Elementary Literacy on the Eve of the Industrial Revolution: Trends in Rural New England, 1760–1830

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SINCE MOST historians are also teachers, literacy may be the most dangerous topic for us to study. We are committed, and more to the point, paid, to further develop literacy skills presumably inculcated earlier on in schooling. Failure to instill proper reading and writing habits in grade and high school students cripples the best efforts of historians as teachers. It is difficult to remain sensitive to nuance and self-critical of current assumptions about changes in literacy levels when we are so intimate with literacy and its apparent decline. Reading some social and intellectual historians on literacy—not to mention historians of education—is like listening to a car dealer ooze on about the value of the auto in modern life. Definitions of literacy are often extremely rigid and elitist. Only its presence and possession—'true literacy'—seems to separate the civilized from the barbarian. The consequences for historical scholarship have been severely limiting.

Historians need to take a different tack. Despite the somber tone of much of the literature on literacy, no one was incapacitated by illiteracy in premodern America. Somehow, premodern peoples managed. They not only survived but lived out their lives, functioned in their society, and communicated with one another far more directly than we will ever comprehend. The key question is, How? Within what modes and through what vehicles? Literacy is best understood as a problem not just

of the actors in a culture, but of the relationship between actors and audience, to employ the late Benjamin Nelson's terminology.[1] Literacy in this view is the social basis of cultural belief and value systems, and conclusions about literacy are an initial step on the path leading to a fuller study of the depth, breadth, and the various levels of cultural interchange in early national America. Starting with elementary literacy is to begin at the beginning.

First, a matter of definition. Throughout this essay I have discussed and measured literacy rather than illiteracy. Various scholars have chosen to analyze literacy by measuring illiteracy, such as Carlo Cipolla in his 1969 book *Literacy and Development in the West*, and Roger Schofield in his 1973 essay 'Dimensions of Illiteracy.'[2] David Cressy advances an interesting justification for measuring illiteracy: that a signature is merely 'an indication that a person can write his name, it provides no information about what else he might achieve; he might be able to string the letters together, he might be a composer of sonnets.'[3] On the other hand, a mark (X) makes it clear that

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[1] Nelson, 'Actors, Directors, Roles, Cues, Meanings, Identities: Further Thoughts on "Anomie," ' *The Psychoanalytic Review* 51 (1964): 135–60; and 'Civilizational Complexes and Intercivilizational Encounters,' *Sociological Analysis* 34 (1973): 79–105.

[2] Cipolla, *Literacy and Development in the West* (Baltimore, 1969); Schofield, 'Dimensions of Illiteracy, 1750–1850,' *Explorations in Entrepreneurial History* 10 (1973): 437–54, esp. fig. 1, p. 441; and Schofield, 'The Measurement of Literacy in Pre-Industrial England,' in Jack P. Goody, ed., *Literacy in Traditional Societies* (Cambridge, 1968), pp. 311–25.

[3] See Cressy's superb 'Literacy in Pre-Industrial England,' *Societas* 4 (1974): 229–49, esp. 229.

the individual cannot write, thus 'as far as this particular skill is concerned he is illiterate, and this is what we are measuring.'[4]

I see this issue differently. I agree wholeheartedly with Cressy's caution regarding signing and marking behavior, avoiding overblown notions of 'true literacy.' I also agree that a signature does not distinguish, at the extremes of a range, between an otherwise illiterate scrawler and a widely hailed sonnet writer. But there is nothing inherent in the measure that forces it to bear this burden. A signature is merely an indication of some level of elementary literacy. The extent of elementary literacy conveyed by any group of signatures must depend upon the historical circumstances in which they were created. Only by learning the context within which the acquisition of elementary knowledge of the world, and those skills making this knowledge usable, takes place can we learn which basic skills at what level of competence were possessed by those who had learned to sign their names.

Cressy is correct that marking (rather than signing), except in cases of feebleness or other infirmity, meant that an individual could not write. But the reverse is not completely true. In early national America, the ability to write one's name is not an unmistakable indicator of further writing ability for, as we shall see, signing was taught *before* other writing. But neither did signing one's name mean that an individual could do no more. Rather it meant, in the overwhelming proportion of cases, that an individual had also attained some basic ability to read and write.

Literacy scholarship has generally employed a narrow range of evidence—data on signing and marking—to reconstruct literacy levels, which has led to correspondingly narrow interpretations of that evidence. But all too often inordinately broad conclusions have been advanced concerning the meaning of those trends. Several additional questions need to be asked beyond those relating to the levels and direction of change in

[4] Cressy, 'Literacy,' (note the title), quotes from p. 230.

male and female signing and marking behavior. Such questions include: What does signing and marking behavior actually test and what level of literacy does it reveal? How may the level of literacy vary depending upon the place and time being studied? When and how was elementary or basic literacy initially acquired? Precisely which skills (signing, reading, writing) were learned and in what sequence? Perhaps most important: Did basic literacy persist throughout the life cycle? How was it maintained? What was its relationship to other dimensions of cultural life?

This essay attempts to consider most of these questions by offering a descriptive analysis of elementary literacy for one area of the United States during its early national period. By elementary or basic literacy I mean the acquisition of the rudimentary skills of reading and writing, and the corresponding knowledge of the world gained through them. The geographical and cultural unit selected for analysis is a portion of rural New England known to contemporaries as the Upper Valley, the settled counties of Vermont and New Hampshire bordering the Connecticut River. Relatively self-contained through 1830, the Upper Valley had settled into a steady pattern of rural growth by the 1780s. Settlements first moved up the central corridor on either side of the Connecticut River; after 1800 they extended further northward and into the uplands. The bulk of the evidence for this study will be drawn from Windsor County, Vermont, the most populous of the six counties. The main patterns discerned there probably hold for much of rural New England, especially in its late-settled areas.

Residents of rural New England between the 1780s and the 1830s, like their fellow human beings elsewhere, had six basic, active modes of cultural expression: oral communication, music and singing, visual arts and crafts, dancing, handwriting, and the printed word. Individuals formed their values and beliefs through a mixture of one or more of these modes as they perceived, processed, assimilated, reformulated, and articu-

lated attitudes on a variety of issues relating to everyday life. Surviving sources from the region are silent on all too many aspects of the oral, musical, and dance modes. Visual sources likewise are sparse and often ambiguous. Handwritten and printed materials, albeit by default, often provide the greatest variety of evidence from which to analyze the social basis of expressive behavior in rural New England society. This essay will be limited to the written and printed means of expression.[5]

The governing assumption for the premodern world was stated well by Toynbee: 'In the pre-industrial agricultural economy in which human and animal muscle power has not been reinforced by mechanical power, all but a small minority of the members of society are condemned to live as a peasantry whose puny production cannot provide amenities beyond such common necessities as food, clothing, and shelter for more than a small minority.'[6] This somber theme of the sad and appalling lot of humanity has seeped into many studies of literacy in Europe and America before 1800. The acquisition of the skill of signing—the single consistent source of evidence for large segments of a society—is made to stand for 'literacy,' a skill that, when widespread enough in a community, marks a fundamental break with Toynbee's world of 'puny production.' From this often implicit perspective, the acquisition of 'literacy' as measured by signing seems to separate the civilized from the barbaric and primitive, the progressive and dynamic from the traditional and static, the modern from the premodern world.

In some of the very best work on literacy—Stone and Schofield on England and Lockridge, Tully, Auwers, and Beales on America—literacy is depicted as a highly critical if not al-

[5] On cultural regions see Raymond D. Gastil, *Cultural Regions of the United States* (Seattle, 1975), esp. pp. 7–46. A provocative essay discussing the relationship between oral and print dimensions is Rhys Isaac's 'Preachers and Patriots: Popular Culture and the Revolution in Virginia,' in Alfred F. Young, ed., *The American Revolution: Explorations in the History of American Radicalism* (De Kalb, Ill., 1975), pp. 125–56.

[6] Toynbee, as quoted in Carlo M. Cipolla, *Literacy and Development*, p. 8.

mighty skill. Moreover, like Puritan sainthood, it is either possessed or it is not, with equally far-reaching implications for, in this case, the lifelong fate of premodern peoples. Only Cressy, in his more recent work, and Graff, consistently, avoid freighting signing and marking evidence with overly broad implications. The modernization framework, which postulates the existence of two radically different societies and a transition from one to the other, is especially vulnerable to simple quantitative methods allegedly yielding one clear criterion presented in an apparently isolated, uncomplicated time series such as found in signing and marking rates. Cressy and Graff show the defects in this approach.[7] This is not meant to attack the specifics of much very fine scholarship but rather to observe a largely unintended consequence of the model and method that have informed this work.

This essay attempts to break free from the interpretive pattern just sketched. The view of trends in literacy rates in rural northern New England presented here is derived from data on signing and marking and other kinds of evidence. The data are interpreted very narrowly as providing evidence only of the levels of what may be called elementary literacy. The specific level of performance achieved varied greatly, of course, and was dependent on a series of factors not determinable from evidence of signing and marking alone. By itself, signing and

[7] On literacy as conversion see Lawrence Stone, 'Literacy and Education in England, 1640–1900,' *Past and Present* 42(1969):61–139; Schofield, 'Measurement' and 'Dimensions'; Kenneth Lockridge, *Literacy in Colonial New England: An Inquiry into the Social Context of Literacy in the Early Modern West* (New York, 1974); Alan Tully, 'Literacy Levels and Educational Development in Rural Pennsylvania, 1729–1775,' *Pennsylvania History* 39(1972):301–12; Linda Auwers, *The Social Meaning of Female Literacy: Windsor, Connecticut, 1660–1775*, Newberry Papers in Family and Community History, no. 77–4A (Chicago, 1977); Ross W. Beales, Jr., 'Studying Literacy at the Community Level: A Research Note,' *Journal of Interdisciplinary History* 9(1978): 93–102; and Cipolla, *Literacy and Development*. For a welcome relief see David Cressy, 'Literacy,' and especially *Literacy and the Social Order: Reading and Writing in Tudor and Stuart England* (Cambridge, 1980); and Harvey Graff, *The Literacy Myth* (New York, 1979). In no way is this one difference in interpretation of signing data meant to lessen my great admiration for the specific findings embodied in the earlier studies. These are all very valuable works.

marking behavior is not a reliable indicator of any individual's level of reading comprehension or of writing ability, at least not in rural New England between 1760 and 1830.

All that signing directly measures is itself, precisely because this skill, as we shall see, was taught before any other writing and usually before any substantial reading instruction. Only the most elementary knowledge of grammar preceded signing, at least in the Upper Valley. As an indirect gauge, however, signing behavior does fairly measure the ability to do some reading, and perhaps some writing as well. This is so because our signing and marking evidence derives from periods in the individual's life cycle long after the completion of basic schooling. If there is evidence for the persistence of one skill, presumably other skills acquired in childhood and youth also persisted, at least minimally.

Signing was a widely used but functionally specific skill, practiced by will makers and witnesses; by petitioners; by persons doing business on credit with a storekeeper, merchant, or peddler; by males making deeds upon the sale of their real property, and by their wives whenever dowry or legal rights to a third of the family's land was involved; by signers of guardian records; and by members of voluntary organizations, to name only the most common occasions. It is possible that at least some percentage of those who signed such documents maintained their ability to sign through frequent practice while losing their ability to read. But other evidence, especially the incidence of book ownership revealed in three-fifths of the inventories of estates, indicates that signing (versus marking) is at least an indirect measure of a minimal level of reading ability. It is not possible, however, to speculate about the relationship between signing and further writing ability because there are no sources to help measure writing ability comparable to the estate inventories that reveal reading habits.

In sum, at least during the period in question, signing evidence is more ambiguous than previous research and common

sense would suggest.[8] Critics of Kenneth Lockridge's *Literacy in Colonial New England* have made a strong case for the view that signing versus marking is not a direct measure of literacy, as Lockridge argued, but an indirect one.[9] However, given the kinds of evidence available to students of literacy in early America and the limitations of each type of source, signing versus marking remains, for now at least, the best if indirect measure of elementary literacy.[10] The present study follows up on Lockridge's work, as he hoped other scholars would, in the end qualifying his finding of 'near universal male literacy' by the end of the eighteenth century.[11]

Of more immediate consequence for literacy research is the crucial question of the precise meaning of the evidence on signing and marking. Until now, many students of literacy have counted signatures and marks in deeds or probated wills, conceiving of this as a direct quantitative procedure. Occasionally they have performed a check to exclude duplication of names and have factored in a percentage, such as Lockridge's 15 percent, to correct for 'feebleness, forgetfulness and opportunity lag.'[12] This correction is useful, but historians also need to uti-

[8] The classic essay remains Lawrence Stone's most thoughtful 'Literacy and Education.' Graff, *Literacy in History: An Interdisciplinary Research Bibliography*, Newberry Papers in Family and Community History, no. 76–1 (Chicago, 1976), however, sees signing evidence as a direct measure of literacy (p. 37). See also Natalie Z. Davis, 'Printing and the People,' in *Society and Culture in Early Modern France* (Stanford, Calif., 1975), pp. 189–226, esp. p. 195. In rural New England, the proportion of wills and inventories declines dramatically after the early 1830s for both New Hampshire and Vermont probate districts.

[9] Lockridge has spawned an unusual number of probing reviews. See especially those in the *William and Mary Quarterly* 32(1975):638–40 (Kevin P. Kelly); *History of Education Quarterly* 15(1975):467–74 (Harvey J. Graff); *Economic History Review* 28(1975):741–42 (Gloria L. Main); *New England Quarterly* 48(1975):128–30 (Neal Salisbury); *Journal of American History* 62(1975):105–6 (Daniel Scott Smith); and the *American Historical Review* 81(1976):203–4 (David Cressy).

[10] Lawrence Stone's advice, in 'Literacy and Education,' that signing and marking is the best measure we have or are likely to get, still stands.

[11] This, his central finding, is based on 300 wills from two Massachusetts counties, 1787–95; Suffolk County rose from ca. 80 to 85 percent literacy between his 1758–62 sample and that of the years 1787–95, and Middlesex County went from ca. 80 to 90 percent. See Lockridge, *Literacy*, pp. 13 and 19–20.

[12] Lockridge, *Literacy*, p. 9 and ch. 1.

lize all tests possible within what has been the primary body of evidence: deeds and, especially, wills.

The further accumulation of case studies will unfortunately not advance our understanding of literacy until scholars probe more deeply into the historical meaning of both signing and marking for the periods and places under scrutiny. Does signing or marking reveal broad or narrow abilities in the will or deed maker? To what extent did other factors impinge on the process of signing and marking? Discussion of these issues may encourage other scholars to refine or correct what is suggested here.

Multiple-moment Research

Not only do wills, deeds, and general store account books possess very different historical contexts, they also tend to have been created at quite different moments in the lives of individuals. A person living in the Upper Valley during 1760–1830 was often neither literate all his or her life, nor a lifelong illiterate. For this reason, it is critical for scholars to bear in mind the precise moment within the life cycle at which a group is measured for evidence of elementary literacy. Previous research designs have often mentioned but not sufficiently analyzed the variability of signing literacy over the life of individuals. To do this historians need to use evidence from several moments in the life cycle.

So far, however, scholars have usually chosen a single source for charting literacy trends. Wills have evolved as one of the best because of their broad coverage of wealth within a population relative to other sources. But wills merely give an indication of literacy at one moment in time, usually quite late in life, a time in which physical infirmity may have affected at least a substantial minority of the population. However quantifiable and helpful in terms of the proportion of a society included, relative to other sources, the data from wills should be seen as simply one fragment from quite late in the course of mostly

male lives. Data gathered from a moment soon after schooling, such as marriage certificates or apprenticeship indentures, are equally untrustworthy. The threshold of adulthood is too narrow a vantage point from which to view the remainder of the life cycle, because literacy skills learned at a young age might later wither from disuse.

Lacking the exquisite catechetical evidence for Sweden or even the solid marriage records of England, scholars of American literacy have searched in vain for a comprehensive source. The serious limitations in any one source of signing data suggest the need to reorient the study of elementary literacy in America away from single-moment studies and toward what I term multiple-moment research. By multiple-moment studies of signing I mean research that combines data from two or more sources, each representing evidence from a different portion of an individual's life cycle. Such research might combine deeds, general store account books, and wills as part of the analysis.[13]

The purpose of multiple-moment research in signing behavior is to understand the actual history of literacy across the course of a person's life. It comprehends that literacy is a complex and dynamic phenomenon, which varies for each individual. The acquisition of literacy usually began during childhood or youth, at home or at school. Later, these elementary skills, once learned, may have been further developed or let languish. Just as the history of literacy for any individual has its beginning, it also has its own end, its termination by death or final illness; or, earlier, for any one of several reasons, including the accumulation of physical infirmities, which might have varied widely with occupation, skill, and fortune. Literacy

[13] As François Furet noted at the recent Bad-Homburg colloquium, language has had an inhibiting effect on literacy study. In English literacy means a state achieved. In French the term *alphabétisation* is a far more flexible and accurate one, for it means the process of becoming literate. With the latter formulation it is far easier to study the history of literacy over the life cycle, including both the acquisition and the maintenance of elementary literacy.

study will truly advance when some evidence from at least two and preferably three different moments in the life cycle of the same group is compared as a regular procedure.

In much of the rural Northeast, for instance, evidence on signing versus marking from wills and inventories exists in the form of records of the probate courts from each legal district. In the Upper Valley these districts encompassed all or half a county.[14] This evidence, mostly from the end of the life cycle, might be combined with data on schooling rates from selected communities within the same probate district, obtained from local district school records or other township school evidence. Two other sources are local deeds of land transfers and the book accounts kept by general stores and other businesses. Land records are as widely available in the Northeast as probate records.[15] Deeds offer the great advantage of containing far more signatures and marks of women than do wills owing to laws necessitating the wife's written permission for land sales involving dowry land or thirds. Deeds also provide approximately eight to ten times as many total signatures as do wills.[16] Both deeds and store accounts span the entire length of adulthood. Unfortunately one of the very best sources used in English and European studies, marriage records, which carry the signatures or marks of both husband and wife, do not exist for this region.[17] No doubt further evidence exists, however, and could be utilized to provide in-

[14] The Genealogical Society of the Church of Jesus Christ of Latter-Day Saints (Mormons) has microfilmed these records for much of New England through the middle of the nineteenth century, and they are available at their many regional deposit centers across the country, known as stake houses.

[15] These records are also available at the stake houses of the Church of Jesus Christ of Latter-Day Saints.

[16] During the same years, 1787–1830, in which there were 225 will makers there were 4,616 deed makers (20.5 to 1). Counting all witnesses, the ratio is 4,616 to 856 or 5.5 to 1.

[17] We have checked every document relating to marriage in the extensive collections of the Vermont Historical Society, Montpelier, and found no signs or marks. Nor were there any recorded in the vital records of any Windsor District township.

sights into literacy at still other moments in the life cycle, enriching our picture.

Ideally, the proportions of signatures and marks would be tested in one data set by comparison with another data set covering the same individuals. This is only minimally possible here, because relatively few of the same individuals who wrote a will show up in school records, scratch books, general store records, or petitions. Fortunately, a sizeable proportion of will makers—about 60 percent for Windsor District—do show up in deeds. Others show up in account books and on petitions. For broader generalization, however, we must turn to the next larger level of social organization, the Upper Valley. With a distinct definable region comprising six to ten probate districts, it is possible to consider evidence of each type listed above, drawn from somewhere within the Upper Valley. Thereby, we add a test of validity and confirmation, comprising four data sets representing distinct segments of the same population for different spans of the life cycle. Multiple-moment analysis of signing behavior is particularly helpful at the county and then township levels of social organization in early America.

This study is based on 10,467 signs and marks drawn from four different types of evidence of elementary literacy: deed makers and cosigners (5,891); township petitions (2,275); account book customers (1,445) and will makers and witnesses (856). Even with all our evidence, however, the experience of the propertyless and those with the least property, about 20 percent of the population, is largely absent.

The Acquisition of Elementary Literacy

Upper Valley Schooling and Attendance Levels

There were four primary ways to acquire elementary literacy skills during the early national period: through parental instruction in the home during childhood; through the district school system, the prevalent form of instruction throughout the

Upper Valley for children and youth; through the Sunday School system, once it became established in the area after 1815; and through one or another occupation or institution affording formal or informal instructional opportunity for those adults who had missed acquiring these skills during childhood and youth.

Not all skills were taught along each of the four avenues. Home instruction usually stressed signing and the basics of grammar and reading. The Sunday School system emphasized reading and memorization together with rote recitation, and normally offered no writing instruction.

In the Upper Valley, parental and district school instruction were the more usual ways to acquire basic skills. Elementary literacy was first learned either at home during childhood, or, more usually, in school during childhood or youth. Education, begun at home in the form of moral instruction, and continued in school, was almost universally believed to be the central task of childhood in the Upper Valley, 1787–1830.[18] Consequently, an elaborate district school system, roughly representing rural neighborhoods, had evolved by the 1790s. Evidence from newspapers, periodicals, and almanacs confirms that the system consisted of a large number of small, one-room schools, with nearly every child within daily traveling distance. Egil Johannson has discussed the crucial nature of this closeness, arguing that the closeness of schools was the single most significant factor affecting literacy levels.[19]

Unfortunately for our study of literacy, it is almost impos-

[18] Although it covers a period before the beginning of substantial settlement in the Upper Valley, the basic outlines of Lawrence A. Cremin, *American Education: The Colonial Experience, 1607–1783* (New York, 1970) are applicable. On the Upper Valley specifically, see Clyde Fussell, 'The Emergence of Public Education as a Function of the State of Vermont,' *Vermont History* 28(1960):179–96; and Charles Kinney, *Church and State: The Struggle for Separation in New Hampshire, 1630–1900* (New York, 1955), esp. p. 152ff.

