

Health By Wealth: Computational tools and population level data uncover substantial inequalities in health over the very long run

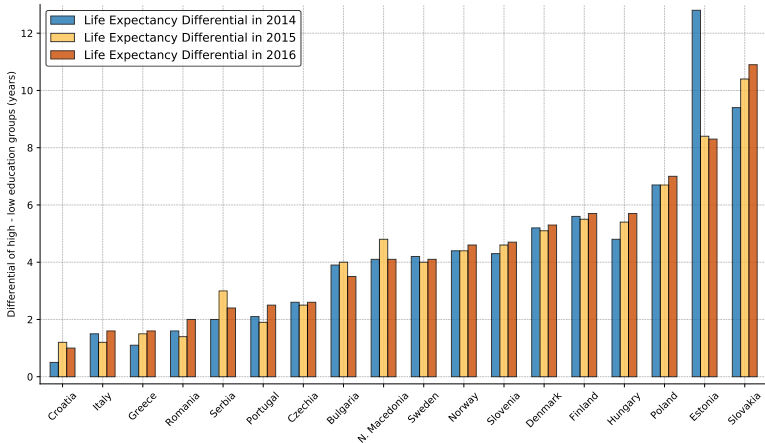
Naomi Muggleton, Aaron Reeves, **Charles Rahal**, Alexandra Rottenkolber, Linda Li

Leverhulme Centre for Demographic Science

The London Universities Population Seminar, April 28th, 2026

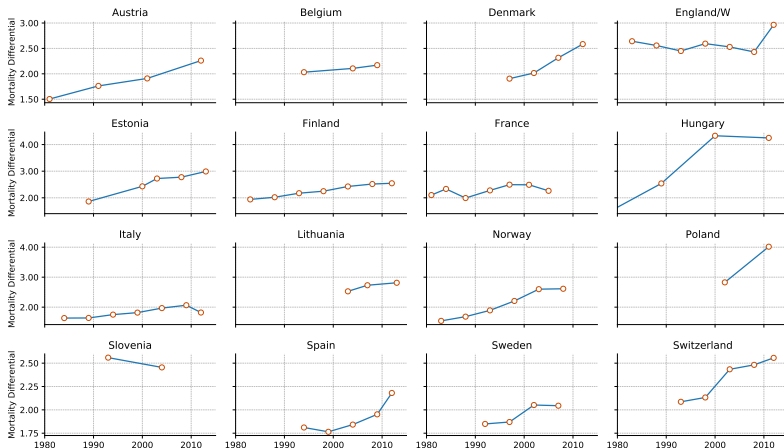


Health inequalities are pervasive



Source: Eurostat. Note: Not a selective subset – this is for **all** countries measured. Differential measured as life expectancy for those with 'Tertiary' education minus life expectancy of those with 'Less than primary, primary or lower secondary' education.

Health inequalities are persistent

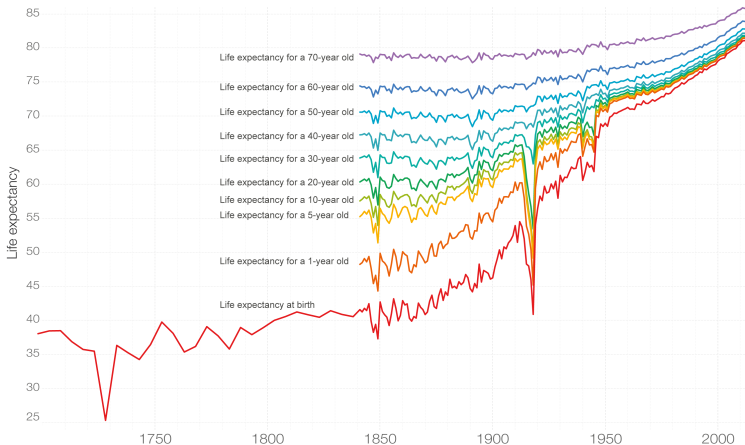


Source: Data from Mackenbach, J.P. et al. (2018). Trends in health inequalities in 27 European countries. *PNAS*, 15(25), 6440-6445. Specifically: their 'Relative Index of Inequality', harmonised across countries to International Standard Classification of Education 1997 categories. *y*-axis again relates to high-to-low education.

Long-run individual mortality evidence is rare

Life Expectancy by Age in England and Wales, 1700-2013

Shown is the total life expectancy given that a person reached a certain age.



“Medicine is a social science,
and politics nothing but medicine at a larger scale.”

— Rudolf Virchow, ca. July 1848–June 1849.

The empirical gap

1. Poorer, less privileged groups die younger.
2. Historical evidence is usually cross-sectional.

But **why** may socioeconomic status and mortality remain associated over time?

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Theory of fundamental causes has four key components:

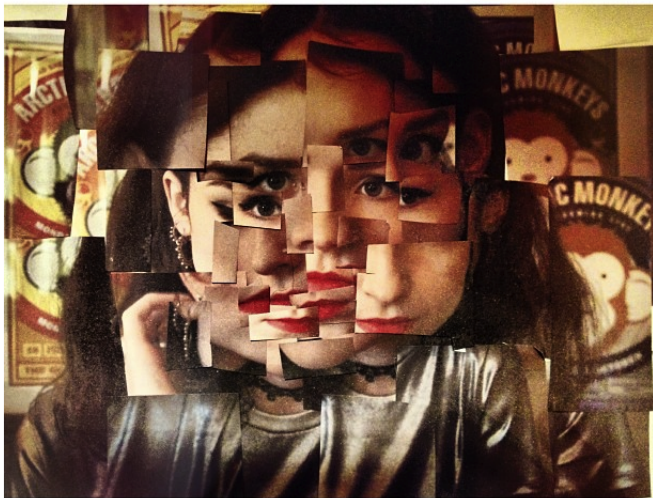
1. Multiple disease outcomes
2. Outcomes mediated through multiple risk factors
3. Access to resources allows risk avoidance and minimizes consequences of disease
4. SES-mortality gradient persists and reproduces despite changing conditions

Key resources: knowledge, money, power, prestige, beneficial social connections.

(Link and Phelan, 1995)



Until recently, historical evidence had arrived as snapshots



Historical evidence arrives as snapshots

Liverpool, 1840

- Chadwick studied Liverpool deaths.
- Professionals: average age 35.
- Tradesmen: average age 22.
- Labourers: average age 15.
- Mortality tracked class position.

Whitehall studies

- Civil servants followed prospectively.
- Lower rank, shorter lives.
- Mortality rose down hierarchy.
- Gradient persisted after retirement.
- Risk factors explained part.

These are powerful comparisons, but not linked individual histories.

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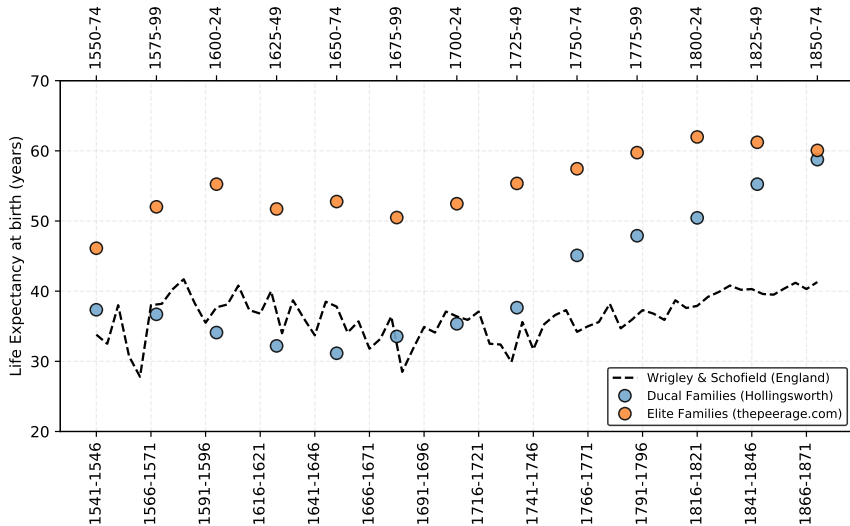
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Neil Cummins: Adjacent work on historical wealth

Common ground: historical names, deaths, and probate reveal long-run wealth patterns.

