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## Literacy Acquisition in an Orphanage: A Historical-Longitudinal Case Study

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How and when children acquire the ability to read and write are questions of considerable interest. This essay uses a simple marker that has been closely examined in the historical literature, the ability to sign one's name, to study circumstances of literacy learning in a sample of 782 children that dates from about two centuries ago. Few children had learned to write upon entrance to the orphanage that produced these records, the Charleston, South Carolina, Orphan House, but the great majority could sign upon exit. Boys were more likely to sign at entrance and exit, but the increase in literacy that was due to the Orphan House school's efforts was greater among girls. Boys seem to have learned to write within 1–3 years of admission, but it took girls much longer, on average, to acquire literacy. While changes in pedagogical techniques had little effect, literate mothers may have been able to help their sons learn to write even after admission.

Children learn to read and write in a variety of settings, most important among them schools and homes. Two centuries ago, however, schools varied greatly in quality and accessibility, and their records remain understudied. Further, high probabilities of parental death meant that many children had little hope of acquiring literacy at home. This study considers the experiences of children who came to the Charleston, South Carolina, Orphan House in the antebellum period, in order to assess the ability of the Orphan House to educate its charges to a basic level of literacy. From this nonrandom sample (nearly all the children were white, for example) of unfortunate youths who lived long ago, several characteristics of their learning experiences emerge that shed light on present-day learning processes. In addition, characteristics of the particular time and place in which the sample was formed penetrate into the data and suggest new perspectives on the peculiar history of education in the South. For both present-day and historical purposes, a longitudinal study of childhood literacy acquisition in the distant past offers a rare opportunity to study child learning.

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The records examined in this study stem from the Charleston Orphan House, the oldest public orphanage in the United States.<sup>1</sup> They begin in the 1790s and extend into the early Civil War era, with nearly half in the two decades after 1810. Before the revolution, the destitute, orphaned, and abandoned children of Charleston became charges of the Anglican parish of St. Philip's Church. As representatives of the established church, wardens were empowered to collect and distribute poor rates as they saw fit. Usually they arranged for local families to care for waifs in exchange for a small stipend. Upon disestablishment, poor relief responsibilities devolved on the city of Charleston, supported by a very small payment from the state of South Carolina. Ever seeking to cut costs, the city closely studied how the orphanage founded by George Whitefield operated in nearby Savannah, Georgia. Expecting that a central home for children would cost less than outdoor relief, the city council established the Charleston Orphan House. The building that would stand at Boundary (now Calhoun) and St. Philip streets for over a century and a half opened in 1794, and it served as a home for some 2,100 children before the Civil War.

Legal authority over the Orphan House resided in its commissioners, who met weekly to discuss admission, discipline, and general management issues. The second entry in the 1791 "Rules of the Orphan House" summarized how responsibility for the child shifted from parent or guardian to the institution and then later to the master to whom the child was bound as an apprentice:

No child shall be admitted into the Orphan House until the Board [of Commissioners] have enquired into and determined as to the propriety of their admission; where the children have parents or guardians, on their admission they shall be bound to the Commissioners for the time being, the girls until they have attained the ages of eighteen years and the boys until they have attained that of twenty one years. As the Girls attain the age of thirteen, and the boys fourteen years (unless their capacities may enable them sooner) their indentures shall be transferred to such mistresses or masters as shall teach them such profession, trade or occupation as may be suited to their genius and inclination.<sup>2</sup>

With one exception noted below, the criteria for propriety in admission were

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### *Literacy in an Orphanage*

rather practical. Inmates were to be residents of Charleston, roughly between the ages of 3 and 14. It was Charleston residents' taxes that paid for the institution, so applications from out-of-towners were generally rejected and referred to the overseers of the poor of the applicant's town or county.<sup>3</sup> Younger children required more attention than the steward (manager) and nurses of the Orphan House could provide and so were supported by outdoor relief or kept with their mother in the Poor House. Older children could be bound out directly as apprentices with no need for "the bounty of the institution." Families, if they existed, were to be poor. The ordinance that established the Orphan House specified that its purpose was to support and educate "poor orphan children and those of poor, distressed and disabled parents who are unable to support and maintain them."<sup>4</sup> Especially if the house was crowded, the visiting commissioner might investigate the family's circumstances more closely to determine whether they were truly needy. Usually they were.

The exception to practicality, which was so obvious to the commissioners that Orphan House records hardly mention it, was race. By far the majority of black children in Charleston were enslaved, and orphans among them were the responsibility of the master.<sup>5</sup> Orphaned free children of color had some hope of receiving the charity of fraternal groups like the Brown Fellowship Society if their skin was light enough. Few other blacks seem even to have tried to get help from the Orphan House. In 1812, a girl named Caroline Lafar was returned to her mother, described as "a mulatto woman," after having lived quietly in the Orphan House for about five years.<sup>6</sup> A mere eight years later suspicion that the children of Rachel Burbridge might actually be "coloured" led the commissioners to inquire into the racial makeup of this family. Mrs. Burbridge replied sharply, "If you do not think that my children are white enough you will be pleased to send them home to me and I shall endeavour to maintain them." The commissioners did send them home that very day.<sup>7</sup> I infer that the other children, about whom no comments on race were made, were all white.

As was common among antebellum orphanages, the children were bound into the Orphan House with a legally binding contract called an indenture (Hacsi 1997, p. 105). By endorsing the indenture, the adult who had brought the child to the Orphan House yielded all legal claims to the child. Contact between family members outside the house, especially mothers, and children within it often continued in a frequent and meaningful way (Murray 2002). By the nature of the indenture this occurred at the sufferance of the commissioners, who nearly always granted permission for the mother to visit or for the child to go to his or her extended family for holidays and the like. The child himself also signed the indenture, which obligated him to remain

in the Orphan House until he became old enough to be bound out to a master, to whom the indentures would be transferred at that time.

