampered by a lack of demographic data include Duane E. Ball and Gary M. Walton, “Agricultural Change in Eighteenth-Century Pennsylvania” with comment by Russell Menard, Journal of Economic History, XXXVI (1976), 109, and 118-125; and James T. Lemon, The Best Poor Man’s Country: A Geographical Study of Early Southeastern Pennsylvania (Baltimore, 1972), 155. Ball and Walton suggest that the average number of children per family fell from nine to six between 1714 and 1790. Menard points out that these figures are impossibly high, though he had no better data available. Lemon assumes an average family size of five in Lancaster and Chester counties between 1740 and 1790. This figure is somewhat too small and does not consider change in household composition.
1783/84 which have not been analyzed by historians. Swedish sponsored immigration to the new world began in 1636 and ended thirty years later, ten years after the Dutch conquest of the territory in 1655. There was no further contact with the mother country until the early 1690’s when the descendants of the original settlers wrote to ecclesiastical and civil authorities in Sweden asking for a minister. The first of a series of missionaries arrived in 1697 and three parishes were established: one each in Philadelphia, Delaware and southern New Jersey.²

While Pennsylvania was considered a single parish, the Swedes were already by the 1690’s living in six separate areas of the colony. The largest concentration of these settlements was some ten miles southwest of the city of Philadelphia in (to use the modern place names) Kingsessing in West Philadelphia, and Ridley, Darby, and Tinicum townships in Delaware County. Next in size were the settlements in and around Upper Merion in Montgomery County. Smaller settlements existed to the north of the city along Pennypack Creek in northeastern Philadelphia and Neshaminy Creek in lower Bucks County. The Swedish Lutherans were predominantly farmers and only a very few ever lived in the city proper. More families were to be found south of the city in Southwark, Moyamensing and Passyunk. But even though these areas bordered the city, most Swedes residing there were also farmers. These censuses were records of a rural population. Only in 1743 was there a substantial proportion of urban families (17%); in other years, 90% or more were residing in the countryside.

The center of the Pennsylvania parish was Gloria Dei Church, located at Front and Christian streets in Southwark. This site had been used for worship since 1669. The distance of the majority of Swedish Lutherans from the church and pastor’s residence meant that the minister had to travel from one community to another in order to hold services. The settlements along the Pennypack and Neshaminy Creeks were too far from the parish center to be visited regularly and these families gradually left the church and turned to other religions. The two largest settlements built separate churches in the 1760’s at Kingsessing and Upper Merion, but continued to be served by the minister in Southwark. While the Swedish settlements were widely scattered,

the church tended to provide a unifying link between the largest population centers. The purpose of the first known census of 1693 was to remind officials in Sweden that there continued to be a Swedish-speaking community in what were now the English colonies of Pennsylvania, Delaware, and New Jersey. The last four censuses were undertaken as a part of the pastor's normal duties. The Swedish Church ritual of 1686 required that ministers not only keep parish registers of baptisms, burials and marriages, but also a record of "all his congregation house by house and farm by farm". In Sweden, parishes were inclusive of all inhabitants, but in Pennsylvania the parish encompassed only those families who were church members. Membership was defined by the ownership of a pew in the church. The families listed in these censuses were not necessarily active in the church; some had only inherited a pew and with it a right to certain privileges in the church. The five censuses provide a great deal of information on the Swedish-American settlements in Pennsylvania. Unfortunately, these records cannot be supplemented by complete parish records. Part of the baptismal, marriage, and death records were lost early in the eighteenth century, while the surviving registers have substantial gaps caused by the absence, illness, or death of the ministers. Since the Swedish Lutheran Church remained entirely dependent upon clergy from Sweden, when one incumbent died in office two or three years would elapse before a replacement could be sent. Full parish registers do not exist for the church until late in the eighteenth century, after the last census was completed.

The oldest of the censuses is dated 1693 and is available in two published sources in two different forms. The first is an alphabetical listing in the Rev. Israel Acrelius' history of the Swedish settlement, first published in 1759. The second, a listing by settlement, was published by the Rev. Jehu Curtis Clay in 1835. This census gives the names of the heads of households, indicates which of these were born in Sweden, and provides the total number of people in each household. The effect of the cessation of immigration after 1665 can

3 Clay, *Annals* 31-52
be seen in this census. By 1693 only thirty-nine of the heads of households had been born in Sweden, twenty-one percent of all household heads. Two of these men are noted to have been in America for fifty-four years. Most adults and all the children had been born in the new world. The disadvantages of the 1693 census are that ages are not given, and that the composition of households cannot be discerned since wives, children, other relatives and, perhaps, servants and slaves may be included in the totals. The distinguishing characteristic of this census is that it is the only one of the five which purports to list all families, "which are found and still live in New Sweden, now called Pennsylvania, on the Delaware River," though a quick check of families indicates that in this census, as in all others, some families were not counted. The other four censuses list members of the Swedish Lutheran Church.

The second census, compiled in the years 1697/1698 with some additional births noted for 1699 and published in volume II of the Pennsylvania Magazine of History and Biography, is one of the most complete of the five censuses. Each household is listed separately and households are grouped according to place of settlement. It lists the names of every member of the household, the relationship of all members of the household to the head of the household, the age or date of birth of most children, and the race of the servants. Given more rarely is the date of birth of adults and the date of marriage. A few comments are made upon the religious status of individuals. Because of the absence of age data for most adults in these communities, the age structure of the population can only be approximated and fertility data has to be roughly estimated. A more subtle fault in this compilation appears only on detailed analysis. There is a substantial under-enumeration of female children in this census. The sex ratio for children under age twenty is 130 males for every 100 females. This distortion is even more pronounced for children under the age of five, for these ages the sex ratio is 165. In a normal population the ratio would be near parity. It might be argued that this proportion is due to the variation found in dealing with rather small numbers (there are 258 children listed). Yet the very form used by the Rev. Andreas Rudman indicates that sexism and not random variation is the cause of the skewed sex ratios. In most families, the male children are given first starting with the eldest and only after the youngest male child has
been listed are the female children named. Obviously, female children were of secondary importance.\textsuperscript{6}

The third of the censuses is the least complete and the only one which has not been translated into English. This census, dated November 20, 1743, is found in the first volume of the Gloria Dei Church records. It lists only the names of heads of households for nine Pennsylvania communities. No other demographic data is given. Some few of the names have comments written after them and these need to be translated. One man is identified as a vagabond. While little demographic data can be derived from this census, it would be important as a link between earlier and later censuses.\textsuperscript{7}

C. J. Stillé discovered the fourth document in 1891 among ecclesiastical documents relating to America in the archives at Upsala, Sweden. This census was compiled by the vestrymen in May of 1753 under the direction of the Rev. Olave Parlin. Like most of the other censuses, each household is listed separately and is grouped by place of residence. Eleven Pennsylvania communities are included. Each individual is named, and it is noted whether the individual understands, speaks, and reads Swedish, whether he or she reads English, and whether the individual is a communicant of the church. In addition, for heads of household, marital status and occupation is given. Non-Swedes are identified by ethnicity. Because this is a census concerned with the religious status of church members, the primary subjects are adults. Children are under-enumerated, most of those listed are already able to read and so must be older, and whole communities are returned without any children at all being listed. This shortcoming of the data and the total absence of information on age make this census of little use to the demographer. However, the wealth of other kinds of information makes this listing of importance to students of language, literacy, and religion.\textsuperscript{8}