1. Intergenerational Wealth Mobility

Clark and Cummins (2015), *Economic Journal*

Rare surnames trace dynastic wealth persistence across generations.



2. The hidden wealth of English dynasties

Cummins (2022), *Economic History Review*

Declared estates are compared with expected inherited wealth.

3. Where Is the Middle Class?

Cummins (2021), *Journal of Economic History*

Most relevant: death and probate universes measure wealth holding.

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The closest paper is still a different question



Cummins (2021) asks:

What do death and probate records reveal about wealth holding, top shares, and the missing middle class?

Our project asks:

How do linked probate and death records reveal survival gradients, age-at-death differences, and health inequality?

Key distinction: data construction

Probate records: Cummins already has a list of people whose estates went through probate. We first have to create that list from scanned Probate Calendar pages.

Death records: Cummins compares probate people with all registered deaths. We make FreeBMD searchable by name, date, and place, then link each probate person to the best death record.

Cummins (2021), *Where Is the Middle Class? Evidence from 60 Million English Death and Probate Records, 1892–1992*.

Probate records are an underused resource

"Although imperfect in several respects the probate valuations offer comprehensive and objective information on the personal wealth of the entire British population in the modern period. They are, moreover, probably unique among advanced industrial nations in presenting probate valuations for the whole population. . . . It is a mystery why so little use has been made of them"

Rubinstein, William D. "Wealth, Elites and the Class Structure of Modern Britain." *Past & Present* 76, no. 1 (1977): 99–126.

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Turning wills into a population-scale wealth measure

Probate Data

Building long-run wealth histories

We combine OCR, deep learning, and record linkage to measure wealth at national scale.

Probate Records (1858-1995)**All wills and administrations**

Deceased person's wishes for distributing their assets.

Legal process for distributing assets when there is no will.

Wills

Administrations

Death Registry (1861-1991)**All 66m deaths**

John Doe

Parish

Date

Age

Family Trees**WikiTree database****Gender Estimation**

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**Gender Estimation**

API

Ann

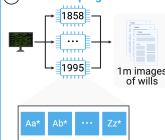
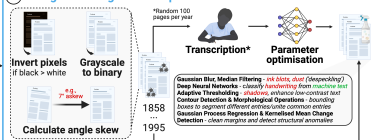
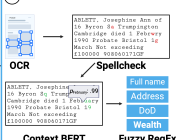
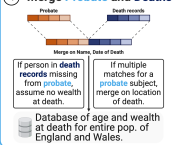
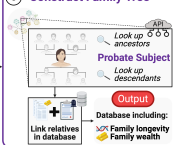
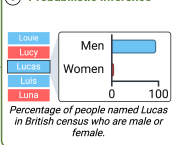
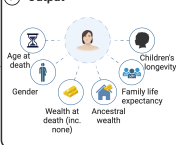
Brian

Camilla

David

Gender Estimation Results:

- Ann: X
- Brian: X
- Camilla: X
- David: X

1 Web Scraping**2 Image Cleaning with Computer Vision****3 Text Extraction and OCR****4 Merge Probate and Deaths****5 Construct Family Tree****6 Probabilistic Inference****7 Output**

Probate Records (1858-1995)

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Deceased
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All 66m deaths

John
Doe

Name

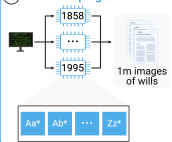
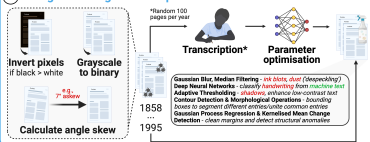
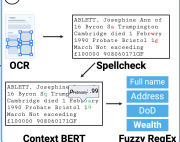
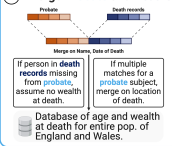
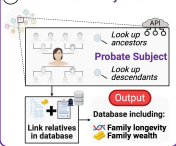
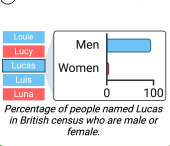
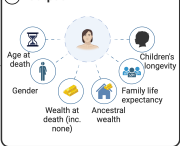
Parish

Date

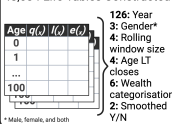
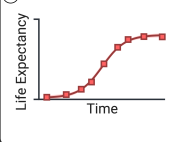
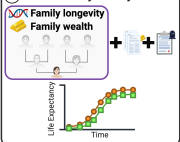
Age

Family Trees

WikiTree database

**Gender Estimation****1 Web Scrapping****2 Image Cleaning with Computer Vision****3 Text Extraction and OCR****4 Merge Probate and Deaths****5 Construct Family Tree****6 Probabilistic Inference****7 Output****(A) Life Tables**

48,034 Life Tables Constructed

**(B) Historical Trends****(C) Stratified by Wealth****(D) Stratified by Family Wealth**

Probate records measure estates at death

- The **Probate Registry Calendar** is a digitised collection of all the wills proved in the UK between 1858 and 1995.
- With very few exceptions (e.g., members of the royal family), **all individuals** who have left behind inheritance are listed in probate records.
 - **Wills:** individuals who have formally expressed a wish for their estate (big or small).
 - **Administration:** where a will was not created, but the estate was valued at (in today's money) $\approx$ £5,000.

Raw probate extract, 1858–1992: 17,077,740 person records.

Probate thresholds changed over time

Years	Nominal probate threshold	Source
1858–1900	£10	Turner (2010, p. 628)
1901–1931	£50	Turner (2010, p. 628)
1932–1964	£100	Atkinson and Harrison (1978, p. 36)
1965–1974	£500	Atkinson and Harrison (1978, p. 36)
1975–1984	£1,500	Atkinson and Harrison (1978, p. 36)
1984–	£5,000	Turner (2010, p. 628); Alvaredo, Atkinson, and Morelli (2018, p. 29); Atkinson, Atkinson, and Morelli (2017, p. F8); Karagiannaki (2015, p. 187)

Source: Cummins, Neil. 2021. "Where Is the Middle Class? Evidence from 60 Million English Death and Probate Records, 1892–1992." *The Journal of Economic History* 81(2): 359–404, Table 1. DOI: 10.1017/S0022050721000164.



DICKENS { Charles otherwise
Charles John
Huffham Esq.