### Signature Literacy in the Past

The ability to write one's name constitutes an imperfect marker of literacy, but one that is generally accepted in the historical literature as indicative of an intermediate level of learning (Lockridge 1974, p. 7). Children may have been taught to read the Bible for religious purposes without being taught to write, which would lead to signature literacy rates that underestimated true literacy. On the other hand, some children may have been able to write their names only and not read at all, which would lead to signature literacy rates as overestimating true literacy. Signature literacy has three advantages over variables used in other studies of schooling and learning. First, it measures ability, or the outcome of an educational process, rather than educational inputs such as time in school or graduation from high school. Second, it is based on a clear-cut indicator variable: either the person signed or marked an X, unlike studies that use standardized test results in which the structure, meaning, and grading of the test are far from transparent. Finally, in studies of eighteenth- and nineteenth-century documents, the variability in signature literacy is substantial, which enhances statistical analysis. The dean of historical literacy studies, Harvey Graff (1991, pp. 3–4), stressed the importance of studying basic rather than sophisticated measures of literacy, in order to maintain some level of comparability across time and space. The Orphan House records offer a wealth of reliable information on human capital acquisition that is similar to previously studied measures of learning outcomes and is even superior in its simplicity and comparability.

There are essentially two types of information sources on American literacy in the past: manuscript records that people either marked (usually with a plus sign [+] or a letter X) or signed with their name, such as the Orphan House indentures, and after 1840, the decennial census. The questions in the latter varied substantially from census to census, however, so as to prevent comparison of one year's data with another. In 1840 the head of household was asked for the total number of illiterates in the family. In the later censuses illiteracy was recorded for each person in individual entries, and in 1870 separate questions about the ability to read and write appeared. For 1860 and earlier, the query concerned illiteracy of those 20 years old and younger; for 1870 and later, the minimum age was 10 years. Thus, we cannot inquire directly about family literacy patterns during the antebellum era using census records (U.S. Bureau of the Census 1976, p. 365).

A considerable amount of direct signature literacy data exist in wills, deeds,

### *Literacy in an Orphanage*

petitions, marriage bonds, and the like. Because historians who have examined such data have typically aimed to study the relationship of literacy to wealth, or of how literacy might influence decisions to spend that wealth, for example, through bequests, the lion's share of historical literacy studies analyzes relatively wealthy people whose literacy may not have been typical of the average person (Lockridge 1974). While some studies have unearthed data on literacy of average and poor persons, few have examined women, and very few indeed have considered children.<sup>8</sup> Another layer of difficulty in interpreting literacy among property owners was created by the loss of their ability to sign at an older age due to dementia or feeble hands. In the present sample, once literacy had been attained by the children in question, it was retained.<sup>9</sup>

This essay exploits the longitudinal nature of the data, in which relatively poor children signed or marked a document two times that were several years apart. The indenture was a single document composed of two halves. In the top half, the child, with the consent of a parent or guardian, agreed to enter the Orphan House and remain there until reaching a suitable age to be bound out as an apprentice to a master. Here the indenture was signed or marked by both the child and the parent or guardian. On average, a child spent just over five years in the institution before being bound out or returning to the parent, when it was time to complete the rest of the indenture. Because the bottom half concerned the master's responsibilities to feed, shelter, and train the child, he (or in about one-fifth of the cases, she) also endorsed the agreement by a signature or mark.<sup>10</sup> Possibly because Orphan House policy was to bind children to particular masters or mistresses only if the child was willing, the child also signed or marked a second time at the bottom. Literacy of children at their entrance and again upon leaving the Orphan House can be established in cases where the child endorsed top and bottom. Examination of signatures or marks at exit among children who marked at entrance can show how effectively the Orphan House school taught basic literacy skills.

Further information on the education levels of these children can be gleaned from textual sources. Table 1 provides a short description of the child's education or literacy according to Orphan House officials who investigated the family or to letters that testified as to the family's poverty. In general, children who were supposed to have been illiterate in fact marked the document, and those who were supposed to have been able to read or to have had a little schooling were able to write their names. I am not aware of other historical sources of children's literacy that also provide anecdotal information on the child's education for comparison.

TABLE 1

*Correspondence between Descriptions of Literacy or Education in Manuscript Sources and Ability to Sign or Mark Legal Document*

Year	Sex of Child	Age	Comment in Records	Sign or Mark
1816	Boy	9, 10	“Without the smallest instruction”	X, X
1817	Girl	12	“She has had no education”	X
1817	Boy	7	“He can neither read nor write”	X
1819	Girl	10	“Can scarcely read”	X
1836	Boy	10–13	“Able only to read a little”	S
1855	Boy	11	“Mother can read and so can the two elder boys”*	S
1857	Girl	11	“Has no education except the knowledge of the alphabet”	S
1857	Boy	11	“A regular attendant at St Michael’s Sunday School and of some day school”	S

SOURCE.—“Applications,” Charleston Orphan House Collection, South Carolina Room, Charleston County Public Library.

\* Visiting commissioner also observed that the mother “cannot write,” and she in fact marked her indenture; the other boy neither signed nor marked his indenture.

### Families and Schools in Literacy Acquisition

The children in the present sample came to the Orphan House from a variety of unfortunate circumstances (Murray 2002). A little more than one-third were in fact full orphans who had lost both parents to death, or in some cases endured the death of one parent and had been abandoned by the other. Some of these children had been informally placed with neighbors or extended family. Poor wardens and clergy found others who were living rough and begging for food. About half had been bound in to the Orphan House by their mother; given restrictions on the ability of women to contract in nineteenth-century South Carolina, we can be sure that the fathers of these children were dead or had abandoned the family. About one-ninth had been bound in by their father, who may have been a widower or who may have been signing for both himself and his wife.

