

Miszelle

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## **Age heaping and life course reckoning: Individual-level evidence from Spanish**

### **Inquisition records**

*Note: this is the last working paper version before it was submitted (and accepted) by the Journal of Social and Economic History (VSWG).*

*Abstract:* Human capital, and numerical abilities in particular, are a crucial resource for economic development, but measuring numeracy is a major challenge. The Spanish Inquisition offers a possibility to assess numerical skills, as the inquisitors performed indirectly a mathematics test with the accused. They asked for their age and for a detailed life narrative, with many defendants failing to notice if the sum of the narrative did not add up to the given age. This also allows for exploring correlations with age-heaping-based numeracy estimates at the individual level. Those who reported rounded ages tended to perform worse in “life course reckoning” tasks. Persons whose life reckoning was off by more than five years showed a 23 to 26 percent higher age heaping (and hence, lower numeracy).

*Keywords:* age heaping, numeracy, life course reckoning, Spanish Inquisition

*JEL Codes:* N13, N00, O15

### **1. Introduction**

The recent economics literature emphasizes that numerical abilities matter strongly for the success or failure of economies.<sup>1</sup> In the field of economic history, the rise of northwestern Europe during the early modern period was preceded by a “Numeracy Revolution”, whereas other world regions such as the Middle East, Africa or South Asia did not participate in such a substantial growth of numerical education.<sup>2</sup> The numeracy revolution in Europe could be identified using an indicator called “age heaping”. This estimation technique is based on the observation that individuals who are not very skilled in numeracy tend to report more often a

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<sup>1</sup> Hanushek/Woessmann (2012)

<sup>2</sup> A’Hearn/Delfino/Nuvolari (2009); Keywood/Baten (2021); Tollnek/Baten (2017).

rounded age. When asked for their age, they report, for example, “I am 40” when they really want to say “I am around 40, but I do not know exactly”.

Although all scholars studying age heaping regularly assess the plausibility of this indicator by comparing other educational proxies, our study is the first to present direct and individual-specific evidence about the question whether individuals who report a rounded age tend to perform worse in “life course reckoning” tasks that require numerical skills.<sup>3</sup> Persons with “life course reckoning” skills avoided mathematical mistakes in their biography. Hence, similarly as age heaping, life course reckoning can be used to proxy numeracy. Comparing age-heaping with another measure of numerical skills for the early modern period is an important contribution to the literature, because it implies that the whole age-heaping-based numeracy literature is based on a solid foundation.<sup>4</sup>

The Spanish Inquisition demanded these “life course reckoning” tasks, as the inquisitors first asked for the current age, and then requested a life history from birth until the current date, without gaps.<sup>5</sup> Some individuals made numerically erroneous statements such as, to explain this with a hypothetical example, they might have said “My age is 30, I married when I was 20, then worked for 15 years on a farm”, which we would interpret as inconsistent life course reckoning. Life course reckoning tasks can be interpreted as a mathematics test, because it requires numerical skills to tell a life course in a correct and consistent way.

Historical records about the detailed life courses of human beings are otherwise very scarce before the mid-nineteenth century, when the “age-heaping period” ended – the period for which age-heaping can serve as an indicator for basic numeracy (for developing countries, it can still be used<sup>6</sup>). In the late fifteenth century, the newly established Spanish Inquisition began collecting detailed biographical information about Conversos, individuals who were

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<sup>3</sup> See Nalle (2016), p. 186, on group-level evidence.

<sup>4</sup> Tollnek/Baten (2016).

<sup>5</sup> Nalle (2016).

<sup>6</sup> Baten (2021).

arrested for secretly practicing Judaism after converting to Christianity. During the sixteenth century, as fear of the Ottoman Turks and the Protestants increased, the courts expanded their jurisdiction to include Moriscos (converted Muslims), and many members of the majority, Catholic population, who were mostly tried for blasphemy, bigamy, witchcraft and black magic, and anti-Catholic remarks or behaviour. In the end, every sector of the population except for the highest members of the nobility were routinely arrested and interrogated.