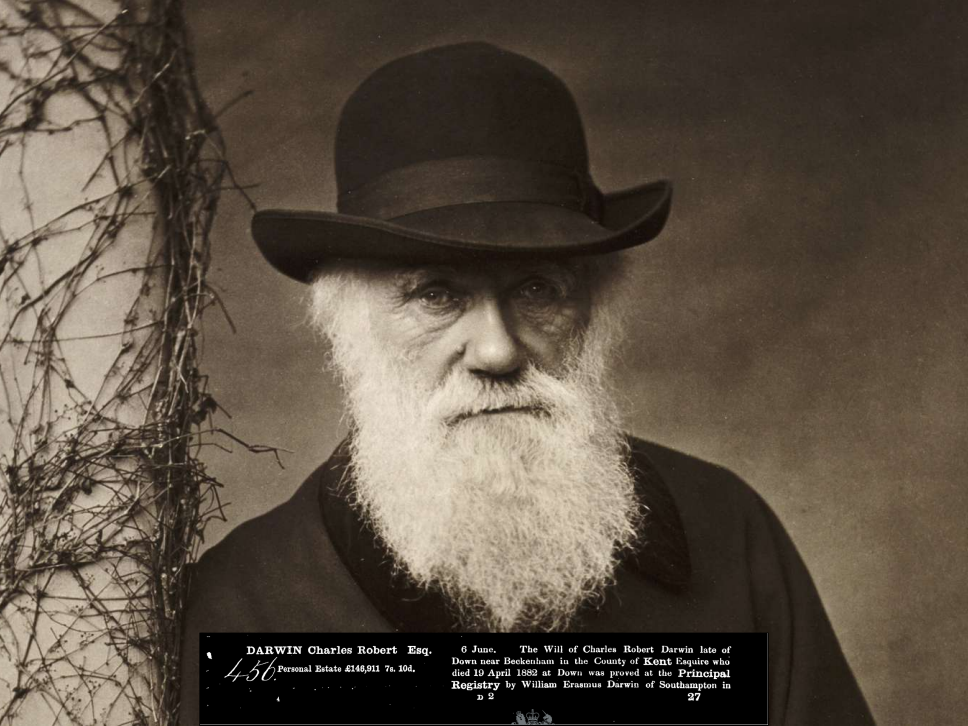
468

Effects under £80,000..

19 July.

The Will

with a Codicil of Charles otherwise Charles John Huffham Dickens late of Gads Hill Place near Rochester in the County of Kent Esquire deceased who died 9 June 1870 at Gads Hill Place aforesaid was proved at the Principal Registry by the oaths of Georgina Hogarth of Gads Hill Place aforesaid Spinster and John Forster of Palace Gate House Kensington in the County of Middlesex Esquire the Executors.



DARWIN Charles Robert Esq.

450

Personal Estate £146,911 7s. 10d.

6 June. The Will of Charles Robert Darwin late of Down near Beckenham in the County of Kent Esquire who died 19 April 1882 at Down was proved at the Principal Registry by William Erasmus Darwin of Southampton in

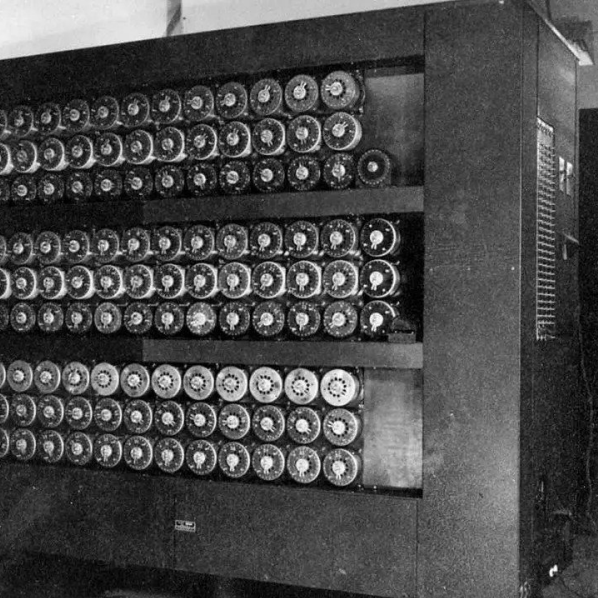
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27





WOOLF Adeline Virginia of Monks House Rodmell near **Lewes**
(wife of Leonard Sidney Woolf) died 28 March 1941 Probate
Llandudno 19 August to the said Leonard Sidney Woolf
publisher. Effects £16868 7s. 7d.
Resworn £14051 3s. 5d.



TURING Alan Mathison of Hollymeade Adlington-road Wilmslow
Cheshire died 8 June 1954 Probate **Manchester** 20 September
to Philip Nicholas Furbank librarian. Effects £4603 5s. 4d.



CHURCHILL the right honourable sir **Winston Leonard Spencer K.G. O.M. C.H.** of Chartwell Manor Westerham Kent and 28 Hyde Park Gate London S.W.7 died 24 January 1965 at 28 Hyde Park Gate Probate London 9 February to dame Clementine Ogilvy Spencer Churchill G.B.E.; widow Mary Soames married woman and John Rupert Colville C.B. C.V.O. banker. E304044.

Probate also captures modest estates

- **John Croxton**; a labourer who died in December 1854 and left £5 (£600 today) to a farmer.
- **Lionel Abbot**; a commercial clerk who died in 1924 and left £65 (£4,000 today) to his son.
- **Susannah Chilvers**; a widow who died in 1964 and left £211 (£4,000 today) to her bricklayer son and homemaker daughter.

Collecting probate meant scraping at national scale

Stage	Step
1.	Set up 138 virtual machines (EC2, AWS) - one for each year.
2.	Sent requests ¹ at a rate of – on average – one request every 10 seconds (plus or minus noise). ²
3.	Use wildcard search to rattle through all surnames between Aa* and Zz*.
4.	Save image in AWS S3 bucket for processing.

Result: 1 million pages of probate records (or, stacked horizontally...)

¹With friendly user agent message providing contact details.

²This is well within normal traffic for server and abides by robots.txt guidelines.

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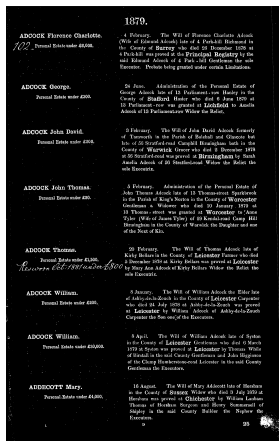
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Computer vision turns scans into usable records



1. Invert colours if black pixels > white pixels
2. From greyscale to binary (black-white)
3. Calculate angle of pixels and deskew
4. Blob removal (e.g., ink blots)
5. Margin detection using Gaussian Process Regression
6. Remove handwriting; keep typewriting
7. Speckle removal (e.g., dust)
8. Bounding boxes around each entry
9. Resize page based on optimal extraction^a

^aHuge thanks to RAs who created training set per year!

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ADCOCK Florence Charlotte.

102. Personal Estate under £2500.

1879.

4 February. The Will of Florence Charlotte Adcock (Wife of Edward Adcock) late of 4 Parkhill Rowland in the County of Surrey who died 25 December 1878 at 4 Parkhill was proved at the Principal Registry by the said Edward Adcock of 4 Parkhill Godstone the sole Executor. Probate being granted under certain Limitations.

ADCOCK George.

Personal Estate under £250.

26 June. Administration of the Personal Estate of George Adcock late of 12 Palladium Court Haverly in the County of Stafford Haverly who died 6 June 1878 at 12 Palladium Court was granted at Lichfield to Annita Adcock of 12 Palladium Court Widow the Sole.

ADCOCK John David.

Personal Estate under £250.

9 February. The Will of John David Adcock formerly of Turnworth in the Parish of Rothall and Gloucester late of 26 Stratford Road Churchill Birmingham late in the County of Warwick Overton who died 8 December 1878 at 26 Stratford Road was proved at Birmingham by Sarah Adcock Adcock of 20 Stratford Road Widow the Sole the sole Executor.

ADCOCK John Thomas.

Personal Estate under £25.

5 February. Administration of the Personal Estate of John Thomas Adcock late of 15 Thomas Street Spitalfields in the Parish of King's Square in the County of Worcester Goddard a Widower who died 30 January 1873 at 15 Thomas Street was granted at Worcester to Anna Tyler (Wife of James Tyler) of 10 Knollwood Close Hill Birmingham in the County of Warwick the Daughter and one of the Next of Kin.