The final census, written by the Rev. Mattias Hultgren in 1783/84 with notes on deaths through 1786, is in many ways the most complete. This census, inserted among the baptismal records of Gloria Dei Church, came at the end of the Swedish mission to America. For

\textsuperscript{6} G B Keen, "Notes and Queries," \textit{PHMB}, II (1878), 224-228, 341-343

Gloria Dei Church, microfilm reel one, Genealogical Society of Pennsylvania

\textsuperscript{7} C J Stille, \textit{Archivum Americanum Upsal Documents Relating to the Swedish Churches on the Delaware}, I (Mss, Historical Society of Pennsylvania, 1891), 493-514
nearly one hundred years the monarchs of Sweden had supplied min-isters, books, and some schoolmasters to the Swedish communities, but by the 1780's very few inhabitants still understood the language, some wanted the right to elect ministers of their own choice, and many members of the church were not ethnic Swedes but attended the church because of an affinity towards the doctrine (basically Episcopalian), the minister, or because the building was convenient to their homes. 9

The census of 1783/84 covers the members of Gloria Dei Church in Southwark, St. James Church in Kingsessing, and Christ Church in Upper Merion. Each household is listed separately and information is given for each individual on nationality and age. The distance of the household from the nearest church and from the parsonage in Southwark and the ability of adults to understand Swedish are also included. Children are listed according to parentage so that the children from the wife’s previous marriage, or the husband’s previous marriage are clearly distinguished from the children born to the currently married couple. Other relatives and servants and the maiden names of married women are included. In addition, a column entitled “Diverse Notes” includes scattered information on religious affiliation, drunkenness, illegitimacy, marital status, and literacy, along with other chance comments. This census is both a good demographic resource and a social resource, and its date allows a link to the first federal census of 1790. There are a few problems with the 1783/84 census. Some few entries for households are incomplete, a few more are illegible since the paper on which the original was written has disintegrated at the edges. There is an under-registration of young children, although because of the fullness of the data on ages these omissions can be estimated with a fair degree of accuracy. As in the census of 1697/98 there is an under-enumeration of female children. The sex ratio for those under age five is 147. Unlike the earlier census, however, there is no bias above age five. On the whole, this census is the most complete of the five but it covers the smallest number of households.

9 Gloria Dei Church, (Mss. by E. D. McMahon, 1924), I, Genealogical Society of Pennsylvania, 755-772.
TABLE 1
SUMMARY OF THE FIVE CENSUSES

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Households</th>
<th>Number of Individuals</th>
<th>Average Household Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1693</td>
<td>189</td>
<td>943</td>
<td>5.0</td>
</tr>
<tr>
<td>1697/98</td>
<td>75</td>
<td>441</td>
<td>5.9</td>
</tr>
<tr>
<td>1743</td>
<td>116</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1753</td>
<td>94</td>
<td>331</td>
<td>3.5</td>
</tr>
<tr>
<td>1783/84</td>
<td>65</td>
<td>350</td>
<td>5.4</td>
</tr>
</tbody>
</table>

The summary table lists the basic data contained in each of these surveys. The difference in average household size between the censuses of 1693 and 1697/98 suggests that servants were not included in the totals of the earlier one. Only the total number of households is known from the census of 1743, but a comparison with the next census, which covered more communities, reveals a substantial decline in membership for the Swedish Lutheran Church. This was the decade of the Great Awakening, and many families had converted to other churches during this period of religious revival. The Swedish Church had been without a minister for two and a half years when the Rev. Gabriel Naesman arrived in October of 1743. He found that “the new sects of Whitfieldites, or ‘New Lights,’ and Zinzendorffians which had come in, were most zealously drawing the people to themselves, and obtaining a hold among the Swedes, all the more readily as their church was now standing unused.”10 In addition to the apostasy of many individuals, some families may have moved out of Pennsylvania to New Jersey, where Swedish censuses for 1697/98, 1753 and 1786 show a consistent increase in population. The difference in average household size of the two most complete censuses, of 1697/98 and 1783/84, suggests declining fertility, which will be discussed in more detail later. The low average household size in 1753 is caused by the under-registration of children and servants.

The overwhelming majority of households were headed by married couples in all periods. Marriage was the norm for adults and few persons remained single throughout their lives. Marriage remained an economic necessity on the scattered farm sites of Pennsylvania where work was divided into male and female tasks and adult servants were either scarce or expensive. The major exceptions to married heads of household were caused by the death of one or both spouses. Most households in the "Other" category consisted of brothers and sisters whose parents were deceased, but who were old enough to continue running the family farm. More rarely, such households contained relatives whose exact relationship is not clear.

Widows and widowers comprise the next category. Most striking here is the steady increase in the percentage of households headed by the widowed, probably the result of epidemic mortality in the Pennsylvania countryside. Another indication of an increase in adult mortality levels is that in 1697/98 only 5.7 percent of the married couples had been married before, while in 1783/84, 17.4 percent were re-married. The censuses do not provide a direct measure of mortality and the lack of complete parish registers prevents the recovery of the date of death of individuals. Yet the census does show that nearly half of the marriages disrupted by death ended in the late 1760's. Three diseases were epidemic in Pennsylvania in those years: smallpox, typhoid fever and influenza. Smallpox was largely a disease of children, and typhoid fever was generally confined to large urban areas, so influenza would seem to be the likely culprit in the rise of adult mortality in the late 1760's. The case for influenza is strengthened by the reports of Peter Kalm who noted major epidemics of influenza among the Swedish Lutherans in 1728 and 1748, both epidemics killing large portions of the adult populations, but leaving the children
“pretty free of it”. Influenza appears to have established a twenty year epidemic cycle in the Pennsylvania countryside and would seem to be the reason for the rise in the percentages of widowed heads of households and remarriages by 1783/84.11

Although epidemic disease patterns affected the percentages of widowed persons in the population, few households were headed by single persons and the overwhelming majority by married couples in all periods. But while the proportions of married couples in the population varied little, the ages at which persons could expect to marry changed dramatically in the ninety year period covered by these censuses. In the seventeenth century most adults were married and headed their own households. By the 1780’s the majority of young adults were dependent, continuing to live with their parents, or working as servants for others.

