Monogrammic Determinism?

Stilian Morrison, Department of Economics, Pomona College, Claremont, CA 91711

Gary Smith, Ph.D., Department of Economics, Pomona College, Claremont, CA 91711

Correspondence:

Gary Smith

Pomona College

Claremont, California 91711

909-607-3135; fax: 909-621-8576

gsmith@pomona.edu

3591 words, 2 tables, 2 figures

* We are very grateful to the editors and reviewers for their careful, detailed, and extraordinarily helpful suggestions.

Monogrammic Determinism?

Stilian Morrison

Gary Smith

Abstract

Objective: Attempt to replicate a report that people whose names have positive initials (such as ACE or VIP) live much longer than do people with negative initials (such as PIG or DIE). The primary analysis in the original 1969-1995 study grouped decedents by year of death; however, average age at death (AAD) calculations for decedents grouped in this way can be misleading if the frequency of initials changes over time. Grouping the decedents by birth year solves this problem and provides a more natural test of whether there is a statistical relationship between initials and longevity.

Methods: The California Department of Health Services mortality data base was used to identify the birth year and age at death of decedents with positive or negative initials, as defined by the original study and as chosen by a new survey.

Results: There is no substantial or statistically significant relationship between either set of initials and longevity when decedents are grouped by birth year, either for the original study period 1969-1995 or for the longer period 1905-2003.

Conclusion: These data do not indicate that mortality is affected by one's initials.

Key words: initials, mortality, longevity, names

Monogrammic Determinism?

Introduction

The popularity of baby-name books suggests that many parents give a great deal of attention to the selection of their baby's name. A number of studies have investigated the relationship between a person's first name and self-esteem and various aspects of their lives, with mixed conclusions (1, 2, 3). For example, McDavid & Harari (4) found that, in assessing classmates they did not know personally, children rated students with desirable names as more popular than students with undesirable names. Erwin and Calev (5) found that school teachers gave lower grades to essays purportedly written by children with unattractive names. However, other research has found that these name effects are mitigated by additional information about a person (6).

Christenfeld, Phillips, and Glynn (7) report that a person's 3-letter initials are also important; specifically, that people with positive initials (such as ACE or VIP) live much longer than do people with negative initials (such as PIG or DIE). The idea that longevity is affected by one's initials has been dubbed "monogrammic determinism" by William R. Corliss (8), who publishes a bimonthly newsletter of "observations and facts that challenge prevailing scientific paradigms."

If this theory were true, then parents should choose their children's initials carefully and doctors and health researchers should consider initials in their diagnosis, treatment, and understanding of diseases. Is this person's health at risk because of his initials? Can this woman prolong her life by changing her name in order to change her initials? Has our study of, say, heart disease controlled for the confounding influence of initials? However, there are theoretical and statistical issues that make it especially important to see if independent data confirm this proposed relationship between initials and mortality. This study uses mortality data for the years 1905-2003 with decedents grouped by birth year to attempt to replicate the results previously reported using mortality data for 1969-1995 with decedents grouped by death year.

The Original Study

Christenfeld et al. use the following 12 positive initials: ACE, GOD, HUG, JOY, LIF, LIV, LOV, LUV, VIP, WEL, WIN, and WOW; and 19 negative initials: APE, ASS, BAD, BUG, BUM, DED, DIE, DTH, DUD, HOG, ILL, MAD, PIG, RAT, ROT, SAD, SIC, SIK, and UGH. They report that their lists were compiled by consulting an electronic dictionary of 3-letter English words and adding several near-words, such as LUV. They then confirmed their choices by asking 39 undergraduates to label these 31 initials and 9 neutral initials as positive, negative, or neutral.

Decedents Grouped by Death Year

Christenfeld et al. use California mortality data for the years 1969-1995 for white nonHispanic decedents, separated by gender. Their primary analysis groups decedents by death year and compares the average age at death (AAD) for those with positive or negative initials to the AAD of decedents with neutral initials. They report that, in comparison to their controls, males with positive initials lived 4.5 more years, males with negative initials lived 2.8 fewer years, females with positive initials lived 3.4 more years, and that there was no difference for females with negative initials. A 4.5-year difference in life expectancy is larger than the difference between the United States and Venezuela and almost as large as the difference between the United States and Algeria (9). There are plausible explanations for observed AAD differences among the United States, Venezuela, and Algeria. We do not have a comparable scientific explanation for why initials might have such large effects on life expectancy.