[19] See Johannson, *History of Literacy in Sweden*; and Auwers, 'Social Meaning,' p. 29 n. 8 citing another of Johannson's works, *En studie med kvantitativa metoder av Folkundervisningen i Bygdea socken, 1845–73* (Umea, Sweden, 1972). The citation is from Lockridge, *Literacy*, p. 67.

sible to find any systematic evidence of actual school attendance in the region until the mid-1840s. Only with the 1844 district school reports of townships, reflecting changes in state law, is there a count of 'no. of scholars who have attended common schools.' These first enumerations, for Cavendish township, for instance, show that 83 percent of all those male and female children and youth between four and eighteen years of age residing in the township attended school that year.[20]

Fortunately, a rather remarkable document has recently come to light, offering the earliest record of daily attendance in a rural New England school district. This was a report, the 'Daily Attendance Record of the North District School, Underhill, Vermont, Winter Term, 1828–29' submitted by the instructor T. E. Ellsworth, Jr. to the Underhill, Vermont, school committee in 1829.[21] By the late 1820s, Underhill, in the mountains just northwest of the Upper Valley, had risen from a backwater farming and grazing community into a fairly bustling township with no less than three hamlets vying for supremacy and status. By the time Ellsworth submitted his report, there had been a long tradition of schooling in Underhill, stretching back some forty years.

Underhill winter school lasted a total of sixty-five class days, alternating between Monday through Saturday and Monday through Friday weeks, for a total of thirteen full weeks. Ellsworth's report, kept every day classes were held, enables us to analyze aggregate attendance as well as patterns for different types of households. For the first half of the semester the range of attendance went from a low of nineteen students (42 percent) to a high of thirty-four (76 percent). Both the median and the average attendance was twenty-eight (62 percent).

[20] Cavendish, Vermont, Vital Records, vol. 6 (1830–56). These figures combine summer and winter school attendance, and do not distinguish attendance levels or daily rates.

[21] MS 26, no. 13, Vermont Historical Society, Montpelier. Permission of the Society is warmly acknowledged for the use of the document. A fuller analysis of this document in its setting is scheduled for 1983 publication by *Vermont History*.

During the second half of the semester, attendance was more irregular, ranging between 34 and 86 percent. The average was twenty-one students (60 percent), and, despite the fluctuation, the median was twenty-two students or 63 percent. There was a consistent rhythm to attendance, with an initial period of fairly high attendance (ca. 60–77 percent), followed by a period of lower attendance (58–69 percent). On any given day a visitor was likely to find three of every five enrolled children actually at school. Moreover, two-thirds of all students attended at least 60 percent of all classes.

Families were remarkably consistent in their attendance across both halves of the semester. Among families with one or two students enrolled, most students attended very faithfully, meaning above 75 percent of all classes. At the other end of the spectrum was a pattern, second in frequency, consisting of those who attended hardly at all, meaning 10 percent of the classes or less. Occurring least frequently was students attending between a third and three-quarters of class days.

Many puzzles remain in our search for connections between the acquisition of elementary literacy and schooling, but Ellsworth's attendance record provides us with a set of patterns that hold for Underhill, Vermont, and perhaps for many other hamlet school districts in the late 1820s within rural New England. At least this record begins to put to rest that tired argument that these children most likely attended school only haphazardly given rural road conditions, so that they probably received only enough instruction to sign their names. For two-thirds of all students, average attendance was 81 percent or fifty-two class days. High average attendance for the entire group (60–62 percent) and regular attendance for two of every three students enrolled suggests that children in this fairly isolated school district must have acquired far more than just the ability to sign and to read the simplest words.

The curriculum was fairly broad. Beyond signing (which was often learned earlier in summer school or perhaps in the

home), students in a single semester also learned writing (enough to be able, at this stage of life, to compose a letter), elementary grammar and spelling, arithmetic sufficient to keep one's accounts and engage in basic market activity, some geography and a bit of history, and a general reading ability adequate to read the yearly almanac, the weekly newspaper, and the basic books which they would continue to read throughout life, such as hymnals, devotional tracts, the Bible, songbooks, and the psalms.[22] Children making the transition from family to community entered the latter with a broader set of basic skills and a more particular stock of rudimentary knowledge than we have assumed.[23]

The Teacher-Student Ratio

Another calculation offers additional insight into the quite extraordinary extent of formal schooling in the Upper Valley. Carlo Cipolla has concluded that 'until 1800 the most favorable cases for expanding literacy were those in which, apart from the parish priests and other kinds of informal teachers, there was one formal teacher per 1,000 inhabitants.'[24] Virtually all of Windsor County townships have detailed yearly reports of schooling which can be used to ascertain the teacher-student ratio. I have chosen for study two of the five townships for which we will later follow trends in elementary literacy, Plymouth and Cavendish (fig. 1).

With a population of approximately 1,200 in 1828 (see

[22] The best general history of the town is Loraine S. Dwyer, *The History of Underhill, Vermont: The Town Under the Mountain* (Underhill, Vt., 1976). On early settlement and population see John Hayward, 'Underhill,' in *The New England Gazeteer*, 5th ed. (Concord, N.H., 1839). Additional information may be found in Abby Maria Hemenway, ed., *The Vermont Historical Gazeteer: A Magazine Embracing A History of Each Town, Civil, Ecclesiastical, Biographical and Military*, 3 vols. (Burlington, Vt., 1867), 1:886–87; and 'Underhill,' in W. S. Rann, ed., *History of Chittenden County, Vermont* (Syracuse, N.Y., 1886); and Hamilton Child, comp., *Gazeteer and Business Directory of Chittenden County, Vermont for 1882–83* (Syracuse, N.Y., 1882), pp. 256[10+16] [sic].

[23] See a more detailed description of this attendance record forthcoming in *Vermont History* (see note 21).

[24] Cipolla, *Literacy and Development*, pp. 25–26.

Figure 1

WINDSOR DISTRICT, 1787–1830

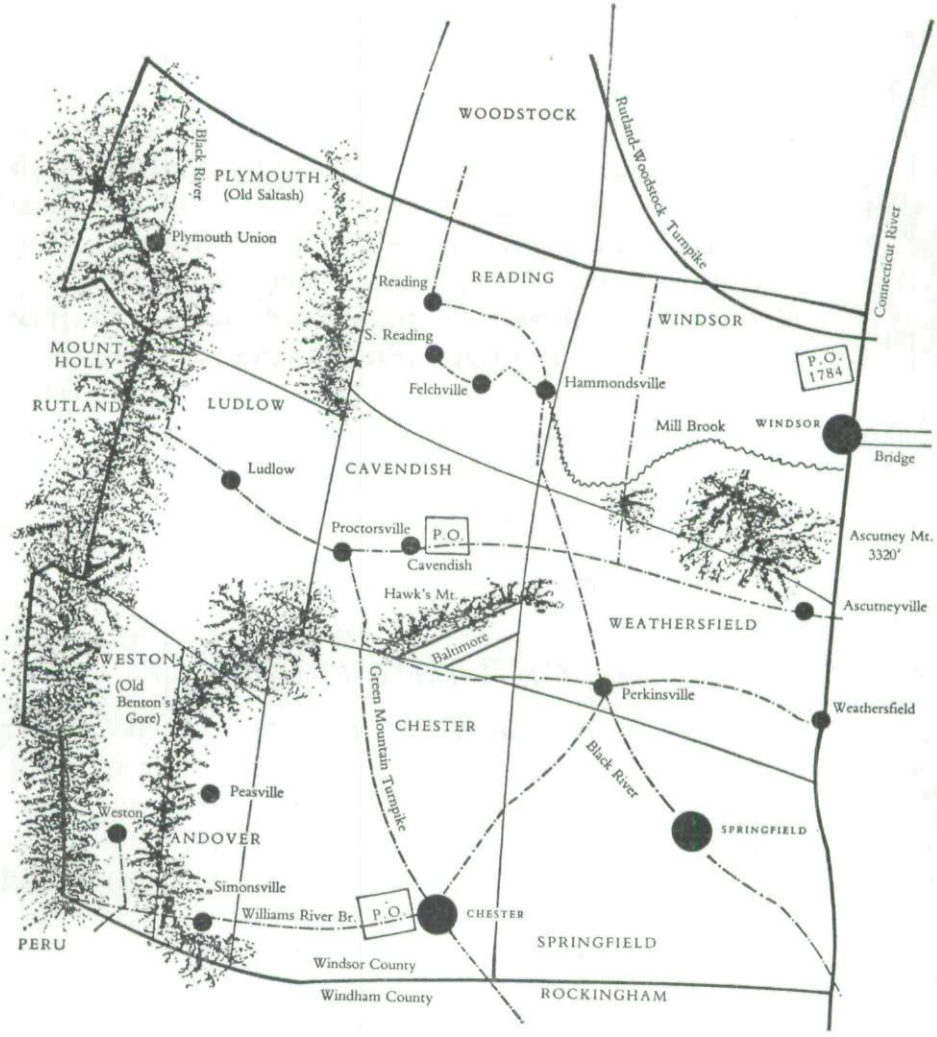

table 1), Plymouth school district clerks reported the useful information found in table 2. There was a teacher for every 75 inhabitants and a regular winter school teacher for every 300 residents.

A similar situation prevailed in the nearby more bustling community of Cavendish. With a population of approximately 1,600, Cavendish school district clerks reported the information found in table 3. There was a teacher for every 107 inhabitants and a winter school instructor for every 229 residents.

This evidence points to undeniably high levels of schooling activity in rural New England communities, certainly much higher than anywhere else in the Western world at this time. Other research demonstrates that this pattern of a large number of fairly small-sized neighborhood schools is a consistent one throughout Upper Valley townships; levels and regularity of attendance remain an open question, however. Common sense in the matter suggests that most residents of Windsor County by about 1800 were receiving, during their childhood or youth, enough schooling to acquire elementary literacy skills.[25]

Specific Sequence of Development of Elementary Skills

What was actually taught in these district schools in the Upper Valley and in what sequence? The connection between signing ability, its relation to reading and writing levels, and the content and sequence of subjects has provided the most imaginative, and unfortunately, one of the least soundly researched dimensions of literacy study. To date, most scholars of early American literacy have accepted Roger Schofield's findings on England. First formulated in 1968 and succinctly summarized in a 1973 essay, Schofield holds that:

> Ideally, therefore, measures of literacy should be both standard and direct. For pre-industrial England in the late eighteenth and

[25] Fussell, 'Emergence,' p. 187. The general assessment is from numerous remarks in the area's newspapers, periodicals, and almanacs.

Table 1

WINDSOR DISTRICT POPULATION, 1770–1830

N and percentage increase

	1770	*1790*	*1800*	*1810*	*1820*	*1830*
Andover	—	275	1,022†	957†	1,000	977
			272%	55%	4%	−2%
Cavendish	—	491	921	1,297	1,551	1,486
			88%	41%	20%	−4%
Chester	152*	981	1,880	2,370	2,493	2,291
			92%	26%	5%	−8%
Ludlow	—	179	409	877	1,144	1,125
			128%	114%	30%	−2%
Plymouth (formerly Saltash)	—	106	495	834	1,112	1,237
			367%	69%	33%	11%
Reading	—	747	1,128	1,565	1,603	1,392
			51%	39%	2%	−13%
Springfield	141*	1,097	2,038	2,556	2,702	2,736
			86%	25%	6%	1%
	—	—	(2,032)‡	—	—	(2,749)‡
			85%			
Weathersfield	20*	1,146	1,946	2,115	2,301	2,223
			70%	9%	6%	−3%
Weston	—	—†	—†	629	890	972
					42%	9%
Windsor	—	1,542	2,214	2,757	2,956	3,094
			44%	25%	7%	5%
TOTALS		6,564	12,053	15,957	17,752	17,533
			84%	33%	11%	−1%

SOURCE: U.S. Census Schedules, 1790–1830.

* Child, *Gazeteer of Windsor County*, pp. 115 (Chester), 224 (Springfield), 244 (Weathersfield).

† Weston was part of Andover till 1797 and still counted as such in the 1800 Census of the U.S. The 1810 Andover proportionate rise was calculated by adding Weston's population.

‡ C. Horace Hubbard and J. Dartt, *History of the Town of Springfield, Vermont, with a Genealogical Record, 1752–1895* (Boston, 1895).

> early nineteenth centuries there is only one measure which satisfied these two conditions: the ability to sign one's name. Although at first sight, this is not a particularly meaningful literacy skill, it has the advantage of giving a fairly 'middle-range' measure of literacy in this period. This is because, ever since the sixteenth century, school curricula had been so phased that reading was taught before writing, and the intermittent nature of school attendance thus ensured that large numbers of children left school having acquired some reading ability, but little or no ability to write. In this period, therefore, the proportion of the population able to sign was less than the proportion able to read and greater than the proportion able to write. Early nineteenth century evidence suggests that the proportion of the population claiming a basic level of reading ability may have been half as much again as the proportion able to sign, and that the proportion able to sign roughly corresponded with the proportion able to read fluently.[26]

This is one of the more sweeping generalizations in all literacy study, and yet none of the citations in the essay or in an earlier one present detailed evidence to prove that the sequence of skills in English schooling was indeed reading, signing, and then writing. Was English schooling as uniform as Schofield assumes? More recent work on England confirms Schofield's findings but only for the sixteenth and seventeenth centuries.[27] Whatever future work on England after 1700 may show, these findings are not automatically applicable to America before 1700, and certainly not to the early national era, a century later. The sequence in which skills were acquired has unfortunately not been much researched in work on early American educational history.

Any relationship between signing, reading, and writing depends on the specific historical context. What we need is direct

[26] Schofield, 'Dimensions,' p. 440; see also 437–54, passim and his earlier, more lengthy version, 'The Measurement of Literacy,' esp. pp. 315–18. Lockridge, *Literacy*, also follows this formulation; see pp. 3–13, 109–112, and 123ff.

[27] See Margaret Spufford, 'First Steps in Literacy: The Reading and Writing Experiences of the Humblest Seventeenth-Century Autobiographers,' *Social History* 4(1979):408 and notes, and 427; and Cressy, *Literacy and the Social Order*, chs. 1–3.

Table 2

NUMBER OF SCHOLARS AND TEACHERS IN PLYMOUTH SCHOOL DISTRICT, 1828

District	*Teachers*	*Scholars (ages 4–18)*	*Weeks of school (previous 12 months)*
1	2	50	26
2	1	28	8
3	1	53	8
4	1	63	8
5	2	71	28
6	1	22	10
7	1	29	8
8	2	32	17
9	2	50	17
10	1	23	8
12	—	15	—
13	1	12	8
14	1	14	8
13	16	462	11.8 weeks average 8 weeks median

Table 3

NUMBER OF SCHOLARS AND TEACHERS IN CAVENDISH SCHOOL DISTRICT, 1828

District	*Teachers*	*Scholars (ages 4–18)*	*Weeks of school (previous 12 months)*
1	2	63	24
2	2	61	24
3	2	47	21
4	2	54	24
5	2	50	25
6	1	28	6
7	2	67	31
8	—	35	—
9	2	40	18
10	0*	13	8
10	15	458	18.1 weeks average 22.5 weeks median

* Scholars were taught by an adjoining Weathersfield district teacher, and Cavendish paid compensation per pupil.

evidence concerning the exact sequence in which skills were acquired. Signatures should never automatically serve as surrogates for measures of writing skill or anything more than the most basic reading ability. We must know the sequence among the three.

Evidence, though not abundant, does exist. Reading was often learned first in the home, especially wealthier ones, by means of one of the popular primers available, supplemented after 1790 by an increasing variety of 'primary instructors,' or 'parental assistants.' Evidence of a large number of primers and parental instructors and assistants for sale, purchased, and retained in inventories confirms their general usage.[28]

By law (1797) the basic subjects to be taught in district schools were 'English, reading, writing and arithmetic.' Manuscript record books kept by teachers further specify subjects taught in the one-room, ungraded classrooms. Winter school records from Danvers and Charlton, Massachusetts, and Killingly, Connecticut, itemize books used, including grammars, readers, spellers, and arithmetic books for basic instruction, as well as works in geography, history, rhetoric, philosophy and astronomy, bookkeeping, and 'polite learning' for the more advanced scholars.[29]

Certification documents prepared by teachers offer excellent insight into subjects taught and their sequence. In 1812, in the Upper Valley community of Grantham, New Hampshire, the 'Experienced Schoolmaster' William Smith certified that Louisa Weir attended his winter school for twelve weeks. Smith

[28] Marcus A. McCorison, *Vermont Imprints, 1778–1820* (Worcester, 1963) contains many examples of primers and parental instructors. In conjunction with Gilmore, *Primed With Knowledge* (unpublished book length manuscript), all works in these categories printed in the Upper Valley, or for sale within the region, wherever printed, have been analyzed.

[29] John Badger, 'Order of Exercises in District School No. 3,' *Danvers Historical Society Collections* 14(1926):3–34; Charlton, Mass. School Records, District #12, Charlton, Mass. Local Records, 1783–1869 (1 octavo vol.), 1800, Manuscript Collections, American Antiquarian Society (hereafter cited as Manuscript Collections, AAS); Killingly, Connecticut, Manuscript Record Book, 1838–49, Old Sturbridge Village, Research Library, Archives, Sturbridge, Mass. (hereafter referred to as OSV).

noted that 'She writes a fair hand, reads with propriety, is well versed in English Grammar, and has a good understanding of Geography.'[30] At most Louisa Weir might have previously attended a term of summer school.

The most direct evidence I have found of the sequence of subjects comes from an Acton, Massachusetts, schoolmaster's winter school journal for 1828. George Moore began the term December 17, and taught spelling, grammar, and writing the first week. Books arrived by December 22, and as early as December 25 he entered the following journal notes: 'Happened to think that today is Christmas, but saw no one take any notice of it, and thought, if I did, I should appear rather off, and so let it pass. Informed scholars for the first time that *compositions* would be required of them weekly.'

Spelling, grammar, and writing went on parallel to one another, and after a week, reading too. Part of the reason for the delay, perhaps all of it, was slowness in the delivery of schoolbooks. Whether the books delayed the onset of reading instruction is not known for certain but is likely. In any event, within a week of school's beginning, Moore was teaching spelling, grammar, writing, and reading, different subjects at different times of the day.[31] Geography clearly waited on the development of reading skills, as did arithmetic. This can be seen from perhaps our best source, the actual progression in children's arithmetic books, writing books, and scratch journals.

Fortunately a considerable number of these workbooks from rural western New England have been preserved (primarily by the American Antiquarian Society, Old Sturbridge Village, and the Vermont Historical Society). They may be divided into three types, each reflecting a different configuration of exercises—undoubtedly related to alternative modes of instruc-

[30] William Smith, Certificate of Louisa Weir, Manuscript Teacher's Certificates, No. 1976–18, OSV.

[31] George Moore, Journal, 1828–33, Schoolmasters Winter School Journal, entries for Dec. 17–25, 1828, unpaged, OSV.

tion and pedagogical approaches to teaching the basic skills. In all three types of workbook the fundamental sequence of skills remains the same: the signature, then rudimentary grammar; spelling and writing simultaneous with basic reading, followed by more of each simultaneously; and shortly, elementary arithmetic lessons.

Basic Sequential Instruction. The pattern revealed in the first variety of scratch book I term basic sequential instruction. This type began with the signature, sometimes written only once and fairly smoothly (on p. 1 or the cover), at other times practiced several times until the signature became smoother. Occasionally the signature would not appear until well into the book, but when it did (e.g., on p. 12 of one book) it was found at the bottom of the page accompanied by a date. In all likelihood these students could sign before the school session began, and simply did not need to practice. Instead, students were beginning to date their exercises and sign the pages, turning in their books opened to that day's exercise so that the teacher would be able to check their progress most easily. As a result, many books were signed and dated regularly on the bottom right side.

Simon Ray Greene's 1801 workbook, of the basic sequential type, began with lines and circles on p. 1; moved to variations of each on pp. 2–4; to the lower-case alphabet on p. 5; to 'Constantinople' repeated three times on p. 6; to 'Abominable Bumble' repeated several times on pp. 7–8; then to the alphabet in capitals on pp. 9–10; followed by 'Transubstantiation' repeated several times (p. 11); as well as other words (pp. 12–13), and finally phrases (pp. 14–19). The workbook concluded with several pages (pp. 26–37) of repetition of the revealing sentence 'Observe and copy and write better if you can.'[32]

[32] Greene, Scratch Book, Marsh Creek, June–July 1801; this is now numbered 3 of 20 books in the Penmanship Collection, 1762–1848, of the American Antiquarian Society. Many of these books are unpaged; I have imposed page numbers for convenience of research. See also (of this type): Lucy Ann Keyes, Eastford, Conn. (Lower

Basic Parallel Lesson Instruction. The pattern revealed in the second variety of scratch book is what I call basic parallel lesson instruction. This type, of which Andrew Bigelow's 1785 workbook is an example, began in similar fashion, with letters, but these appeared on the left-hand (verso) pages of the book. The first right-hand (recto) page contained a sentence, repeated several times. Thereafter verso pages contained letters and then a single repeated word, then words, phrases, and finally sentences. Recto pages contained sentences virtually all the way through the book. On most facing pages, in other words, would be that day's two or more practice lessons: elementary work repeated on the left, and full sentences representing progress on the right side, along with a signature and date.[33]

Intermediate Lesson Instruction. The pattern revealed in the third type of scratch book I call intermediate lesson instruction. One young lad from Richmond, New Hampshire, first scratched 'Peter Robbins His Book' in a rough hand on the cover, then on p. 1 wrote the phrase, 'they can never be wise that' seven times, practiced his name several times in progressively smoother strokes, then repeated three times the first half of the alphabet. On p. 2 he practiced writing single and double syllable words. Peter also practiced number formation, then addition and subtraction. On virtually every subsequent page there are short sentences and longer words, as well as sentences pertaining to arithmetic, explaining everything from troy weight to liquid and cloth measures.[34]

A further piece of evidence, from the Upper Valley township of Wardsboro, Vermont, helps clarify this third variety of

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Valley), Jan. 1848, no. 11; M. Elizabeth Hovey, n.p., n.d, no. 12; Betsey A. Lincoln, n.p., Nov. ca. 1827–35, no. 13; Rev. Samuel May, Leicester, Mass. (Lower Valley), Oct.–Nov. 1822, and June 1823, nos. 14 and 15.