Eight marriages were recorded in the census of 1697/98. The average age at first marriage for men was twenty-three, for women it was eighteen. These were very low marriage ages, especially by seventeenth-century standards. In seventeenth-century New England the average age at marriage was three to four years later, and these New Englanders married earlier than their contemporaries in Europe. The decisive factor which allowed early marriage was the availability of land. The total population of Pennsylvania and Delaware in 1700 was only 20,000. Farms consisted of hundreds of acres, the average in Chester County was over 500 acres in 1700, with only a small portion improved. Parents could easily subdivide their properties to provide a homestead for their children, and young adults could acquire new lands to cultivate. Most newly married couples settled near their parents. The abundance of land meant that young adults could marry early.12

By 1790, the population of Chester, Delaware and Montgomery counties, where the majority of these families lived, was over 60,000. The frontier was long gone and the average farm was 130 acres. Land

11 Since the death records of Gloria Dei Church are incomplete, the date of the birth of the last child and/or the date of remarriage was used to determine the end of a marriage. Of 24 marriages ended by the death of one spouse, 11 occurred in the period 1764-1769. On epidemics in Pennsylvania see John Duffy, *Epidemics in Colonial America*, (Baton Rouge, 1971), 100, 198-200, 227. Adolph B. Benson, ed., *Peter Kalm’s Travels in North America*, (Clinton, Mass., 1937), I, 192, 198-199.

was no longer cheap and most farms could not be subdivided. Without easy access to land, young adults had to delay marriage and the average age at marriage rose in the eighteenth century. The 1783/84 census did not give age at marriage, but many marriages can be recovered from the Pennsylvania marriage license records. For those married between 1745 and the 1780’s, the average age at first marriage was 22 for women and 26 for men. The years of high mortality between 1764 and 1769 not only produced a large number of widows and widowers but also resulted in a decline in the average age at marriage for men. High death rates seem to have left many farms vacant during those years and the average age at marriage for men fell to 23 years, while in all other years of the mid-eighteenth century the average age at marriage was 27. The epidemic or epidemics of the late 1760’s had no effect on the average age at which women married. Marriage ages were regulated by economic opportunity. On the frontier and under crises of mortality land was available and this allowed young adults to marry early; otherwise young couples had to delay marriage while waiting to acquire their own homestead. 

While in the seventeenth century most young adults headed their own households, in the late eighteenth century most young adult males were dependents. Of twenty-nine men aged twenty-one to twenty-nine in the census of 1783/84, only eight were married (27 percent) and two of these were still living with their parents. Three men were single but independent, while the majority (62 percent) were at home and unmarried or working as servants for others. At ages thirty to thirty-four, two-thirds of the men were married, and only above age thirty-five were all men married (or widowed). The shortage of land in the eighteenth century had created a population of dependent adults and delayed marriage.

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13 Bureau of the Census, *Heads of Families at the First Census of the United States Taken in the Year 1790, Pennsylvania* (Washington, D.C., 1908), 9–10. Ball and Walton found that the average farm size in Chester county in 1790 was 130 acres, “Change,” 105. The average for the Swedes in Philadelphia, Chester and Montgomery counties in 1782 was 129 acres. Eighteenth-century marriage ages are based on 21 first marriages for women and 20 for men as recovered from John B. Linn and William H. Egle, eds., *Pennsylvania Archives, Second Series, II, Names of Persons for whom Marriage Licenses were issued in the Province of Pennsylvania previous to 1790* (Harrisburg, 1876).
For women, these changes had less dramatic results. Nearly two-thirds of the women in their twenties were married, although in the late seventeenth century very nearly all young women were married. And by the 1780's, some women would never marry. Ten percent of the women above age thirty were still unmarried, either living at home or working as servants for others.

The fifty families whose land holdings were listed in the 1782 tax records illustrate the precise relationship between the availability of land and dependence for young adults. The majority of dependent adults lived on farms that were much smaller than the average for Chester County. On the very smallest landholdings, on those less than twenty acres, there were few dependent adults and few servants. Most of these heads of household were not farmers, but were craftsmen or laborers. There was little employment opportunity in these households. The eighteen farms with twenty to ninety-nine acres contained 61 percent of the dependent adult children. These farms were too small to subdivide yet large enough to require the labor of additional adults. And because these farms were small it can be assumed that there was little profit. These farmers did not have enough money to buy new property for their children, nor could they afford to replace the free labor provided by their children with hired help. Most of these children would not become independent until their parents died or retired. On the farms with more than 100 acres there were few dependent adults. Here work in the fields and the household was done by servants. It would seem that these farmers could afford both the cost of providing their children with an independent living and the cost of replacing their labor with hired help. The shortage of land in the 1780's did not affect all families equally.\(^\text{14}\)

\(^{14}\) The 1781 and 1782 tax lists for Philadelphia, Chester and Montgomery counties are found in William Henry Egle, ed., *Pennsylvania Archives*, Third Series, (Harrisburg, 1897) Couples who farmed less than 100 acres waited longer to marry than couples on larger farms. The average age at marriage for those farming between 10 and 99 acres was 22 for women and 27 for men (base numbers 5 and 8). The average for those farming 100 or more acres was 21 for women and 25 for men (base numbers 7 and 7). It would seem that wealthier persons could afford to marry earlier, although this calculation measures farm size in 1782, not the amount of land farmed at the date of marriage.
TABLE 3
FARM SIZE AND DEPENDENCY

<table>
<thead>
<tr>
<th>No. of Acres</th>
<th>No. of Farms</th>
<th>No. of Dependent Adult Children 1783/84</th>
<th>Percentage</th>
<th>No. of Servants 1782 and 1783/84</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-19</td>
<td>9</td>
<td>18</td>
<td>3</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>20-49</td>
<td>5</td>
<td>10</td>
<td>8</td>
<td>23</td>
<td>2</td>
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<tr>
<td>50-99</td>
<td>13</td>
<td>26</td>
<td>13</td>
<td>38</td>
<td>1</td>
</tr>
<tr>
<td>100-149</td>
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<td>20</td>
<td>5</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>150-199</td>
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<td>4</td>
<td>—</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>200-299</td>
<td>7</td>
<td>14</td>
<td>4</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>300 +</td>
<td>4</td>
<td>8</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>100</td>
<td>34</td>
<td>100</td>
<td>37</td>
</tr>
</tbody>
</table>

Some of the consequences of this situation can be seen by tracing these dependent children and servants through to the first federal census of 1790. The majority of these twenty-five men had married and were independent by 1790. Twelve still lived in the same community, but their parents had died and they now headed their own households. Only one man, Abram Jones, was still unmarried and at home at age thirty-six. Eight men disappear from the record. Some may have died, but most must have moved out of state. Four other men were able to become independent by emigrating. Three of these now lived in frontier counties in Pennsylvania: two in Northumberland County and one in Northampton County. One man moved to Philadelphia. He had lived on his father-in-law’s farm but after his wife died in 1786, he and his three children moved to the city where he remarried. Migration was not confined to the landless. Two men who had been farmers in 1783/84 had moved to urban areas by 1790; one to Germantown, the other to Philadelphia. These farming communities had become population exporting regions by the 1780’s, feeding both the settlement of the West and the growth of the cities. Epidemic mortality and falling fertility only partially alleviated the lack of opportunity caused by the shortage of land.