Present-day studies of family literacy indicate that even quite poor families can do much to aid the literacy acquisition of their children—literacy in this context, of course, meaning more sophisticated abilities than simple name writing (Auerbach 1989; Gadsden 1994). At the same time, the simple ability to write one’s name matters. Studies of literacy acquisition among present-

*Literacy in an Orphanage*

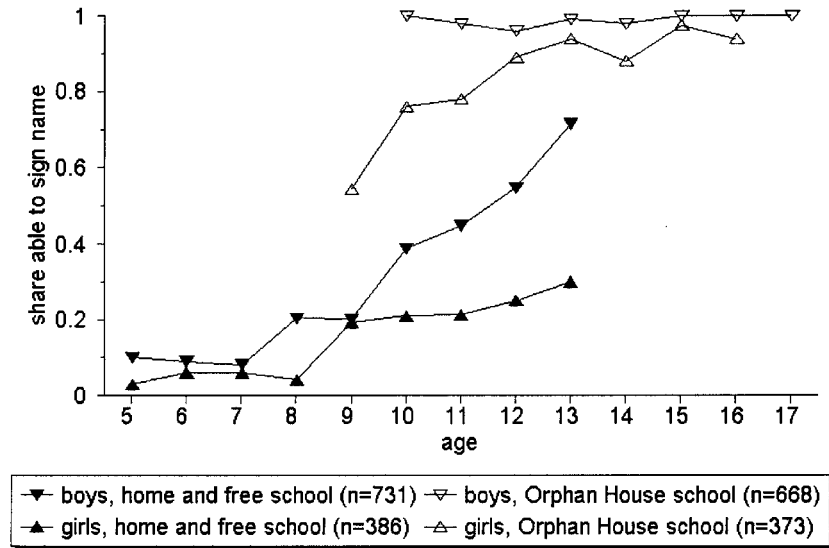


FIG. 1.—Literacy acquisition in Charleston

day children suggest that a child's ability to sign carries much information concerning the child's present and future human capital acquisition. Janet Bloodgood (1999) showed that the ability to write one's name early in a school year among children as young as four and five years of age was associated significantly with the acquisition of related skills later in the school year, including writing of other words, spelling, and other verbal skills. Connie Juel (1988) found positive and significant correlations between writing ability around age 6 and in later years. The age at which formal schooling begins has been found to be relatively unimportant in literacy acquisition among children, which is of some relevance to the Charleston orphans, who entered the Orphan House over a range of ages.<sup>11</sup>

Historical studies of childhood literacy indicate that family and home influenced literacy acquisition in the past and may have been especially important among poor families (Fishback and Baskin 1991; Sklar 1993). Figure 1 shows signature literacy rates by age for children who signed or marked their indentures at entrance to the Orphan House with the solid black marks. Only those rates based on the signs and marks of 10 or more children appear in this figure. It appears that literacy was minimal among these children before age 7. From that age onward disparities grew between boys and girls. At each successive age among boys literacy rates increased at about 10 percent per year. However, from age 9 onward very few girls seem to have learned to write. The ability of many boys and a few girls aged 8–10 to acquire some



basic level of literacy indicates that some families were either teaching these children to write or arranging for them to be taught in the free schools of Charleston. Because only the very poor were admitted into the Orphan House, it seems highly unlikely that many incoming children had benefited from private schooling or tutoring, the preferred mode of education for the well-to-do children of Charleston.

Some of this increase in child literacy must have come from teaching efforts by the surviving parent(s). Previous work indicates the importance of the parent's literacy, especially that of the mother, in enabling the child to achieve literacy. In upstate New York at a slightly later period the literacy of the mother was found to have had a positive and significant effect on the child's literacy (Murray 1997). In studies of Southern literacy later in the nineteenth and early in the twentieth centuries, the tendency of parental literacy to induce child's literacy was found among blacks and whites alike (Fishback and Baskin 1991; Margo 1990). In addition, surviving parents wanted their children to be educated, to judge from their own testimonies in supporting documents. For example, Martha Ann Monroe begged the Commissioners to admit her son William Calvert into the Orphan House, "where," she wrote, "he may be provided with raiment & diet and his education, which is of the greatest importance to his future welfare, as my circumstances will not permit me to do so myself."<sup>12</sup> Calvert, who was nine years old when he entered, marked his indenture, but when bound out eight years later, he signed his own name.

The increase in literacy with age at entrance, particularly among boys, may have been a result of enrollment in one of Charleston's free schools. Prior to the state school law of 1811, primary education of the poor was accomplished through privately funded charity schools. After that year the state agreed to fund free schools to which in theory any white family could send its children. A clause that required "poor orphans and the children of indigent and necessitous parents" be given priority in admissions resulted in the reality in which free schools were only attended by the poor who could afford no better (Jordan 1982; and Pyburn 1960). A group of citizens petitioned the Orphan House to admit two boys, explaining, "if the father was able to clothe and feed them he would get them at a free school but as he is not"; the alternative was for the boys to "remain ignorant and unimproved."<sup>13</sup> In addition, infant schools modeled on those in New England were organized in the 1820s to teach basic arithmetic, spelling, and a little writing to children aged 4 to 8 years (Pyburn 1960, p. 89; Vinovskis 1993). Given the desires of surviving parents and guardians to educate their children, the target population for the free schools, and the source population of the Orphan House, it seems reasonable to suppose that some of the increase in literacy among older children had occurred in the free schools.

But it must not have been easy. The free schools were intended to be

### *Literacy in an Orphanage*

charitable, not universal, and they cut corners wherever possible. The Lancasterian system in which older students “monitored”—taught, really—younger children was intended by Joseph Lancaster to be a panacea for the problem of how to teach large numbers of poor children. It was enthusiastically adopted in several of Charleston’s free schools. School commissioners proudly reported on huge enrollment increases with no additional expenditure needed (Kaestle 1973; Pyburn 1960, pp. 88–89). From 1811 to 1846 funding from the state remained constant while enrollment doubled, driving the student-teacher ratio from about 50 : 1 to over 100 : 1 (Jordan 1982, p. 108). By 1855 an observer found the average Charleston free school to be “a dirty hut” in which children were “tormented for six hours with books and birch,” eventually to leave “injured physically, intellectually, and morally and learned only to hate school and books.” According to this observer a mere two years of such schooling would allow the average student to catch up to the learning level of the average teacher. No wonder even the poor who were sufficiently motivated to send their children to these schools often removed them and sent them to work—at age eight! (Jordan 1982, pp. 105–6).