ADCOCK Thomas.

Personal Estate under £250.
Received 666-1887 under £2500

28 February. The Will of Thomas Adcock late of Kirby Bellars in the County of Leicestershire Thomas who died 2 December 1874 at Kirby Bellars was proved at Leicester by Mary Ann Adcock of Kirby Bellars Widow the Sole the sole Executor.

ADCOCK William.

Personal Estate under £250.

5 January. The Will of William Adcock the Elder late of Ashby-de-la-Zouch in the County of Leicestershire Carpenter who died 24 July 1873 at Ashby-de-la-Zouch was proved at Leicester by William Adcock of Ashby-de-la-Zouch Carpenter the Son one of the Executors.

ADCOCK William.

Personal Estate under £25000.

5 April. The Will of William Adcock late of Syden in the County of Leicestershire Goddard who died 9 March 1873 at Syden was proved at Leicester by Thomas White of Stratford in the said County Goddard and John Hargreaves of the Church Haverhamwood Leicester in the said County Goddard the Executors.

AIDSCOTT Mary.

Personal Estate under £2500.

16 August. The Will of Mary Aidcott late of Borden in the County of Surrey Widow who died 2 July 1870 at Borden was proved at Chichester by William Ludlow Thomas of Bordon Bignon and Henry Stannard of Stigley in the said County Bignon the Executors.

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ADCOCK George. Personal Estate under £100.	21 June. Administration of the Personal Estate of George ADCOCK late of 11 Parliament-street Huddley in the County of Stafford Huddley who died 4 June 1879 at 11 Parliament-street was granted at Lichfield to Amelia ADCOCK of 23 Parliament-street Widow the Relict the sole Executrix.
ADCOCK John David. Personal Estate under £100.	3 February. The Will of John David ADCOCK formerly of Tenworth in the Parish of Balshill and Glamorgan late late of 20 Street-end Chapel Birmingham both in the County of Warwick Glamorgan who died 2 December 1873 at 20 Street-end was proved at Birmingham by Sarah Amelia ADCOCK of 69 Stratford-road Widow the Relict the sole Executrix.
ADCOCK John Thomas. Personal Estate under £25.	5 February. Administration of the Personal Estate of John Thomas ADCOCK late of 13 Thomsen-street Spitalfields in the Parish of King's Norton in the County of Worcester Gloucestershire a Widower who died 10 January 1879 at 13 Thomsen-street was proved at Worcester to Anne Taylor (Wife of James Taylor) of 22 Radford-road Camp Hill Birmingham in the County of Warwick the Daughter and one of the Next of Kin.
ADCOCK Thomas. Personal Estate under £1,000. <i>Residuary £60,000-£100,000</i>	30 February. The Will of Thomas ADCOCK late of Kirby Bellus in the County of Leicestershire Farmer who died 6 December 1873 at Kirby Bellus was proved at Leicester by Mary Anna ADCOCK of Kirby Bellus Widow the Relict the sole Executrix.
ADCOCK William. Personal Estate under £100.	4 January. The Will of William ADCOCK late of Elder late of Ashby-de-la-Zouch in the County of Leicestershire Carpenter who died 24 July 1873 at Ashby-de-la-Zouch was proved at Leicester by William ADCOCK of Ashby-de-la-Zouch Carpenter the Son and one of the Executors.
ADCOCK William. Personal Estate under £10,000.	8 April. The Will of William ADCOCK late of Syden in the County of Leicestershire Gentleman who died 12 March 1873 at Syden was proved at Leicester by Thomas White of Bristol in the said County Gentlemen and John Hughes of the City of Manchester Leicestershire in the said County Gentlemen the Executors.
ADBOOTT Mary. Personal Estate under £1,000.	10 August. The Will of Mary ADBOOTT late of Haxham in the County of Bedfordshire Widow who died 2 July 1873 at Haxham was proved at Hitchin by William Ludlow Thomas of Haxham Esquire and Henry Mansel of Hitchin in the said County Builders the Relict the Executors.

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ADCOCK George. Personal Estate under £100.	21 June. Administration of the Personal Estate of George ADCOCK late of 11 Parliament-street Haverly in the County of Staffordshire who died 4 June 1920 at 11 Parliament-street was granted at Lichfield to Amelia ADCOCK of 20 Parkmansmore Widow the Heiress.
ADCOCK John David. Personal Estate under £100.	3 February. The Will of John David ADCOCK formerly of Tamworth in the Parish of Balsall and Gloucesters but late of 20 Stratford-road Chesham Bovingdon both in the County of Warwickshire who died 2 December 1920 at 20 Stratford-road was proved at Birmingham by Sarah Amelia ADCOCK of 20 Stratford-road Widow the Heiress the sole Executrix.
ADCOCK John Thomas. Personal Estate under £25.	5 February. Administration of the Personal Estate of John Thomas ADCOCK late of 13 Thomsenstreet Spitalfields in the Parish of King's Norton in the County of Worcester Gloucestershire a Widower who died 10 January 1920 at 13 Thomsen-street was granted at Worcester to Anne Taylor (Wife of James Taylor) of 22 Radford-road Camp Hill Birmngham in the County of Warwick the Daughter and one of the Next of Kin.
ADCOCK Thomas. Personal Estate under £1,000. <i>Residuary Estate under £1,000</i>	30 February. The Will of Thomas ADCOCK late of Kirby Bellon in the County of Leicestershire who died 6 December 1920 at Kirby Bellon was proved at Leicester by Mary Anna ADCOCK of Kirby Bellon Widow the Heiress the sole Executrix.
ADCOCK William. Personal Estate under £100.	4 January. The Will of William ADCOCK the Elder late of Ashby-de-la-Zouch in the County of Leicestershire Carpenter who died 24 July 1920 at Ashby-de-la-Zouch was proved at Leicester by William ADCOCK of Ashby-de-la-Zouch Carpenter the Son and one of the Executors.
ADCOCK William. Personal Estate under £10,000.	8 April. The Will of William ADCOCK late of Syden in the County of Leicestershire Gentleman who died 12 March 1920 at Syden was proved at Leicester by Thomas White of Bressall in the said County Gentleman and John Hughes of the Clung Hamlet Leicestershire in the said County Gentleman the Executors.
ADBOOTT Mary. Personal Estate under £1,000.	10 August. The Will of Mary ADBOOTT late of Haslem in the County of Berks who died 2 July 1920 at Haslem was proved at Chichester by William Ludlow Thomas of Haslem Berks and Henry Mansfield of Shipley in the said County Builders the Executors.

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8. Bounding boxes around each entry
9. Resize page based on optimal extraction^a

^a Huge thanks to RAs who created training set per year!