[33] Bigelow, Scratch Book, no. 1b (two different students' work in one book), Penmanship Collection, AAS. See also nos. 1a and 2.

[34] 'Peter Robbins His Book,' labeled by Sturbridge as an Arithmetic Book and filed as such (no. 1961.52), OSV. See also Badger, 'Order of Exercises,' pp. 31–34, for supportive data including evidence on the age range of his pupils.

workbook. In District 7's record book, one of the notes containing yearly provisions for the 1826 winter school makes the distinction that scholars accepted from other districts would be charged twelve cents per week if they wished to learn grammar, arithmetic, or geography, but only half that price to be taught reading and writing skills only.[35]

Essentially intermediate lesson instruction was a bit more advanced in that it often either began with an assumption of basic signing and alphabet mastery, or moved through the initial letter and work skills quite rapidly—in effect combining into one term what usually took two (summer and winter) in the first two workbook patterns.[36]

The evidence presented here, forming three trends in the actual sequence of skills acquisition and learning, points to an overall pattern of instruction at variance with Schofield's findings for England in the sixteenth and seventeenth centuries. These children's scratch books, dated in such a manner as to show weekly and often daily progress, and corroborated by

[35] Wardsboro, Vermont, Records of School District No. 7, 1820–30, entry for Jan. 30, 1826, unpaged, OSV. Instances of the former instructional level are found in these school writing books; for instance, see Jesse Hitchcock, Arithmetic Book, Brimfield, Mass. (Lower Valley) between 1815 and 1829, OSV. His writing was somewhat scribbled on p. 1ff. but gets better further on. See also Nathaniel Allen, Cyphering Book, Fisher's Island [Maine?], 1805, and Rebeckah Salisbury, Scratch Book, Boston, Mass., 1788; both of these are in the Penmanship Collection (1762–1848), AAS, and I have numbered them nos. 20 and 19 of 20 books. See also nos. 4, 7, and 17. Much more supporting evidence on each of the points in the preceding three paragraphs (notes 31–34) may be found in scattered comments from the following sources (only evidence from the area or books with demonstrably wide circulation within the Upper Valley are included): occasional brief remarks found in almanac series, especially Beers' *Vermont Almanac*, 1800, 1803–20; Mower's *New Hampshire and Vermont Almanac*, 1805–10; *New England Farmer's Diary and Almanac*, 1814–20; as well as a score of shorter-lived almanacs published or printed in Vermont and New Hampshire print centers. See also John Jenkins, *The Art of Writing* (Boston, 1791; Cambridge, Mass., 1813; Elizabethtown, N.J., 1816); Mrs. Louisa G. Hoare, *Hints for the Improvement of Early Education and Nursery Discipline*, 3rd ed. (Dover, 1826); Elihu Marshall, *A Spelling Book of the English Language* (Plymouth, N.H., 1826); and the major Upper Valley weekly newspaper (title varied), *The Vermont Journal* (Windsor, 1783–1830).

[36] See Daniel Farnham Plummer, n.p., 2 semesters, summer school, June–July 1792, and Nov. 1795 through Mar. 1796, no. 5; Josiah B. Peele, n.p., May–Aug. 1808, no. 6; James Coombs, West Medway, Mass. (Lower Valley), Dec. 1844, no. 10; Reuben Cominas, Charlton, Mass. (Lower Valley), Dec. 1833 and Dec. 1834, no. 16; all in the Penmanship Collection, AAS.

schoolmasters' journals, are about as direct evidence of the actual sequence of skills acquisition as historians are likely to find.[37] Based on my evidence from rural New England ca. 1787–1840, the sequence of skills acquisition was as follows: first, signing, if not previously learned at home; then, within a day or two of the beginning of summer or winter school, writing and basic reading, including grammar and spelling; followed by arithmetic, and within about two weeks geography, as both writing and reading skills progressed apace, sufficient to admit more advanced instruction.

Since both reading and writing development were underway within a matter of a couple of days of the beginning of both summer and winter school, the literal truth that signing was learned first is not a useful distinction to make. Of greater significance is the fact that an apparently small proportion of individuals learned signing without ever attending school. This skill was learned either at home in childhood, or later in life, out of some combination of functional necessity and sense of self-esteem. For these reasons alone, the proportion of signers could be somewhat higher than the proportion of readers. But Upper Valley schooling was not characterized by separate skills learned one at a time. On the contrary, to the learning of signing and letter and word formation were quickly added instruction in basic spelling, grammar, writing, and reading. Shortly, arithmetic and then geography joined the curriculum.

By the age of about eighteen, most Upper Valley residents who were to achieve at least elementary literacy had done so. Family, district summer and winter schools, and after 1815, Sunday schools, were the major institutions inculcating these skills. Unfortunately there is only indirect evidence of the proportion of the population that may have gained early on in life the essential skills necessary to read and write. As we shall see in the

[37] Schofield, 'Dimensions,' p. 440ff; and 'Measurement,' pp. 314–18.

next section, multiple-moment research provides us with the tools to conclude that adult male elementary literacy, leaving aside the lowest fifth of the households by wealth for lack of detailed evidence, reached near-universal levels throughout Windsor County as early as the 1760s and surely by the mid-1770s. Female elementary literacy, with the same exception, rose from approximately two-thirds in the late 1770s to nearly four-fifths by the late 1780s, and after fluctuating between 74 and 91 percent over the next two decades (1792–1811) stabilized at an extraordinarily high level of about 85 percent (1812–30).

As Jedidiah Morse said in 1819, 'In no country is Common schooling more attended to. A family of children who could not read, write, and understand common arithmetic, could probably not be found.'[38]

Findings on Elementary Literacy in the Upper Connecticut River Valley, 1760–1830

As we have seen, merely counting signatures and marks does not give a true representation of literacy rates. This information must be applied within the historical context: What is the life stage of the signer or marker? And what is the nature of the community within which this evidence exists?

Because of the serious limitations involved in any one set of records available to us, we will assess several different sources —account books, deeds, petitions, and wills. Each source reaches different segments of the population at different junctures in the life cycle, and combined they give us a balanced view of the entire adult life span within a community. Each source of information has its own particular strengths and weaknesses, and we will learn more about, say, female signing rates, from one source than another.

Our second area of concern is differences in overall rates from community to community: Why is the literacy rate higher

[38] Morse in *The American Geography* (Boston, 1819), p. 300.

in one township than it is for a nearby township? What is it in the nature of a community that promotes literacy? And, how does a community's place on the road to modernization affect its rate of literacy?

Account Book Customers of General Stores and Other Shops

Our first form of evidence covers a broad portion of the life cycle—all of adulthood and old age. Account books kept by general stores and other commercial establishments generally represented the population of one or two townships, with some coverage of another one to four surrounding townships. Signatures and marks were recorded by those who traded on credit with the store. The various daybooks and ledgers list items purchased and, after about 1800, their cash value. The goods given, services performed, or monies paid by the customer were noted on the other side of the ledger at first, and later on the same page. When the debts incurred were paid off and the account settled, both parties—the storekeeper (or an authorized clerk) and the customer—signed off.

Depending on the nature of the business, the number of customers, and the extent of the credit system, account books vary dramatically in their usefulness for the study of elementary literacy. Among the best are those from the least specialized enterprises. Of these, general store account books offer perhaps the most extensive range and the greatest number of signatures and marks.

Unlike wills or deeds, account books were not systematically preserved during the nineteenth century. Therefore, it is impossible to make sophisticated estimates of the proportion of the population of an area that account books represented. Moreover, signatures and marks appear in only about 15 percent of the ledger books, and even more rarely in daybooks. Account books are chiefly valuable for their broad social and economic sampling of the entire adult male population and also those elderly living in separate households. Their most definite so-

cial bias is that they exclude the poorest segment of society, those unable to obtain credit. Laborers, poor artisans, and tenant farmers usually did not maintain general store accounts.[39]

Account book evidence has been gathered from five Windsor District townships (including three of the five for which extensive deed records exist and are analyzed in the next section); three additional townships from the other half of Windsor County; six townships from elsewhere in the Upper Valley, mostly on the New Hampshire side, to balance this picture; and from Greenfield, just over the Massachusetts line in the Lower Valley (see table 4). The research design excluded signatures of all store owners, business partners, and other official personnel—all were signers—and all duplicate signatures both within the same account books and throughout the entire group. Accounts were settled variously, from as frequently as twice a year to once every three years.

Spanning nearly a century (1755–1851) and providing the earliest evidence of signing and marking among Upper Valley sources, my group of twenty-one sets of account books contained 1,445 different names, 98.5 percent of which (1,424 versus 21) were males. The long overall time span is a bit deceptive since fully 83 percent of all the signatures and marks fell within the years 1784–1819; the years 1772–75 and 1829–34 together represented half the remaining signatures and marks. Among male signers of accounts 99.2 percent were literate (1,408 versus 12) with no meaningful variation across the decades. It is worthy of note, however, that the last *mark* was made in 1813. When the 4 male witnesses (all of whom signed) are added, the male signing rate remains the same. Among female account holders 75 percent were literate (15 versus 5), a rate that is hardly affected by the addition of a lone female (signing) witness (76.2 percent). It is best to consider the evidence on female signing levels as merely an impression,

[39] This conclusion is based on information in inventories, and especially estate settlements, detailed in Gilmore, *Primed With Knowledge*.

given the paucity of female-headed households with accounts in commercial establishments.

If we consider these twenty-one sets of account books chronologically there are no gaps between the early 1760s and the mid-1830s. Broken down by type, general store account books were most numerous, with nine sets covering 1761–1834 and the midcentury years, and accounting for over half of all the signatures and marks (764, or 53 percent). Physicians' accounts ranked second, with five sets extending over the years 1755–1811 and containing just over a third (520 or 36 percent) of all signatures and marks. Far smaller in their coverage were artisans' account books, 1808–38, encompassing 10 percent of all signatures and marks.

Most account books fell into one of two patterns. The first covered an extended period of time with a small but steady flow of accounts settled (hence signatures and marks) each year. Examples of this type of account book include those of Henry Tolles, Jr., 1801–28, of Weathersfield, a general store account book (no. 5 in table 4); Asa Hazen, 1796–1824, of Hartford, Vermont (no. 11); and J. Sterne, 1792–1811, a physician of Windsor (no. 8).

The second pattern comprised briefer periods of time, usually no more than one or two cycles (totaling three to six years) of credit and settlement. Among these records can be found a substantial proportion of the heads of household in one or two communities. Typical examples include Nathaniel Stone's Windsor medical practice (no. 7) where 209 signatures and marks were recorded during the decade 1784–94; David Sumner's Hartland general store (no. 14), whose books contain 83 signatures and marks entered between 1802 and 1806; and Weld and Sons, owners of Plymouth and Rumney, New Hampshire, general stores (no. 18), whose books recorded 252 signatures and marks in less than three years (1816–19).

These community 'snapshots' show that account book evidence is a useful secondary source of signing and marking be-

Table 4

ACCOUNT BOOK EVIDENCE OF ELEMENTARY LITERACY, THE UPPER VALLEY, 1755–1851

Township	*Type of commerce*	*Years covered by signs/marks*	*Name of proprietor*	*Signs/Marks* (male and female)*
Windsor District (Windsor County)				
1. Cavendish	Farmer	1802–06	Daniel Mason	M: 10–0
2. Reading	Livery Stable	1798–1811	—	M: 6–0
3. Springfield	Shoemaker	1829–38	Barna Cook	M: 7–0
4. Weathersfield	General Store	1827–34	Gideon Chapin	M: 59–0
5. Weathersfield	General Store	1801–28	Henry Tolles, Jr.	M: 44–1 (97.8%)
				F: 1–0
6. Windsor	Physician	1774–90	David Hall	M: 15–0
7. Windsor	Physician	1755–95	Nathaniel Stone	M: 280–3 (98.9%)
				F: 1–2
8. Windsor	Physician	1792–1811	J. Sterne	M: 153–2 (98.7%)
				F: 0–1
9. Windsor	General Store	1794–96	James Tarbox	M: 40–0
10. Windsor	Physician	1795–99	Nahum Trask	M: 3–0
Hartland District (Windsor County)				
11. Hartford	General Store	1796–1824	Asa Hazen	M: 80–0
				F: 1–0
			Witness,	F: 1–0
12. Hartland	Blacksmith	1809–21	Levi Hamilton	M: 82–1 (98.8%)
			Witnesses,	M: 4–0

13. Hartland	Physician	1791–1806	John Harding	M: 58–1 (98.3%) F: 1–0
14. Hartland	General Store	1802–15	David H. Sumner	M: 123–0 F: 2–0
15. Woodstock (South)	General Store	1821–30	—	M: 27–0
Upper Valley (Other Districts)				
16. Alstead, N.H.	Farmers	1798–1804; 1814; 1822–34	Asa & Thomas Whitcomb	M: 9–0
17. Charlestown, N.H.	General Store	1761–94	Wm. Heywood	M: 65–0
18. Plymouth & Rumney, N.H.	General Store	1816–19	Weld & Son Co.	M: 244–3 (98.8%) F: 5–0
19. Chelsea, Vt.	Cobbler	1810–14	Josiah Green	M: 18–0
20. Whitingham, N.H.	Artisan	1808–25	Joseph Brown	M: 23–0 F: 0–1
Lower Valley (Just over Massachusetts line)				
21. Deerfield, Mass.	General Store	1787–89; 1800–51	Tilton Family	M: 62–1 (98.4%) F: 4–1

TOTALS: 21 sets of accounts; 1,445 notations; Males 1,408–12 (99.2%); Females 16–5 (76.2%)

SOURCE: Manuscript Collections, AAS (nos. 1; 14; 17; 18; 21); Vermont Historical Society (nos. 2–13; 15; 16; 19; 20)
* Accounts unless otherwise specified.

havior. In the case of Stone's practice, for instance, there were only about 260 households in Windsor township during that decade. Even though Stone's practice included families from Reading and Weathersfield, the signing and marking behavior of a very large majority of all Windsor household heads were captured on the pages of his account books.

While account books are very helpful sources for the study of elementary literacy, providing evidence for an important segment of Upper Valley society, they contain three serious limitations. First, those discovered thus far include hardly any evidence of females. Second, account books exist for only a very small proportion of all contemporary stores, and thus amount to only a small proportion of the total population of the region. They offer concentrated glimpses of elementary literacy. In Plymouth, New Hampshire, 243 male signatures and marks were found over the years 1815–18, at a time when there were 155 adult males over twenty-five in Plymouth and 151 in Rumney, the two principal towns within the economic locale represented. This represents 79 percent of the males in these two townships over the age of twenty-five, and approximately 50–55 percent of all the males trading with that store.[40] Third, these signatures represented only the households which held store accounts, probably excluding much of the bottom fifth of the population by wealth. Given these limitations, deeds offer a most helpful addition to the sources of data about past patterns of literacy. The results corroborate my findings from the probate and deed records.

Male and Female Deed Makers

Deeds may be analyzed in several ways. In one of the most imaginative studies, Ross Beales analyzed signing and marking in a single community, Grafton, Massachusetts, for one

[40] Manuscript population schedules of the *Federal Census of the United States for 1820*: New Hampshire's Grafton County, Plymouth and Rumney townships (National Archives Microfilm copy).

year, 1747. He limited his inquiry in this manner to achieve greater depth. Taking a tax assessment list and searching for all the names, he was able to recover virtually all adult male property owners and almost half the married adult females from the deeds. Further estimates of the proportions of adult males and married females will determine if there is much variation from Beales's findings. It is neither possible—records do not exist in many cases—nor necessary to replicate all the steps leading to his analysis of signing behavior for each township[41] but I have followed Beales's procedure for calculating the proportion of adult male and married female signatures and marks for two of the five studied, Plymouth and Cavendish, Vermont, using the federal censuses. For both Plymouth and Cavendish I omitted witnesses to deeds.[42] Nevertheless, this did not dramatically alter the proportions of the propertied showing up as deed makers. For adult males the proportions were 92 percent and 94 percent, and for adult married females 41 percent and 44 percent respectively. Thus Windsor District deeds prove to be an immensely rich source to discern elementary literacy levels on a community-by-community basis.

As Beales has argued, 'deeds are the richest single source of data on literacy' in early America. They include a substantial proportion of adult married women (45 percent for Grafton, Massachusetts, in 1747) and a very large proportion of all adult males (97 percent for Grafton).[43] The clear limitation of deeds is that they only include households owning real prop-

[41] Beales, 'Studying Literacy,' pp. 94–98.

[42] The marks and signs of witnesses were excluded after a test revealed virtually no marks for any year, 1790–1830, for female witnesses to deeds in Plymouth and Cavendish, Vermont. Since there certainly were female deed makers who marked in both townships (see graphs 5-A and 3-A respectively), this led me to the suspicion that care was not taken by the clerks in these two communities to record accurately the signing or marking status of witnesses to deeds. It is also the case that the error rate (cases in which one or more signs and one or more marks exist for the same individual) for deed makers was higher in each of these communities. Careful tracking of this potential problem was undertaken for all five townships. See Beales, 'Studying Literacy,' p. 99, where Beales tracks 'uncertain' cases.

[43] Ibid., pp. 94–98.

erty and, hence, underrepresent the bottom fifth of the population by wealth, as do most sources. Jackson T. Main has found that roughly 20–30 percent of Northern society owned no land shortly after the mid-eighteenth century.[44] But deeds offer scholars three main advantages relative to other sources of signing and marking behavior: they are the most inclusive of all known early American sources; more importantly for multiple-moment research, they provide the broadest cross section of the adult male population; and, likewise, they offer the largest proportion of adult females.[45]

Because deeds exist on a township-by-township basis, they enable us to resolve one of the most critical problems in all literacy study: how to discern variations among communities in the same area. American scholars frequently have chosen a single community for other purposes, and then studied its signing rates in isolation.[46] Scholars of Britain, France, and Sweden are far in advance of scholars of America in this line of inquiry.[47] Roger Schofield in studying English marriage registers found a marked geographical variation from one county to another in the percentage unable to sign. More perplexing, 'local variation within a county was even greater.'[48] The same situation obtains for communities within America. To date no one studying elementary literacy in Britain or America has developed a convincing argument for these local variations in signing

[44] Main, *The Social Structure of Revolutionary America* (Princeton, 1965), pp. 60–65.

[45] There were 658 females signing or marking deeds in the five townships analyzed, ca. 1771–1830, with very few notations before 1787, compared with 151 female will makers and witnesses, 1787–1830, in the ten townships in Windsor District.

[46] See Beales, 'Studying Literacy,' p. 93.

[47] See Schofield, 'Dimensions' and 'Measurements'; Cressy, 'Literacy' and 'Literacy in Seventeenth Century England; More Evidence,' *Journal of Interdisciplinary History* 8(1977):141–50; Stone, 'Literacy and Education,' on England; the interesting study by François Furet and Jacques Ozouf, eds., *Lire et écrire: l'alphabétisation des Français de Calvin à Jules Ferry*, 2 vols. (Paris, 1977) on France; and Egil Johannson, *The History of Literacy, in Sweden, in Comparison with Some Other Countries*, Umea University, Education Report no. 12 (Umea, Sweden, 1977), on Sweden.

[48] Schofield, 'Dimensions,' p. 444.

rates.[49] Since wills homogenize findings from ten to thirty townships they offer no resolution to this basic problem. Among American sources, deeds may resolve it.

In order to study these variations, we tried to consider all conceivable factors accounting for different rates of elementary literacy from one community to the next. The components we found can be broken down into two general groups: intratownship and intertownship.

Among intratownship factors, occupation, wealth levels, and schooling rates have proven to be the most relevant, judging from comparative work. David Cressy has found significant differences by occupation in his work on depositions made by witnesses before the courts of the dioceses of London and Norwich between 1580 and 1730.[50] In his study of Grafton in 1747, Beales found reasonably consequential differences in signing rates by wealth levels, with lower signing rates, particularly, toward the bottom 40 percent of his wealth scale. Little work has been published on actual schooling rates for rural America, 1760–1830, but it seems reasonable to conclude that the progress of both schooling and elementary literacy are related in America.[51]

Among intertownship factors, three general typologies have been employed to account for broad differences among townships in America, though none have been specifically employed in literacy research to our knowledge. First is Jackson T. Main's commercial-urban east versus subsistence-rural west rubric. Second is the approach, as James Kirby Martin puts it, of 'town growth as a function of river, valley and highway networks, a typology employed by some students of regional economic development.' Third, and most recent, is Edward M.

[49] The exchange between Lawrence Stone and David Cressy raises some of the difficulties. See Stone and Cressy, 'Literature in 17th Century England,' *Journal of Interdisciplinary History* 8(1978):799–801.

[50] Cressy, 'Literacy,' p. 232ff.

[51] Beales, 'Studying Literacy'; and Lockridge, *Literacy*. In France this is not the case, according to the studies in Furet and Ozouf, *Lire et écrire*.

Cook, Jr.'s use of central place theory, in *The Fathers of the Towns*, to explain the 'relationships among the various centers of population in an area.' Cook finds five different types of communities: cities, major county towns, the suburbs to each, self-contained villages, and newly formed frontier towns.[52] All three typologies have proven useful, but the first is too general for our purposes. I have attempted to utilize the second and third approaches, adding to them insights drawn from Allan R. Pred's brilliant work, *Urban Growth and the Circulation of Information*.[53]

With these factors in mind, it was possible to work out a mixture of intra- and intertownship factors that begins to explain local variations in various kinds of cultural participation ranging from elementary literacy to formal publishing.[54] For now I will merely summarize a few of the essential relationships necessary to understand evidence from deeds. Economic growth and social differentiation of a township were, to a large extent, a function of geography and transportation networks. All levels of cultural participation in the Upper Valley were partly dependent upon this same interrelationship of geography and transportation. All printed items traveled along the same roads and rivers as shoes and sheep, and were inhibited by the same mountains and mud. Knowledge was not just a material commodity, however. The entire cultural participation system for print and written expression in rural New England functioned simultaneously as part of the material distribution system, and part of another distinct and less easily charted

[52] See Main, *Social Structure*; for Martin's discussion, see his review of Cook's *Fathers of the Towns* in *Journal of Social History* 11(1978):440–42. Cook's subtitle is *Leadership and Community Structure in Eighteenth-Century New England* (Baltimore, 1976), quote from p. 77.