Although we cannot claim representativeness for the Iberian population of this time period, we can cover a number of very distinct population groups, and the resulting variation in numeracy levels and life course reckoning abilities allows us to study the relationship between these two variables. This correlation also remains once we take into account occupation, religion, age, or gender groups, or century (in multiple regression analysis using the records of the Tribunal of Cuenca, the database is derived from trials dating from the sixteenth and seventeenth centuries). Two hundred and eighteen of these trials provide enough information to compare an individual's stated age with the sum of months and years declared in his or her life narrative and meet our other criteria (see below).<sup>7</sup> Virtually all defendants were from Spain (a minority were Portuguese residents of Castile) and were born between 1426 and 1687. The source also reported each individual's occupation, level of education, religious knowledge and other information that allows to assess the social composition of our sample.<sup>8</sup>

Before we assess the correlation between life course reckoning and age heaping below, we will first present four actual examples of life course reckoning. Francisco Benito is a good example of doing poorly at life course reckoning. When he was arrested in 1586 on charges of practicing Islam, he stated that he was 50 years old, and that he was born and raised in Biar (Alicante) until he was 14 years old. At 14 he left his parents' home for Sax, 20 kilometers

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<sup>7</sup> The total number of trials in the sample is 1,492, but for the majority of cases, the life course reckoning could not be assessed. We also excluded a very small number of individuals arrested under the age of 17, as for these, age heaping techniques could not be sensibly applied.

<sup>8</sup> Nalle (1989).

distant, presumably to work there. He lived in Sax for four or five years, went home for three or four years, and from there he went to Valencia for three or four months. At that point, for reasons unknown, he trekked 200 kilometers to the city of Cuenca, where he lived for 10 years, during which time he married. From Cuenca he relocated to the town of La Parrilla, where he stated he had lived for 25 years. All of this adds up to 56 or 58 years and several months.<sup>9</sup>

Another interesting case is Catalina Ortiz, age 60, a spinner from Soquéllamos, a town in La Mancha, who was arrested for blasphemy in 1640. The court recorder reported: "She was born in Soquéllamos and because her parents died when she was very young, she was raised by her uncle and her sister until she was twelve. Then she went to the house of Gaspar Patiño, her father's cousin, and stayed there four years. Subsequently she went to the house of Sebastian Gallego's widow for one year and then back to her sister's place for half a year. Thereafter she went to Gonzalo Sanz Culebra for a year and then again back to her sister for a year. She then married her first husband and was with him 11 years, was widowed for three years, and consequently was remarried for nine years until she was arrested and held prisoner in the royal jail in Campo Criptana for seven years. She was released two years ago."<sup>10</sup> All of that adds up to 51½ years. In addition, she states that she married her first husband 32 years ago, which, if she actually were 60 years old, would put her age at marriage at around 28, whereas according to her narrative, she married her first husband after she went back to her sister for the second time, at 19½. In Catalina's case, her addition fails.

While we might expect that the illiterate would have difficulty with life reckoning, the task could also challenge even the well-educated. The priest, Licenciado Francisco de Escobar, was arrested in 1639 for solicitating sexual favors while in the confessional. He stated that he was 50 years old (i.e., born in 1589) and gave a very detailed account of his studies and distinguished career. However, he was undone by his statement that he studied with the Jesuits

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<sup>9</sup> ADC Inquisition, leg. 307, exp. 4446.

<sup>10</sup> ADC Inquisition, leg. 461, exp. 6337.

from 1606 to 1623, because with that precise date, it is possible to double check his addition. In 1623, if he really was born in 1589, he would have been 34 years old. He goes on to state, quite specifically, that after he left the Jesuits, he spent eight or nine years teaching the humanities, then lived two years with the Bishop of Cuenca, another two years he worked as the director of the Seminary of San Julián, followed by a year of serving in one town, four years in another. Finally, he was reassigned to Las Pedroñeras, where he had been the parish priest for about eight years. This puts his age at 59 or 60—completely off, despite his university degree.<sup>11</sup>

In some cases, keeping track of one's life could be relatively easy, especially for a woman who only left home to marry, and then lived with her husband, perhaps moving once or twice. However, our study focuses on cases in which persons interrogated by the Inquisition made reckoning mistakes. It is important to note that we are not claiming representativeness for the whole population. We exclude persons who did not provide a narrative with enough discreet life events to allow for an arithmetical calculation. Nevertheless, most of the individuals arrested by the Inquisition had more to say about their biography (and more occasion for calculation errors).