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	1879.
ADCOCK Florence Charlotte. Personal Estate under £6,000.	4 February. The Will of Florence Charlotte ADCOCK (Wife of Edward ADCOCK) late of 4 Parkhill Belmont in the County of Surrey who died 21 December 1878 at 4 Parkhill was proved at the Principal Registry by the said Edward ADCOCK of 4 Park Hill Gardens the sole Executor. Probate being granted under certain Limitations.
ADCOCK George. Personal Estate under £100.	21 Jan. Administration of the Personal Estate of George ADCOCK late of 11 Parliament-street Haverly in the County of Staffordshire who died 4 June 1878 at 11 Parliament-street was granted at Lichfield to Anna ADCOCK of 23 Parkmansmore Widow the Heiress.
ADCOCK John David. Personal Estate under £100.	3 February. The Will of John David ADCOCK formerly of Tewkesbury in the Parish of Batsall and Gloucester but late of 20 Stratford-road Chesham Bovingdon both in the County of Warwickshire who died 2 December 1873 at 20 Stratford-road was proved at Birmingham by Sarah Anna ADCOCK of 68 Stratford-road Widow the Heiress the sole Executrix.
ADCOCK John Thomas. Personal Estate under £25.	5 February. Administration of the Personal Estate of John Thomas ADCOCK late of 13 Thomsenstreet Spitalfields in the Parish of King's Norton in the County of Worcester Gloucestershire a Widower who died 10 January 1873 at 13 Thomsen-street was proved at Worcester to Anne Taylor (Wife of James Taylor) of 22 Radford-road Camp Hill Birmngham in the County of Warwick the Daughter and one of the Next of Kin.
ADCOCK Thomas. Personal Estate under £1,000. <i>Residuary Estate under £1,000</i>	10 February. The Will of Thomas ADCOCK late of Kirby Bellus in the County of Leicestershire who died 8 December 1873 at Kirby Bellus was proved at Leicester by Mary Ann ADCOCK of Kirby Bellus Widow the Heiress the sole Executrix.
ADCOCK William. Personal Estate under £100.	4 January. The Will of William ADCOCK the Elder late of Ashby-de-la-Zouch in the County of Leicestershire who died 21 July 1873 at Ashby-de-la-Zouch was proved at Leicester by William ADCOCK of Ashby-de-la-Zouch Carpenter the Son and of the Executors.
ADCOCK William. Personal Estate under £10,000.	8 April. The Will of William ADCOCK late of Syden in the County of Leicestershire Gloucestershire who died 12 March 1873 at Syden was proved at Leicester by Thomas White of Bressall in the said County Gloucestershire and John Hughes of the Chapp Hamlet Leicestershire in the said County Gloucestershire the Executors.
ADBOOTT Mary. Personal Estate under £1,000.	10 August. The Will of Mary ADBOOTT late of Haverham in the County of Berks who died 2 July 1873 at Haverham was proved at Chichester by William Ludlow Thomas of Bokerly Wyke and Henry Mansel of Stopley in the said County Hants the Heiress the Executors.

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	1879.
ADCOCK Florence Charlotte. 102. Personal Estate under £6,000.	4 February. The Will of Florence Charlotte ADCOCK (Wife of Edward ADCOCK) late of 4 Parkhill Mansions in the County of Surrey who died 21 December 1939 at 4 Parkhill was proved at the Principal Registry by the said Edward ADCOCK of 4 Park Hill Gardens her sole Executor. Probate being granted under certain Limitations.
ADCOCK George. Personal Estate under £100.	21 June. Administration of the Personal Estate of George ADCOCK late of 11 Parliament-street Haverly in the County of Staffordshire who died 4 June 1920 at 11 Parliament-street was granted at Lichfield to Amelia ADCOCK of 20 Parkmansmore Widow the Relict.
ADCOCK John David. Personal Estate under £100.	3 February. The Will of John David ADCOCK formerly of Tamworth in the Parish of Balsall and Gloucesters last late of 20 Stratford-road Churchill Birmingham last in the County of Warwickshire who died 2 December 1933 at 20 Stratford-road was proved at Birmingham by Sarah Amelia ADCOCK of 68 Stratford-road Widow the Relict the sole Executrix.
ADCOCK John Thomas. Personal Estate under £25.	5 February. Administration of the Personal Estate of John Thomas ADCOCK late of 13 Thomsenstreet Spenshaw in the Parish of King's Norton in the County of Worcester Gloucesters a Widower who died 10 January 1930 at 13 Thomsen-street was granted at Worcester to Anne Taylor (Wife of James Taylor) of 22 Radford-road Camp Hill Birmingham in the County of Warwick the Daughter and one of the Next of Kin.
ADCOCK Thomas. Personal Estate under £1,000. Residence 666-1937-1938-1939	30 February. The Will of Thomas ADCOCK late of Kirby Bellus in the County of Leicestershire Farmer who died 5 December 1933 at Kirby Bellus was proved at Leicester by Mary Anna ADCOCK of Kirby Bellus Widow the Relict the sole Executrix.
ADCOCK William. Personal Estate under £100.	4 January. The Will of William ADCOCK the Elder late of Ashby-de-la-Zouch in the County of Leicestershire Carpenter who died 21 July 1933 at Ashby-de-la-Zouch was proved at Leicester by William ADCOCK of Ashby-de-la-Zouch Carpenter the Son and of the Executors.
ADCOCK William. Personal Estate under £10,000.	8 April. The Will of William ADCOCK late of Syden in the County of Leicestershire Gentleman who died 12 March 1933 at Syden was proved at Leicester by Thomas White of Stroud in the said County Gentleman and John Hughes of the Clung Hamlet Leicestershire in the said County Gentleman the Executors.
ADBOOTT Mary. Personal Estate under £1,000.	10 August. The Will of Mary ADBOOTT late of Haxham in the County of Bedfordshire who died 2 July 1933 at Haxham was proved at Leicester by William Ludlow Thomas of Haxham Esquire and Henry Mansel-Pleydell of Shipley in the said County Builders the Executors.

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1879.

ADCOCK Florence Charlotte.
Personal Estate under £6,000.

4 February. The Will of Florence Charlotte Adcock (Wife of Edward Adcock) late of 4 Parkhill Mansions in the County of Surrey who died 21 December 1933 at 4 Parkhill was proved at the Principal Registry by the said Edward Adcock of 4 Parkhill Gardens the sole Executor. Probate being granted under certain Limitations.

ADCOCK George.
Personal Estate under £100.

21 June. Administration of the Personal Estate of George Adcock late of 11 Parliament-street Haxley in the County of Staffordshire who died 4 June 1929 at 11 Parliament-street was granted at Lichfield to Anna Adcock of 23 Parkmansmore Widow the Heiress.

ADCOCK John David.
Personal Estate under £100.

3 February. The Will of John David Adcock formerly of Tenworth in the Parish of Rotherham and Gloucester late late of 20 Stratford-road Chappel Beauchamp both in the County of Warwickshire who died 2 December 1933 at 20 Stratford-road was proved at Birmingham by Sarah Anna Adcock of 69 Stratford-road Widow the Heiress the sole Executrix.

ADCOCK John Thomas.
Personal Estate under £25.

5 February. Administration of the Personal Estate of John Thomas Adcock late of 13 Thorneacre Street Spetchworth in the Parish of King's Norton in the County of Worcester Gloucestershire who died 10 January 1930 at 13 Thorne-acre street was proved at Worcester to Anne Taylor (Wife of Anne Taylor) of 22 Radford-road Camp Hill Birmingham in the County of Warwick the Daughter and one of the Next of Kin.

ADCOCK Thomas.
Personal Estate under £1,000.

30 February. The Will of Thomas Adcock late of Kirby Bellon in the County of Leicestershire Farmer who died 5 December 1933 at Kirby Bellon was proved at Leicester by Mary Ann Adcock of Kirby Bellon Widow the Heiress the sole Executrix.

ADCOCK William.
Personal Estate under £100.

4 January. The Will of William Adcock the Elder late of Ashby-de-la-Zouch in the County of Leicestershire Carpenter who died 24 July 1933 at Ashby-de-la-Zouch was proved at Leicester by William Adcock of Ashby-de-la-Zouch Carpenter the Son and one of the Executors.

ADCOCK William.
Personal Estate under £10,000.

8 April. The Will of William Adcock late of Syden in the County of Leicestershire Gentleman who died 12 March 1929 at Syden was proved at Leicester by Thomas White of Bressall in the said County Gentleman and John Hughes of the Claydon Hamlet Leicestershire in the said County Gentleman the Executors.

ADDSOOTY Mary.
Personal Estate under £1,000.