Decedents Grouped by Birth Year

Christenfeld et al. also examine data for decedents with positive and negative initials whose birthdates and deathdates were both between 1969 and 1995. For each of these subjects, they compared the subject's age at death with the AAD for people with neutral initials who were born on the same day as the subject. They report that most decedents with negative initials died earlier than the AAD of the controls (187 versus 127) and that most decedents with positive initials died later than the AAD of their controls (18 versus 15).

Problems With the Original Study

Decedents Grouped by Death Year

Retrospective studies have many possible pitfalls. Here, one serious problem is that the frequency of three-letter initials changes over time. Suppose, for example, that mortality rates are constant and identical for people with positive and negative initials, but that there are more people with negative initials in later birth cohorts than in earlier cohorts. If so, people with negative initials, whether dead or alive, will tend to be younger than people with other initials.

Christenfeld et al. acknowledge that this is a problem and report that the ratio of decedents with negative initials to all decedents increased by 40% between 1969 and 1995 (which would decrease the AAD) and that the ratio of decedents with positive initials to all decedents was approximately the same in 1969 and 1995. They attempt to control for the increased popularity of negative initials by identifying neutral initials that increased in popularity by comparable amounts between 1969 and 1995.

However, it is the popularity of initials in every year that matters, not just the first and last years. Suppose that initials do not affect mortality and consider, for example, a straight line drawn between the frequency of initials in 1969 and 1995. There are many possible patterns for initials in the intervening years, including: (a) above the line for the first half and below the line for the second half; and (b) below the line for the first half and above the line for the second half. Even though the frequencies are the same at the end points, there will be extended periods of time when the average age at death will be higher for (a) than for (b) and extended periods when the reverse is true. Thus we cannot reliably assess the effects of changing popularity just by looking at 1969 and 1995, and we cannot confidently identify a control group simply by looking at the frequencies of initials in 1969 and 1995.

Matters are further complicated by the fact that Christenfeld et al. estimate changes in the popularity of initials by comparing the frequency of initials for decedents grouped by death year, which is a flawed measure of changes in the popularity of initials at birth. This is an example of the more general problem of survivor bias in case-control studies (11). Here is simple example. Suppose that 80% of the population, regardless of initials, die at age 50 and 20% die at age 100; their average age at death is 60 years. Now suppose that 100 people were born in 1870 with positive initials and 80 people were born in 1920 with positive initials; in all other years, there were no positive initials. In 1920, 80 people with positive initials die and their average age at death is 50; in 1970, 84 people with positive initials die and their average age at death is 61.9 years. When decedents are grouped by death year, we observe an increase in the number of deaths with positive initials (from 80 to 84) even though there was a decrease in the number of births with positive initials (from 100 to 80). We also observe an increase in the average age at death (from 50 to 61.9) even though there has been no change in mortality rates and there was an increase in the number of deaths of people with positive initials.

How do we circumvent this problem? By grouping decedents by birth year. If two groups have the same mortality rates, the omission of living persons will reduce the level of the AAD, but the expected value of the AAD over any horizon will be identical for the two groups. For example, if we look at two groups with the same mortality rates who were born in 1900, the expected value of the AAD increases as we expand the horizon from, say, 25 to 50 to 100 years; however, the expected value of the AAD is the same for both groups whether we look at horizons of 25, 50, or 100 years.

Decedents Grouped by Birth Year

The Christenfeld et al. analysis of decedents whose birthdates and deathdates were both between 1969 and 1995 has the virtue of grouping decedents by birthday. However, none of these people lived past age 26 and most died at very young ages. If so, these data will not tell us much about the relationship between initials and mortality. In addition, these data are likely to be positively skewed, with means that are much larger than the medians.

It would be better to look at a data set that includes people who lived more than 26 years and to compare the AAD for decedents with positive and negative initials grouped by birth year.

Methods

Simulations

To gauge the importance of grouping decedents by birth year when the popularity of initials is not constant, simulations were run with the Berkeley Mortality Database (10), which is compiled from life tables prepared by the Office of the Chief Actuary in the Social Security Administration. This database has historical death rates for 1900-1995 and projected death rates for 1996-2080. The data show the frequency of death each year for persons of ages 0 to 120. We begin with a cohort born in 1900 and a birth rate that increases the size of each subsequent cohort by g percent a year. We do not distinguish between males and females, but instead use the aggregated male and female mortality rates to determine the number of people who die each year from 1900 to 2080. We then calculate the AAD each year for each birth-year cohort; for example, the AAD for people born in 1900 who were deceased by 1950 and the AAD for people born in 1900 who were deceased by 1951. We also calculate the AAD each year for people grouped by death year; for example, the AAD of all persons who died in 1950 and the AAD for all persons who died in 1951.