Families were larger and fertility was higher in the late seventeenth century than ninety years later. William Penn commented on the large size of these families in 1682, “they have fine children, and almost
every house full; rare to find one of them without three or four boys, and as many girls: some six, seven, and eight sons.” Penn was certainly exaggerating for in any community there will be some infertility, some newly married couples just starting to form families, and some older couples whose children have left home. But the census of 1697/98 shows that 36 percent of the married couples did have six or more children at home.\textsuperscript{15}

TABLE 4

<table>
<thead>
<tr>
<th>No. of Children</th>
<th>1697/98</th>
<th>1783/84</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
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<td>2</td>
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<td>3</td>
<td>5</td>
<td>6</td>
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<tr>
<td>4</td>
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<tr>
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<td>5</td>
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<td>7</td>
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<td>8</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Total Number Married Couples 58 49
Total Number of Children 234 154
Average Number of Children 4.0 3.4

This table reveals that the average number of children per married couple had fallen by nearly one child in the ninety years between the 1690's and the 1780's. However, changes in the economic structure blur the extent of change. Families in 1783/84 had many more adult children still at home which inflates the size of families. A more exact measure of fertility is needed.

The usual measure employed by demographers to measure fertility from census data is the child-woman ratio. This is a ratio of the number of children under five years of age for every 1,000 women aged fifteen to fifty. The attempt to apply this measure of fertility to the data runs into the problems noted in the initial description of these censuses. In

\textsuperscript{15} Clay, \textit{Annals} 55
1697/98, very few married women had their ages listed; so that the ages of most have to be guessed at based on the ages of their children or the ages of the husbands. This census also has a skewed sex ratio for children under age five. In order to bring the sex ratio into a more normal balance, twenty-one girls must be added to the seventy-four children listed as being less than five years old. In the census of 1783/84, there is little problem with the ages of women. However, there is both an under-enumeration of young children and a skewed sex ratio. Extrapolation from the total age and sex distribution of this population indicates that the number of children under age five should be increased from the thirty-seven listed to sixty. The underlying assumption in this estimation is that fertility had remained fairly constant for this generation of families. It is, of course, possible, though it does not seem likely, that fertility had fallen dramatically in the four years prior to the census. As a general rule, early censuses are prone to undercount infants, and fertility levels shift gradually rather than suddenly.16

If all the assumptions made here are approximately correct, then we can achieve a more precise measure of fertility. In 1697/98, there were 1,218 children under the age of five for every 1,000 women aged fifteen to fifty. In 1783/84, there were only 723 children under the age of five for every thousand women in their child-bearing years. Fertility levels had fallen to 60 percent of the levels of the 1690's. The important question is how these families achieved lower fertility. One factor has already been discussed. By the late eighteenth century, fewer women in their child-bearing years were married. Sixty-two percent of all women aged fifteen to fifty were married in the 1697/98 census, 52 percent in 1783/84. Delayed marriage was an important element in the reduction of fertility.

Families were larger and fertility was higher in the late seventeenth century than ninety years later. William Penn commented on the large size of these families in 1682, “they have fine children, and almost every house full; rare to find one of them without three or four boys, and as many girls: some six, seven, and eight sons.” Penn was certainly exaggerating for in any community there will be some infertility, some newly married couples just starting to form families, and some older couples whose children have left home. But the census of 1697/98 shows that 36 percent of the married couples did have six or more children at home.15
TABLE 4
NUMBER OF CHILDREN PER MARRIED COUPLE

<table>
<thead>
<tr>
<th>No. of Children</th>
<th>No. of Families 1697/98</th>
<th>No. of Families 1783/84</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
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<tr>
<td>6</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
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</tr>
<tr>
<td>8</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
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</tr>
</tbody>
</table>

Total Number Married Couples 58 49
Total Number of Children 234 154
Average Number of Children 4.0 3.4

This table reveals that the average number of children per married couple had fallen by nearly one child in the ninety years between the 1690's and the 1780's. However, changes in the economic structure blur the extent of change. Families in 1783/84 had many more adult children still at home which inflates the size of families. A more exact measure of fertility is needed.

The usual measure employed by demographers to measure fertility from census data is the child-woman ratio. This is a ratio of the number of children under five years of age for every 1,000 women aged fifteen to fifty. The attempt to apply this measure of fertility to the data runs into the problems noted in the initial description of these censuses. In 1697/98, very few married women had their ages listed; so that the ages of most have to be guessed at based on the ages of their children or the ages of the husbands. This census also has a skewed sex ratio for children under age five. In order to bring the sex ratio into a more normal balance, twenty-one girls must be added to the seventy-four children listed as being less than five years old. In the census of 1783/84, there is little problem with the ages of women. However, there is both an under-enumeration of young children and a skewed sex ratio. Extrapolation from the total age and sex distribution of this population
indicates that the number of children under age five should be increased from the thirty-seven listed to sixty. The underlying assumption in this estimation is that fertility had remained fairly constant for this generation of families. It is, of course, possible, though it does not seem likely, that fertility had fallen dramatically in the four years prior to the census. As a general rule, early censuses are prone to undercount infants, and fertility levels shift gradually rather than suddenly.\(^\text{16}\)

If all the assumptions made here are approximately correct, then we can achieve a more precise measure of fertility. In 1697/98, there were 1,218 children under the age of five for every 1,000 women aged fifteen to fifty. In 1783/84, there were only 723 children under the age of five for every thousand women in their child-bearing years. Fertility levels had fallen to 60 percent of the levels of the 1690's. The important question is how these families achieved lower fertility. One factor has already been discussed. By the late eighteenth century, fewer women in their child-bearing years were married. Sixty-two percent of all women aged fifteen to fifty were married in the 1697/98 census, 52 percent in 1783/84. Delayed marriage was an important element in the reduction of fertility.

A later average age at marriage was not the sole reason for this fall in fertility. Fertility also fell within marriage. The child-woman ratio can be calculated based on the number of married women, or rather on the number of women who were sexually active, for two women in 1783/84 had illegitimate children. The ratio shows that sexually active women had reduced their fertility by nearly one-third by 1783/84. The marital fertility ratio in 1697/98 was 1,979 children per 1,000 women, in 1783/84 the ratio was 1,333. Two changes seem responsible for this reduction in fertility. A crude measure of age-specific

\(^{16}\) The war probably had some effect on fertility. These farm families had lived near major theatres of war in 1777 and 1778. The German Lutheran church in Philadelphia had substantially fewer baptisms than usual in those two years, and a commentator wrote, "You will observe, that in years of the war the births were less numerous. This is a natural reflexion, which ought always to be made by anyone who makes calculations on the population of America." J. P. Brissot de Warville, *New Travels in the United States of America Performed in 1788* (Dublin, 1792), 366. Wartime reductions in fertility might have reduced the number of five, six and seven year olds in the census population and caused an underestimation of the number of children under the age of five. Yet there were 36 children between the ages of 10 and 14 who would have been born before the war, 50 children aged 5-9 who were born during the war years, and 17 children aged 0-4 born after the war. Had the war had a substantial effect on fertility, the cohort aged 5-9 should have been the smallest. The under-registration of infants, rather than the effects of the war on fertility, produced the age structure of the population.
fertility rates indicates that women in the late seventeenth century maintained high fertility throughout their child-bearing years. In contrast, women in the second half of the eighteenth century had high fertility in their late twenties and early thirties, that is in the first decade of their marriages, but substantially reduced their fertility after age thirty-five.  