We find that the majority of children grew up in one location with their parents until they left home as teenagers—the boys to work at another farm, apprentice for a trade, join the military, or a bit of all of the above, and the girls to marry, and, occasionally, to enter household service as a maid. In the period between leaving home and settling down, half of the boys moved once or twice, but a third move was not unusual for 22 percent, nor even up to eight moves altogether (28 percent). After settling down, most individuals relocated at least once or twice until the moment they were arrested by the Inquisition. If we were to filter the results by the

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<sup>11</sup> ADC Inquisition, leg. 728, exp. 1236.

age of the informant, we might find that older respondents report resettling more times than younger ones.

Women appear less frequently in the Inquisition’s records; only about 20 percent of all cases involve women. Their narrations typically differ from those of men, as their significant life events tend to be only their marriage, followed by the birth of their children, and perhaps a relocation or two. Despite the apparent lack of information, with patience, women’s life reckoning skills often can be evaluated. The following is a typical case given by the “Morisca”<sup>12</sup>, Maria de Cielli, who was deposed in 1571. With a bit of sleuthing, we can establish that although illiterate, Maria had a good grasp of numbers. María stated that “she has lived for the last sixteen years in this town [Portera, a village of Deza] with Catalina, Gil de Cielli’s wife, who was now deceased, and she served them for one year”. At first glance, there appears to be nothing to work with here. However, if Maria’s memory is accurate, she arrived in Portera at 21, and worked as a servant until she was about 22. From her genealogical testimony, which is part of the normal interview process, we also know that she was married and that her oldest child was 14 years old, born when Maria was 23. In other words, after leaving service at 22, Maria married, and the child was born the next year. In her case, she was coded as being accurate within one year on either side of her stated age.<sup>13</sup> We provide two additional examples in Appendix B.

Table 1: Descriptive statistics

Variable	Observations	Mean	Standard deviation
numerate	218	0.44	0.50
off5more	218	0.23	0.42
conv_jew	218	0.35	0.48
conv_musl	218	0.22	0.42

<sup>12</sup> Some contemporaries used this as a derogative term for former Muslim women who had converted.

<sup>13</sup> ADC Inquisition, leg. 374, exp. 5298.

Female	218	0.28	0.45
commerc	218	0.29	0.46
Artisan	218	0.37	0.48
Agric	218	0.29	0.46
occunkn	218	0.04	0.20
agegr1732	218	0.36	0.48
agegr3352	218	0.42	0.49
cent15	218	0.10	0.30
cent16	218	0.67	0.47
cent17	218	0.23	0.42

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Note: all variables shown above are 1/0 indicator variables.

Source: calculated from evidence collected in the Archivo Diocesano de Cuenca, Inquisition.

Before proceeding to regression analysis, we provide descriptive statistics of the sample (Table 1). All variables in this table are binary variables, with values being zero or one. The variable “numerate” is zero if the age of the person is ending in five or zero, and one otherwise. The mean of this variable is 0.435 and the standard deviation is 0.50. Of course, around 20 percent of the population have ages really ending in five or zero (without erroneous rounding). Hence, to calculate numeracy, we need to increase this number by the corresponding amount in order to arrive at numeracy estimates of the population.<sup>14</sup> The resulting numeracy estimate of the whole sample is 54.4 percent. The variable “off5more” indicates individuals whose life reckoning were off by five years or more. Its mean is 0.23 and the standard deviation 0.42. Another important independent variable is “female” which indicates whether the individual is female or not. In the sample, most of the defendants were male, hence the average of this variable is 0.28. We use two variables (conv\_musl and conv\_jew) to represent the religion before conversion, being either Muslim or Jewish. Furthermore, the occupations were coded as four different categories (commercial, artisan, agricultural and occupation being unknown).

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<sup>14</sup> Juif/Baten (2013).

Notice that the mean of the unknown occupation group (occunkn) is small in comparison to the other occupation groups (0.04). Century and age effects were also controlled for in the regression below, as fixed effects, using the variables cent15, cent16, cent17, agegr1732 (for the age group 17 to 32), and agegr3352. Most of the defendants can be assigned to the sixteenth century (0.67), whereas the fifteenth and seventeenth century representation is smaller.