A Survey of Good and Bad Initials

The positive and negative initials chosen by Christenfeld et al. are not necessarily those perceived by others to be the best and worst initials. We compiled an independent list of positive and negative initials by using all 26^3 possible three-letter combinations for initials to chose 100 candidates, including the 31 used by Christenfeld et al. We gave 46 students and faculty this list of 100 initials, together with these instructions:

> Hi,
>
> I'm compiling a list of 3-letter initials that might be considered "positive" or "negative"; for example, Gary Nance Smith would have the initials GNS, which doesn't seem to have positive or negative connotations. What I would like you to do is look at the attached list and select the 10 initials that you would be happiest to have (the 10 best or 10 most positive) and the 10 initials you would be unhappiest to have (the 10 worst or the 10 most negative).
>
> Thanks for your help,

We tabulated the total number of votes received by each set of initials. The top 12 positive initials (in order) were ACE (32), ICE (18), JOY (17), VIP (17), CEO (16), WOW (16), GEM (14), FLY (13), FOX (13), HIP (12), WIT (12), and WIN (11). The top 19 negative initials (in order) were ASS (29), KKK (27), FAG (22), DIE (21), GAY (21), ZIT (20), FUK (18), PIG (16), DUM (15), RAT (15), SOB (13), TIT (12), GAS (11), FAT (11), BAD (10), POX (10), HOR (9), BUM (8), and SIN (8). Only 5 of the 12 positive initials (ACE, JOY, VIP, WOW, and WIN) used by Christenfeld et al. were among the top 12 vote-getters; only 6 of their 19 negative initials (ASS, DIE, PIG, RAT, BAD, and BUM) were among the top-19 vote-getters. Four of their initials (LOV, LUV, SIC, and UGH) received only 1 vote from the 46 persons surveyed and several others received 2 votes.

A Statistical Comparison of Average Ages at Death

The California Department of Health Services (12) maintains a mortality data base back to 1960 that identifies initials, gender, date of birth, date of death, and race or ethnicity. They also have a mortality data base for 1905 to 1959 that identifies initials, gender, date of birth, and date of death—but not race or ethnicity. For the years 1969-1995 studied by Christenfeld et al., white nonHispanic decedents who had any of the 12 positive or 19 negative initials they selected were grouped by birth year. For the longer time period 1905-2003, decedents with these initials were grouped by birth year and decedents with the initials selected by our survey participants were also grouped by birth year. One analysis used all decedents; another excluded children who died before they were five years old. We looked at white, nonHispanic decedents for 1960-2003 and all races for 1905-1959, because of the absence of race information. In practice, the early years have few usable data because the recorded date of birth is usually "unknown."

One tricky issue is females, who often change their initials during their lifetime. Are they most affected by their initials at birth or by their initials at death? If they care strongly about their initials, is there self-selection bias in the women who choose to marry men with fortunate or unfortunate names and then change their names to acquire positive or negative initials? There is no practical way to deal with these issues, other than to examine males and females separately and to recognize that female data are a less reliable test of the theory.

For each birth year t, the average age at death was calculated for those with positive initials (AAD_t^+) and for those negative initials (AAD_t^-). If there were at least five decedents with positive initials and five decedents with negative initials, then the paired difference in the average age at death was calculated for that birth year:

$$d_t = AAD_t^+ - AAD_t^-$$

For example, for male decedents born in 1900, there were 66 people with positive survey initials and 98 people with negative survey initials. The average age at death was 78.28 years for those with positive initials and 75.48 years for those with negative initials, a difference of 78.28 - 75.48 = 2.80 years.

The null hypothesis is that mortality rates are not affected by initials, so that the expected value of each paired difference is zero: $E\left[d_t\right]=0$. The nonparametric Wilcoxon signed-rank test for paired differences tests the null hypothesis that the median of the paired differences is zero (13). With more than 25 observations, the probability distribution of the Wilcoxon test statistic is well approximated by the normal distribution, which can then be used to calculate p values.

Results

The Importance of Grouping Decedents by Birth Year

Our Berkeley Mortality Database simulations confirm that the growth rate g of the popularity of initials has no effect on the AAD over any horizon if decedents grouped by birth year; for example, the AAD of people born in 1900 who were deceased by 1950 is the same if g = 0.00 or if g = 0.02. On the other hand, the growth rate has a large effect if decedents are grouped by death year; for example, the AAD of all persons who died in 1950 is much lower if g = 0.02 than if g = 0.00. Table 1 shows the AAD for people who died in 2000 for values of g ranging from -3% to +3%.