### Literacy Learning in the Orphan House School

Pedagogy at the Orphan House school resembled that in the free schools, with the important exception of mandatory attendance. Both institutions used older students to supervise the younger, thereby allowing student teacher ratios to balloon to almost unimaginable proportions, like the 107 : 1 ratio in the free school of 1834. The Orphan House separated its pupils by sex, with a schoolmaster and schoolmistress for each. Still, in many years its student teacher ratio must have resembled the free schools. In the 1820s, when the free school had 64 students for each teacher, there were 120 or so boys to challenge the schoolmaster and about 60 girls for the schoolmistress. Likewise, in the 1850s when the free school ratio was around 60 : 1, the Orphan House was positively bursting at the seams, with over 140 boys and about 75 girls. The two schools seem to have followed similar disciplinary procedures, with little stinting on corporal punishment. In September 1803 the angry father of 13-year-old Henry Barry lashed out at Orphan House commissioners for allowing him to be beaten and flogged. Commissioners agreed to remove the child to the Poor House.<sup>14</sup> At the free school, a teacher who administered punishments with “too great severity” was dismissed, leaving open the question of how harsh a beating would qualify as too severe (Pyburn 1960, p. 87).

Classroom activities were similar in the two schools. In the winter (November–March) both provided six hours of schooling between 9:00 A.M. and 5:00 P.M., with two hours off in midday. In the summer the Orphan House initially

ran one hour longer than the free schools, but by 1811 the Orphan House had reduced its afternoon session to have a school day of the same length.<sup>15</sup> Both schools used similar books. Texts assigned in the free schools included Webster's spelling book, Lindley Murray's English grammar, and a simple catechism. The Orphan House used *Introduction to the English Reader*, also by Murray, as well as Jedidiah Morse's *Geography Made Easy*, Martinet's *Catechism of Nature*, and *Dilworth's Assistant* for arithmetic.<sup>16</sup> Where the free schools had participated in the Lancastrian system in which older students taught younger students, in 1818 the Orphan House allowed its schoolmaster to introduce a competing scheme of Andrew Bell, whose method was similar to Lancaster's but more open to the teaching of specifically Anglican religious instruction to the children. Bell's own assessment of his system may not have been a good omen: "It is not proposed that the children of the poor be educated in an expensive manner, or even taught to write or cypher."<sup>17</sup> Later improvements resulted in the ability of his students to learn to write "in less than no time," according to Bell (Barnard 1861, p. 485). His intention to provide some education to the poor but not too much was less important to Orphan House officials than its economy. The Orphan House schoolmaster, John Kingman, thanked the board for providing him with tutelage in Bell's system, "whereby my labors are much abridged."<sup>18</sup> At least one downside to leaving the education of younger children in the hands of the older ones emerged in James Barry's bitter observation that it was the "boy schoolmaster" who had beaten his son so terribly.<sup>19</sup>

The Orphan House had one great advantage over the free schools insofar as the schooling it offered might have effectively taught its children to read and write: attendance. As a residential institution, it could and did require its children to remain on the grounds and could enforce school attendance. The free schools, however, could not, and members of their board of commissioners usually reported unfavorably on the share of pupils who actually came to school (Pyburn 1960, p. 88). Given the importance of attendance, especially among families as destitute as those who sent their children to free schools—and those who sent theirs to the Orphan House but for whom the free schools might have been the next best alternative—it is possible that the reason the Orphan House pupils learned so much was that they were forced to attend school. This is the most obvious difference between the Orphan House and the combination of free schools and family assistance available to children before coming to the Orphan House, since the time in school, methods, books, and student backgrounds appear to have been similar.

Compared to family and free schools, the Orphan House made a tremendous difference in the literacy acquisition of children entrusted to it. The curves made with open shapes in figure 1 indicate child literacy levels at exit. The source of the endorsements were the bottom halves of indentures. The

### *Literacy in an Orphanage*

children who left signatures and marks had been in the Orphan House for some time and were about to be bound out as apprentices to a master or to be returned to their parent or guardian. At each age, children leaving the Orphan House were much more literate than those entering. For example, among 12- and 13-year-olds, just under half of those entering were able to sign their name. But for girls and boys alike, about 90 percent of 12-year-olds who were leaving the Orphan House signed. In many cases the Orphan House school taught children who entered illiterate how to write not long after the child's admission. Literacy at entrance for all 1,271 children who signed or marked was 19 percent, but among those leaving the Orphan House within a year, it was 61 percent ( $n = 31$ ), and after just one to two years it was 90 percent ( $n = 61$ ). The Orphan House was effectively providing basic training in literacy to its charges.

A further characteristic of education in the Orphan House was that the rules of the institution specifically spelled out that girls were to be taught. Not for as long as boys—in the 1790s they were to get three hours of schooling compared to six for the boys, but some teaching nonetheless. By the end of the antebellum era, the politician, school reformer, and Orphan House alumnus Christopher Memminger was urging that the free schools cast off their role as charity schools and become universal institutions for all Charleston's children, not just the poor. This was to include girls as well, although not blacks (Jordan 1982, p. 111). During the antebellum era the evidence suggests that girls were in fact much less likely than boys to learn to write, both before coming to the Orphan House, when they might have been taught by family and free schools, and even after some years in the Orphan House, when they undoubtedly did receive some training in basic literacy.

### Statistical Analysis of Literacy Acquisition

Figure 1 shows the differences in literacy by gender and, by inference, according to the source of education as well. The curves marked with dark triangles indicate literacy at entrance, when the child's education would have come from the family or free school, and those with open triangles trace literacy at exit, after the child had attended some years of the Orphan House school. Differences in prior literacy acquisition by sex are evident in the diagram. First, more boys were literate at entrance than were girls. This is not too surprising, given the common finding of literacy gaps by sex among adults. Here, we can see that in this particular case, the gap was present at all ages, although small up to age 9. Second, for boys especially, the older the child at entrance, the more likely he or she was to be literate. As boys aged they were able to acquire literacy at a steady rate, but the same was much

less likely to have been the case for girls. They began to acquire literacy a year after boys, and after the initial jump among 9-year-olds, the rate of increase in literacy acquisition among girls was minuscule, as previously noted. Girls benefited relatively little from either family teaching or free schools after age 9.