## **2. Results**

We classified the sample into persons reporting a round versus another age, defining the former as “age-heaping” (ages ending in five or zero). We excluded children below the age of 17; very old people are of negligible quantity. We first compare in a descriptive way whether age-heaping corresponds with the life course reckoning. The interesting values are those who are off by five years or more, as we can be sure that in this case, individuals had either a very low ability to perform simple numerical operations, or they faked such a statement for other reasons (misleading the Inquisition, for example). However, misleading the Inquisition about such an unimportant aspect as one’s age seems not a successful strategy. It is not easy to imagine how a punishment could be avoided by reporting an age that was so far off, especially as we can assume that somebody in the Inquisition’s staff had sufficient numerical abilities to detect the mistake if it were important to the prosecution of the case.

In this analysis, we compare very extreme miscalculations in the life course reckoning process with the age heaping behaviour. If we would have a substantially larger sample size that would be more consistent in the data recording process, we might be able to assess also whether the relationship between the two variables might be linear or non-linear. However, given (1) the limited sample size and (2) the fact that the Inquisition officials tolerated statements indicating that the defendant lived “for six or seven years” or no quantification of the time span at all, we would argue that taking the extreme miscalculations as a benchmark is more adequate. In general, the secretary recorded the defendant’s statements as they were



delivered, without alterations or commentary, except to note the emotional or physical attitude of the prisoner (crying, kneeling, etc.).

If we compare those reporting a rounded age with those who did report another age among the 51 defendants who were off by five years or more, we observe that age heaping persons were almost twice as likely to fall into the category with severe mistakes in the life course reckoning (28.7 percent v. 16.7 percent).

In a logit regression analysis, we can identify whether this might be caused by other variables, such as religious, occupational, age or gender variables. We regress the variable “numerate”  $N$  on life course reckoning and a number of controls, using Logit regression (hence the “LogOdds”):

$$\text{LogOdds } N_{ica} = a + b * \text{LCR}_{ica} + X'B + m_c + n_a + e_{ica}$$

Where the subscript “i” denotes the individual, “c” the century of birth, and “a” the age group. “LCR” is the main variable of interest, the ability of life course reckoning, our “mathematics test”. “X’B” is a vector of religious, occupational or gender variables, “ $m_c$ ” are the century fixed effects, and “ $n_a$ ” are the age fixed effects (see notes to Table 2). We introduce age groups in order to control for differences in age.<sup>15</sup> The stochastic error term is “e”.

Table 2: Correlates of numeracy (i.e., not reporting a rounded age): 5 Logit regressions

	(1)	(2)	(3)	(4)	(5)
off5more	-22.99** (0.014)	-23.61** (0.012)	-23.40** (0.015)	-26.25*** (0.005)	-23.07** (0.020)
conv_musl			10.76 (0.358)		
conv_jew			14.41 (0.181)		
Female		-11.38 (0.246)			
Commerc				22.71* (0.060)	25.25** (0.038)

<sup>15</sup> The literature has systematically tested this and found only a strong effect for the youngest age groups – in comparison for the older age groups – in the nineteenth and twentieth century, see Crayen/Baten (2010, Appendix).

Artisan				15.14 (0.164)	15.37 (0.164)
Occunkn				37.43* (0.087)	34.22 (0.154)
Century effects	included not	included not	Included not	Included not	included
Age effects	included	included	included	included	included
Observations	218	218	218	218	218
Pseudo R-squared	0.0636	0.0636	0.0636	0.0636	0.0636

Notes: marginal effects are reported. p-values of Wald tests in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The omitted category refers to an individual born in the fifteenth century. In Column 2, it refers to a male. In Column 3, it refers to an “old” Christian. In contrast, those “converted (f. Musl.)” were accused of practicing Muslim religious activities after they had officially converted to Christianity, and “converted (f. Jew)” were accused of practicing Jewish religious activities. In Column 4 and 5, the constant refers to a farmer (compared to occupations in commerce, artisanal or unknown), in column 5 also to a person in the age group 53 and higher. The other age groups are 17 to 32 and 33 to 52. The left and the right of the regression can in this case be flipped, as we are only assessing a multiple correlation, not a specific direction of causality. If we would use the 1/0 indicator variable “numerate” on the right hand side, we observe the share of relatively correct life course reckoning is 16.51% higher, evaluated at the sample mean.