1969-1995 Decedents Grouped by Birth Year

We next reexamined the 1969-1995 mortality data used by Christenfeld et al. with the decedents grouped by birth year, rather than by death year as in the original study. Figures 1 and 2 show the male and female paired differences using their lists of initials and, as in the original study, no restrictions on the number of observations or the age at death. The figures show that the deviations are (approximately) as likely to be positive as negative and, overall, are about the same average size.

Table 2 shows that the average difference in AADs over this period is slightly negative for both males and females (the opposite of the results reported by Christenfeld et al.), though the differences are neither substantial nor statistically persuasive. Thus, the relationship between initials and mortality that was reported in their study disappears when decedents are grouped by birth year rather than by death year.

Young Decedents Grouped by Birth Year

Our reanalysis of the Christenfeld et al. study of decedents whose birthdates and deathdates were both between 1969 and 1995 found that most died at very young ages—indeed, in the first year of life. For those with positive initials, the median age at death is 0.2 years and the mean age at death is 3.9 years; for those with negative initials, the median age at death is 0.4 years and the mean age at death is 4.3 years. It is not plausible that infant deaths are affected by their feelings about their initials.

These data are also positively skewed, with means that are much larger than the medians. It is consequently misleading to count (as do Christenfeld et al.) the number of decedents who died before or after the AAD for the control group. Even if we were to compare two identical mortality distributions that are skewed in this way, we would find that the age at death for most decedents in either group is less than the average age at death for decedents in the other group. Christenfeld et al. report that most people with positive initials (18 out of 33) lived longer than the average person in their control group. This is truly surprising because the distribution is highly skewed and the median age at death of people with positive initials was 0.2 years. We could not replicate this finding. Instead, we found that only 14 out of 33 people with positive initials lived longer than the average person in their control group.

A New Study of Decedents Grouped by Birth Year

Mortality data for the years 1905-2003 were used to calculate the AAD for decedents grouped by birth year, using both the initials in the original study and the initials selected by our survey participants. For the initials used by Christenfeld et al. there were a total of 2678 males with positive initials, 4792 males with negative initials, 1098 females with positive initials, and 7387 females with negative initials; for the survey initials there were a total of 4201 males with positive initials, 6485 males with negative initials, 2798 females with positive initials, and 4533 females with negative initials.

Larger data sets generally reduce the p values (14) and this is true here. However, Table 2 shows that, for either set of initials, these data do not support the results reported by Christenfeld et al. The observed differences in AADs are neither substantial or statistically persuasive, and the mean and median differences in AADs are negative for males, the opposite of the direction reported by Christenfeld et al.

Discussion

It has been reported that people whose names have positive initials live much longer than do people with negative initials. However, there is no persuasive biological theory of why longevity should be significantly affected by initials and it seems unlikely that negative initials would be so popular if they had such dramatic damaging effects on health. If people were so devastated by their initials, surely caring parents would be reluctant to give their children negative initials.

One problem inherent in any study of initials and mortality is that language usage and slang expressions change during the lifetimes of many, if not most, decedents. Some current slang, like ICE and FLY, was not used 50 or 100 years ago; some slang that was popular 50 or 100 years ago is not commonly used today. Someone born in the early part of the twentieth century might have considered GAY to be positive in the first half of the century and negative in the second half. The only practical way to deal with this problem is to analyze a variety of positive and negative initials.

The primary analysis in the original 1969-1995 study grouped decedents by year of death; however, AAD calculations for decedents grouped by death year can be misleading if the frequency of initials changes over time. When these 1969-1995 decedents are grouped by year of birth, there are neither substantial or statistically significant differences between the AAD of decedents with positive and negative initials. The original study of decedents grouped by birthday who were born and died between 1969 and 1995 is potentially more reliable but weakened in practice by the fact that most of the people who died in this brief interval were infants; in addition, the statistical measure used by this study is flawed because mortality data are skewed.

The most natural test of whether there is a statistical relationship between initials and longevity is to group the decedents by birth year and to compare the AAD of those with positive and negative initials. If two groups have the same mortality rates, the expected value of the AAD over any horizon will be identical for the two groups. California decedents grouped by birth year do not replicate the results reported for decedents grouped by death year, either for the original study period 1969-1995 or for a longer period 1905-2003. These data do not indicate that mortality is affected by one’s initials.