Signatures and marks of young people who were exiting the Orphan House also showed that literacy increased with age and was more common among boys than girls. It was not simply, however, that the Orphan House reproduced the educational gaps that appeared in entering children, because girls entered at much lower levels of literacy. Consider children aged 10–13, an age group with considerable numbers both entering and leaving the Orphan House. The literacy rate of entering boys in this age group was 46 percent ( $n = 228$ ), and among exiting boys it was 98 percent ( $n = 363$ ). Among girls, a smaller share of those leaving could write their names than among boys, at 85 percent ( $n = 237$ ). The lower signing rate at exit may have resulted not from the commissioners' lack of concern for girls' education but the greater level of ignorance among entering girls, because their literacy rate was half that of boys (23 percent;  $n = 119$ ) at entrance. The disparity in literacy rates declined from 23 percent at entrance to 13 percent at exit, and this convergence during residency in the Orphan House represents some kind of special contribution by the Orphan House toward improving the state of girls' learning. Regarding age effects, the share of girls who were literate at exit rose with age, while the share of literate girls at entrance did not rise over those same ages. This suggests that the Orphan House arranged for girls aged 9–13 to continue to obtain some kind of basic literacy education—which these girls would probably not have been able to acquire outside the institution.

The learning experiences of poor children, both outside and within the Orphan House, appeared to have differed by sex, which contrasts with the assessment that such efforts elsewhere in America at that time were characterized by “little distinction by gender,” according to one leading historian of education (Vinovskis 1992, p. 323). That may have been true in the North. Despite the convergence in literacy rates, girls and boys seem to have received somewhat different educations in the Charleston Orphan House, beyond the differential in time spent in school noted previously. In the eighteenth century boys were sent out to a private school upon reaching age 8, while girls were kept in the Orphan House to help with daily operations such as making new clothes for fellow residents.<sup>20</sup> The schoolmistress was allowed to order different books for her girls than the schoolmaster ordered for the boys, for example, substituting the simpler *Reading Exercises for the Use of Schools* by David Blair while the boys read Aesop's fables.<sup>21</sup>

The intentions of the commissioners were that children of both sexes learn their subjects well, however those subjects might have differed in complexity.

### *Literacy in an Orphanage*

They examined the children regularly and at times even criticized those in charge of the girls who had allowed their training in writing and arithmetic to lag behind the boys, which, the commissioners claimed, “was equal to any seminary in the city.” The commissioners acknowledged when comparing writing samples that those of the girls were “generally inferior.” In response, they appointed a committee to find ways to improve the teaching of writing to girls, which suggests that less effective education of girls was not just a fact but a problem in the eyes of the men responsible for the institution.<sup>22</sup>

Data taken from the indentures can teach us about the identities of those who learned to write during their time in the Orphan House. The slightly different question of who could sign at exit depended heavily on whether the child could sign at entrance, since literacy among children was virtually never lost once acquired. Therefore, in the analysis that follows I consider only those children who marked their names at entrance. If these children signed or marked at exit I infer that they learned to write their name in the Orphan House school. Thus the longitudinal nature of the data can be exploited to reveal characteristics of the children who learned to write in the Orphan House school versus those who remained illiterate. Literacy learning depended on a variety of characteristics, some belonging to the children and others to the Orphan House. Secular trends in the economy might have caused different families to bring their children to the Orphan House at one time or another. Perhaps the ways poor families taught their children at home, in preparation for learning to read and write, changed over time. An ideal research strategy is to use regression analysis to keep all other factors constant, so as to focus on the particular variable of interest.

Characteristics of the sample can be found in table 2, which shows mean values of the several available variables. The 782 children in the sample represent all those who entered the Orphan House between 1790 and 1860, marked their indenture at entrance, and either signed or marked it upon being bound out or returned to their parents. Nearly half the children in the sample were bound out between 1810 and 1830. Figure 2 shows how the sample was distributed across the decades as well as the share of girls in each decade. Nearly 90 percent of these children successfully learned to sign their name before leaving. Forty percent of this sample consists of girls, which is consistent with earlier findings that most of the children in the Orphan House were boys. Because relatively few children signed or marked their indentures after about 1840, there are relatively few observations from the late antebellum period. The modal age at leaving was 13 years, which reflects the policy of binding at age 13 for girls and 14 for boys. Nearly half of the children had spent six or more years in the Orphan House, which should have provided plenty of time to learn signature literacy. As previously noted, half the children were bound in by their mothers, an eighth or so by their fathers, a third by

TABLE 2

*Mean Values of Each Variable*

Variable	Full Sample	Boys	Girls
Personal characteristics:			
Signed when leaving Orphan House	.90	.96	.79
Girl	.40	.00	1.00
Birthplace or residence:			
Charleston	.88	.89	.88
Other South Carolina	.03	.04	.02
Away from South Carolina	.09	.07	.09
Decade of indenturing:			
1790s	.07	.07	.07
1800s	.16	.15	.18
1810s	.24	.22	.28
1820s	.24	.26	.21
1830s	.18	.18	.18
1840s	.07	.08	.07
1850s	.02	.03	.01
1860s	.01	.004	.01
Age at indenturing (years):			
8 or less	.04	.02	.06
9	.02	.01	.03
10	.07	.03	.13
11	.12	.08	.18
12	.18	.16	.20
13	.28	.34	.19
14 and older	.30	.36	.21
Years resident in Orphan House:			
Less than 1	.03	.02	.06
Between 1 and 2	.05	.03	.09
Between 2 and 3	.09	.07	.11
Between 3 and 4	.11	.10	.12
Between 4 and 5	.12	.12	.11
Between 5 and 6	.11	.12	.10
More than 6	.50	.54	.43
Family of origin and characteristics:			
Bound in by father	.11	.12	.09
Share of fathers who were literate	.84	.79	.93
Bound in by mother	.49	.50	.48
Share of mothers who were literate	.46	.48	.44
Bound in by other kin	.06	.04	.05
Bound in by nonfamily member	.34	.34	.38
<i>n</i>	782	470	312