[53] Pred's subtitle is *The United States System of Cities, 1790–1840* (Cambridge, Mass., 1973). Pred's model for the framework of intercity relations offers a major modification to central place theory based on research on the circulation of knowledge in early national America.

[54] For a more detailed account, see William J. Gilmore, *Primed With Knowledge: Literacy Reading and Its Cultural Locations in Rural New England, 1787–1830*, esp. sec. 2.

nonmaterial communication system. If all knowledge was distributed differentially within the Upper Valley, then elementary literacy, the basic possession of the skill of signing and rudimentary reading ability, should also show a similar variation in its distribution throughout the area. Figures 1 through 3 show the key geographical features of Windsor District, and the basic transportation and communications systems among the settled places. In addition they offer snapshots at two moments in time, 1800 and 1825, of differential access to the products of print culture: books, broadsides, and pamphlets, periodicals, annuals, and newspapers.

It is in light of Windsor District's geography and transportation and communications systems that five of the ten settled communities within Windsor District (Windsor, Cavendish, Plymouth, Reading, and Weston) were chosen for study (fig. 1). I sought to include examples of all types of communities. To proceed, first I will consider the overall findings on elementary literacy for Windsor District, then analyze them by individual townships, discussing variations among the five sets of trends, and finally, consider factors helping to account for these variations.

Overall Literacy Rate of Windsor District. Elementary literacy rates calculated from deeds for Windsor District as a whole, 1761–1830, were very high. Graph 1-A shows combined elementary literacy of both male and female deed makers for all five Windsor District townships, 1761–1830. (All graphs are located at end of article.) The range of signing levels is very narrow, between a low of 93 percent, 1822–26, and a high of 98 percent, 1797–1801. There is a gradual rise in signing levels through 1801 (94–98 percent), followed by a corresponding drop (98–94 percent) through 1816, with a very slight modulation (93–95 percent) thereafter through 1830. The main overall finding is of an extraordinarily high combined male and female elementary literacy rate among those persons selling real property, 1761–1830, within Windsor District.

When literacy across Windsor District is broken down by gender (graph 1-B), rather substantial differences between male and female trends are revealed. The male signing rate moved within an extremely narrow range (between 95 percent and 99 percent) and the central trend is an exceptionally steady one, pointing to almost universal elementary literacy for males achieved among those selling real property by 1761, and sustained throughout the next seventy years. The female signing rate moves within a much broader overall range (60–91 percent). The central trend, however, reveals a brief, relatively low level of 60–63 percent between the mid-1770s and mid-1780s. This is followed by a fairly sharp rise to nearly 80 percent for the decade 1787–96, then two decades (1797–1816) of fluctuation between 91 percent and 74 percent, succeeded by a decade and a half of sustained elementary literacy at a relatively high level, 84–87 percent. These are the highest levels of female signing behavior for the Western world through 1830 found to date.[55]

The main tendency in female elementary literacy rates is well supported by evidence drawn from will makers and witnesses (compare graphs 7-B and 1-B), discussed below. The chief difference is that the rise to a consistently high level (about 85 percent and above) occurred less rapidly than the thinner evidence from will makers and witnesses suggests. Rather than achieving this level by the mid-1790s as suggested by wills, the more detailed evidence found in deeds reveals that it took until the mid-1810s for the five townships taken as a group. Male signing trends from deeds for Windsor District are also completely in accord with trends from evidence of male will makers and witnesses through 1830 (compare these same graphs). Evidence from deeds from the same townships is much more extensive than evidence from will makers and witnesses (20.5 times the number of will makers and 5.5 times the

[55] See Stone, 'Literacy and Education'; Schofield, 'Dimensions'; Furet and Ozouf, *Lire et écrire*; Lockridge, *Literacy*; and Cremin, *American Education*.

number of will makers and witnesses, counting the deed signatures for only half the townships).[56] This confirms the general findings of extremely high male elementary literacy from 1760, quite high female literacy during the years 1787–91, and very

Table 5

ADDITIONAL EVIDENCE OF ELEMENTARY LITERACY FROM LOOSE DEEDS, WINDSOR DISTRICT, VT., 1761–1829

Group	*N of markers*	*Signers* *N*	*%*
Windsor, Vermont, 1761–1796*			
Male deed makers	4	155	97.5
Male witnesses	0	240	100
Female deed makers	0	1	100
Female witnesses	2	22	91.7
TOTALS: Males 99%; females 92%; combined male and female 98.6%			
Weathersfield, Vermont, 1783–1829†			
Male deed makers	1	64	98.5
Male witnesses	0	87	100
Female deed makers	0	2	100
Female witnesses	0	13	100
TOTALS: Males 99.3%; females 100%; combined male and female 99.4%			

SOURCES: * Nathaniel Stone and Green Papers, doc. box 69, Vermont Historical Society.

† Weathersfield Deeds, XMS 974.31 W 378, Vermont Historical Society.

[56] All duplicate signatures have been avoided, a very tedious procedure because of the enormous number of deeds. Among the fifty-three volumes of land records there were approximately 21,000 deeds made for these five townships, mainly (87 percent) between 1787 and 1830. These 21,000 deeds were made by only 4,642 men and cosigned by 658 of their wives (and in a very few cases their widows). Deed makers included all individuals owning land in a township, wherever their place of residence. Speculations occasionally account for a sizeable proportion of deeds early on in the settlement of a township, or for a short period of particularly rapid growth. But they still account for only one sign or mark each. Signs and marks are made by the grantor (seller) of property.

high female literacy from 1812 forward. Supplementary research in loose deeds (table 5), filed separately, confirms these findings.

In breaking down the composite rates for Windsor District into the five townships from which the evidence derived, similar variations to those found by Schofield, Cressy, and Furet and Ozouf appear. Contiguous townships often have substantially different literacy rates, and further research reveals that these differences carry over into other areas of cultural participation.[57]

Windsor—Cultural Center. Windsor, the first of the five townships chosen for an analysis of elementary literacy at the local level, was the communications center of the entire Upper Valley through 1830. One of the two economic centers in Windsor District (see figs. 2 and 3), Windsor also had the highest population and largest village through 1830 (table 1). The district's center of print culture, Windsor boasted the oldest print shop and the oldest continuously published weekly in the Upper Valley, the *Vermont Journal*, founded in 1783, as well as the first post office in the area.[58]

Elementary literacy in Windsor was understandably very high (graph 2-A).[59] The male signing range was very narrow (94–99 percent). Among males owning real property, almost all had achieved elementary literacy by the early 1760s when evidence is first available. As graph 2-A demonstrates, this very high signing rate was maintained over the entire seventy years, 1761–1830.

By comparison, the female signing range appears quite broad

[57] Gilmore, *Primed With Knowledge*, secs. 7–12.

[58] See *Table of the Post Offices in the United States* (Washington, D.C., 1798). No other townships in the district had a post office until ca. 1803. Also on Windsor, see Hamilton Child, *Gazeteer and Business Directory of Windsor County, Vermont for 1883–84* (Syracuse, N.Y., 1884), p. 41ff. on the date of post office establishment, and 255ff. on West Windsor and Windsor.

[59] Because of the sizeable numbers of male deed makers, the five-year time series will be used. For females, the ten-year time series is more accurate because of the frequent occurrence of very low numbers for female cosigners.

Figure 2

WINDSOR DISTRICT ZONES OF ACCESS AND COMMUNICATIONS SYSTEM, 1800

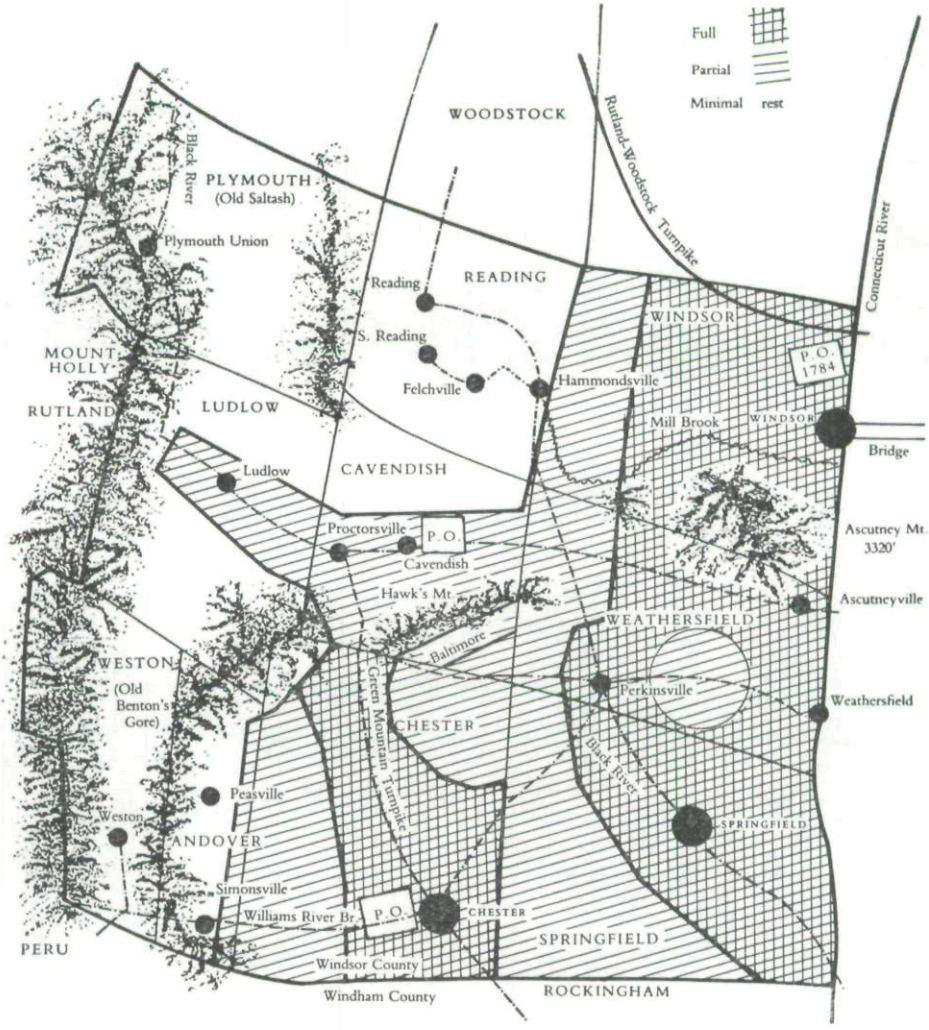
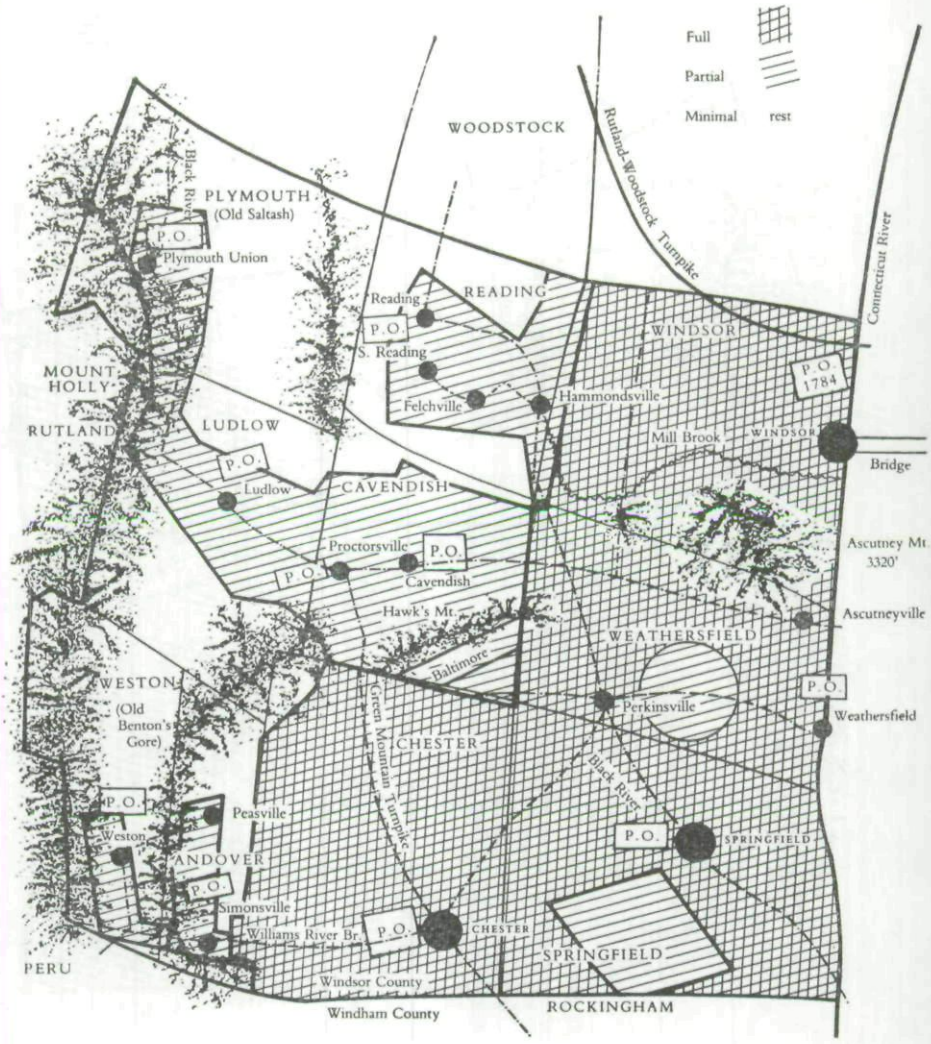


Figure 3

WINDSOR DISTRICT ZONES OF ACCESS AND COMMUNICATIONS SYSTEM, 1825



(64–93 percent). But closer inspection reveals that this is the case only through the mid-1780s (graphs 2-A and 2-B). Thereafter the range was between 84 and 89 percent (graph 2-B) and even when broken down into a five-year series ranged between 81 and 92 percent (graph 2-A). By the late 1780s, then, extremely high female signing levels had been achieved in this rural northwestern New England center of communications. Elementary female literacy had started out at nearly two-thirds (64 percent) for the 1770s, risen to three-quarters (74 percent) for the years 1782–86, and then to 84 percent for the decade 1782–91. Throughout the early national period, 1787–1830, elementary literacy levels of Windsor women maintained a remarkably high level.

During the 1770s male and female levels were more than thirty percentage points apart, but then the female rate rose to within fifteen points of the male by the 1780s, and closed to within eight to twelve points over the next forty years, through 1830.

Cavendish—Small Rural Center. Cavendish, Vermont, possessed a post office as early as 1803, at a time when the only others in the district were at the two largest villages and economic centers, Chester and Windsor. Cavendish was a smaller-scale Windsor. A middle-sized community within Windsor District, it had a respectable population, reaching 1,000 souls shortly after 1800, and gradually moving from seventh to fifth in population among the ten townships (table 1) by 1830. In Edward Cook's typology, Windsor was a major county town, while Chester was a larger and Cavendish a smaller secondary rural center.[60] The chief advantage of Cavendish was its strategic location for the flow of materials and communications throughout the district. It was not accidental that Cavendish established only the third post office in Windsor District (compare figs. 2 and 3), for it held a central position at the conjunc-

[60] See Cook, *Fathers*, pp. 165–83.

tion of the only two major pathways up from the Connecticut River Valley and into the central hinterland of Windsor County. Almost all traffic in goods, people, and books seeking access to the communities in the foothills of the Green Mountains traveled through Cavendish. Yet, as was typical of communities on travel routes, Cavendish had no history of print activity through 1830.[61]

Like that of Windsor, the male signing range for Cavendish was both extremely narrow and extraordinarily high (95–100 percent). Among males with real property almost all had achieved elementary literacy by the mid-1770s (graph 3-A), the time of earliest evidence. The largest shift between five-year periods thereafter was from 93 to 100 percent. Near-total elementary literacy for males was maintained throughout the period 1776–1830.

The situation for wives of disposers of property in Cavendish was apparently more volatile, however (graph 3-B). The range of signing behavior varied more widely (60–97 percent). After an initial low of 60 percent during the late 1770s, female elementary literacy rates did rise steadily and rapidly to 70 percent for the decade 1782–91, and to 88 percent during the years 1792–1801. But then the rate fell to 71 percent for the years 1802–11, only partly because the pool of female cosigners for 1808–11 was very small. (This trend is also present in the evidence for Reading—see below.) In the immediate aftermath of this decade the rate rose dramatically, with nearly universal female elementary literacy, 1812–30, for this portion of the Cavendish population.

Unlike the situation in Windsor, the convergence of male and female signing trends awaited the second decade of the nineteenth century in Cavendish. From an initial divergence of thirty-six percentage points in the 1770s and twenty-eight points in the 1780s, the gap narrowed to nine points for the decade 1792–1801, then widened once more to twenty-seven

[61] See Child, *Gazeteer of Windsor County*, pp. 101–13.

points in the years 1802–11, before the remarkably close convergence in 1812–30.

Cavendish replicated the Windsor pattern of near-total male literacy among property sellers from the earliest evidence. But Cavendish was a full quarter-century behind Windsor in achieving very high female signing rates. During the last two decades, however, Cavendish female rates reached a considerably higher level than those of Windsor.

Reading—Farming Community. Reading comes closest to being what Cook calls a self-contained farming community.[62] Settled fairly early among the townships in the district, it consistently ranked fifth among the eleven townships in population through 1820, but was bumped to sixth by Cavendish in 1830 (table 1). Actually Reading only grew 2 percent during 1810–20, the lowest rate of population increase among Windsor District communities for the decade. Between 1820 and 1830 Reading lost 13 percent of its population—the largest loss in the district. From its founding Reading was a quiet farming, pasturing, and small 'mill privilege' community. No printing shop ever invaded its hills. No large village ever developed. A post office was established comparatively late, in 1818; Reading was one of the last of Windsor District communities to achieve this emblem of access to the world outside the Upper Valley.[63]

Despite its self-contained, backwater status, Reading's male signing range conforms to the patterns found in Windsor and Cavendish. The range of male signing behavior was exceptionally narrow (95–99 percent) at the very highest end of the scale. Beginning at 98 percent in the late 1770s (graph 4-A), male signing rates were a model of steadiness throughout the next fifty-four years, through 1830. Female signing rates varied widely, however. They were exceptionally low in the late

[62] Cook, *Fathers*, pp. 179–81.

[63] *Table of the Post Offices in the United States* (Washington, 1825); on Reading generally see Child, *Gazeteer of Windsor County*, pp. 179–97.

1770s—lowest of all five townships studied—and did not begin to rise substantially until the early 1790s (graphs 4-A and 4-B). The decade of the 1790s saw improvement, with a very high rate of 85 percent, but the next decade, 1802–11, witnessed a backsliding to 67 percent, similar to the Cavendish pattern. This was followed by two consecutive ten-year averages in the 80–85 percent range, 1812–30—signs of the beginnings of stability at an exceptionally high level.

However, a closer look at the five-year trends, 1812–30, for Reading, made possible by the relatively high number of female signs and marks (graph 4-A), suggests more volatility—in fact, a range of thirty points over 1812–30. Thus, it appears that even by 1830, Reading had not yet quite achieved a consistently high (above 75 percent) female elementary literacy rate. In this respect it was about two decades behind Cavendish, and more than four behind Windsor.

Comparing male and female trends, we find that the narrow range of male rates (95–98 percent) was in marked contrast to the very broad female range (47–85 percent) through 1830. It is true that after 1792 the female range narrowed to never more than eighteen points, but still the fairly sharp contrast remained: high steady male signing levels and lower and less steady female levels.

Finally, handwriting of Reading townspeople was consistently much rougher than that of Windsor or Cavendish deed makers and cosigners. Significant variation in pressure, alternately hard and soft, suggests perhaps a lack of regular writing experience. This was the only important distinction found; in particular, there was little evidence of any split between clear and sloppy, or shaky and steady signatures.

Plymouth and Weston—Frontier Communities. Plymouth and Weston were decidedly 'newly settled, struggling and unstable communities,' in Cook's typology—that is, frontier townships. Plymouth Kingdom was first settled quite late in the final

phase of Windsor District expansion in the mid-1780s. Nestled in the foothills of the Green Mountains, Plymouth was described by one of its earliest historians in picturesque language: 'the surface of the town is bold and rugged, while deep eroded valleys and numerous transverse gorges render the scenery beautiful.'[64] With only 106 inhabitants in 1790, Plymouth grew quite rapidly over the next forty years, to 1,237 souls in 1830. In fact Plymouth was either first or second in growth rate within the district at each of the four censuses after 1790 (table 1). In the process it climbed from ninth to seventh in overall size among the ten townships. But there were ecological limits even on such a beautiful 'grain and grasses' and mill-site community. That a post office was established at Plymouth Union hamlet in 1809, in advance of some other isolated frontier settlements in the area, was in fact owing to the combination of relative isolation and rapid growth.[65]

Weston, in the southwestern corner of Windsor County, was geographically very similar to Plymouth. It too resided on the eastern slope of the Green Mountains, the last township at the northern end of West River Valley proceeding north from Brattleboro. Weston was a relatively isolated frontier community, formed out of Andover township in 1797, and specialized in grazing and some farming. No post office was established until the very last round of post office development in Windsor District, in 1815.[66] Throughout the decades 1800–30 Weston was last in total population, nearing the 1,000 threshold only in 1830. But growth was rapid after 1810: Weston was first in the district, 1810–20, and second 1820–30 (table 1). Both Plymouth and Weston remained at the end of the chain of

[64] Cook, *Fathers*, p. 181ff., quote from 181; on Plymouth (known as Saltash to 1797), see Child, *Gazeteer of Windsor County*, pp. 169–77, quote from p. 169.