10 August. The Will of Mary Addsooty late of Haxham in the County of Bedfordshire Widow who died 2 July 1933 at Haxham was proved at Chichester by William Ludlow Thomas of Haxham Esquire and Henry Mansournell of Shipley in the said County Builders the Executors the Executors.

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1879.

ADCOCK Florence Charlotte.
Personal Estate under £5,000.

4 February. The Will of Florence Charlotte Adcock (Wife of Edward Adcock) late of 4 Parkhill Mansions in the County of Surrey who died 29 December 1939 at 4 Parkhill was proved at the Principal Registry by the said Edward Adcock of 4 Park Hill Gardens the sole Executor. Probate being granted under certain Limitations.

ADCOCK George.
Personal Estate under £100.

21 June. Administration of the Personal Estate of George Adcock late of 11 Parliament-street Haxley in the County of Stafford Haxley who died 4 June 1929 at 11 Parliament-street was granted at Lichfield to Anna Adcock of 23 Parkmansmore Widow the Heiress.

ADCOCK John David.
Personal Estate under £100.

9 February. The Will of John David Adcock formerly of Tamworth in the Parish of Balsall and Glanville late late of 20 Stratford-road Campbell Birmingham both in the County of Warwick Glanville who died 2 December 1933 at 20 Stratford-road was proved at Birmingham by Sarah Anna Adcock of 69 Stratford-road Widow the Heiress the sole Executrix.

ADCOCK John Thomas.
Personal Estate under £25.

5 February. Administration of the Personal Estate of John Thomas Adcock late of 13 Thomsenstreet Spetchworth in the Parish of King's Norton in the County of Worcester Glanville a Widower who died 10 January 1939 at 13 Thomsen-street was proved at Worcester to Anne Taylor (Wife of James Taylor) of 22 Radford-road Camp Hill Birmingham in the County of Warwick the Daughter and one of the Heirs of Kin.

ADCOCK Thomas.
Personal Estate under £1,000.

30 February. The Will of Thomas Adcock late of Kirby Bellon in the County of Leicestershire Farmer who died 5 December 1934 at Kirby Bellon was proved at Leicester by Mary Ann Adcock of Kirby Bellon Widow the Heiress the sole Executrix.

ADCOCK William.
Personal Estate under £100.

4 January. The Will of William Adcock the Elder late of Ashby-de-la-Zouch in the County of Leicestershire Carpenter who died 24 July 1933 at Ashby-de-la-Zouch was proved at Leicester by William Adcock of Ashby-de-la-Zouch Carpenter the Son and one of the Executors.

ADCOCK William.
Personal Estate under £10,000.

8 April. The Will of William Adcock late of Syden in the County of Leicestershire Gentleman who died 12 March 1929 at Syden was proved at Leicester by Thomas White of Bressall in the said County Gentleman and John Hughes of the Clung Hamlet Leicestershire in the said County Gentleman the Executors.

ADDSBOTHY Mary.
Personal Estate under £1,000.

10 August. The Will of Mary Addsborthy late of Haslem in the County of Bedford Widow who died 2 July 1933 at Haslem was proved at Chichester by William Ludlow Thomas of Haslem Bedford and Henry Mansournell of Stimpay in the said County Bedford the Heiress the Executors.

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1879.

ADCOCK Florence Charlotte.

Personal Estate under £6,500.

4 February. The Will of Florence Charlotte Adcock (Wife of Edward Adcock) late of 4 Parkhill Belmont in the County of Surrey who died 29 December 1939 at 4 Parkhill was proved at the Principal Registry by the said Edward Adcock of 4 Park Hill Gardens the sole Executor. Probate being granted under certain Limitations.

ADCOCK George.

Personal Estate under £100.

21 June. Administration of the Personal Estate of George Adcock late of 11 Parliament-street Hudders in the County of Staffordshire who died 4 June 1929 at 11 Parliament-street was granted at Lichfield in the County of Staffordshire to the said Hudders.

ADCOCK John David.

Personal Estate under £100.

9 February. The Will of John David Adcock formerly of Tewkesbury in the Parish of Batsford and Gloucester but late of 20 Stratford-road Chesham Bovingdon both in the County of Warwickshire who died 2 December 1933 at 20 Stratford-road was proved at Birmingham by Sarah Amelia Adcock of 69 Stratford-road the said Hudders the sole Executrix.

ADCOCK John Thomas.

Personal Estate under £25.

5 February. Administration of the Personal Estate of John Thomas Adcock late of 13 Thamestreet Spetchley in the Parish of King's Norton in the County of Worcester Gloucester a Widower who died 10 January 1939 at 13 Thamestreet was proved at Worcester at Anne Taylor (Wife of James Taylor) of 22 Radford-road Camp Hill Birmingham in the County of Warwick the daughter and one of the next of kin.

ADCOCK Thomas.

Personal Estate under £1,000.

30 February. The Will of Thomas Adcock late of Kirby Bellon in the County of Leicestershire Farmer who died 5 December 1933 at Kirby Bellon was proved at Leicester by Mary Ann Adcock of Kirby Bellon the said Hudders the sole Executrix.

ADCOCK William.

Personal Estate under £100.

4 January. The Will of William Adcock the Elder late of Ashby-de-la-Zouch in the County of Leicestershire Carpenter who died 24 July 1933 at Ashby-de-la-Zouch was proved at Leicester by William Adcock of Ashby-de-la-Zouch Carpenter the son one of the Executors.

ADCOCK William.

Personal Estate under £100.

8 April. The Will of William Adcock late of Syden in the County of Leicestershire Gardener who died 12 March 1933 at Syden was proved at Leicester by Thomas White of Syden in the said County Gardener and John Hughes of the Claydon Hamlet Leicestershire in the said County Gardener the Executors.

ADDSBOTHY Mary.

Personal Estate under £1,000.

10 August. The Will of Mary Addsborthy late of Haxham in the County of Bedfordshire who died 2 July 1933 at Haxham was proved at Hitchin by William Ludlow Thomas of Haxham Bedfordshire and Henry Somersall of Stimpay in the said County Bedfordshire the Executors.

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1879.	
ADCOCK Florence Charlotte. Personal Estate under £6,000.	1 February. The Will of Florence Charlotte Adcock (Wife of Edward Adcock) late of 4 Parkhill Mansions in the County of Surrey who died 24 December 1878 at 4 Parkhill was proved at the Principal Registry by the said Edward Adcock of 4 Parkhill Mansions her sole Executor. Probate being granted under certain Limitations.
ADCOCK George. Personal Estate under £100.	21 June. Administration of the Personal Estate of George Adcock late of 11 Parliament-street Hanley in the County of Stafford Bachelor who died 4 June 1878 at 11 Parliament-street was granted on 21st June 1878 to Anna Adcock of 20 Parliament-street Widow his Heiress.
ADCOCK John David. Personal Estate under £100.	1 February. The Will of John David Adcock formerly of Tamworth in the Parish of St. Martin and Glanville late late of 20 Street-end Church Birmingham born in the County of Warwick Gloucester died 2 December 1878 at 20 Street-end was proved at Birmingham by Sarah Anna Adcock of 68 Stratford-road Widow his Heiress the sole Executrix.
ADCOCK John Thomas. Personal Estate under £50.	2 February. Administration of the Personal Estate of John Thomas Adcock late of 13 Unnamer-street Spetchworth in the Parish of King's Norton in the County of Worcester Gentleman or Wife who died 10 January 1878 at 13 Thomas-street was proved at Worcester by Anne Thale (Wife of James Thale) of 22 Kestrel-road Camp Hill Birmingham in the County of Warwick the Daughter and sole of the Testator's Son.
ADCOCK Thomas. Personal Estate under £1,000.	10 February. The Will of Thomas Adcock late of 31 Bell-lane in the County of Leicester Partner who died 3 December 1875 at 31 Bell-lane was proved at Leicester by Mary Ann Adcock of Kirby Hall near the Station the sole Executrix.
ADCOCK William. Personal Estate under £100.	1 January. The Will of William Adcock late of Esher late of Ashby-de-la-Zouch in the County of Leicestershire Gentleman who died 24 July 1878 at Ashby-de-la-Zouch was proved at Leicester by William Adcock of Ashby-de-la-Zouch Carpenter his Son and the Executors.
ADCOCK William. Personal Estate under £10,000.	1 April. The Will of William Adcock late of Boston in the County of Leicestershire Gentleman who died 18 March 1878 at Boston was proved at Leicestershire by Thomas White of Boston in the said County his Executor and John Whigham of the Claydon Farmhouse near Leicestershire in the said County his Executors.
ADBOOYTT Mary. Personal Estate under £1,000.	10 August. The Will of Mary Adbooytt late of Hoxham in the County of Devon Widow who died 4 July 1878 at Hoxham was proved at Chichester by William Jackson Thomas of Bokerly Barton and Henry Somerset of Bishop's Cleeve in the said County her sole Executors.