References

1. Christopher A. The psychology of names: An empirical reexamination. Journal of Applied Social Psychology 1998; 28: 1173-1195.
2. Fryer R, Levitt S. The Causes and Consequences of Distinctively Black Names, NBER Working Paper No. w9938; 2003.
3. Bertrand M, Mullainathan S. Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination, NBER Working Papers 9873; 2003
4. McDavid J, Harari H. Stereotyping of names and popularity in grade-school children. Developmental Psychology 1966; 37: 453-459.
5. Erwin P, Calev A. The influence of Christian name stereotypes on the marking of children’s essays. British Journal of Educational Psychology, 1984; 54: 223-227.
6. Young R, Kennedy A, Newhouse A, Browne P, Thissen D. The effects of names on perception of intelligence, popularity, and competence. Journal of Applied Social Psychology 1993; 23: 1770-1778.
7. Christenfeld N, Phillips D, Glynn L. What’s in a name: Mortality and the power of symbols. Journal of Psychosomatic Research 1999; 47: 241-254.
8. Corliss W. Monogrammic Determinism. Science Frontiers 1998; 118, Retrieved March 15, 2004, from http://www.science-frontiers.com/sf118/sf118p17.htm.
9. Central Intelligence Agency, The World Fact Book, 2005; Retrieved May 13, 2005, from http://www.cia.gov/cia/publications/factbook//index.html
10. Berkeley Mortality Database. (n.d.). Retrieved March 17, 2003, from http://demog.berkeley.edu/wilmoth/mortality
11. Breslow N, Day N. Statistical Methods in Cancer Research , Volume 1—The Analysis of Case-Control Studies. Lyon: International Agency for Research on Cancer; 1980.

12. California Department of Health Services, Death Statistical Master Files. Sacramento, CA: California Department of Health Services (CD-ROM data files); 1905-2003.
13. Wilcoxon F. Individual Comparisons by Ranking Methods. Biometrics 1945; 1: 80-83.
14. Arrow, K. Decision Theory and the Choice of a Level of Significance for the t-Test, in Olkin, W. Hoeffding, S.D. Gurye, W.G. Madow, and H. B. Mann (Eds.), Contributions to Probability and Statistics: Essays in Honor of Harold Hotelling. Stanford: Stanford University Press, 1959: 70-78.

Table 1

The Effect of Cohort Growth Rate on the Average Age at Death of Year 2000 Decedents

Annual Growth Rate of Cohort (percent)	Average Age at Death (years)
-3.0	72.2
-2.0	70.6
-1.0	68.7
0.0	66.4
1.0	63.6
2.0	60.3
3.0	55.6

Table 2

Paired Difference in Average Age at Death (AAD) for Decedents with Positive Initials Minus AAD for Decedents with Negative Initials

	Males			Females		
	Mean	Median	p-value	Mean	Median	p-value
1969-1995 Decedents, Initials used by Christenfeld et al.						
minimum age = 0	-0.22	-0.02	0.49	-0.25	-0.20	0.90
1905-2003 Decedents, Initials used by Christenfeld et al.						
minimum age = 0	-0.43	-0.14	0.41	0.84	0.81	0.10
minimum age = 5	-0.40	-0.14	0.47	0.79	0.84	0.09
1905-2003 Decedents, Survey Initials						
minimum age = 0	-0.42	-0.55	0.17	0.83	0.53	0.13
minimum age = 5	-0.31	-0.51	0.34	0.75	0.53	0.12