[65] Child, *Gazeteer of Windsor County*, quote from p. 171; *Table of the Post Offices in the United States* (Washington, 1811).

[66] Child, *Gazeteer of Windsor County*, pp. 250–55; *Table of the Post Offices in the United States* (Washington, 1825).

Windsor County settlement through 1830. Plymouth grew more rapidly, and was considerably larger in size.

Elementary literacy trends for the two frontier communities were rather similar. Only in those communities did male signing rates ever dip below 90 percent. The range of male elementary literacy for Plymouth remained fairly narrow (85–98 percent), with the single largest fluctuation being a rise from the low of 85 percent in 1812–16 to 94 percent in 1817–21 (graph 5-A). Basically the male signing rate began very high in the years 1776–96, then dropped from 98 percent to 91 percent by the turn of the century, steadied itself through 1811, took a further drop from 91 percent to 85 percent in 1812–16, and finally rose quite abruptly, maintaining a level between 91 and 94 percent from 1817 to 1830.

The pattern for Weston male signing was similar. A slightly narrow range (89–99 percent) meant less volatility, with the only significant fluctuation being a decline of seven points in the mid-1820s (graph 6-A). The first available evidence places elementary literacy very high, at 99 percent in the mid-1790s. It remained between 98 percent and 99 percent through 1816, took a very slight dip 1817–21 to 96 percent, then dropped to 89 percent, 1820–26, before rising again to 93 percent through 1830. In both cases, but less so for Weston, male elementary literacy showed a brief weakening. Interestingly, also in both cases, this slight faltering came after a bit more than two decades of rapid population growth. I will return to this point in the next section comparing trends across the five townships.

Female elementary literacy trends closely paralleled male trends. As with male rates, the Plymouth range of female signing behavior was far broader (60–86 percent) than that for Weston (78–92 percent). Plymouth had a relatively high initial level of 75 percent for the 1780s, followed by a rise to 86 percent for the 1792–1801 decade, then a severe drop to 60 percent through 1811, followed by a slow but steady rise to 67 percent, and finally, back up to 75 percent by the 1820s (graph

5-B). Weston's pattern of female signing was fairly similar, delayed by about a decade and a half. Also beginning relatively high at 78 percent for the 1790s, elementary literacy for Weston's female property owners rose sharply to 92 percent for the 1802–11 decade, then dropped, first to 83 percent the following decade and then to 79 percent for the years 1822–30 (graph 6-B).

After an initially broad difference of twenty-one points between the male and female patterns for Weston during the 1790s, the difference narrowed to a range of six to fifteen points. For Plymouth, after an initial difference also of twenty-one points (during the 1780s), male and female trends converged to within eight points (1792–1801), but this was followed by two decades of wide divergence, of thirty-two and twenty-three points, with the gap being narrowed to sixteen points in the years 1822–30.

Describing the differences in patterns of elementary literacy among Windsor District townships is easier than accounting for them. Nevertheless, I have found three different patterns of elementary literacy. The first, characteristic of Windsor and Cavendish townships, depicts near-universal male elementary literacy among those selling real property all the way from the 1760s through 1830. It also entails sustained female elementary literacy at a very high level, above 83 percent, achieved in the late 1780s for Windsor and by 1812 for Cavendish. The second, exemplified by Reading, involves near-universal male elementary literacy attained by the date of the earliest evidence, in the late 1770s. The key difference between Windsor and Cavendish, and Reading, came in female trends, a more sensitive indicator of overall literacy levels. Windsor and Cavendish sustained very high levels (ca. 85 percent) of female elementary literacy by about 1810, rates not attained in Reading by 1830. The third, which held for Weston and Plymouth, saw male rates sustained at a near-universal level, except for a

brief decline in Weston, 1822–26, and in Plymouth, 1812–16. Female rates, on the other hand, did not sustain a very high level (85 percent) through 1830.

Township Petitions to the State Legislature

A third source of evidence for signing and marking behavior is the group of petitions that citizens of townships sent to the state legislature. Sent usually by a single township but occasionally by two, or even by an entire probate district or county, these petitions were very numerous throughout the Upper Valley from as early as the mid-1760s. The subjects most frequently found in these petitions were: a request for approval of a local tax or lottery to extend a road or build a bridge; a request for the establishment or change of a county seat; a request to create a new town or divide a town in two; an appointment of one kind or another; and relief from a tax or fee.

As with all sources of signing and marking behavior, township petitions combine particular strengths with weaknesses—in this case, fairly serious weaknesses. The main usefulness of petitions (and account books) is that they provide an additional dimension of signing and marking behavior, another grouping and clustering of that behavior which we seek to measure.

Township petitions are not all equal in value for literacy research. They require sorting by both the number of names attached and by their purposes. Because most petitions containing a small number of names were filed by township elites (officials, professionals, and businessmen), they do not offer a fair representation of elementary literacy levels in those communities. We have thus chosen to exclude all petitions containing fewer than fifteen names.[67] Another matter for scrutiny is the content of the petitions, which offers clues to the aims of the petitioners and the composition of the groups involved.

[67] The only exception made was a petition with female signs or marks (see table 6, no. 39).

Some petitions were excluded because names were signed with the same hand. All petitions containing fifteen names or more which did not emanate from a definite town or group of towns were also dropped, thus avoiding all bogus speculative petitions for land grants.

With the above exceptions, all petitions with fifteen or more signatures and marks were included for analysis. Table 6 presents the results of an analysis of every Upper Valley petition through 1794, and then, owing to the extraordinarily high signing rate, a subgroup of petitions, 1795–1830. This subgroup was of petitions from the five Windsor District townships for which we have analyzed all land records. All petitions for these five communities through 1830 were included, without exception.

Altogether forty-five petitions between 1766 and 1794 were included, containing 2,275 signatures and marks. Almost all names appearing were those of males. Only nine females were listed: eight signed and one marked, for a rate of 88.9 percent. Among the males the ratio was 2,261 to 5 or 99.8 percent signers to markers. The most valuable petitions were not those with the longest lists of names, for these usually emanated from several townships. Rather, petitions for such things as the building or extension of a road or the location of a school were most representative of a single community's population. Each of these petitions offered a 'snapshot' of a momentary affiliation among individuals for a set goal.

My basic finding is that male signing levels were near 100 percent as early as evidence exists. Only a puzzling Brattleboro petition (no. 8) from 1784 and a 1786 Townshend request to relocate the shire town (no. 13) suggest anything less than complete male elementary literacy among those assenting to the petition. Otherwise this concentrated group of petitions confirms the evidence in deeds and account books, that near-total elementary literacy for males was achieved soon after the mid-eighteenth century in rural northwestern New England,

Table 6

EVIDENCE OF ELEMENTARY LITERACY FROM TOWNSHIP PETITIONS TO THE STATE LEGISLATURE, UPPER VALLEY, 1766–1830

Date signed	MS *vol. and page**	*Township*	*Signs/marks (all male unless noted)*	*Purpose of petition*
1. 1766	16:36	Windsor	16–0	Extend a road
2. 1771	17:321	Windsor	35–0	Extend a road
3. Jan. 4, 1779	17:13	Chester & Rockingham	49–0	Build a road
4. Oct. 1780	18:331	Wardsboro	20–0	Relief from land tax
5. Feb. 1781	17:342	Royalton	39–0 F:1–0	Relief from charter fees
6. Oct. 17, 1783	17:364	General	106–0 F:2–0	Freedom of religion
7. Sept. 7, 1784	17:97	Windsor City	23–0	To have only one county court
8. Sept. 23, 1784	v.8:346–7	Brattleboro	20–1 (95%)	—
9. May 23, 1785	17:109	Wardsboro & Somerset	54–0	To have only one shire town
10. Oct. 24, 1785	17:134	Hartland	27–0	Build a bridge
11. Sept. 20, 1786	17:177	Orange County	264–0	Single shire town & new county lines
12. Sept. 28, 1786	17:181	Guilford	50–0	No change in shire towns

* These notations refer to the bound manuscript volumes of the state papers of Vermont, which contain the actual petitions as received. Where a 'v' appears, the citation is to the printed copy in the *State Papers of Vermont*, vols. 8 and 9 ed. by Edward A. Hoyt (Montpelier, 1952); and vol. 10, ed. by Allen Soule (Montpelier, 1958). Vol. 8 covers General Petitions, 1778–87; vol. 9, 1788–92; and vol. 10, 1793–96.

13. Oct. 2, 1786	17:184	Townshend	18–1 (94.7%)	Relocate shire town
14. Oct. 3, 1786	17:186	Wilmington	27–0	No change in shire towns
15. Oct. 14, 1786	17:215	Windsor	23–0	Lottery to improve road
16. Feb. 16, 1787	17:284	Hartford	48–0	Appoint X as Justice of Peace
17. Jan. 16, 1787	17:281	Londonderry	34–0	Build roads and bridges
18. Feb. 3, 1787	17:259	Weathersfield	35–0	Relief for delinquents on church land tax
19. Feb. 6, 1787	17:263	Jamaica	20–0	Tax to build a road
20. Sept. 21, 1787	17:315	Norwich	39–0	Tax to build a bridge
21. Sept. 24, 1787	17:316	Saltash (Plymouth)	22–0	Tax to build a road
22. Sept. 25, 1787	17:317–18	Wardsboro	105–0	Division of a town
23. Oct. 13, 1787	17:342	Thetford	32–0	Tax to build a road
24. Oct. 10, 1788	18:44	Windsor City	34–0	Lottery to repay for a road
25. Aug. 25, 1789	18:84	Windsor District	224–2 (99.1%)	Creation of a new county
26. Sept. 7, 1790	18:143	Southern Windham County	24–0	Lottery to build a bridge
27. Oct. 19, 1791	18:299	Wilmington	17–0	Complete bridge; repair roads
28. Oct. 14, 1791	18:286	Windsor	27–0	Lottery to clear Connecticut River for navigation
29. Oct. 18, 1791	18:294	Cavendish & Ludlow	23–0	Charter for a public grammar school
30. Sept. 20, 1792	18:349	Windsor & Reading	46–0; 41–0	Creation of a new town
31. Oct. 2, 1792	18:371	Bridgewater	39–0 F:1–0	Lottery to build bridges
32. Oct. 2, 1792	18:373	Brookfield	45–0	Location of county grammar school

Date signed	MS *vol. and page*	*Township*	*Signs/marks (all male unless noted)*	*Purpose of petition*
33. Oct. 2, 1792	v.9:148	Marlboro	27–0	Build roads & bridges
34. Oct. 5, 1792	18:364	Cavendish†	95–0	Lottery to build road
35. Oct. 6, 1792	18:380	Norwich & Hartford	24–0	Lottery to build a bridge
36. Oct. 8, 1792	18:394	Fairhaven	20–0	Divide town in two
37. Dec. 22, 1792	18:222	Brookfield	34–0	Tax to build a road
38. Oct. 1, 1793	19:23	Rochester	26–0 F:1–0	Tax to build a road
39. Oct. 7, 1793	19:36	Brookfield	8–0 F:2–1	Authorization to sell real estate
40. Oct. 12, 1793	19:53	Saltash	31–0	Lottery for a grist mill
41. Oct. 17, 1793	19:74	Woodstock & Windsor	15–0	To have two shire towns
42. Oct. 13, 1794	19:92	Tunbridge	108–1 (99.1%)	Payment of court costs
43. Aug. 22, 1794	19:93	Stockbridge	16–0 F:1–0	Build roads and bridges
44. Aug. 30, 1794	19:95	Athens	54–0	Creation of a new town
45. Sept. 8, 1794	19:99	Ludlow†	57–0	Lottery to build a road

TOTALS: 45 petitions; 2,275 notations; males 2,261–5 (99.8%); females 8–1 (88.9%)

1795–1830: Sampling only was employed for these petitions, to ensure that universal levels of elementary male literacy were maintained. They were. Analysis of all petitions from towns whose deeds were studied (Weston, Plymouth, Reading, Cavendish, and Windsor) reveals only 3 marks (all male) among approximately 1,450 signs, and these were found in three different petitions.

† Includes a small sampling from contiguous townships.

as in the eastern areas studied by Kenneth Lockridge. That petitions did not accurately represent the entire population of the Upper Valley should be obvious, however. The difficulty is that we have no direct evidence of which portions of the population of a given community were not represented. Although it is likely that the bottom fifth by wealth was largely absent from most petitions, those concerning road building and school location may well have included their share of the very poor living in those communities. In any event, this different angle of vision yields the same overall result as our previous probes.

Will Makers and Witnesses

Next to township deeds, the richest extant vein of signing and marking evidence are the records from county probate districts. Windsor County had two probate districts, Hartland to the north and Windsor to the south. Beginning with 1787, I have analyzed all probate records through 1830 for Windsor District, comprising ten townships in the southern half of the largest and most populous of the six counties in the Upper Valley.[68] Basically the valuable pioneer path trod by Lockridge was followed, though his method was expanded upon in one area through an analysis of the signatures and marks of witnesses in addition to will makers.[69]

The Windsor District probate records include wills and inventories of estates, as well as depositions about the estate from a variety of people, especially appraisers appointed by the judge to survey, list, and evaluate each estate. They also include statements by heirs, attesting that they have indeed received their appropriate share. Signatures or marks appear for

[68] *Records of the Windsor District Probate Court*, (microfilm copy, Vermont Public Records Office, Montpelier, Vt.), vols. 1–13 (1787–1830). These record books each contain wills and inventories interspersed. Most have a person index in the first few pages of the volume. The years covered by each volume overlap, significantly in some instances, adding difficulty to the basic research design. The ten townships include Andover, Cavendish, Chester, Ludlow, Plymouth, Reading, Springfield, Weathersfield, Weston, and Windsor. Baltimore, an unincorporated settlement, was also included.

[69] Lockridge, *Literacy*.

four groups: will signers; witnesses to wills; heirs; and judges, commissioners, and other individuals appointed to perform official functions. The latter two groups were not counted; the number of heirs was negligible, and the presence of officials' signatures would have skewed the sample.[70] Names were only counted once in the years 1787–1830.

There was very little overlap between Upper Valley wills and estate inventories, although they appeared side by side in the record book of the probate clerk. One hundred seventy decedents, or 25.7 percent of the cases, were represented by a will and an inventory. The will, probated after the death of the head of a household, was followed by an inventory of the estate of that person. Another 55 decedents, or 8.3 percent of the total, were represented by a will but no inventory. The largest group, 435, or 66 percent of the cases, were represented by an inventory but no preceding will. Wills by themselves usually did not include evidence of the wealth of the person or the extent of their estate; hence meaningful wealth correlations are impossible. On the other hand, inventories, most frequently of individuals who died intestate, contained few useful signatures or marks (generally only those of the judge, clerk, and commissioners).

How representative of the population of Windsor District at large is this group of 225 will makers and 631 witnesses from the ten townships? Does the subgroup of witnesses differ in any essential way from the subgroup of will makers? One of the most sensitive students of probate records, Daniel Scott Smith, tested for underregistration bias among will makers (but not witnesses) in Hingham, Massachusetts, for a sixty-year period, 1726–86. He found that 65 percent of the wealthiest two-fifths of the population left a will, but only 22 percent of the middle two-fifths and 8 percent of the poorest fifth did so. In the years 1726–86, those leaving wills represented a range of

[70] But the few heirs among witnesses were included (less than 5 percent of witnesses, and mostly widows).

28–47 percent of total decedents, with a noticeable decline in the proportion after 1740.[71] For our period, this decline means that fancy signature-wealth correlations are on extremely weak ground.

It is possible, however, to test for the relative wealth in Windsor District of those 170 individuals for whom both a will and an inventory survive. Table 7 presents the relative wealth of these persons (75 percent of all will makers), along with evidence from several other groups for comparative purposes: all Windsor District families whose inventories mention books, 1787–1830; all families with an inventory (those with and those without books) for six sample years between 1787 and 1830; Jackson Main's evidence for the entire country in the Revolutionary Era; and William Willingham's evidence for Windham, Connecticut, 1761–80 and 1781–1800.

Turning to social classes, we found that the very poor were greatly underrepresented among my group of will makers with inventories. Main and Willingham found that the very poor constituted 13–20 percent of the population, whereas they comprise here only 2.4 percent of will makers. This is even far lower than all decedents whose estates were inventoried during the six sample years. The lower middle class was, on the other hand, considerably overrepresented: 58.2 percent of will makers with inventories versus 40 percent for the Revolutionary Era and 48–50 percent for Windham, 1761–1800. The middle class and the wealthy of Windsor both were represented in almost the exact proportions as the Revolutionary Era population, and also the population of Windham. Overall, we may conclude that will makers overrepresent the lower middle class, greatly underrepresent the poorest fifth, and rep-

[71] Smith, 'Underregistration and Bias in Probate Records: An Analysis of Data from Eighteenth Century Hingham, Massachusetts,' *William and Mary Quarterly* 32(1975):100–110; but see also Gloria L. Main, 'Probate Records as a Source for Early American History,' *William and Mary Quarterly* 32(1975):89–99; John Faragher, 'Old Women and Old Men in Seventeenth Century Weathersfield, Connecticut,' *Womens' Studies* 4(1976):11–31; and Kenneth Lockridge, 'A Communication,' *William and Mary Quarterly* 25(1968):516–17.

Table 7

COMPARATIVE ECONOMIC CLASS STRUCTURE, 1760–1830

Windsor District

Economic class structure	*Will makers with inventories 1787–1830 (N=170)*			*Inventories with books 1787–1830 (N=314)*		*Inventories from 6 sample years* (N=129)*		*Population of entire Country in Revolutionary era†*	*Population of Windham, Conn.‡*	
	N	Average wealth	%	N	%	N	%		1761–80	1781–1800
Wealthy: $6,601+	16	$6,935	9.4	33	10.5	7	5.4	10%	4%	3%
Middle: $1,651–6,600	51	$3,678	30	109	34.7	31	24	30%	34%	34%
Lower middle: $166–1,650	99	$ 997	58.2	146	46.5	81	62.8	40%	48%	50%
Poor: $1–165	4	$ 51	2.4	26	8.3	10	7.8	20%	14%	13%

* Gilmore, *Primed With Knowledge*, sec. 6.

† Jackson T. Main, *Social Structure*, pp. 42–43.

‡ William Willingham, 'Windham, Connecticut: Profile of a Revolutionary Community, 1776–1818' (PH.D. diss., Northwestern University, 1972), pp. 72 and 241ff.

resent well the middle and wealthiest classes. While these are rough conclusions in need of further refinement, they do suggest that wills are clearly not a hopelessly elite source for the study of elementary literacy. The vast bulk of the population, the 70 or 80 percent between the top and bottom classes are, in fact, well represented.

Analyzing witnesses in addition to the makers of wills adds substantially to the sample available.[72] After dropping all probate officials and their families, 225 will makers and 631 different witnesses were represented. The overall group of will makers and witnesses comprise 856 signers and markers, 1787–1830 (table 8). Judging from township census data, witnesses were usually neighbors or, in some cases, relatives; they were also younger in average age than will makers. Virtually all witnesses were from the same geographical area as will makers, and all had reached legal age (twenty-one). The small number of heirs included (noted in the wills) were generally immediate family or other kin.[73] Presently there is no direct way to determine the wealth of the witnesses.[74] It seems reasonable to infer that the 631 witnesses broaden somewhat the cross section of the population represented but available evidence does not permit testing this conjecture.

Judging from the evidence of these 856 will makers and witnesses, the overall signature literacy was extraordinarily high, 96.9 percent. Among the will makers subgroup the literacy rate is 92.5 percent; that of the witnesses subgroup is even higher, 98.6 percent. Further analyzing the figures for the will makers subgroup by gender, the male literacy rate is 96.8 percent, the female rate 70.3 percent (the latter being a consider-

[72] Each will usually includes three witnesses, though in a few cases two or four appear. Codicils are extremely helpful when available as they yield a second check on the signing versus marking process of an individual, yielding at least two moments late in the life cycle at which we may test for signing literacy.

[73] See David E. Narrett, 'Preparation for Death and Provision for the Living: Notes on New York Wills,' *New York History* 57(1976):417–37.

[74] Detailed tax records by township have not yet been located for Windsor District communities.

ably higher signing rate than in most other Western societies during these decades).[75] If the larger witnesses subgroup is analyzed by gender, the gap between male and female rates narrows considerably; the male rate is 99 percent and the female rate 96.5 percent. The total male literacy rate for both will makers and witnesses is 98.4 percent, for females 91.1 percent. The extremely small number of female will makers, 37,

Table 8

SIGNATURES VERSUS MARKS LITERACY MEASURE, WINDSOR DISTRICT PROBATE COURT, 1787–1830 (N=856)

Signatures and marks	*Total N*	*Wills*	*Witnesses*
Signatures—male	694	182	512
Signatures—female	136	26	110
Marks—male	11	6	5
Marks—female	15	11	4

Signatures only	*N*	%
Overall—wills	225	92.5
Overall—witnesses	631	98.6
Male composite (wills + witnesses)	705	98.4
Female composite (wills + witnesses)	151	91.1
Male—wills	188	96.8
Female—wills	37	70.3
Male—witnesses	517	99
Female—witnesses	114	96.5
Combined (wills and witnesses for both males and females)	856	96.9

SOURCE: All Windsor District Probate Records, 1787–1830.
NOTE: No signatures are duplicated.

[75] See, for instance, Lockridge, *Literacy*; Lawrence Cremin, *American Education*, esp. chs. 17 and 18; Stone, 'Literacy and Education'; and Schofield, 'Measurement' and 'Dimensions.' By far the best bibliography of findings in English is Graff's *Literacy in History*. On Sweden see Egil Johannson, *History of Literacy in Sweden*.

may well account for the wide variance of twenty-six points in their rates compared with rates for male will makers. A more accurate level of elementary female literacy is probably somewhere between 65 and 85 percent. In general males outnumbered females as makers of wills or as witnesses by more than a 4–1 margin; only 16.4 percent of all signatures and marks made by will makers, and 18 percent by witnesses, belonged to women.