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1879.	
ADCOCK Florence Charlotte. Personal Estate under £1000.	4 February. The Will of Florence Charlotte Adcock (Wife of Edward Adcock) late of 4 Parkhill Mansions in the County of Surrey who died 24 December 1878 at 4 Parkhill was proved at the Principal Registry by the said Edward Adcock of 4 Parkhill Victoria Street, the Executor. Probate being granted under certain Limitations.
ADCOCK George. Personal Estate under £1000.	21 June. Administration of the Personal Estate of George Adcock late of 11 Parliament Street in the County of Stafford Bachelor who died 4 June 1878 at 11 Parliament Street was granted on Letters in Adm. Abscond of 20 Parliament Street Widow the Heir.
ADCOCK John David. Personal Estate under £1000.	1 February. The Will of John David Adcock formerly of Tottenham in the Parish of St. John and Glanton late son of 20 Street and Chapel Birmingham born in the County of Warwick (Glasgow) died 8 December 1878 at 20 Street and Chapel was proved at Birmingham by Sarah Anna Adcock of 68 Stratford Road Widow the Heir. The said Heir.
ADCOCK John Thomas. Personal Estate under £1000.	2 February. Administration of the Personal Estate of John Thomas Adcock late of 13 Unconquered Spinnelock in the Parish of King's Norton in the County of Worcester Gentleman a Widower who died 10 January 1878 at 13 Thomas Street was proved at Worcester by Anne Fyfe (Wife of James Fyfe) of 22 Redcross Camp Hill Birmingham in the County of Warwick the Daughter and one of the Next of Kin.
ADCOCK Thomas. Personal Estate under £1000.	10 February. The Will of Thomas Adcock late of 14 Parkhill Mansions in the County of Leicester Partner and one of 5000000 (1878 at 14 Parkhill) was proved at Leicester by Mary Ann Adcock of 14 Parkhill Widow the Heir. The said Heir.
ADCOCK William. Personal Estate under £1000.	1 January. The Will of William Adcock late of 14 Parkhill Mansions in the County of Leicester Gentleman who died 24 July 1878 at 14 Parkhill was proved at Leicester by William Adcock of 14 Parkhill Mansions the Executor.
ADCOCK William. Personal Estate under £1000.	14 July. The Will of William Adcock late of 14 Parkhill Mansions in the County of Leicester Gentleman who died 24 July 1878 at 14 Parkhill was proved at Leicester by William Adcock of 14 Parkhill Mansions the Executor.
ADBOOY Mary. Personal Estate under £1000.	10 August. The Will of Mary Adbooy late of 14 Parkhill Mansions in the County of Leicester Widow who died 4 July 1878 at 14 Parkhill was proved at Leicester by William Adbooy Thomas of 14 Parkhill Mansions and Henry Adbooy of 14 Parkhill in the County of Leicester the Executors.

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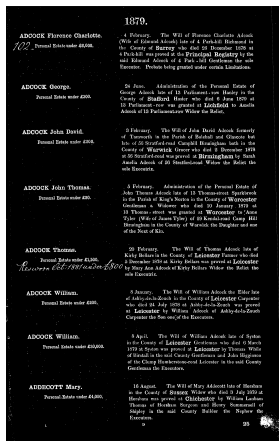
1879.

ADDOCK Florence Charlotte. Personal Estate under £6,500.	4 February. The Will of Florence Charlotte Addock (Wife of Edward Addock) late of 4 Parkhill Boulevard in the County of Surrey who died 20 December 1939 at 4 Parkhill was proved at the Principal Registry by the said Edward Addock of 4 Parkhill Court Green the sole Executor. Probate being granted under certain Limitations.
ADDOCK George. Personal Estate under £100.	26 June. Administration of the Personal Estate of George Addock late of 11 Parliament-street Haxley in the County of Stafford Haxley who died 4 June 1929 at 11 Parliament-street was granted at Lichfield to Amelia Addock of 23 Parkmansmore Widow the Heiress.
ADDOCK John David. Personal Estate under £100.	9 February. The Will of John David Addock formerly of Tamworth in the Parish of Balsall and Glanville last late of 20 Street-end Chapel Broomington last in the County of Warwick Glanville who died 2 December 1933 at 20 Street-end was proved at Birmingham by Sarah Amelia Addock of 69 Stratford-road Widow the Heiress the sole Executrix.
ADDOCK John Thomas. Personal Estate under £25.	5 February. Administration of the Personal Estate of John Thomas Addock late of 13 Thomsenstreet Spetchley in the Parish of King's Norton in the County of Worcester Glanville a Widower who died 10 January 1939 at 13 Thomsen-street was proved at Worcester to Anne Taylor (Wife of James Taylor) of 22 Radford-road Camp Hill Broomington in the County of Warwick the Daughter and one of the Next of Kin.
ADDOCK Thomas. Personal Estate under £1,000.	30 February. The Will of Thomas Addock late of Kirby Bellows in the County of Leicestershire Farmer who died 5 December 1934 at Kirby Bellows was proved at Leicester by Mary Ann Addock of Kirby Bellows Widow the Heiress the sole Executrix.
ADDOCK William. Personal Estate under £200.	4 January. The Will of William Addock the Elder late of Ashby-de-la-Zouch in the County of Leicestershire Carpenter who died 24 July 1933 at Ashby-de-la-Zouch was proved at Leicester by William Addock of Ashby-de-la-Zouch Carpenter the Son one of the Executors.
ADDOCK William. Personal Estate under £10,000.	9 April. The Will of William Addock late of Syden in the County of Leicestershire Gardener who died 12 March 1939 at Syden was proved at Leicester by Thomas White of Brindley in the said County Gardener and John Hughes of the Clung Hamlet Leicestershire in the said County Gardener the Executors.
ADDOCKT Mary. Personal Estate under £1,000.	10 August. The Will of Mary Addockt late of Haxley in the County of Bedford Widow who died 3 July 1933 at Haxley was proved at Cambridge by William Ludlow Thomas of Haxley Registrar and Henry Somerset of Stipley in the said County Bailiff the Heiress the Executors.

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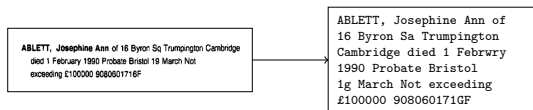
^aHuge thanks to RAs who created training set per year!