TABLE 5
AGE-SPECIFIC FERTILITY RATES

<table>
<thead>
<tr>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1697/98</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>1.5</td>
<td>1.0</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td>1783/84</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>2.0</td>
<td>1.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

This crude age-specific fertility rate is based on the child bearing experiences of twelve married women in the 1697/98 census whose exact ages are known, plus two women who are estimated to have been two years younger than their husbands. The base number in 1783/84 is thirty-two women. The child bearing experiences of widows were excluded since it is impossible to discover the date at which the marriage ended for seventeenth-century women. No women over the age of fifty were included in this analysis since their children were more likely to have left home. Age-specific fertility rates are normally based upon births to married women. These rates are crude since the date of marriage is unknown for most women and fertility must be calculated on the number of children still surviving and living at home in the year of the census. The effect of these constraints is that age-specific fertility rates are underestimated both since some women would have married late in any five-year age group and would thus have been unlikely to bear children while infant and childhood mortality would reduce the number of surviving children. Yet it does not seem plausible that the shortfall in fertility exhibited by women over the age of thirty-five in the last census would be caused by these factors. Most women were married in their twenties and were at risk of childbirth throughout their thirties and forties. In addition there is no reason to suppose that infants born to older mothers in the 1770's and 1780's would be at greater risk of death than infants born to older mothers in the 1690's. Even though this crude age-specific tabulation underestimates total fertility, the trends it reveals are accurate.
One technique employed by these women was to increase the intervals between births, perhaps by prolonged breastfeeding. The second change was that women in the eighteenth century ceased bearing children at an earlier age. The four women who are known to have been between the ages of forty-four and forty-eight in 1697/98 had their last child at age 45.5. Five women between the ages of forty-four and fifty in 1783/84 had their last child six years earlier, at age thirty-nine. Fertility fell not only because of a rise in the average age at marriage but also because these women were limiting births within marriage.

As rural Eastern Pennsylvania passed from frontier conditions to settled, densely populated conditions, fertility fell. Fertility would continue to fall through the nineteenth century. Most of this reduction in fertility was accomplished before 1783. The rate of change had slowed considerably by the nineteenth century. But the data from one ethnic group in seventeenth and eighteenth-century Pennsylvania illustrates the later fertility history of the United States. Fertility was always highest on the frontier and fell rapidly as settlement took place.

The figures presented here show a fine linear progression to modern rates of low fertility. Yet these results may be, in fact, specious. Since child-woman ratios are based upon the number of living children, it may be that fertility did not fall, but that infant and childhood mortality rose. Perhaps these women had smaller families because they had fewer surviving children. Neither the censuses nor the extant parish records will yield information on death rates by age. Circumstantial evidence is ambiguous. On the one hand, increased population density accompanied by better roads, more schools, taverns, churches, and markets would facilitate the spread of communicable diseases, the important

18 Other techniques of birth control which might have been used include coitus interruptus and abortion. There was an interest in herbal medicine and the Rev. Rudman reported a "little tree, which looks like Juniper, and is called the Savan, it has the property of making a mare barren, or bring out her foal before the time. For that purpose you need only give her a handful of it." Thomas Campanius Holm, Peter S. Du Ponceau, trans., *A Short Description of the Province of New Sweden. Now called, by the English, Pennsylvania, in America, in Memoirs of the Historical Society of Pennsylvania, III* (Philadelphia, 1834), 163.
killers of young children in the eighteenth century. Isolation was the
best preventative against communicable disease. An increase in pop-
ulation would allow the establishment of relatively permanent disease
pools and could aid the spread of epidemic disease. Counterbalancing
the effects of increased population density were improvements in the
standard of living which accompanied the transition of the area from
a frontier to an old settlement. Farm families were better housed and
better clothed by the eighteenth century. Midwives trained by doctors
and smallpox inoculation became available in Pennsylvania in the
1760's. All these factors might be expected to increase an infant's
chance of survival. Since infant mortality rates fell in the city of
Philadelphia during these same years, even in the face of a rapidly
rising population, it would seem that at the very least there would be
little change in infant mortality rates in the countryside and a reason-
able chance that life expectancy improved. Finally, any argument for
rising mortality would have to account for the evidence contained in
the age specific fertility rates. It is unlikely that higher mortality would
occur only in children born to mothers over thirty-five years of age.
Had death rates risen, all children, regardless of the age of their
mothers, would have been at risk. The smaller number of children
per married couple, the lower child-woman ratios, and the lower age-
specific fertility rates were the result of deliberate reductions in ferti-
licity, not rising infant and childhood mortality. 20

Along with the fall in fertility were shifts in household composition
which tended to mask the effects of fertility reduction. Most house-
holds in both periods consisted simply of parents and children. They
were then, to use the technical term, nuclear in composition. The
proportion of nuclear families increased between 1697/98 and 1783/
84, rising from 49 percent of all households to 57 percent. It is in
these families that the effects of fertility reduction can be most clearly

20 On standard of living see Kalm, Travels 272, Acrelius, History, 156-157. See also James Deetz, In
Small Things Forgotten, The Archeology of Early American Life (Garden City, New York, 1977), especially
(paper presented to the Seminar of the Philadelphia Center for Early American Studies December,
1660-1860 (Ithaca, 1960), 23-24, and Duffy, Epidemics, 100. On infant mortality in Philadelphia, see
seen: average family size fell from 6 to 4.8 persons. But while nuclear families were the most common form, a substantial proportion of families included collateral relatives, unrelated persons and servants. These extended households accounted for 37 percent of the total in 1697/98 and 32 percent in 1783/84. These extended households increased in size over time rising from an average of 7.4 individuals to 7.8. In the 1780’s, those households with additional members contained more grandchildren, more dependents of various statuses and more servants than did seventeenth-century households. Thus the rise in the proportion of nuclear families and the fall in fertility did not produce as great a reduction in overall household size as might have been expected. Despite a 40 percent reduction in the child-woman ratio, the average number of individuals per household fell by only ten percent, from 5.9 to 5.4 persons.21

The majority of the people in these censuses made their living by farming. As William Penn noted in the year after he arrived, “The Dutch applied themselves to traffic, the Swedes and Finns to husbandry.” Most families seemed content with agricultural life. None were among the wealthiest families of Pennsylvania, nor did they seek power through political activity. The Rev. Israel Acrelius wrote in 1759 that “Our Swedish Americans have always been afraid of getting too rich, and have therefore paid little attention to their own best interests.” More ambitious members of these communities tended to leave the church, or they were more recent immigrants, trained in the professions or as merchants in Sweden in the eighteenth century.22

Only Charles Justis, a tailor, was identified by occupation in the 1697/98 census. The rest of the men were farmers or farm laborers. By 1753 there was more variety, largely because of an increase in the number of Swedes living in or near Philadelphia. Still, 58 percent of the heads of household were returned in this census as peasants.