What implications can be drawn from these findings? The extremely high overall basic literacy rate on wills, 1787–1830, is the key finding. When the combined overall signature rate for the period as a whole is broken down into a time series (graph 7-A), only once does the rate fall below 95 percent, and that rate of 87.9 percent is for the initial five-year period, 1787–91. Except for those initial years, the rate fluctuates between 95.6 and 100 percent, a very slight range of variation. Thus, near-total literacy prevailed for society except for those in the lowest fifth in wealth. While the female signature rate remains lower than that of the male, it too is higher than other studies of America, and substantially higher than comparable data in England and elsewhere in Europe.[76]

When male and female signature rates are distinguished and each broken down into a time series (graph 7-B), an initially wide variation for the years 1787–91 appears, of 92.9 percent and 60 percent respectively, followed by a marked convergence of the rates throughout the years 1792–1830, as was evident from deeds. This is an enormously significant finding, and makes one wonder about other parts of New England. The female signature rate rose to 88.9 percent by the second five-year period, 1792–96, and dipped only once thereafter, and only slightly, below the 85 percent rate (1797–1801). The variance between male and female rates declined dramatically by the early 1790s, mostly staying between six and eleven points. In sum, the female rate rose sharply by the early 1790s, and re-

[76] See note 75 (excluding Graff).

mained consistently high after 1800, so that differences between male and female elementary literacy rates were far less significant in the Upper Valley than in other portions of the United States.

Interpreting this surprisingly high signature rate, sustained over nearly four decades, 1792–1830, presents a difficult problem. I have measured only the skills of signing (directly) and rudimentary reading ability (indirectly). These were two elementary skills, important both in themselves and as part of the more general realm of cultural expression in written and printed form. Interpreting just what the ability to sign one's own name means is further complicated by the fact that signing was a symbolic gesture. It was a profound statement of personal existence, worth, and if not identity, then, in the parlance of 1815, 'character.' The frequent, ritualized use of signing in the still essentially face-to-face culture of rural New England during much of the early national period, when letter writing was too expensive for most, was a frequent, regular affirmation of both emerging individualism and an older tradition of community trust. One's signature on a deed or a will, a probate record book, or an account book in a general store, committed the signer, and reaffirmed that complex web of economic group interest and social standing binding together members of Upper Valley townships. For this reason alone signing is not necessarily very good evidence of further writing ability.[77]

In addition to the problem of the representativeness of wills in the Upper Valley population at large, two other troublesome if minor issues must be confronted when analyzing evidence from wills. First, the meaning of other internal evidence in wills that apparently pertains to the act of signing must be clarified. For example, the will of Thomas Kimball of Chester ends with the statement, 'I have hereunto set my hand and affixed my seal.' The witnesses attested at the time that the will

[77] These judgments are drawn from a study put aside for now: Gilmore, 'Conceptions of Personality and the Life Cycle in Rural New England, 1790–1830.'

was 'signed, sealed, pronounced and declared,' and they did so again later before the probate court judge, William Hunt. The will maker's signature and seal appear.[78] A subsequent codicil prepared by Kimball also states that he signed with his hand and sealed with his seal. The three witnesses to the codicil, two of whom also witnessed the will, likewise stated that the codicil was 'signed, sealed, published, pronounced, and delivered in the presence of us.' After his death two of the witnesses testified that they 'saw the said Thomas Kimball, the testator, make his signature and affix his seal to the codicil.' But Kimball did not sign the codicil; he marked it. Could all these witnesses be mistaken? Probably not. This is not an isolated case.[79] What does it mean?

My first thought was that there might be some subtle distinction between 'set my hand' (the phraseology in the signed will) and 'signed with my hand' (the expression on the marked codicil), perhaps entailing the use of 'signed' in an earlier meaning of affixing a mark as a symbol. Further investigation revealed this not to be the case. A random sample of seventy-five wills from Windsor District, 1795–1814 and 1825–30, revealed that among will signers, fifty-five used the form 'set my hand and seal,' twelve used the form 'signed and sealed,' and one used the form 'witness my hand and seal.' Among markers, five used the form 'set my hand and seal' and two used the form 'signed with my hand.' Adding up signers and markers, the most frequently used form was 'set my hand and seal' (sixty of seventy-five cases from the sample). The next most frequently used phrase for both signers and markers was 'signed' or 'signed with my hand and sealed' (fourteen of seventy-five cases).[80] Thus, while slight differences in the expressions employed in wills do exist, they do not correlate with a distinction

[78] Thomas Kimball, Last Will and Testament, and Testimony, *Records of the Windsor District Probate Court* (microfilm copy), vol. 4 (1801–05), pp. 36–7 and 39–41.

[79] Kimball, Codicil, and Testimony, 4:38–39 and 40–41.

[80] *Records of the Windsor District Probate Court* (microfilm copy), vols. 3–6 (1795–1814) and 9–11 (1825–30).

between signing and marking the will. The language in all of the wills refers to an earlier definition of 'signing'—the making of both signatures and marks.[81]

In short, the actual act of signing or marking appears to be independent of the convention of wording in the will, at least within the Upper Valley, 1787–1830. While closer correlation might have been more attractive from an analytic standpoint, at least one apparent contradiction in the evidence has been resolved.

The second troublesome issue is that of feebleness as it may have affected the will maker's ability to sign. The reader may recall that the signing rate was higher for both male and especially female witnesses than for male and female will makers (99–96.8 percent and 96.5–70.3 percent). Although the variance between the signing rate for all will makers compared to all witnesses may be partly attributable to the small number of female will makers, feebleness is another factor well worth considering. The best study of the matter to date, Kenneth Lockridge's *Literacy in Colonial New England*, found that 'only a third made their wills within three months of probate, so most wills seem to have been made before impending death could palsy a literate hand.' He then allowed about 5 percent for this factor in his balancing of elements increasing or decreasing the rates found by counting signs or marks.[82] This is not the only way to approach the problem of feebleness. An equation such as Lockridge proposed is unnecessary in at least some cases because evidence of feebleness shows up explicitly in the wills themselves.

[81] The 1828 edition of Webster's dictionary includes the following definitions of 'Sign, v.t. 1. To mark with characters or one's name. . . . 3. To mark.'

[82] Lockridge, *Literacy*, quoted from p. 8. See also his 'The American Revolution, Modernization, and Man: A Critique,' in Richard M. Brown and Don E. Fehrenbacher, *Tradition, Conflict and Modernization: Perspectives on the American Revolution* (New York, 1977), pp. 103–19, esp. p. 107. Without any substantial group of death records the problem is a difficult one. With a list of individuals whose wills were probated in Windsor Probate District, Windsor County, Vermont, we recovered dates of small samples from 1803, 1813, and 1823 from local newspapers.

As an example, we will once more turn to the will of Capt. Thomas Kimball. Kimball, a gentleman living in Chester, Vermont, owned a large general store specializing in 'hardware goods, English clothing goods, and fancy ware.' His estate was valued at $7,047.08 upon his death. Kimball first made his will November 18, 1801, and signed his copy. Then on December 9 a codicil was added with Kimball's mark, along with his seal. Within six weeks Kimball was dead and the executor presented the will and codicil for probate. Estate appraisers were soon appointed by the judge of probate court, and on February 16, 1802, the inventory was certified by the judge as complete. The whole process from first will, through Kimball's infirmity, to presentation of the will for probate had taken just nine weeks and two days. Nearly four more weeks elapsed before final probate of the estate. Any conclusions to the effect that Kimball's mark in the codicil showed that he was illiterate would be totally false. The fact that Kimball's estate inventory listed thirteen volumes of books strengthens the evidence of literacy provided by the signed will.[83]

But what of the vast majority of cases where only a single document exists? If that document is marked, not signed, should one assume feebleness or illiteracy, and on what grounds? Students of the problem need to be much more cautious about marks, for if feebleness had set in in 20 percent of all cases, for instance, then all existing estimates of literacy would be far too low.

There is another body of evidence within the wills that must also be weighed when quantifying signing and marking. Surprisingly it is little noted. Each will usually began with a statement about the mental condition of the will maker, almost always to the effect that he or she was of sound mind, followed by a statement about the person's physical condition. Frequently

[83] 'Inventory of the Estate of Thomas Kimball,' *Records of the Windsor District Probate Court* (microfilm copy), vol. 4 (1801–05), pp. 41–51 and 74–99; and 'Last Will and Testament,' pp. 36–37.

enough to be significant, comments about 'bodily indisposition' and other similar phrases appear.[84] Surely these need to be factored into judgments about levels of feebleness, but until now they have not been. In the above analysis of Windsor District wills, only minimal alterations in the findings in table 8 occur because after 1787 wills were made further in advance of death.

Will makers in the Upper Valley, 1787–1830, were frequently much younger than the will makers of previous centuries. Lockridge's data revealed frequent late will making, thereby raising the likelihood of feebleness affecting the result. He too found evidence of a shift toward earlier will making in his 1750–90 samples.[85] Data from Windsor District for an even later period, 1790–1815, reveals an even lower incidence of late will making, defined here as being within three months of probate. Windsor District data, 1795–1814, suggests that no more than 15 percent of will makers made their wills inside of fourteen weeks of probate.[86] Wills from this group contain a relatively high proportion of comments regarding physical health (40 percent) though the proportion suggesting serious impairment is quite low at 8 percent.[87] It should be added that many of the comments are ambiguous so that 8 percent is probably an underestimate of serious impairment.

Whether such serious impairments affected the will maker's ability to sign is, of course, not known. The logical conclusion, however, is that actual signing levels may be slightly higher than those found in the evidence of wills. This is obviously not the case for the Upper Valley in the period studied, with its

[84] A survey of Windsor District wills, 1795–1815, reveals comments regarding physical health. The comments ranged from 'healthy' to 'seriously ill,' with more ambiguous statements in between. These appear in approximately 40 percent of all wills. The rate is higher for the far smaller number of codicils. See *Windsor District Probate Records*, vols. 3–6 (1795–1814).

[85] Lockridge, 'American Revolution,' p. 107.

[86] All wills probated have been included. See *Windsor District Probate Records*, vols. 3–6 (1795–1814).

[87] Ibid.

already high rates, but it is certainly a possibility for earlier centuries, particularly in societies where the will-making process was delayed until shortly before death in a sizeable proportion of the cases. In short, feebleness may place a far more serious limitation on the validity of wills as an accurate measure of elementary literacy in some societies than has been realized.

More evidence drawn from wills and inventories from other parts of the Upper Valley besides Windsor District undoubtedly will enrich our understanding of signature literacy in the early national period. Windsor District lay at the geographical and communications center of this rural region. Because, as we have seen, rates were lower in more mountainous, hardscrabble locations, the rates for Windsor District might well exceed those of more remote areas.

But at least we have been able to corroborate these extraordinary findings from Windsor District wills and inventories by using other forms of evidence pertaining to signing and marking. Using multiple-moment research has enabled us to overcome the set of biases that determines the particular characteristics of individuals who appeared in the probate records.

The chief contribution of wills to multiple-moment research is that they yield insight into signing and marking behavior of individuals late in the life cycle, across a broad geographical area of half a county. As with all measures of elementary literacy discovered to date, wills also have serious limitations. First, wills address only minimally the question of female literacy. Second, will makers account for only a small proportion of those who die, about 25–35 percent, and therefore provide a limited window into the total population. Moreover, will makers represent a high proportion of those in late adulthood, and in old age. As such they speak to the literacy of a severely age-restricted portion of the population. Third, wills are representative of only the top 80 percent of the wealth structure. As with the other measurements we have used, wills barely represent the bottom 20 percent of the wealth structure at all.

What the Evidence Reveals

Using the data we have analyzed, we can now begin to come to some conclusions about the way literacy actually functioned in the Upper Valley, and to place it further in its cultural, material, and world context. What factors actually account for the different levels of elementary literacy in the five communities we studied in depth? We will discuss the impact of social settlement patterns and economic development on literacy, as well as geography, communications systems, and other factors. Then, using the evidence of multiple-moment research, with its ability to look at literacy at various points in the life span, we can ask whether literacy skills were maintained once acquired. And finally, we will discuss how the high literacy rate in the Upper Valley compares to the rest of the Western world.

Factors Accounting for Different Levels of Elementary Literacy

Occupation and Wealth. Intratownship factors, introduced in the section on deeds, are able to provide only minimal assistance in accounting for the three distinct patterns of elementary literacy existing among the ten contiguous townships of Windsor District in the period 1761–1830. Little evidence on the occupations of deed makers, for example, may be garnered from land records, owing to the absence of occupational self-identification after the early 1790s in most cases, and after 1800 in almost all instances. All possible occupational designations have been gathered from deeds in the townships of Windsor, Cavendish, Reading, Plymouth, and Weston for male and female markers. Among twenty male markers, thirteen were listed as yeomen or husbandmen,[88] five gentlemen, one esquire, and one artisan. Among female markers, the husbands of twenty were listed as yeomen or husbandmen, and two as arti-

[88] We know from our inventories in Gilmore, *Primed With Knowledge*, that there was no longer a distinction between these two designations by overall wealth or other specific material possessions. See also Cressy's discussion in 'Literacy.'

sans. This means that thirty-three of forty-two, or four-fifths of the markers, were yeomen or husbandmen, a figure substantially higher than their proportions within the total population of Windsor District. That another eight were listed as gentlemen is a bit surprising. Among Windsor District inventories of will makers noting this designation, nearly all held over $3,000 in total wealth at death, and most were substantial commercial farmers. Work by Ross Beales suggests that lower signing rates occurred toward the bottom two-fifths of the wealth structure, and the high proportion of yeomen and husbandmen in my sample is in keeping with this finding.[89] My findings on the wealth structure of will makers suggests that the rates may be somewhat inflated owing to the absence of nearly all of the lowest fifth of the population.

School Enrollment. Evidence on a second intratownship factor, variation in school enrollment rates, is very sketchy before the mid-1840s. Excellent records were kept in many townships of the number of scholars in each school district and of the number of weeks per school term, but 1844 is the first year for which I have found the additional notation 'No. of scholars who have attended school.' Moreover, the quality and detail of record keeping is no clue, even indirectly, of enrollment rates since Plymouth, with the lowest male and female signing rates, had one of the most complete records of numbers of scholars living in each school district each year.[90]

It is no doubt possible that different mixes of occupations, wealth, and school attendance could have, by themselves, accounted for some of the variations that are especially visible in female signing rates for the five townships analyzed in depth. To measure these variations we would need a more complete analysis of occupational, wealth, and schooling patterns for

[89] Beales, 'Studying Literacy.'

[90] Cavendish, Vermont, Vital Records, vol. 6 (1830–56), p. 154 for the quote, and ff. for further attendance figures.

each township, a very different study from this one and impossible for Windsor District given presently known evidence. Thus the focus must be on intertownship factors to help account for our three different patterns of elementary literacy in Windsor District.

Hierarchy of Communities and Market Activity. Upon closer inspection, the differences discovered are not just differences in degree among the five townships. I have found three different patterns of signing and marking behavior, patterns that hold for the other five townships in the district as well (figs. 2 and 3). For Windsor we might have substituted Chester; for Cavendish, Weathersfield or Springfield (through 1820); and for Weston and Plymouth, Ludlow and Andover. Reading had no other counterpart in the district.

Cook's typology, as noted, is very helpful, if a bit general, in accounting for the varying rates.[91] Windsor, with highest overall elementary literacy, shares the characteristics of a major county town; Cavendish, with the next highest rate, was a secondary rural center; Reading, third, was a self-contained farming community; and Weston and Plymouth, lowest in overall literacy, were newly settled frontier communities. The key finding is that my findings parallel quite closely Cook's typology of communities. A fuller analysis of American communities, 1780–1840, is needed in order to modify this extension of Cook's typology. If it finds patterns similar to those discussed here—higher levels of elementary literacy following later stages of social settlement and economic development—then it should assist in understanding differences within regions.[92] In the Upper Valley at least, elementary literacy rates follow

[91] Cook, *Fathers*.

[92] The argument presented most carefully by Margaret Spufford in 'First Steps in Literacy' pp. 407–35, that poorer sons and daughters might be less likely to attend school, does not seem applicable to early national America where schooling remained a likely option throughout the 4 to 18 year old period of childhood and youth. In rural society school terms were adapted to light work seasons within the agricultural cycle.

social settlement patterns very closely. More important for comparative purposes, they follow precisely the development of the market economy throughout rural New England. As a general phenomenon, the higher the level of market activity, the greater the elementary literacy skills. Even by 1825 Weston, Andover, and Plymouth possessed no villages, only small hamlets. Market activity was minimal (fig. 3). A slightly higher level of market activity was found in Reading with its numerous hamlets (but no sizeable cluster of population). Substantially more involved in market activity were the crossroads communities of Cavendish, Weathersfield, and Ludlow, together with Springfield, which developed an early factory village. Each township had at least one budding village. At the center of market activity were the two district towns, Chester and Windsor.[93]

The finding that literacy rates vary directly with the level of involvement in the market economy and of societal development has been foreshadowed in the work of Egil Johannson, David Cressy, and others. These scholars have found that literacy rates varied by occupation and were higher for those occupations more closely aligned with market economic activity.[94] Given this finding—corroborated by several other scholars at the recent Bad-Homburg literacy colloquium[95]—it is not surprising that, among a group of townships in a single county, one of the central factors accounting for variation would be the level of involvement in the market economy. Involve-

[93] For some time I have been investigating the proliferation of market economy activity throughout the Upper Valley, focusing on Windsor County. The generalizations about levels of market activity among Windsor District townships have been drawn from an analysis of the encroachment of the market as seen in advertisements in all area newspapers, 1790–1830. These patterns have been compared with analysis of a second body of evidence, sales patterns, as seen in account books from Windsor District businesses of all kinds. Taken together they provide a contrast of supply and demand systems. Valuable work in the first area has been done by two of my former research assistants, Timothy MacMannimon and Jay Felsberg.

[94] Cressy 'Literacy' and *Literacy and the Social Order*; and Johannson, *History of Literacy in Sweden*.

[95] June 1979 International Colloquium on Literacy, Economic Development, and Social Change, Reimers-Stiftung Institute, Bad-Homburg, Germany.

ment was dependent on both the quality of the road and river transportation systems for supply, and on population concentration for sales. It was the same transportation system that disseminated all forms of printed matter and the most widespread vehicle for written expression, the letter.

Population Trends. Considering the population growth and settlement mosaic of Windsor District, the direct effects of in- and out-migration on literacy rates may be discerned.[96] From the Revolution, Windsor was the entrepôt to central and southern Windsor County (figs. 2 and 3). It was settled early and quite fully, reaching 1,500 souls in the late 1780s, 2,000 by the mid to late 1790s, and 3,000 soon after 1820. Following in Windsor's wake, Cavendish grew more slowly and leveled off, slipping into decline before reaching 1,600 residents. Reading grew more steadily, reaching 1,600 people, but then rapidly declined. Windsor to the east, and Woodstock, north of Reading, were simply too large to permit Reading's development as a sizeable village. There was a mountainous barrier to the west of Reading; hence traffic bypassed the township, flowing westward toward the Green Mountain communities from better-situated Cavendish to the south, which had better access into the Green Mountains. Weston and Plymouth, owing to their more isolated locations, had a late start, but grew rapidly in the later waves of settlement, 1810–30. Then both stopped growing, slowly losing and barely replenishing their populations throughout the remainder of the century (see table 1).

As we have already seen, after twenty to twenty-five years of rapid growth, Weston and Plymouth, and earlier Windsor and Cavendish, experienced a temporary decline in elementary literacy rates, most noticeably in that for females (see graphs). The decline was revealed through the higher proportion of marks, rather than signatures, among those selling property to

[96] For settlement patterns as well as out-migration see Lewis D. Stilwell's marvelous classic, *Migration from Vermont* (Montpelier, Vt., 1937).

newcomers. Who the sellers were and whether they were all local residents is an intriguing question.

Concentrating on Weston, I kept track of all female cosigners 1808–30 as well as those very few male markers also responsible for the overall drop in signing rates. Among forty-five individuals (forty-two women) selling property, slightly over half (twenty-three) resided in Weston at the time of sale. The remaining twenty-two came from other areas: three from other parts of Vermont; eleven from nearby New Hampshire counties; six from Massachusetts, including four from those counties just to the south of the Vermont border, and two from Boston; one from Maine; and one from New York City. Of those who marked, however, nine resided in Weston whereas only three resided elsewhere.[97] This evidence reveals that half the individuals selling land during the peak in-migration years, 1810–30, resided elsewhere but that fully three-quarters of the markers resided in Weston.

Interpreting this evidence is very difficult. Either schooling was slow to catch up with population growth, or more likely, those who had migrated to Weston earlier and were now selling property had lost the skill of signing; or, more likely, had never acquired it wherever they had resided earlier in their childhood and youth. That those selling property may have missed out on schooling, or that they may have lost this skill in Weston during its frontier stage of settlement life seems the most likely explanation in light of the fact that those residing elsewhere did not lose their signing ability nearly as frequently. Otherwise, those who migrated to Weston would have had to have been less literate as a group to begin with, and to date no evidence supports this hypothesis.

What we may conclude, tentatively, is that very high in-migration over a fifteen- to twenty-year period produced a far

[97] Weston, Vermont Land Records, vols. labeled 3 (1807–14), 4 (1814–18), 6 (1818–27), and 7 (1827–37). I used the Vermont Historical Society's microfilm copy filmed by the Church of Jesus Christ of Latter-Day Saints in 1952.

greater number of deeds cosigned by landholding wives. This offers a glimpse into the maintenance of literacy among adult married women, many of whom had resided in that township since its pioneer days. These women as a group were less able to maintain elementary literacy in the form of the skill of signing than women at other later stages of societal development in Windsor District townships. This cosign was in almost all cases (before the 1820s at least) the first time the wife had signed her name on an official document since marriage. Almost all signing was done by males. This leaves the interesting and presently unanswerable question of whether signing levels here represent just a temporary decline in the skill of signing, for lack of practice in a newly settled area, or whether one should infer from it a decline in the ability to read as well.