*Literacy in an Orphanage*

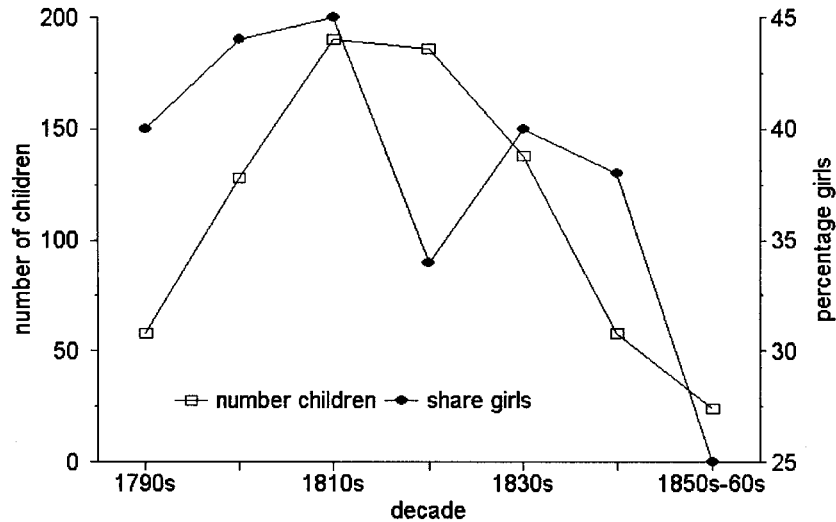


FIG. 2.—Children bound out from Orphan House

public or church officials, and the rest by other kin. Disproportionately many full orphans were bound out and thus signed the indenture; often children bound in by their mothers returned to them after they remarried (Murray 2003).

To examine the influences of each of these variables on literacy acquisition within the Charleston Orphan House, I estimated several logistic regression models in which the dependent variable was set equal to one if the child signed his or her name on the indenture upon being bound out and to zero if the child endorsed the indenture with a mark (tables 3 and 4). Since each child in the sample had marked at entrance, the dependent variable thus shows whether the child learned to write at least his or her name while in the Orphan House. In addition, the columns headed  $\partial P/\partial X$  provide an estimate of the magnitude of the effect of the independent variable upon literacy acquisition, relative to the omitted category.<sup>23</sup> The magnitude is given in terms of the change in probability of literacy due to the difference between the given and the omitted category. Table 3 provides the results of a regression of all available variables over the entire sample, and table 4 distinguishes between boys and girls in separate regressions, with fewer variables to compensate for the smaller number of observations in each.

Table 3 shows six kinds of potential influences upon literacy acquisition: sex, region, decade, age, time in the Orphan House, and prior family situation. Differences in literacy learning by gender were evident: holding all other characteristics constant, girls were 16 percent less likely to learn to write while



TABLE 3

*Logit Regression Estimation Results*

Variable	Parameter Estimate	Standard Error	$\partial P/\partial X$
Intercept	-1.59 <sup>+</sup>	.94	
Girl	-1.78**	.35	-.17
Birthplace or residence:			
Charleston	-.09	.52	-.01
Other South Carolina	-.67	.96	-.06
Away from South Carolina	...		
Decade of indenturing:			
1790s	...		
1800s	.18	.65	.02
1810s	-.23	.59	-.02
1820s	.41	.63	.04
1830s	-.02	.61	-.002
1840s	1.32	1.18	.12
1850s	-.93	1.12	-.09
1860s	.12	1.71	.01
Age at indenturing (years):			
8 or less	...		
9	.45	.79	.04
10	2.78**	.64	.26
11	2.99**	.60	.28
12	3.28**	.61	.31
13	3.89**	.64	.37
14 and older	3.42**	.61	.32
Years resident in Orphan House:			
Less than 1	...		
Between 1 and 2	1.81**	.69	.17
Between 2 and 3	1.42*	.60	.13
Between 3 and 4	1.45*	.60	.14
Between 4 and 5	1.82**	.65	.17
Between 5 and 6	2.78**	.83	.26
More than 6	2.19**	.55	.21
Family of origin and characteristics:			
Bound in by father	-.75	.89	-.07
Father signed	.82	.98	.08
Bound in by mother	-.05	.37	-.005
Mother signed	.61	.45	.06
Bound in by other kin	.18	.84	.02
Bound in by nonfamily member	...		
Pseudo $R^2$		.34	
$n$		782	

<sup>+</sup> Significant at the .10 level.

\* Significant at the .05 level.

\*\* Significant at the .01 level.

*Literacy in an Orphanage*

TABLE 4

*Mean Values and Logit Estimation Results by Sex*

	BOYS			GIRLS		
	Parameter	Standard Error	$\partial P/\partial X$	Parameter	Standard Error	$\partial P/\partial X$
Intercept	.14	1.53		-1.48 <sup>+</sup>	.81	
Charleston	-1.95	1.26	-.08	.52	.46	.09
Time of indenturing:						
before 1810	...			...		
1810-29	-.80	.82	-.03	-.09	.42	-.01
1830-49	-.53	.96	-.02	.14	.48	.02
1850-69	-2.24	1.42	-.09	-1.16	1.07	-.19
Age at indenturing (years):						
Under 11	...			...		
11	2.36 <sup>+</sup>	1.23	.09	1.04*	.43	.17
12	1.65 <sup>+</sup>	.88	.07	1.77**	.50	.29
13	3.01**	1.06	.12	2.15**	.56	.36
14 and older	1.92*	.96	.08	1.82**	.51	.30
Years in Orphan House:						
Less than 1	...			...		
1-3	3.56**	1.28	.14	.80	.62	.13
3-5	4.24**	1.24	.17	1.01	.63	.17
Over 5	6.52**	1.46	.26	1.29*	.60	.21
Adult who bound child into Orphan House:						
Bound in by father	-.81	1.31	-.03	-.99	1.15	-.17
Father signed	-.28	1.55	-.01	1.32	1.23	.20
Bound in by mother	-1.75*	.86	-.07	.46	.41	.08
Mother signed	1.46 <sup>+</sup>	.87	.06	.21	.49	.03
Pseudo $R^2$	.40			.17		
$n$	470			312		

<sup>+</sup> Significant at the .10 level.