Source: calculated from evidence collected in the Archivo Diocesano de Cuenca, Inquisition.

One of our findings is that a lower ability in life course reckoning resulted in dramatic and consistently lower age-heaping-based numeracy estimates: the marginal effect of those off by five or more years resulted in a numeracy that was between 23.0 and 26.3 percent lower. Relative to average numeracy, 54.4 percent, this is a substantial amount. The coefficient for “female” is negative (though not statistically significant), as most societies provided less schooling to females. Among the religious and occupational variables, only the commercial occupations were characterized by a significantly higher numeracy. The unknown occupation groups also see a significantly higher numeracy, but this disappears once controlling for age effects. Although we included age and century fixed effects, this did not result in notable differences of the life course reckoning variable.

The overall number of cases unfortunately is quite limited; hence we cannot perform regressions by century. However, if we distinguish Inquisition cases before and after 1570, we observe for both periods a significant relationship between life course reckoning and age-

heaping based numeracy estimates.<sup>16</sup> As numeracy is substantially lower for the earlier part of the sample (48.6 percent) and somewhat higher for the later part (57.2 percent), it is not astonishing that the coefficient is larger for the former (-33.5, significant at the five percent level), while the one of the later period is somewhat smaller in absolute value (-19.8, significant at the 10 percent level).

In sum, although we assess a variety of different specifications, our regression results for the extremely low life course reckoning abilities are very robust.

### 3. Discussion

In this discussion section, we relate our results to the literature on the relationship of age-heaping and other educational indicators. Almost any of the age-heaping studies of the last decade compared the evidence with other educational indicators for sub-periods in which both indicators are available. Every single of these studies found a close correlation between age-heaping and other educational indicators.<sup>17</sup> Even in the case of the ancient Roman economy, such plausibility tests turned out to be possible and confirmed the information content of age-heaping for educational analysis.<sup>18</sup> However, none of the studies so far could investigate individual-specific numeracy life course reckoning in comparison with age-heaping behaviour.

In contrast, some studies emphasize the deviations of age-heaping-based numeracy and other educational indicators such as literacy: A'Hearn, Delfino and Nuvolari speculate for the Italian case that cultural values might have prevented a 100 percent correlation, especially for female participants in censuses. They also wondered whether it might be implausible that some Southern Italian elite members claimed to be literate who were apparently less numerate, while northern Italian peasant women were more numerate.<sup>19</sup> However, Baten, Benati and Ferber used

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<sup>16</sup> Not shown in the table, details available from authors.

<sup>17</sup> Examples: Hippe/Perrin (2017); Cappelli/Baten (2021); Hippe/Baten (2012); Baten/Llorca-Jaña (2021).

<sup>18</sup> Baten/Priwitzer (2015).

<sup>19</sup> A'Hearn et al. (2021).

exactly the same data set and observed correlations of around 70 to 80 percent for both men and women; they conclude that some measurement error should always be expected in historical data (or in empirical data in general).<sup>20</sup>

Moreover, commenting on A'Hearn et al.'s "plausibility" check, we saw above that sometimes even persons with a university education like Francisco de Escobar were less numerically skilled than the converted Muslim woman Maria de Cielli. Moreover, Baten et al. argue – in accordance with a vast literature in social history – that literacy is not a perfect measure of education, because social desirability biases are sometimes underlying literacy reporting behaviour (and sometimes simply wrong statements are biasing literacy data).<sup>21</sup> Given these different views, it is even more important to assess the correlation between age heaping and life course reckoning ability.