Communications Systems. Cook's criteria for township types takes too little cognizance of the precise communications systems and the range of access to print culture operating within his Massachusetts towns. This is a crucial factor in understanding variations within a population in levels of participation in print and written culture (fig. 1). Windsor District's communications systems—namely, the road and river transportation network—both carried material goods and people throughout the area and acted as the central dissemination system for print and other forms of written expression. Books played a dual role in this system. They were both material commodities and transmitters of nonmaterial information, ideas, beliefs, and cultural values.

A close look at Windsor District's communications system reveals three distinct zones of access to print materials (figs. 2 and 3). These access zones derive from reading patterns in Windsor District.[98] Our three patterns of elementary literacy, formulated in the section on deeds, fit exceptionally well with these three zones of access to print and written cultural expres-

[98] Gilmore, *Primed With Knowledge*, secs. 2 and 8–12.

sion. Windsor Township was a community rich in the fruits of the printing press from 1783 on. As such it is understandable to find early on in our evidence near-total male elementary literacy, achieved there by the late 1780s. Cavendish was a mix of minimal and partial access zones in 1800 but had gained in access to print by 1825, moving toward full access in and around its hamlets. Cavendish's elementary literacy patterns corresponded: a near-total male signing level at the beginning of available evidence, and very high female signing by the years 1812–16. Reading was a community with little direct access to print in 1800. Access improved thereafter such that it had become a partial access community by 1825. Male signing trends were similar to those in Windsor and Cavendish, but female signing rates were just approaching very high levels in 1830. Weston and Plymouth had minimal access to print in 1800, but had begun the move to partial access status by 1825. These townships had not quite consistent universal male signing rates through 1830, and considerably lower and more inconsistent female signing rates.

The Maintenance of Elementary Literacy

All that is recoverable from a strictly quantitative analysis of literacy is the basic rate of signing. Only qualitative analysis provides evidence of which skills and stock of knowledge were acquired, how, and in what sequence. Within rural New England, signing, reading, and writing were normally learned together in the home and at school,[99] and it is because of and only under these conditions that evidence of the ability to sign may imply the ability to read and write, at least at an elementary level and at least for a portion of one's life. Although they were learned together, however, these three skills were frequently disengaged and practiced separately at various times through-

[99] Deeds, wills, and account books reveal very few instances of individuals marking first and signing later, perhaps 15 among the 6,000 analyzed, suggesting that very few who could not sign by early adulthood learned to do so later in the life cycle.

out late youth, adulthood, and old age. For example, writing anything more than one's signature was a skill rarely employed by perhaps a substantial majority of Upper Valley residents before at least 1815. It was costly to write letters and keep journals, owing to the cost of pens and paper and to the expense and uncertainty of the postal system during these early decades.[100]

Skills practiced flourished while those not utilized withered. Unlike writing letters or journals or keeping account books, signing was often practiced, in fact several times a year by many householders as they traded with artisans and store owners. But it should be noted that only males signed frequently, at least until the locus of production shifted away from the household enough so that women had more contact with village stores and other institutions, generally only by the 1820s.

Unfortunately there is no direct measure of the proportion who could read—the most difficult and complex skill—before the 1840 census. Moreover, public reading occurred both in households and in communities, enabling some participation in the emerging world of print by those who could not themselves read. Presently, scholarship on reading in America tells us little of who continued to read throughout life before the rise of the newspaper.[101] Perhaps not much more prevalent than signing into the 1790s, reading was far more prevalent than any other form of writing. With the spread of the weekly newspaper beginning in earnest in the 1790s—as well as cheap tracts and pamphlets, and later political handbills and other forms of widely disseminated literature—reading became by

[100] Remarkably few estates inventoried in Windsor District, 1787–1830, possessed any writing implements. Of some 650 estates only 19, or 3 percent, possessed any writing paper, implements, or furniture. In every case these were households possessing a private library.

[101] Book possession rates in inventories from all Windsor District estates, 1787–1830, reveal a rate of 62 percent of retention of private libraries at the death of the head of household. This figure is about the same as that found by Jackson Turner Main for the mid-eighteenth century. See Main's *Social Structure*, pp. 254–63.

far the most practiced of the three skills in rural New England.

On the other hand, one should not assume that because a person in old age was able to sign his or her name he or she could still read. Most certainly signing does not presuppose other reading or writing ability. For this reason it is not possible to draw firm conclusions from the finding of lower signing levels among will makers than their younger witnesses, or lower levels in wills than deeds. Marking, rather than signing, of wills may have been caused by loss of signing ability (where the same group is analyzed) or feebleness.

The later disengagement and segregation in patterns of signing, reading, and writing, from their near-simultaneous acquisition in childhood or early youth, is perhaps the most important point in this essay. As research progresses, its implications will force the study of elementary literacy in its proper context: the levels of cultural participation in early national America.

To study the maintenance of elementary literacy, then, historians must study broader and deeper levels of cultural participation. Only a few remarks on this subject are possible in this essay.[102] It is helpful here to summarize what a person living in the Upper Valley, 1787–1830, with a term of summer school and fair attendance for one term at a district winter school would have acquired. First a student would have learned to sign his or her name. Next the student would have acquired a basic ability in reading and grammar, sufficient to follow almanacs, a local newspaper, and other basic books and pamphlets, especially the Bible, hymnals and songbooks, devotional tracts, school books, elementary works in geography and history, and some light fiction, poetry, and essays. Levels of comprehension are difficult but perhaps not impossible to estimate from private library holdings. The basic stock of knowledge acquired would have been heavily weighted toward moral pre-

[102] The research design introducing Gilmore, *Primed With Knowledge*, discusses this problem and offers an approach to its systematic study.

cepts, geography, history, a smattering of excerpts of works of literature, arithmetic, and a rudimentary understanding of key Protestant beliefs. Only a small minority of the population would have progressed beyond this level. Finally would have been some general ability to write a letter, the UNESCO standard of literacy for the skill of writing.

Considerable contemporary evidence attests to the persistence of reading for a large majority of Upper Valley residents.[103] Once acquired, reading skills were frequently exercised. The rate and intensity varied from township to township, based on wealth, occupation, location, and the place of the individual's community within the overall communications network of the region. For a sizeable majority of Upper Valley residents, reading skills were maintained, and residents read the region's most widely available organs of cultural information: the almanac, the weekly newspaper, hymnals and other religious works, and, increasingly after 1815, novels, books about one or another stage of life, histories, and popular science and technology. Perhaps the strongest evidence of the growth of reading lies in the fact that over three-fifths of all Windsor District households with an estate probated between 1787 and 1830 contained family libraries, built up over decades in some cases. These collections of books clearly reflected the tastes and reading habits of other members of the family in addition to those of the head of household.[104] In the vast majority of these inventories, at least one book had been purchased within five years of the death of the head of household.

Book ownership was reflective of only a part of all readership. An analysis of the extent of newspaper and almanac reading confirms the maintenance of the habit of reading at even higher levels than the probate records of book ownership would

[103] In addition to comments of resident observers and travelers to the region, much other information exists which further substantiates this observation, including information on newspaper circulation and reading, book advertising, and book possession rates in inventories.

[104] This finding is drawn from Gilmore, *Primed With Knowledge*, sec. 5.

indicate. To hazard an estimate, based on my work in *Primed With Knowledge*, by 1800 approximately 60–70 percent of Upper Valley males and 50–60 percent of females maintained their ability to read throughout life, and these proportions grew steadily over the next two decades. Especially after 1815, rural New Englanders read ever more regularly as a greater proportion of reading materials were now designed for more specific audiences based on gender, religious persuasion, class, and, perhaps most important of all, stage of life.

Just as schooling proliferated after 1800 in the Upper Valley, so too did an ever-increasing host of other social institutions reinforcing if not ensuring the maintenance and further development of the populace's participation in the burgeoning world of print. These included church-related organizations, voluntary religious organizations of the benevolent reform empire, secular reform and social organizations, and political parties. With increasing mobility leading to more rapid turnover of community members, more formalized and wider distribution networks of print culture multiplied.

Writing proficiency lagged by comparison with reading until the 1820s, mainly because there were few occasions in which to exercise it, and also because of its high cost. One cannot even estimate what proportion of the population maintained their writing facility throughout life until further research uncovers more concrete evidence.

Study Area Literacy Rates Compared to Western World

In referring to female signing rates I have often used the term 'remarkably high.' By this I mean compared with studies of other locations in America, England, and Europe. Cressy has found English rates of 48 percent for females reached in the dioceses of London and Norwich by the 1690s, in evidence from depositions of witnesses before ecclesiastical court. But Schofield's evidence from 274 random parishes shows far lower rates of 36 percent by 1750, reaching 40 percent only by 1790

and 51 percent only by 1830.[105] In America, Lockridge's basic finding from wills was that 'women's literacy everywhere in Anglo-America seems to have moved from a rate below 20% early in the seventeenth century toward a rate around 50% in the mid-nineteenth century.' His evidence from wills shows overall female signing rates of 44 percent for the years 1758–62 and only 46 percent by 1787–92, reaching 65 and 60 percent respectively for Bostonians but only 35 and 40 percent for rural women.[106] Other scholars working with American wills have found similar rates, notably Alan Tully, who reported that female signing rates reached 44 percent for the 1765–74 decade in Chester County, Pennsylvania, and 38 percent in Lancaster County.[107] Still other students who have worked with American deeds have discovered much wider variation in female signing rates. Beales's exhaustive work on Grafton, accounting for nearly half of all of the town's wives in 1747, established a range of 32–46 percent female elementary literacy from a combination of deeds and probate records.[108] But Linda Auwers's amazing findings from a larger community, Windsor, Connecticut, point to much higher rates. Working with deed makers and witnesses, she reported female signing rates of 75–76 percent for the birth cohorts 1710–19, 1720–29, and 1730–39, rising to 93 percent for the 1740–49 birth cohort. Auwers's sample is very small—only forty-one deed makers and witnesses for the 1740–49 birth group—in a large township. Nevertheless, these findings, combined with work by Lawrence Cremin, clearly show New England female elementary literacy levels in the mid- to late eighteenth century to have been on the rise toward far higher levels than elsewhere in America, Eng-

[105] I have converted all findings into literacy rates (rather than illiteracy rates). See Cressy, 'Literacy in Seventeenth Century England,' p. 146; and Schofield, 'Dimensions,' pp. 445–46.

[106] Lockridge, *Literacy*, quote from p. 97; see also 39–40.

[107] Alan Tully, 'Literacy in Rural Pennsylvania,' pp. 304–5.

[108] Beales, 'Studying Literacy.'

land, and Europe. In reading levels Sweden and Finland had the highest rates in the Western world.[109]

This said, one must remember the limitations inherent in their sources (and ours), especially that the bottom fifth by wealth is barely visible. I believe that this limitation in female signing rates holds true for male rates albeit to a lesser extent because far fewer males are missing from our data. (As we have seen, female signing rates are a more sensitive indicator of literacy than male rates, for male rates are consistently more uniform.) If further research proves this to be the case,[110] then one will need to add a serious qualifier to the findings of Cremin, Beales, and Lockridge that New England male signing rates had reached near-universal levels by or shortly after the middle of the eighteenth century.[111] Evidence from deeds, account books, township petitions, and wills for rural northern New England, 1760–1830, demonstrates the extension of very high signing trends from the more settled areas of southern New England into newer settlement areas. In sum, it is reasonable to conclude that extraordinarily high if not universal levels of elementary literacy had been achieved in the Upper Connecticut River Valley in general, and Windsor District, Vermont, in particular, for both males and females, apparently far earlier than for most other sections of the United States outside of New England, or for England and the European continent.

Conclusion

There are several key factors motivating this extremely high elementary literacy level for rural New England males and females. To stress the conjunction of those two major institu-

[109] Auwers, 'Social Meaning.' Cremin, *American Education*, pp. 517–46; Beales, 'Studying Literacy'; Lockridge, *Literacy*; and Johannson, *History of Literacy in Sweden*.

[110] While Beales believes that the 1747 Grafton tax list includes all males residing in the township, work on the Upper Valley presently underway suggests that both the elderly and the propertyless were often not included on these lists, at least for the early national period.

[111] See note 109 above.

tions, family and school, is merely to identify the prime agents in the push toward basic literacy. There were two sets of factors: material and ideological/cultural. On the side of material conditions, rural New England society was already on the road of Polanyi's great transformation into an industrial world.[112] The market economy was rapidly expanding throughout the Upper Valley after 1787, bringing with its steady encroachment the further need for a reasonably educated population well able to read and, increasingly, to write as well as to sign. Breakdowns of literacy by occupation have uniformly found a close connection between the expansion of the market economy and higher literacy. In this regard, books were one of the earliest products spread widely throughout a population by the advance of goods produced outside the household.[113]

Ideological and cultural factors also played a major role. Here religion and morality combined in the spread of the value systems of older Calvinist and more recent Evangelical Protestantism. Both emphasized the importance of education. Additionally, the development of two other more secular clusters of ideas was important. First was the cult of the republican family and domesticity, with its emphasis on the Bible, moral training, and reading for improvement. Second was the rise of a shared conception of the life cycle and stages of life—a full-blown theory of human personality development: the Romantic approach to the self.[114] Both stressed a broad-based educational program beginning in the home and continuing with the district school system.

Taken together, the expansion of the market meshed perfectly with an increasingly rationalized religious perspective, social theory, and theory of human personality, catapulting the Upper Valley toward extraordinarily high male and very high

[112] Gilmore, *Primed with Knowledge*, sec. 4.

[113] See Cressy's work, cited throughout this essay; and Karl Polanyi, *The Great Transformation* (New York, 1956).

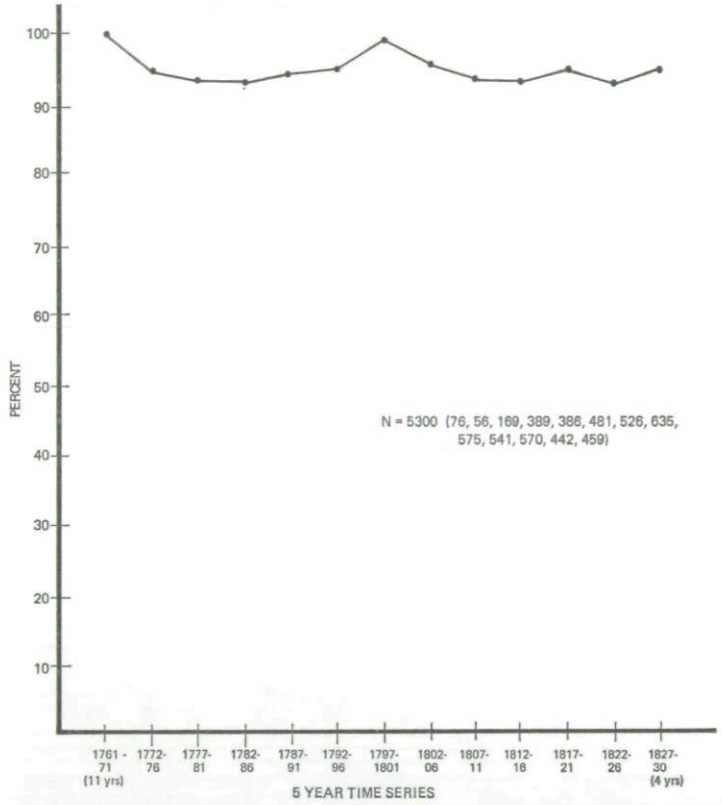
[114] See Nancy Cott, *The Bonds of Womanhood: 'Woman's Sphere' in New England, 1780–1835* (New Haven, Conn., 1978).

female elementary literacy rates. Only Sweden[115] and Finland matched or surpassed rural New England during the early national period for literacy rates; in none of these societies did a majority of the adult population maintain writing as a functional necessity before the 1820s. These three societies had found particularly felicitous combinations of cultural and material circumstances. All three attained the highest levels of elementary literacy, as well as the highest levels of active reading in the Western world, on the eves of their industrial revolutions, before manufactories dotted their landscapes and before the machine had entered far into the garden. All three societies faced the new world of the factory primed with knowledge.

[115] See Egil Johannson's fine study, *The History of Literacy in Sweden.*

GRAPH 1 - A

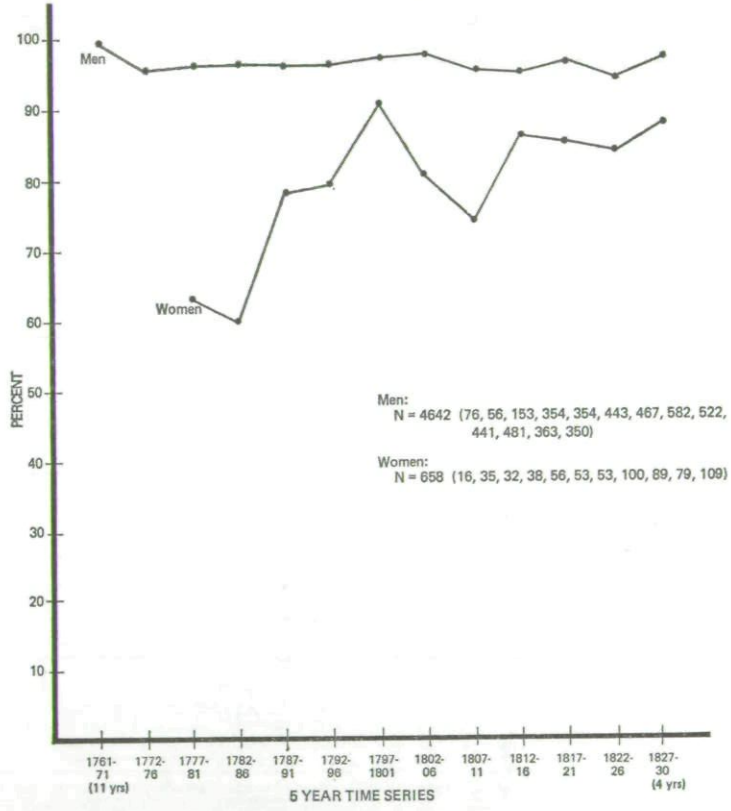
Combined Elementary Literacy for Windsor District Townships, 1761 – 1830: Male and Female Deed Makers



Source: All deeds from Windsor, Cavendish, Plymouth, Reading, and Weston, Windsor County, Vermont, from the land records of each township, 53 vols., 1760 – 1830.

GRAPH 1 - B

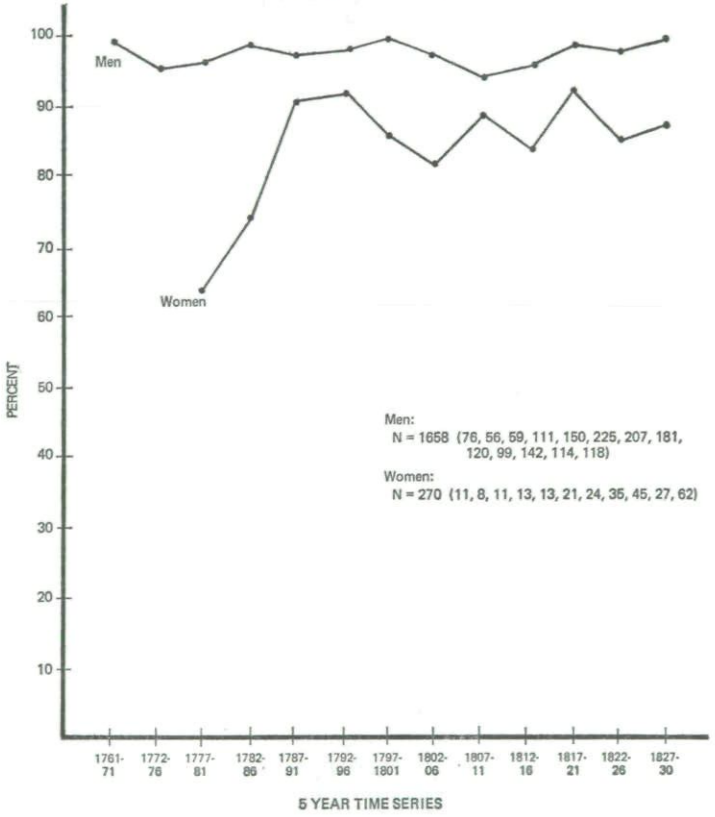
Elementary Literacy for Windsor District Townships, 1761 – 1830: Deed Signatures



Source: All deeds from Windsor, Cavendish, Plymouth, Reading, and Weston, Windsor County, Vermont, from the land records of each township, 53 Vols., 1760 – 1830.

GRAPH 2 - A

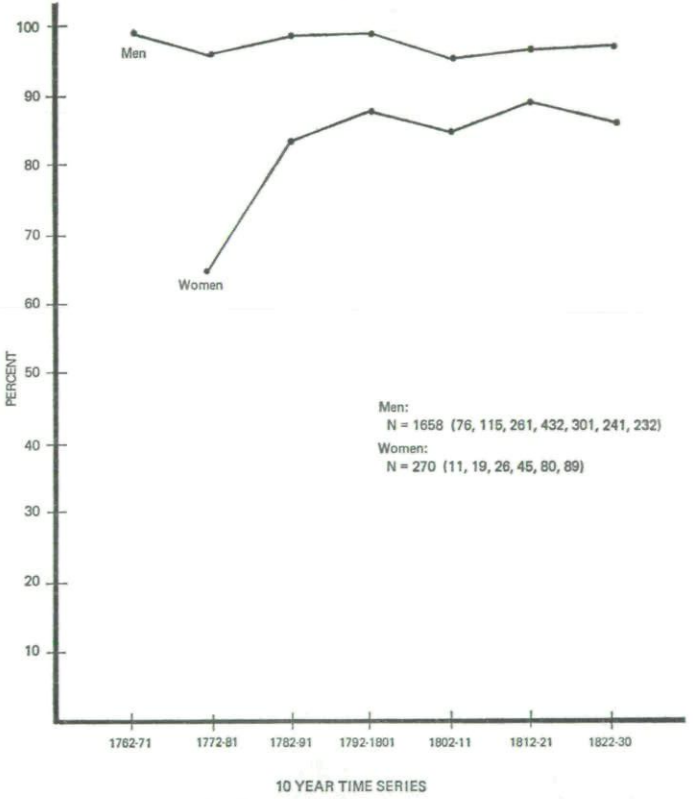
Elementary Literacy for Windsor, Vermont, 1761 – 1830: Deed Signatures



Source: All deeds made Jan. 1, 1761 – Dec. 31, 1830: Windsor Land Records, General Index and Vols. 1 – 15, 1772 – 1832.