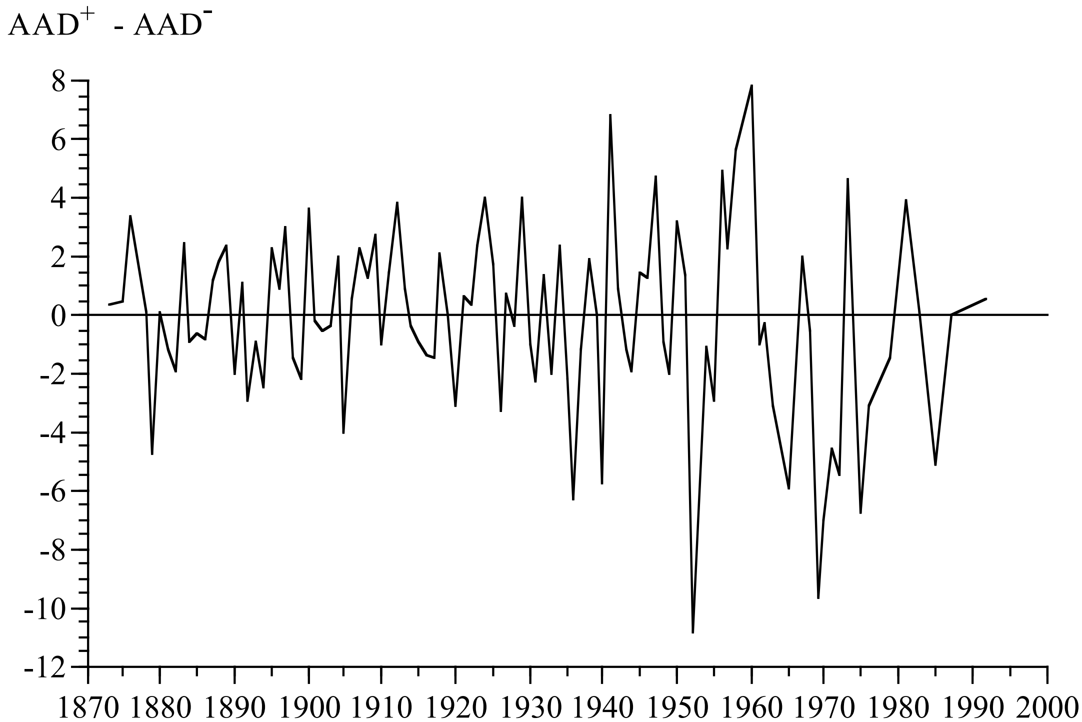

Figure 1 Difference in Average Age at Death (AAD) of 1969-1995 Male Decedents with Positive and Negative Initials Used by Christenfeld et al.

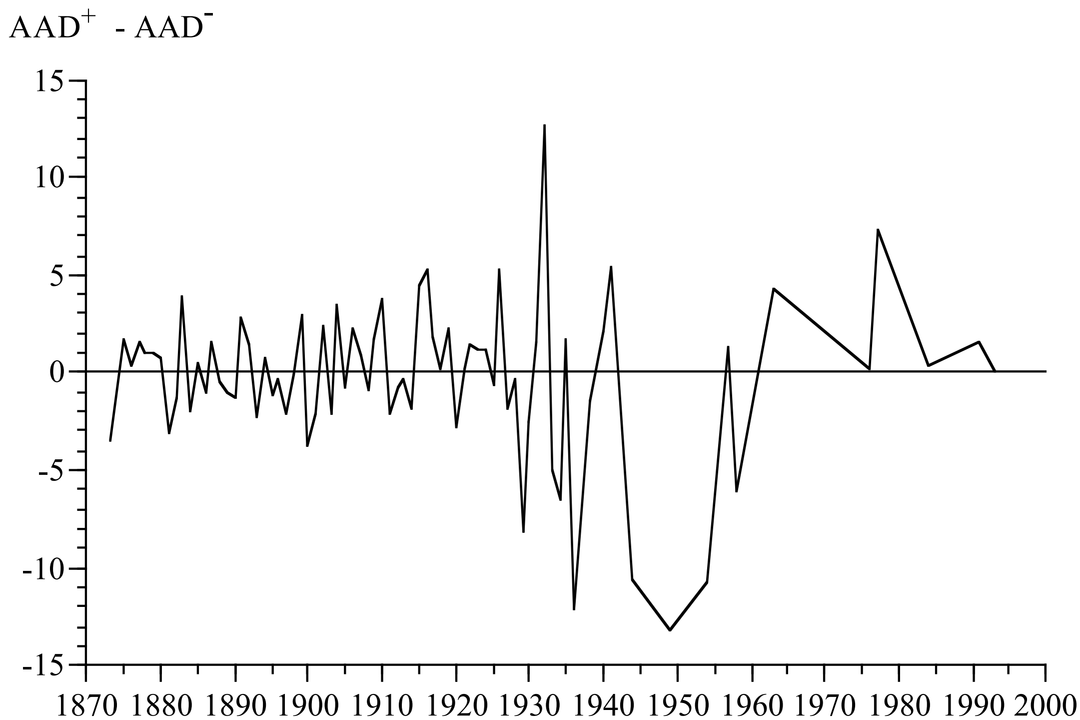

Figure 2 Difference in Average Age at Death (AAD) of 1969-1995 Female Decedents with Positive and Negative Initials Used by Christenfeld et al.