For the recent period of the late twentieth and early twenty-first century, it became possible to study regional and intra-familial correlations between mathematics tests and age-heaping. For example, Baten studied the persistence of age-heaping and children's mathematics tests in the regions of West and Central Africa.<sup>22</sup> For these regions, mathematics tests were performed in the PASEC program (Programme d'Analyse des Systèmes Educatifs de la CONFEMEN). The 2014 wave of the PASEC dataset in comparison with other datasets<sup>23</sup> allows comparisons between the numerical abilities of children and the numerical abilities of the parent generation in these regions. For example, among the regions of Burkina Faso the correlation coefficient between the age-heaping-based numeracy estimated for adults and the mathematics tests for children is 0.78 ( $p=0.023$ ), and in Niger 0.95 ( $p=0.00$ ). For all countries in West and West-Central Africa included in PASEC, the correlation was as high as 0.8 ( $p=0.00$ ). However, the number of regions was limited, and a substantial part of the young

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<sup>20</sup> Baten/Benati/Ferber (2022).

<sup>21</sup> Ibidem.

<sup>22</sup> Baten (2021).

<sup>23</sup> For the parent generation, they use the IPUMSI collection of censuses, and the MICS collection of household surveys in which parents were asked for their age, see Baten (2021).

population was not attending school (and hence was excluded by PASEC); hence, Ferber and Baten studied this for 113 regions, for which MICS mathematics tests were available on the whole populations in 12 African countries (MICS is the Multiple Indicator Cluster Survey of UNICEF). The observed R-squares ranged between 0.4 and 0.71 in the African regions of the 21<sup>st</sup> Century.<sup>24</sup>

Similarly, Ferber and Baten studied even correlations for 16,790 parent-child dyads in Chad, Togo and Sierra Leone. If the parents reported a rounded age, the child would reach a statistically significant lower mathematics test score. This remained remarkably significant if the wealth of the family was entered as a control variable. In contrast, the correlation between age-heaping and literacy was much less obvious for this sample.<sup>25</sup>

The sample for comparing age-heaping with miscalculations in the life course reckoning process might be expanded in the future. For example, Humphries' collection of working-class biographies could be another application for the assessment of year addition issues – especially as her sample also includes some early cases, of the seventeenth and eighteenth centuries.<sup>26</sup> We should note though that England was quite early in developing basic numerical skills, hence perhaps less numerical mistakes might be observed.<sup>27</sup>

In sum, several studies obtained results that age-heaping corresponds with numeracy at the regional or family (=parent-child dyad) level. For the first time, this has been complemented in our study with evidence at the individual level.

#### **4. Conclusion**

The Spanish Inquisition offers a possibility to assess the technique of age-heaping based numeracy estimation at the individual level, as the inquisitors performed indirectly a

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<sup>24</sup> Ferber/Baten (2021).

<sup>25</sup> Ibidem.

<sup>26</sup> Humphries (2010).

<sup>27</sup> Baten/de Pleijt (2021).

mathematics test with the accused.<sup>28</sup> We analysed whether individuals who reported rounded ages tend to perform worse in “life course reckoning” tasks. Life course reckoning tasks can be interpreted as a mathematics test, because it requires numerical skills to tell a life course in a correct and consistent way. Some individuals made statements that were widely off, by five or more years. Comparing those who were off by five years or more in their life course reckoning on the one side and age-heaping on the other, age-heaping persons are twice as likely to fall into the “problems with life reckoning” category (28.7 percent v. 16.7 percent). Even controlling for a large number of factors including occupational, religious, age, gender and others, we find a statistically significant and economically substantial effect. Even taking these variables into account, we estimated that persons whose life reckoning was off by more than five years showed a 23 to 26 percent higher age-heaping (and hence, lower numeracy).

Is this a relevant amount, comparing it with other age-heaping differences observed in the economic history literature? Twenty-three to 26 percent numeracy difference is actually a highly relevant amount. For example, the European numeracy “revolution” between the fifteenth and early nineteenth century showed a 50-percent increase.<sup>29</sup> Thus, during this period Europe was transformed from a half-numerate into a mainly numerate continent. Even if our effect size of 23 to 26 percent cannot be directly compared to these vast temporal differences (and our sample is not representative), we can take this as a hint that the difference on numeracy between persons who performed well and those who performed poorly in life course reckoning is of quite substantial size.

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### **Sources**

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<sup>28</sup> Nalle (2016).

<sup>29</sup> Tollnek/Baten (2017).