GRAPH 2 - B

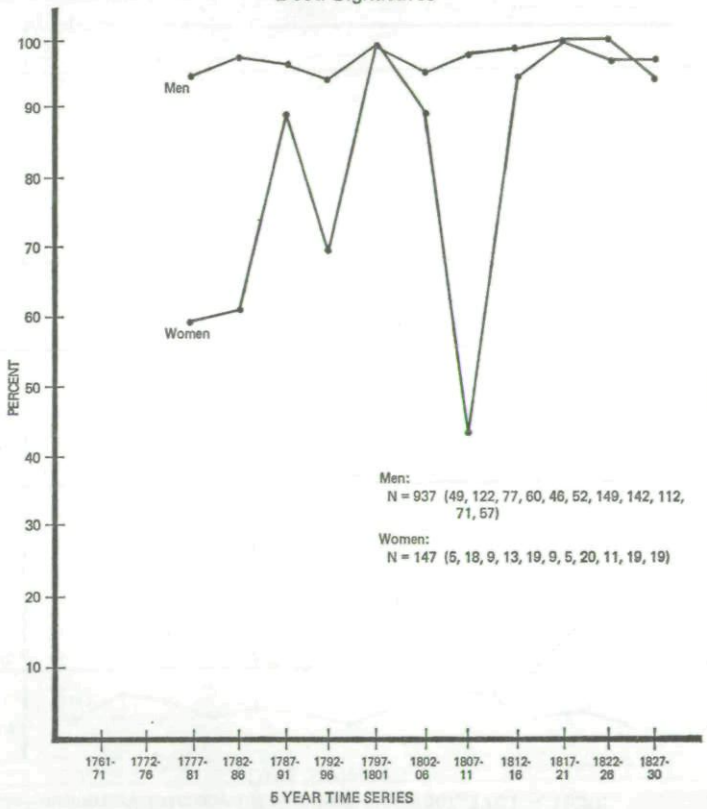
Elementary Literacy for Windsor, Vermont, 1761 – 1830: Deed Signatures



Source: All deeds made Jan. 1, 1761 – Dec. 31, 1830: Windsor Land Records, General Index and Vols. 1 – 15, 1772 – 1832.

GRAPH 3 - A

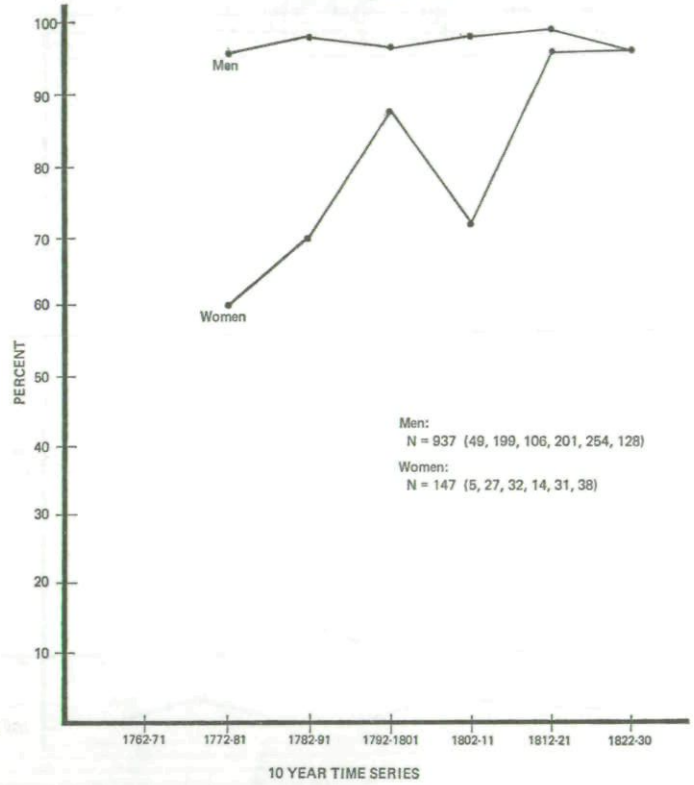
Elementary Literacy for Cavendish, Vermont, 1776 – 1830:
Deed Signatures



Source: All deeds made Jan. 1,1775 – Dec. 31, 1830: Cavendish Land Records, General Index and Vols. 1 – 10, 1789 – 1832.

GRAPH 3 - B

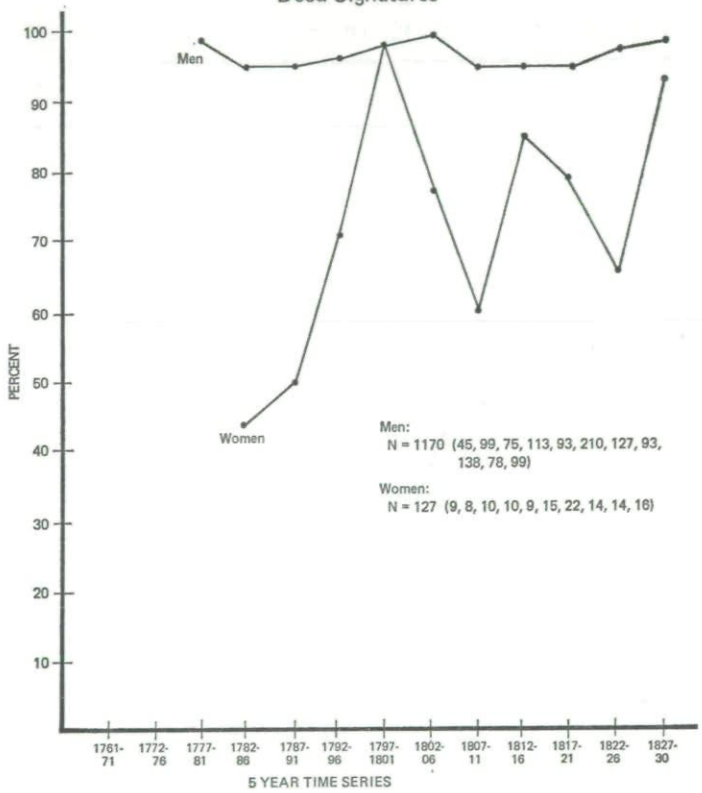
Elementary Literacy for Cavendish, Vermont, 1776 – 1830:
Deed Signatures



Source: All deeds made Jan. 1, 1775 – Dec. 31, 1830: Cavendish Land Records, General Index and Vols. 1 – 10, 1789 – 1832.

GRAPH 4 - A

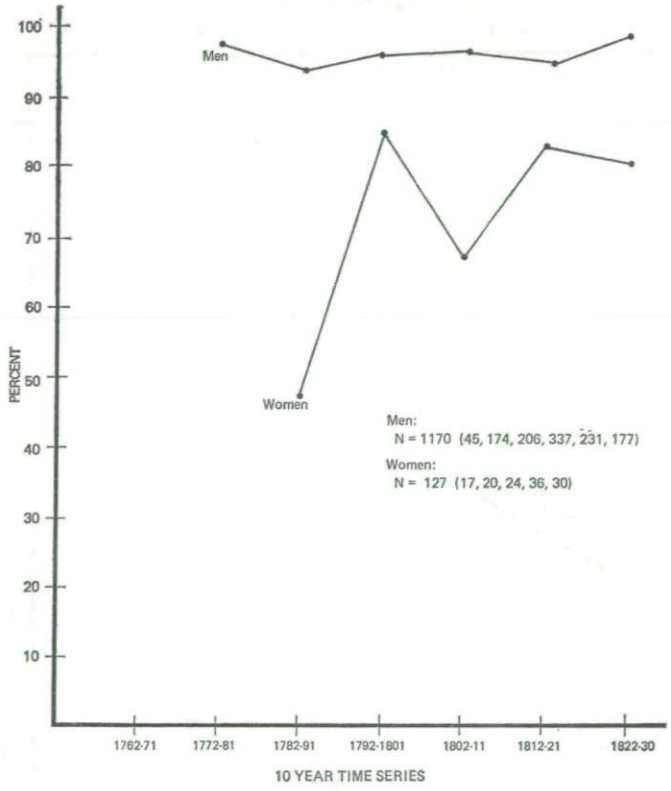
Elementary Literacy for Reading, Vermont, 1777 – 1830:
Deed Signatures



Source: All deeds made Jan. 1, 1777 – Dec. 31, 1830: Reading Land Records, General Index and Vols. 1 – 12, 1760 – 1832.

GRAPH 4 - B

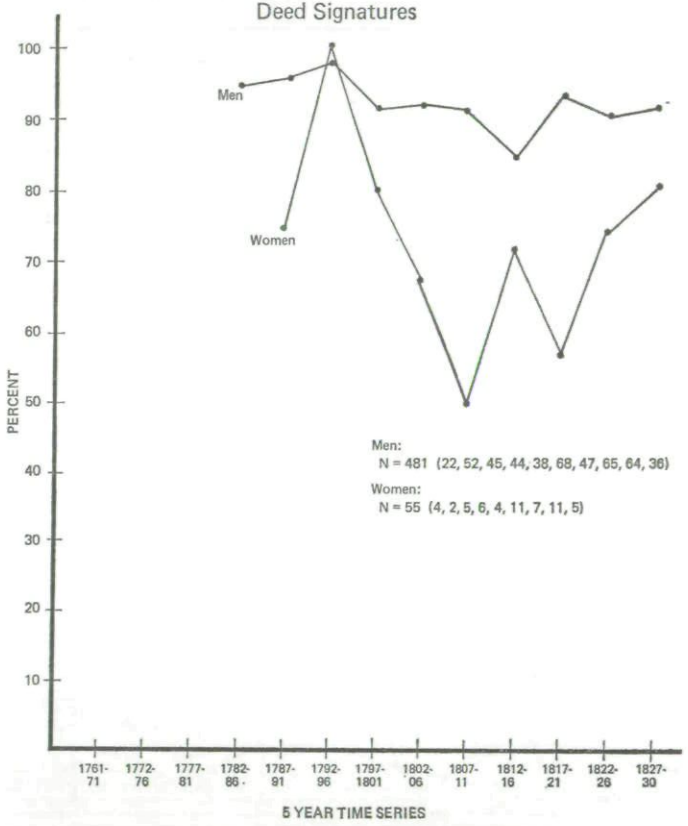
Elementary Literacy for Reading, Vermont, 1777 – 1830:
Deed Signatures



Source: All deeds made Jan. 1, 1777 – Dec. 31, 1830: Reading Land Records, General Index and Vols. 1 – 12, 1760 – 1832.

GRAPH 5 - A

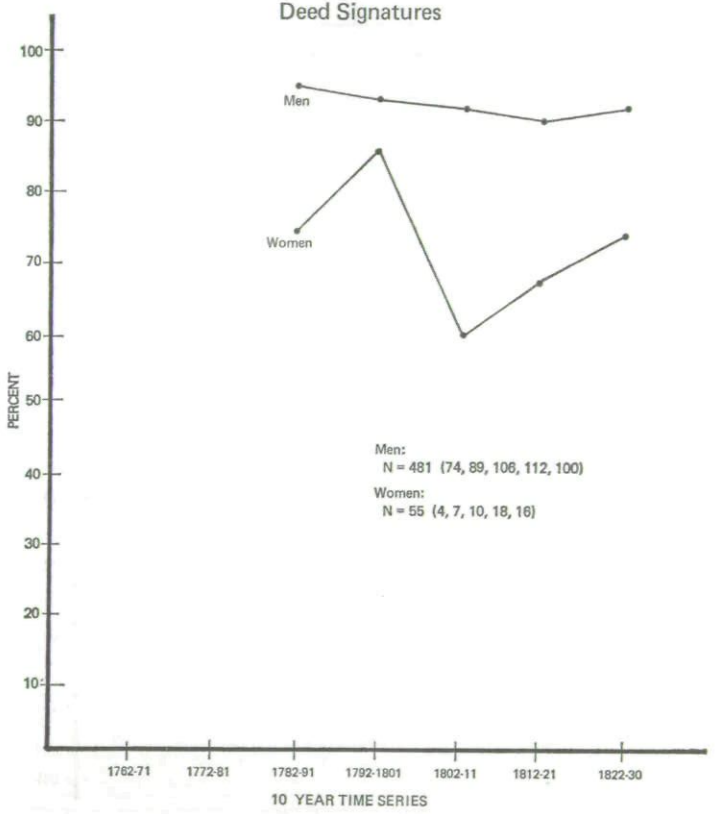
Elementary Literacy for Plymouth, Vermont, 1776 – 1830:
Deed Signatures



Source: All deeds made Jan. 1, 1775 – Dec. 31, 1830: Plymouth Land Records, General Index and Vols. 1 – 9, 1761 – 1833.

GRAPH 5 - B

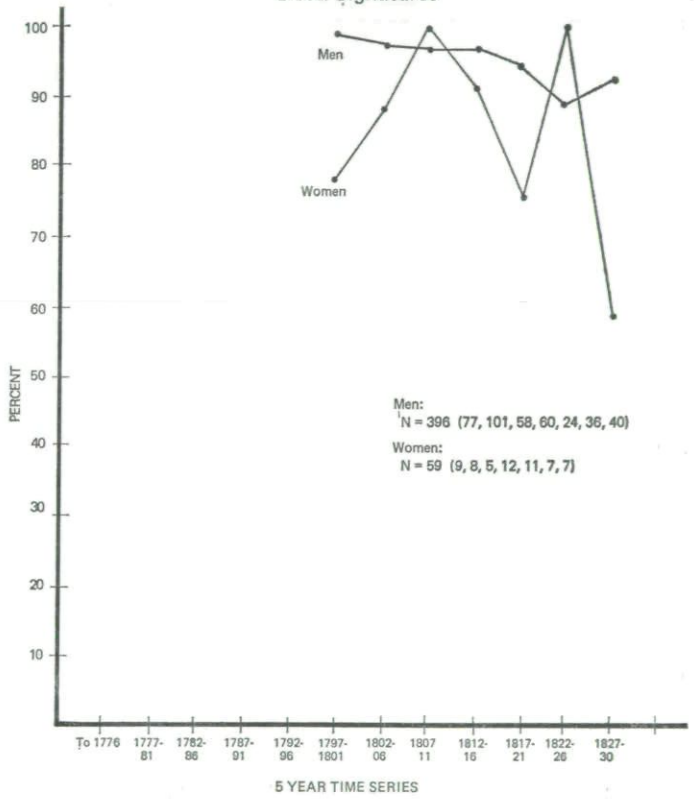
Elementary Literacy for Plymouth, Vermont, 1776 – 1830:
Deed Signatures



Source: All deeds made Jan. 1, 1775 – Dec. 31, 1830: Plymouth Land Records, General Index and Vols. 1 – 9, 1761 – 1833.

GRAPH 6 - A

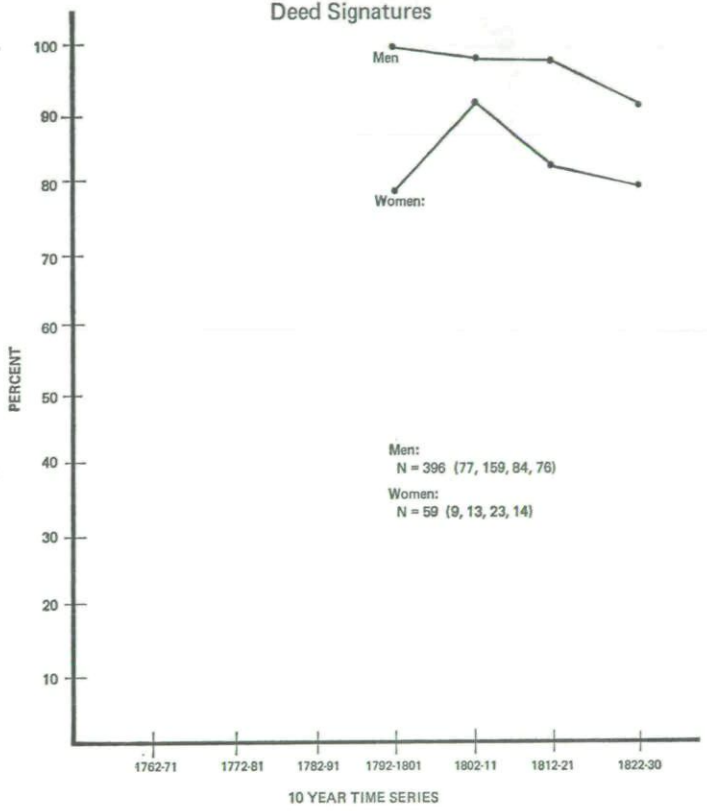
Elementary Literacy for Weston, Vermont, 1775 – 1830: Deed Signatures



Source: All deeds made Jan. 1, 1795 – Dec. 31, 1830: Weston Land Records, General Index and Vols. 1 – 7, 1800 – 1827.

GRAPH 6 - B

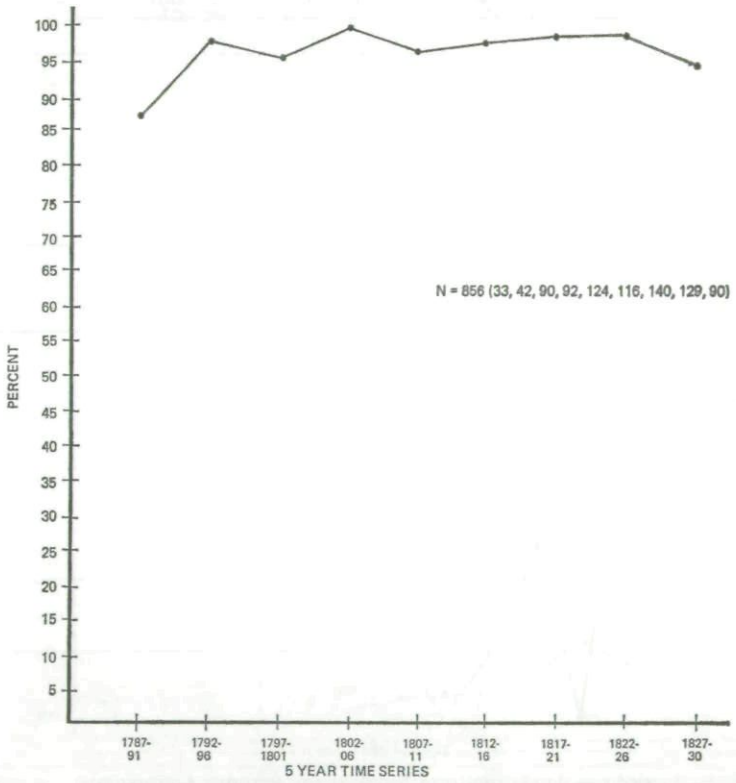
Elementary Literacy for Weston, Vermont, 1775 – 1830: Deed Signatures



Source: All deeds made Jan. 1, 1795 – Dec. 31, 1830: Weston Land Records, General Index and Vols. 1 – 7, 1800 – 1827.

GRAPH 7 - A

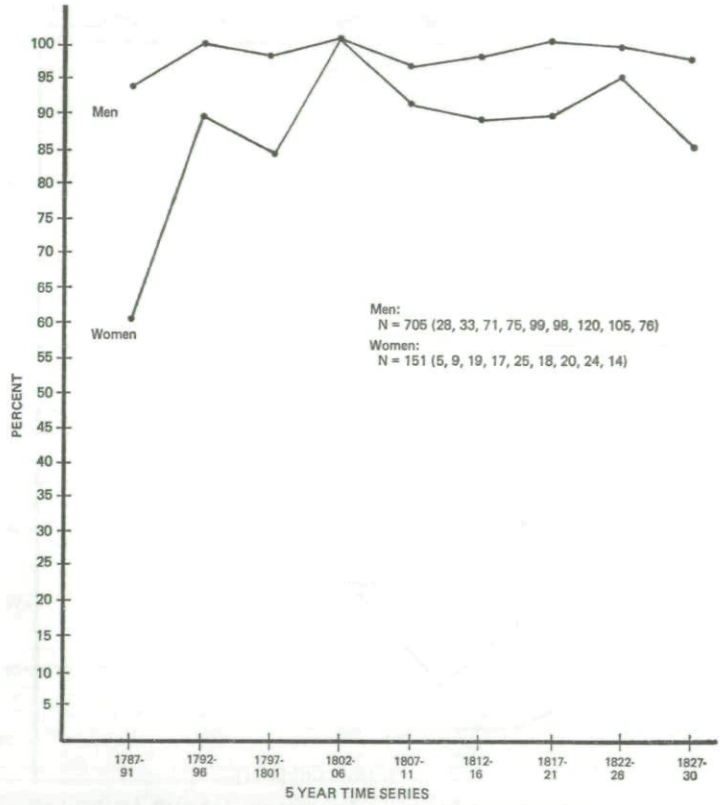
Combined Elementary Literacy for Windsor District, Vermont, 1787 – 1830:



Source: All wills and supporting documents, Windsor County Probate Court, Windsor District, 1787 – 1830.

GRAPH 7 - B

Elementary Literacy, Windsor District, Vermont, 1787 – 1830: Will Makers and Witnesses



Source: All wills and supporting documents, Windsor County Probate Court, Windsor District, 1787 – 1830.