21 In 1697-98, 16 percent of all households had relatives or unrelated individuals living in. Twenty-four percent had servants. In 1783/84, 11 percent had relatives, unrelated persons or welfare recipients living in the household. Twenty-six percent had servants. In those households with servants, there was an average of 1.3 in the earlier period and 1.6 in the later census. Not only did eighteenth-century households with servants have more help, but their servants were older, less likely to be children.

22 The decline in urban church membership was temporary. After the Rev. Nicholas Collin took over the church in Southwark in 1786, there was an increase in membership.
TABLE 6

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>1753</th>
<th>1783/84</th>
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<tbody>
<tr>
<td>Peasants</td>
<td>55</td>
<td>Farmers</td>
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<tr>
<td>Carpenters</td>
<td>2</td>
<td>Millers</td>
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<tr>
<td>Master Shipbuilders</td>
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<td>Tailors</td>
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<tr>
<td>Merchants</td>
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<td>Joiner</td>
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<tr>
<td>Shoemakers</td>
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<td>House Carpenter</td>
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<td>Tailors</td>
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<td>Butcher</td>
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<td>Master Mason</td>
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<td>Total</td>
</tr>
<tr>
<td>Portrait Maker</td>
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</tr>
<tr>
<td>Saddler</td>
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<td></td>
</tr>
<tr>
<td>Seaman</td>
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<td></td>
</tr>
<tr>
<td>Smith</td>
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<td></td>
</tr>
<tr>
<td>Taverner</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Unknown*</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
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</tbody>
</table>

*Most of the persons in the Unknown category were widows. In both the censuses and tax records women were identified by marital status, not occupation. However, the tax records indicate that these widows were landowners and were therefore farmers by occupation.

The most dramatic change in the thirty years between 1753 and 1783 was the precipitous decline in the numbers of Swedish Lutherans in and near the city. In 1753, there were twenty-nine families returned from Philadelphia, Wicacoa, Moyamensing and Passyunk. In 1783, there was only Gunnar Swanson, his wife and daughter, and he was nearly ninety years old. This decline in urban church membership largely explains the lack of variety in occupations in the 1780's. But these lists do reveal that there was a greater variety of occupations in the rural areas by 1783/84. Only 10 percent of the rural inhabitants were not farmers in 1753. Seventeen percent of the rural heads of households in the later period were not farmers. Increased population density provided demand for goods and services. The lack of land forced some people to find other means of support.22

Who was a Swede? It might seem obvious to state simply that Swedes are persons descended from inhabitants of Sweden. But in the seventeenth century, Sweden was an imperialistic nation. The territories controlled by the Swedish crown are now in Latvia, Estonia, Lithuania, and other Soviet Republics, Poland, East Germany, Denmark,
Norway and Finland. The first Swedish Governor was a Dutchman, Peter Minuit, and the footnote to the earliest census of 1693 adds:

Among the members of these congregations in the above list many Hollanders were also intermingled, inasmuch as they now regarded themselves as one people. Many others afterwards added themselves in the same manner, after the congregations got into better order; not only Hollanders, but also English, Scotch, Irish, and German families, all using the Swedish language.

Place of birth, ancestry, or former political allegiance did not define a Swede in the new world. A Swede was a person, of no matter what ethnic background, able to speak the Swedish language.\textsuperscript{23} Ability to speak Swedish was important for religious purposes. Especially in the seventeenth century, one had to speak Swedish to participate in the church. One reason that the Dutch adopted the Swedish tongue was that there was never an established Dutch church in Pennsylvania. If the Dutch settlers wished to attend church prior to the arrival of the British, they had to learn Swedish. Ethnic affiliation meant not just linguistic skill, but also religious affiliation. Thus in the census of 1697/98, Richard Rods is listed as an Englishman. The minister added, however, “His wife and children are Lutherans.” An Englishman was not only unable to speak Swedish, but he was not a member of the Swedish Lutheran Church. It is apparent in all the censuses that nationality and religion are nearly synonymous.

A Scotsman was a Presbyterian, an Englishman an Anglican, a German a Lutheran. The Irish in the early eighteenth century were Presbyterians, later they were Roman Catholics. The assumption that nationality was determined in part by the legally established church of a person’s homeland did not, of course, fit the reality of religion in Pennsylvania. Many of the British were Quakers, others changed their religious affiliation. But the idea that there should be an intimate connection between nationality and religion continued. The solution was that categories such as “Quaker” acquired an ethnic connotation. Thus in the census of 1783/84, John Roberts was described by Rev. Hultgren as “Half Quaker — otherwise a good man.” Theologically,
there could be no such thing as half-Quaker, but if Quaker is inter-
preted as shorthand for background or upbringing, then there might
well be such a category. Statements about nationality or religion in
these censuses are less a description of ancestry or current religious
practice than they are indications of language, upbringing or custom.

These "Swedes" were from the beginning an ethnically diverse
group of people and the Swedish community in this sense at least was
as cosmopolitan as the whole of Pennsylvania. The intermingling of
peoples continued through the eighteenth century, at first through
intermarriage and later through the free accession of non-Swedish
members to the church. The great change was that the Swedish lan-
guage, which had distinguished these communities from other groups
in Pennsylvania, died out after the 1750's.

In the census of 1697/98, there were two persons (other than serv-
ants) who were identified as English. One, Richard Rods, was married
to a Swedish woman. The other was an English woman of unknown
marital status who was listed as "professing our religion." By 1753,
there were sixteen "mixed" marriages recorded — 23 percent of all
marriages listed. Most of these were Swedish men married to English
women, while one Swedish woman had married an Englishman, an-
other a German. None of the English wives even understood Swedish,
although both of the non-Swedish husbands at least understood the
language.

Despite the fact that this was a society in which female children
were often overlooked, in most families the language and religion of
the wives dominated and children were brought up according to the
principles of their mothers. So in 1753, Peter Keen was a Swede and
a communicant of the church. His wife, Anna, was English and the
census taker noted that "the children are English." The children had
not learned the Swedish language nor were either mother or children
communicants. Comments in the 1783/84 census also indicate the
predominance of women. Charles Granthom married an English-
woman and he "never (came) to church since (he) married." Nathan
Sturges attended church but his wife was an Anabaptist and their five
children were "not baptized according to (their) mother's principles."

By 1783/84, the synthesis of religion and language had broken
down. Twenty-one percent of the married couples in the parish were
not even related to the Swedes but were English, German, Irish,
Welsh, or Dutch. In only eight of the forty-three marriages were both partners Swedish. The Swedish community was dissolving and the Swedish language was almost dead. The average age of those who understood Swedish well was sixty-four, of those who understood some forty-five. The four people who were recorded as understanding no Swedish were all in their thirties. The language was a relic of the past, and the Swedish Lutheran Church did not long survive the extinction of the language. The last formal ties with Sweden were severed in this decade and the three churches gradually shifted to Episcopalian governance.