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## Appendix A: Linear probability model

Table A.1: Correlates of numeracy (i.e., not reporting a rounded age), using a linear probability model: The results are very robust, compared with the Logit regression in Table 2

Variables	(1) numerate	(2) numerate	(3) numerate	(4) numerate	(5) numerate
off5more	-22.37** (0.016)	-22.71** (0.014)	-22.60** (0.017)	-25.27*** (0.007)	-21.34** (0.028)
conv_musl			10.43 (0.365)		
conv_jew			13.81 (0.184)		
Female		-10.62 (0.262)			
Commerc				21.32* (0.064)	23.29** (0.044)
Artisan				14.68 (0.156)	14.57 (0.158)
Occunkn				35.26 (0.136)	31.44 (0.198)
Century effects	included not	included not	included not	included not	included
Age effects	included	included	included	included	included
Constant	36.15*** (0.003)	38.27*** (0.002)	23.07 (0.133)	15.89 (0.275)	13.22 (0.355)
Observations	218	218	218	218	218
R-squared	0.05	0.06	0.06	0.07	0.08

Notes: Robust pval in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The constant refers to an individual born in the fifteenth century. In Column 2, it refers to a male. In Column 3, it refers to an “old” Christian. In Column 4 and 5, it refers to a farmer, in column 5 also to a person in the age group 53 and higher. The other age groups are 17 to 32 and 33 to 52. Source: calculated from evidence collected in the Archivo Diocesano de Cuenca, Inquisition.

## Appendix B: Two additional examples

Some, but not all of the inquisitors, elicited from their prisoners the amount of time they had spent on each of their life adventures. Even with individuals who obliged the court by giving complete answers, one encounters a fair amount of imprecision. For example, the shoemaker, Juan Pérez, age 27, who was arrested for having a quarrel with an inquisitor, delivered the following “life course” in 1539.

He said he is 27 or 28 years old, more or less, and he was born in the town of Valdeconcha, which is in the Archbishopric of Toledo, in the area of Zorita. He has lived now in the city of Cuenca on the shoemakers' street for up to three years. He married a daughter of Hernando de Moya up to a year ago, more or less. After he was 10 or 11 years old, he left his parents' house for the town of Aviles, where he apprenticed with Sebastián Platero, shoemaker, and he lived with him for seven years. From there he went to Toledo and worked for his uncle, Sebastián Díaz, the parish priest of San Gil, for one year. While in Toledo, his father sent for him, and he returned to the town of Valdeconcha for up to three months, more or less, and from Valdeconcha he came to Cuenca with Juan Bravo, shoemaker, and he lived with him, working at his trade for up to a year and a half, more or less. After the year and a half, he got engaged to his wife, and he was engaged for up to seven months, more or less. He backtracked to say that after he went home to Toledo, to his father's house, and before he came to Cuenca, he went to El Quintanar, and there he was working at his trade with Pedro Ortiz the Elder, shoemaker. From El Quintanar he went to Belmonte, where he worked with Andrés Gómez, shoemaker, and with Mantilla, shoemaker, and he thinks he was working with them for up to a year, more or less. From Belmonte he returned to Aviles, where he thinks he worked for a month, and from Aviles he returned to Valdeconcho to his father's house, and he was there for up to a month, and from there he came to Cuenca, like he said before.<sup>30</sup>

Then, Juan reflects on his statement, and admits that to reach the age that he says he is, he may have been older when he left home for the first time; he doesn't remember (!). As his statement stands, he has accounted for about 22 ½ years of his life until he came to work in Cuenca at age 24 or 25. Given this, he was coded as moderately successful in his life course reckoning, deviating two to five years of his stated age. In Juan's case, we have the unusual detail that the informant actually realized that his arithmetic did not add up and admitted that

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<sup>30</sup> ADC, Inquisition, Leg. 147 exp. 1759bis.

he might have been older than he thinks when he first left home to apprentice with Sebastián Platero.

Another case is that of Diego Peajero, a farmer who was arrested in 1613 for blaspheming. Diego stated that he was 26, illiterate, and married. All he had to say for himself was that he was born in Aguaviva, and had lived there his entire life. Usually, defendants at least say how long they have been married, but in this case, perhaps because his crime was trivial and he was not pressed for more information, or because Diego was not forthcoming, there is nothing to conclude from his statement (*Ibid.*, leg. 382, exp. 5417).

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