\* Significant at the .05 level.

\*\* Significant at the .01 level.

resident in the Orphan House than were boys. There were no effects by region; prior residence in the city of Charleston, elsewhere in South Carolina, or another part of the country or abroad had no effect on literacy acquisition. No discernible cohort effect could be seen, which may suggest that children generally learned the basics of literacy equally well regardless of pedagogical techniques that varied over time.

Regression analysis allows us to disentangle two closely related influences, the age of the child and the number of years he or she had spent in the institution. The age of the child was associated strongly with increased literacy abilities: while those children who were bound out at age 9 were no more likely to be able to sign than were younger children, those age 10 and older

were significantly more likely to sign, an increase in probability over the younger group of 26 to 37 percent. In addition, the magnitude of the effect grew with age, up to age 13. This simply indicates that children became ever more likely to have acquired basic literacy skills as they aged. In general, older children would have spent more years in residence at the Orphan House. Regression analysis allows us to separate the age effects from years in residence effects. Controlling for age, we can see that the effect of additional years in the Orphan House was significant but was not as powerful as an additional year of age. Having spent at least one year in the institution raised the probability of signing significantly, but the magnitude of the effect was to increase this probability by only 12 to 21 percent, less than the effect of an additional year of age. Again, the magnitude of the residence effect increased with years, so that long-term residents were even more likely than short-term residents to have learned to write.

Modeling the literacy acquisition process for boys and girls separately is desirable for two reasons. First, evidence from textual sources noted above indicated that boys and girls had different educational experiences before arrival at the Orphan House and while living there. Second, the significant coefficient for the variable "girl" in table 3 indicates that even after controlling for age, regional, cohort, residence, and family effects, girls were still less likely to learn to sign, suggesting that education differed by gender not just in process but results as well. Table 4 shows the results of separate regressions. The share of children leaving the Orphan House who could sign their names differed by gender, at 79 percent of girls and 96 percent of boys. For both boys and girls, regional and period effects were similar and statistically nil. For both boys and girls, age had similar and significant effects, which indicated that the probability of learning to sign increased as the child grew older. Thirteen-year-olds were especially likely to sign. The magnitude of the age effect seems to have been greater for girls.

The influence of years in residence and family situations differed by sex in some obvious and some subtle ways. Among boys, those who spent at least a year became significantly more likely to learn to write than those who left the Orphan House within a year of admission. The probability of literacy learning increased as a boy stayed in the house by 14–26 percent, and these figures obtain holding the age of the boy constant. For girls, the magnitude of the increase in literacy probability with each additional year or two in the institution was very close to that of the boys. However, the girls' experiences were more diverse than those of the boys. Although time in the Orphan House increased the likelihood that a girl would learn to sign, enough girls left the Orphan House illiterate that the effect of the first five years of residence was not statistically significant for girls. This is quite strong evidence that, holding age, residence, period, and so on constant, girls received markedly inferior

### *Literacy in an Orphanage*

educations within the Orphan House, in the sense that it took, on average, several more years for them to learn to write than it took boys.

In an orphanage in which children who had lost both parents, or who had been totally abandoned by both parents, inclusion of variables for prior family structure and learning might not seem to have a point. However, as noted previously, one parent or the other brought nearly two-thirds of the Charleston children to the Orphan House, so that a relatively small share of a third or so must have been full orphans. While some of the boys and girls bound in by a surviving or abandoned parent may never have seen that parent again, it seems to have been more of a rule than the exception for parents, and more distant relatives such as aunts and uncles as well, to have maintained their relationship with the child in the Orphan House (Murray 2002). Mothers in particular were concerned about the education their child received in the Orphan House school and knew if they were to recover their children, after remarriage, for example, they would need to continue educating them.<sup>24</sup> Some fathers maintained contact as well; recall the case of Henry Barry described above, in which the father rushed to protect his son, whom he believed had received too harsh a punishment in the Orphan House school. It may also have been the case that the prior family situation may have prepared the child to acquire literacy even if he or she was unable to write at admission.

Whether the result of preparation or continued assistance, boys who were bound in by a mother who was able to write were significantly more likely to acquire literacy in the Orphan House than were boys bound in by illiterate mothers. The ability of literate mothers to influence later literacy acquisition is consistent with prior research on the influence of mothers in a variety of scholarly literatures, although the effect some years after the child had left the family is noteworthy.<sup>25</sup> Why the mother's influence extended far more to sons than daughters is a difficult question to answer, but a resolution may be suggested by the overall sex ratio of bound children. There surely were as many poor and orphaned girls as boys in antebellum Charleston, but boys formed the majority of Orphan House residents. This may have been due to a perceived need to formalize the future labor obligation that boys offered, as their laboring future was tied to the market to a much greater extent than for girls, who were typically bound out as domestics or seamstresses. Knowing that boys were to labor in markets and girls in homes, literate mothers may have made special efforts to prepare their sons for literacy acquisition.