The key to the extinction of the Swedish language lies in the spread of English grammar schools in the early eighteenth century. Rev. Acrelius wrote in 1759 that

Forty years back, our people scarcely knew what a school was. The first Swedish and Holland settlers were a poor, weak, and ignorant people, who brought up their children in the same ignorance, which is the reason why the natives of the country can neither write nor cipher and that very few of them are qualified for any office under the government.

The ignorance of the Swedes in the seventeenth century is certainly overstated, and Acrelius himself provided the evidence of this. In a letter of 1693, the Swedes in America petitioned not only for a minister, but also for books, including 200 catechisms and 200 ABC books, more than enough for every child of school age in the colony. The books arrived with the new minister in 1697.\(^{24}\)

But Acrelius was right that the Swedes were very passive about education. When the Swedish schoolmasters died or turned to other occupations, the Pennsylvania Swedes did not attempt to educate their own children, or to send some back to Sweden for training. Neither did the Swedes in America write books or publish their own newspapers. If books did not arrive from Sweden, the inhabitants did without. The large number of books about the Swedish Americans were all written by native Swedes and published in Sweden. Rather than underwrite the expense of a Swedish educational system, these families

\(^{24}\) Acrelius, *History*, 352, 187, 199.
sent their children to English schoolmasters. And when the children were sent to school, the goals of the parents were limited. "In almost every ridge of woods there is a schoolhouse, but the children never come longer than to learn to read plainly in the book, and to write and cipher." Basic literacy was as much as they wanted. According to Peter Kalm, schools were used for other purposes.

When a child was a little over three, it was sent to school both morning and afternoon. They probably realized that such little children would not be able to read much, but they would be rid of them at home and thought it would protect them from any misbehavior. Also they would acquire a liking for being with other children.

Schools were used by busy farm wives as day-care centers. When the child was older and more responsible, he or she was taken out of school and put to work around the house. It is surprising that the Swedish language survived as long as it did.  

In the census of 1753, nearly all the adults were literate and able to read either Swedish or English. Out of the 178 adults listed, only three men and two women were unable to read either language. Women were less competent in English than the men, for over 25 percent could not read English and 10 percent could not speak English, although they understood it when spoken to. Ninety percent of the men could read English. In 1753, most adults were bilingual, but their children were not. In only five of the forty-eight families with children listed were the children learning to read Swedish. Most children were receiving an English education. It would be these children, adults by the 1780's, who would marry non-Swedes and vote to sever the last remaining ties with Sweden.

Each of the censuses except the first is a list of church members. But membership was defined very differently in the Swedish Lutheran churches of the eighteenth century that it is in American churches of the twentieth century. A member of the parish was a person whose family owned a pew. Pews were property and passed to subsequent generations as did other species of property.

As long as any heir is upon his father's farm, or if that is sold and the heir resides within the bounds of the congregation, he owns the right to his father's pew. Others must buy their own pews. Those who remove from the congregation, so as to be unable to attend service there, shall have no right either in the church or in the graveyard. If any one who has removed, or his heirs, return, he shall receive either his own former pew or some other, without purchase.

While the language used by the Rev. Acrelius suggests a form of primogeniture, in fact the inheritance of a pew was partible and could pass through the female line as well as the male. To be listed as a member of the parish did not necessarily mean that the family was currently active in the church. It might only mean that the family had an ancestral right to a seat in the church and burial in the churchyard.

Of course, belief, as well as the ownership of a pew, defined a Lutheran. A Lutheran should have believed in justification by faith, the Bible, the Augsburg Confession and the two sacraments of infant baptism and communion as channels of God's grace. The censuses do not indicate the state of conscience of individuals, but changes in outward conformity to church doctrine can be traced. The Swedish Lutherans gradually adopted the beliefs of their neighbors concerning the necessity of the sacraments of baptism and communion. Influenced by the Quakers and the Anabaptists, more and more of these Lutherans failed to partake of the sacraments. The Rev. Acrelius blamed secular education as well, "... the further people are from superstition, the nearer they are to atheism; the further they have gone from the renunciation of Popery, the more does the Christian Church tend to free-thinking, indifferentism, and naturalism."

There is little indication of indifference or nonconformity to church teachings on the sacraments in the census of 1697/98. An unnamed Negro servant girl of fourteen was described as a heathen, which probably meant that she was neither baptized nor instructed in Chris-

tian doctrine. The other comment on religious observance concerned the family of John and Magdalen Henricson. Their youngest children, twins, were not baptized and were about thirteen months old when the census was completed. It seems likely that all the other children were properly baptized. In the 1750’s, most children were baptized, although the Rev. Acrelius complained that many parents allowed weeks to pass before bringing their infants to church for their baptism. The census of 1753 does however reveal that few members of the church were communicants. Ninety percent of the population did not take communion. Even among the church officials, the trustees, clerks and wardens, just four out of twenty-four were communicants. Only two of the 135 children were communicants. Few believed in the necessity of partaking in the Lord’s Supper.28

By 1783/84, only six people were listed as communicants of the church and their average age was fifty-seven. Eight other people attended church regularly, twelve came upon occasion, three professed to belong to the church, two more were religious but were unable to come to church. The elected vestrymen were not among the communicants and the Rev. Hultgren said bluntly, “No member of this Church Council attends or has a proper interest in the church.” Baptism was no longer nearly universal. Thirteen people, mostly children, were baptized, twenty-eight were not and four more were of uncertain status. Whether most children were baptized is not clear from the census. Nor are the reasons for failing to baptize children entirely clear. Some was due to the influence of Quaker or Anabaptist belief. Some children were not baptized because their parents were of different religions and perhaps they were as unconcerned about the religion of their children as they had been about the religion of their spouse. Or, baptism may have been a point of contention in these interfaith marriages. Finally, some adults were indifferent to all organized religion and did not attend any church.

The Swedish community, whether defined by language or religion, was virtually extinct by the 1780’s. The church, which had been the one institutional expression of this community, had lost its distinctive character. The people recorded in this final census spoke English, were ethnically and religiously diverse, and few were in strict conformity

28 Acrelius, History, 353-4
with the traditional doctrines of the Swedish Lutheran Church. These five censuses provide not only a demographic profile of Pennsylvania but also trace the development of a new cosmopolitan culture.\textsuperscript{29} 

* * * * *

The evidence provided by an analysis of these five early Pennsylvania censuses shows both the persistence of localized ethnic enclaves in the colony and the gradual process of acculturation of one small group in the mid-eighteenth century. The role played by education, changes in religious practice and intermarriage can be uncovered through the information given in these censuses.

Of interest to demographic historians is the fall in fertility which these censuses document. The decline in fertility among the Swedish Lutherans parallels the results found by Robert V. Wells for Quaker families of the mid-Atlantic region. Quaker wives born before 1730 had an average of 6.7 children, while Quaker wives born between 1756 and 1785 had produced an average of five children by the end of their marriages. Family size had fallen by one-quarter for these Quaker families, just as the average number of children per family fell by one-quarter for the Swedish Lutherans between 1697/98 and 1783/84. Not only was the proportional decrease in the number of children identical, but both groups follow the same pattern of behavior: a rise in the average age at marriage, greater intervals between births within marriage, and an earlier age at the birth of the last child.\textsuperscript{30}

Students of population history do not agree on the reasons for the fall in fertility exhibited by some groups in the eighteenth century and most of the population in the nineteenth century. One school of thought stresses modernization: a shift in societal and personal values from traditional to modern. While different authors have been unable to agree on the timing and details of the transition to modern values, in general the theory finds a shift occurring in the mid-eighteenth century. The traditional worldview was static, deferential, conservative and community-oriented. Given these values, individuals would have

\textsuperscript{29} It is tempting to call this process the Americanization of the population. However, only one person was identified as an American - the sixteen-year old son of African parents. Everyone else was associated with some one European nationality, no matter how mixed their ancestry was in fact.

\textsuperscript{30} Wells, "Family Size," 75
little motivation to control their fertility since change or improvement in status was unimaginable. In contrast, the modern worldview is characterized by beliefs in progress, equality of opportunity, individualism, and reason. In addition, modern societies are urban, capitalistic, materialistic and given to legalistic and institutional forms of organization. Family planning is possible in modern societies because individuals feel that they are in control of their destinies, can plan for the future, and can calculate the financial burdens of large families.

The two groups in eighteenth-century America who are sometimes labeled the most modern — the Quakers and the New England Puritans — are also the groups for whom falling fertility has been documented.31

In comparison to the Quakers and the New England Puritans, the Swedish Lutherans of Pennsylvania seem more traditional than modern. They remained deferential to traditional authorities in the old world longer than other groups in America. They established only one institution in America, the church, and they preferred that the ministers of the church be selected by the Swedish crown and archbishop. Even when formal ties to the Swedish church were dissolved in the 1780’s, the Pennsylvania parish chose the last Swedish missionary as their pastor and he led the church until his death in 1831. The Swedish Americans were a rural population, little involved in commercial occupations, and did not value higher education. Perhaps the translators of the 1753 census were correct in defining the majority as peasants. None of this proves that this population did not believe in progress and individualism, nor does it deny that there were changes in religious practice, language, and marriage patterns. This was not a static community, yet modernization theory is unsatisfactory when applied to this small group of Pennsylvanians.

The second interpretation derives from the work of demographers and economists seeking to explain the fall in rural fertility in nineteenth-century America. Working with federal census data, these investigators have found high correlations between land availability and fertility. Where there is easy access to land, fertility is high. In heavily populated areas, where land is relatively expensive, fertility is low.

The link between land and fertility lies in the farmer's concern for the prospects of his children. This theory is not new, having been commented on by Benjamin Franklin in 1751.

Land being thus plenty in America, and so cheap as that a labouring Man, that understands Husbandry, can in a short Time save Money enough to purchase a Piece of new Land sufficient for a Plantation, whereon he may subsist a Family; such are not afraid to marry; for if they even look far enough forward to consider how their Children when grown up are to be provided for, they see that more Land is to be had at Rates equally easy, all Circumstances considered.

Franklin assumed that "many Ages" would be required to fill the land in America and cause Americans to delay marriage and slow their rate of natural increase. Recent research by Richard A. Easterlin indicates that fertility levels begin to decline after the second generation of settlement. Easterlin's analysis of a sample of Northern farm families in 1860 finds fertility to be at its highest levels in the second generation of settlement and lowest in the oldest settlements. 32

The changes in fertility and farm size which Easterlin finds between regions in the United States in 1860 are strikingly similar to the results produced over time for the Swedes in Pennsylvania. By the late 1690's, the majority of Swedish Americans were second generation settlers. The average size of farms was 500 acres and the child-woman ratio was 1,218. In the United States in 1860, second generation farmsteads averaged 152 acres and the child-woman ratio was 1,210. In 1783/84, the average farm size had fallen to 130 acres and the child-woman ratio to 723 for the Swedes in Pennsylvania; in the oldest farming regions of the United States in 1860, farm size had fallen to 109 acres and the child-woman ratio to 885. 33

The correlations between the availability of land and fertility hold

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33 Easterlin, "Factors," 602. Easterlin gives the child-woman ratio as the number of children aged 0-9 per woman aged 20-49. To make these figures comparable to those used in this study, the number of children was halved and presented as a rate per thousand women.
true for the old world as well as the new. Sweden was densely populated, indeed overpopulated in the 18th century, with a child-woman ratio at the first census in 1750 of 511. Finland, then a province of Sweden and subject to the same wars, climatic conditions, crop failures and epidemics as Sweden, still had a frontier in the eighteenth century. The child-woman ratio in Finland in 1751 was 680. It does not seem likely that the Finns in the mid-eighteenth century were more traditional than the Swedes, nor that western farmers in the United States in the mid-nineteenth century were less modern than their eastern counterparts. Land availability, not modernization, appears to be the decisive regulator of rural fertility.\(^{34}\)

This article has touched upon some of the more obvious points to be gained from these censuses. Much more can be done. Individual families can be traced through time, and role and relationship of servants to the household can be studied in greater detail. Other documentary evidence, especially from the tax records, wills, and inventories of estates, can be investigated. Swedish censuses from New Jersey and Delaware can be linked to the Pennsylvania data. Most tantalizing is the fact that four of these censuses were begun in the third year of the decade. Are there censuses for 1703, 1713, 1723, 1733, 1763, and 1773 in Sweden? C. J. Stillé did not have access to the full archival holdings of the church at Upsala. No one, to my knowledge, has looked for data relating to America in the State archives at Stockholm, which is where Swedish ministers were required, by law, to send returns from their parishes. The five known censuses, the histories of their ministers, and the description by Peter Kalm make this community one of the best documented of any in early American history.\(^{35}\)

\(^{34}\) The child-woman ratios for Sweden and Finland were calculated from the census data given in Gille, "Demographic History," 56

\(^{35}\) New Jersey Swedish Lutherans also took censuses in 1693, 1697/98 and 1753. In addition to these, there is a 1786 census of New Jersey published in Amandus Johnson, The Journal and Biography of Nicholas Colton, 1746-1831 (Philadelphia, 1936) 299-346, a 1748 census of those Swedes who had converted to the Moravian Brethren in Arehus, History 440-444, and an incomplete census dated 1783 in the records of the Swedish church at Racoon Creek, (Mss, Genealogical Society of Pennsylvania) There is census data on the Lutherans in Delaware for 1693 and 1753. Some additional demographic data can be derived from the muster rolls and ship lists for New Sweden in the 1640's and 1650's published in Amandus Johnson, The Swedish Settlements on the Delaware Their History and Relation to the Indians, Dutch and English, 1638-1664 II (New York, 1911), 699-726
Much of what is known of early America concerns the Puritans, the Quakers, the merchants, the plantation owners, the intellectuals, and the politically powerful. The Swedes were mostly farmers and farm laborers, were barely literate, and were neither very rich nor very powerful. They were not attempting to establish a City on the Hill or a Holy Experiment. They were, in almost every respect but language, a fairly “average” group of settlers in the mid-Atlantic region. Their very representativeness makes them interesting and indeed important for an understanding of the social and economic life of the seventeenth and eighteenth centuries.

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