If mothers were keener on education for their sons than for their daughters, this distinction might have influenced the letters some mothers wrote to support their children's admission application. In these letters we can see if mothers were more likely to tell the commissioners that they hoped the Orphan House would provide an education for their sons than for their daughters. It appears that mothers may have favored their sons in this sense. The sex ratio of children

brought to the Orphan House by their mothers was 60 : 40, but in a sample of letters written by (or for) mothers to explain their motivations, mothers were much more likely to state that they hoped for their sons' educations than their daughters', by about three to one. In one example, Catherine Bennett asked for her son's readmission because she found he was making "no progress at all in learning" at a free school. In several cases destitute mothers told the commissioners that the Orphan House was the only possible source of schooling for their daughters, but they were much more likely to make this argument for their sons.<sup>26</sup>

### Conclusions

This essay examined rare evidence on an important question: How and when did children acquire literacy in the past? Because children so rarely have left behind records of their literacy, most of what we know about the literacy of people in the past relies on documents signed or marked by adults. These tend to overrepresent either the rich, such as landowners who signed deeds during property transfers, or the elderly, who signed wills bequeathing their property. In addition, literacy records of adults may reflect literacy acquisition later in life, whereas the present data represent literacy learning by schoolchildren early in life. The data from the Charleston Orphan House show that entering children became more literate as they aged, probably from home education or free schools. A far more important source of literacy, however, was the Orphan House's school, which had the great advantage over free schools in that it could compel attendance. As a result, relatively few who left the Orphan House were unable to write their names, and much of this literacy acquisition occurred within a year or two of their entrance.

The assessment of the role of gender in literacy learning has important consequences for our understanding of the rise of popular literacy in the United States. Scholars have closely examined the rise of women's literacy in New England, inferring that a sharp increase occurred in the later eighteenth century, due in large part to the availability of evening schools for young adults (Herndon 1996; Main 1991; Perlmann and Shirley 1991). Literacy acquisition elsewhere at this time has not been studied closely.<sup>27</sup> In this sample from the South, girls were significantly less likely than boys to be literate when entering the Orphan House school and were less likely to become literate after attending the school. Such magnitudes of literacy differentials may have been unique to the South. In a comparable study of children in mid-nineteenth-century New York State, girls were just as likely as boys to be literate, holding age and prior residence constant (Murray 1997). Despite variation in cultural emphases on girls' education, even within a single state such as Massachusetts,

### *Literacy in an Orphanage*

on the whole Northern communities devoted more resources to teaching girls than the South did (Sklar 1993).

The potential cost of undereducating Southern girls was great. By the time of the 1840 census, adult white literacy in New York state was 96 percent and in South Carolina only 81 percent. In that New York study mentioned above the literacy of mothers was significantly associated with literacy in children. One reason for the literacy gap by region in antebellum America may have been a literacy gap by gender—in a difference-in-differences sense—by region. If Northern women were closer to men in literacy terms than were Southern women to Southern men (as was the case), the intergenerational transmission of literacy in the North would have been that much more easily accomplished even if overall literacy had been about equal. To the extent that differences in literacy by sex help explain the overall literacy gap between regions, the origins of that gap may lie as far back as relatively early childhood, when Southern girls in a variety of settings were less likely than boys to learn to write.

### Notes

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1. There is no general history of the Orphan House, although Bellows 1994 ably discusses it in the context of more general charitable efforts in Charleston.

2. Minutes, Commissioners' Meetings, Charleston Orphan House Collection, South Carolina Room, Charleston County Public Library, vol. 1, p. 38 (hereafter "Minutes").

3. More on Southern poor relief at this time can be found in Lockley 2003.

4. Minutes, October 1790.

5. Slave orphans were especially vulnerable. Elsewhere in the South, legislation to protect slave orphans from unscrupulous masters seems to have reduced the trade in orphans. See Schwartz 2000, pp. 89–90.

6. Minutes, August 6, 1812.

7. Minutes, February 10, 1820, and February 17, 1820; Rachel Burbridge to Commissioners, February 17, 1820, "Applications" files, Charleston Orphan House Collection, South Carolina Room, Charleston County Public Library.

8. For literacy among the middling sorts in England, see Mitch 1992, and among the very poor in eighteenth-century America, see Herndon 1996. On the paucity of data on children's literacy, see Grubb 1990.

9. One child signed first and later marked, and even here the initial signature may have been written by her father. See the indenture of Elizabeth Bossell, December 15, 1803, "Indentures," Charleston Orphan House Collection, South Carolina Room, Charleston County Public Library.

10. On these and similar apprenticeships in early America, see Murray and Herndon 2002.
11. Juel 1988. Similar correlations between early age and later reading skills were even stronger.
12. Martha Ann Monroe to commissioners, May 1, 1827, "Applications." The handwriting of this letter, the signature on it, and Monroe's mark on the indenture suggest that she was in fact illiterate and the letter had been written for her by someone else.
13. Elizabeth Ann Yates et al. to commissioners, January 30, 1813, "Applications."
14. James Barry to commissioners, September 7, 1803, and September 10, 1803, "Applications"; Minutes, September 1, 1803.
15. *Rules and Regulations for the Government of the Orphan House in the City of Charleston*, Rule 6th, in Minutes, July 28, 1791; Pyburn 1960, p. 87; Minutes, June 6, 1811.
16. Pyburn 1960, p. 87; Minutes, March 5, 1795, and June 13, 1811.
17. In *Elements of Tuition* (1805), cited in Kaestle 1973, p. 20. Further comparisons of Bell and Lancaster appear in Salmon 1932.
18. Minutes, July 16, 1818.
19. James Barry to commissioners, September 7, 1803, "Applications."
20. *Rules and Regulations for the Government of the Orphan House in the City of Charleston*, Rule 7th, in Minutes, July 28, 1791.
21. Minutes, June 13 and 27, 1811.
22. Minutes, October 1, 1801; April 11, 1811; December 12, 1816.
23. For the sake of simplicity, I used the following formula:  $\partial P/\partial X = \exists \cong p(1-p)$ , where  $p$  = proportion signing. See Allison 1991, p. 30.
24. For example, Caroline Lawlor to commissioners, October 22, 1841; Mrs. L. Ryan to Mr. [Henry] DeSaussure, March 22, 1855; Maria Schmidt to commissioners, May 8, 1856, all in "Indentures."
25. Aram and Levin 2001; Behrman et al. 1999; and Murray 1997 are three examples from the historical, educational, and economic literatures.
26. Letters in "Applications"; Catherine Bennett to commissioners, September 22, 1853.
27. An exception with broad coverage was Grubb's (1990) explication of Cotton Mather's "creole degeneracy" throughout the colonies. See also Bailyn 1972, pp. 78–83.

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