OCR and rules extract names, dates, places, wealth

ABLETT, Josephine Ann of 16 Byron Sq Trumpington Cambridge
died 1 February 1990 Probate Bristol 19 March Not
exceeding £100000 9080801716F

Amazon Web Services. (2023). *Amazon Textract* (Version 1.4.5). URL: aws.amazon.com/textract/
 OCRfixr development team. (2023). *OCRfixr* (Version 1.5.1) [Python package]. URL: pypi.org/project/OCRfixr/
 FuzzyWuzzy development team. (2020). *fuzzywuzzy* (Version 0.18.0) [Python package]. URL: pypi.org/project/fuzzywuzzy/

OCR and rules extract names, dates, places, wealth

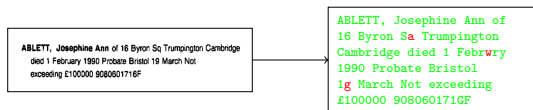


Amazon Web Services. (2023). *Amazon Textract* (Version 1.4.5). URL: aws.amazon.com/textract/

OCRFixr development team. (2023). *OCRFixr* (Version 1.5.1) [Python package]. URL: pypi.org/project/OCRFixr/

FuzzyWuzzy development team. (2020). *fuzzywuzzy* (Version 0.18.0) [Python package]. URL: pypi.org/project/fuzzywuzzy/

OCR and rules extract names, dates, places, wealth

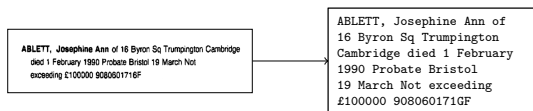


Amazon Web Services. (2023). *Amazon Textract* (Version 1.4.5). URL: aws.amazon.com/textract/

OCRFixr development team. (2023). *OCRFixr* (Version 1.5.1) [Python package]. URL: pypi.org/project/OCRFixr/

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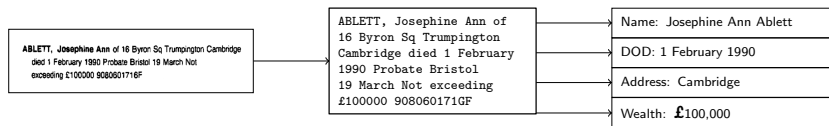


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What the pipeline actually builds

The code reconciles three hard steps: images, text extraction, and linkable person records.

1

Scrape probate calendar images.

Automated searches download year-by-year pages into S3.

2

Clean scans with computer vision.

Pages are deskewed, padded, resized, and denoised.

3

OCR page tables with Textract.

Image tables become JSON and CSV extraction outputs.

4

Parse entries into probate records.

Rules extract names, death dates, addresses, and estate values.

5

Filter geography before linkage.

England/Wales lookups remove records outside the study population.

Linking wealth records to deaths

Death Registry

FreeBMD provides the death registry backbone

- **FreeBMD** opens the civil registration indexes for England and Wales.
- Active since 1998: one of the earliest large crowdsourcing projects.
- **12,767 volunteers** have transcribed **396,762,700** birth, marriage, and death records.
- Death records are complete from 1837 to 1990, as of 27 September 2024.

Raw death-registry extract, 1866–1992: 66,022,066 person records.

FreeBMD captures death-record fields

DEATHS REGISTERED IN APRIL, MAY AND JUNE, 1919.

Surname	Given Name	Age	District	Volume	Page	Transcriber
BURROWS	MARY A.	95	IPSWICH	4A	907	jscoleman

Entry Information

This entry was created from the following transcription:

Surname Given Name Age District Volume Page Transcriber

Deaths Jun 1919

BURROWS Mary A. 95 Ipswich 4a 907 [jscoleman](#)

Surname: Burrows

Given name: Mary A.

Age at death: 95

District: Ipswich

County: Suffolk

The key link is wealth record to death record

probate

surname	name	middlename	location	dod	wealth
ackroyd	william	herbert	ruislip	02-03-1940	5898
acland	arthur	charles	cheltenham	26-11-1939	3025
acock	john	<NA>	bristol	03-01-1940	543
acomb	thomas	nicholson	york	22-03-1940	585

The key link is wealth record to death record

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acock	john	<NA>	bristol	03-01-1940	543
acomb	thomas	nicholson	york	22-03-1940	585

deaths-q1y1940.q1

surname	name	middlename	location	age
ackroyd	william	herbert	middlesex	73
acock	john	<NA>	bristol	85
acomb	thomas	nicholson	york	28
...	...	...	...	...

deaths-q1y1939.q4

surname	name	middlename	location	age
acland	arthur	charles	cheltenham	61
...	...	...	...	...

The key link is wealth record to death record

probate

surname	name	middlename	location	dod	wealth
ackroyd	william	herbert	ruislip	02-03-1940	5898
acland	arthur	charles	cheltenham	26-11-1939	3025
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deaths-qi1939-q4

surname	name	middlename	location	age
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...	...	...	...	...

output

surname	name	dod	wealth	age
ackroyd	william	02-03-1940	5895	73
acock	john	03-01-1940	543	85
acland	arthur	26-11-1939	3025	61
...	...	...	...	...

The key link is wealth record to death record

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deaths-qiy1940-q1

surname	name	middlename	location	age
ackroyd	william	herbert	middlesex	73
ackroyd	william	<NA>	middlesex	5
ackroyd	william	scott	dorset	37
ackroyd	william	herbert	york	28

The key link is wealth record to death record

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deaths-qi^y1940.q¹

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How Splink makes linkage feasible

Exceptionally difficult: noisy historical records, common names, and national scale.
Splink: state-of-the-art probabilistic linkage for this problem.

1 Load probate and FreeBMD deaths.

Probate gives wealth; FreeBMD gives age at death.

2 Clean names, dates, and places.

Fields become comparable across independent sources.

3 Block plausible candidate pairs.

Initials and edit distance make computation feasible.

4 Compare agreement across fields.

Exact, fuzzy, missing, and conflicting evidence are separated.

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Expectation-maximisation learns which evidence is informative.

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Turning scores into matched lives

Conservative cascade: probabilities become one defensible linked death record where the evidence supports it.

1 Accept strongest one-to-one matches.

Competing death records are resolved by highest probability.

2 Rescue exact-name, exact-quarter candidates.

Unique candidates recover obvious below-threshold matches.

3 Rescue near-name contextual matches.

Minor spelling differences pass when geography agrees.

4 Forgive district-only clashes.

Residence and registration districts can legitimately differ.

5 Save matches and diagnostics.

Outputs retain match type, probability, and validation rates.

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What the matching returns

Audit trail: each record is classified as **One Match**, **Multiple Matches**, or **No Match**.

One Match

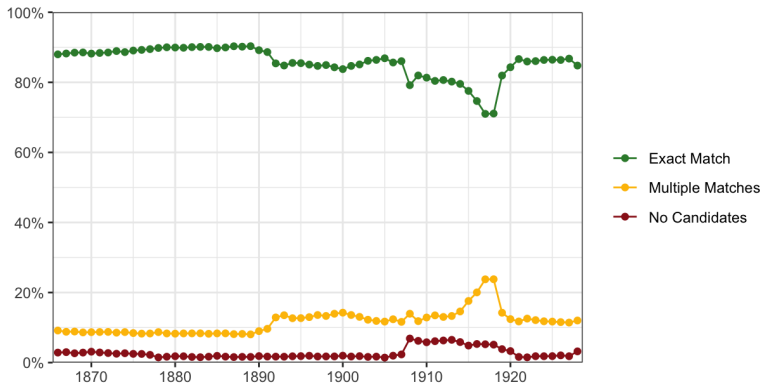
single linked death record

Multiple Matches

plausible candidates remain

No Match

no defensible link found



How matched records become analysis data

Linkage is not the endpoint: the matched files are reshaped into cohort, gender, and wealth strata.

1

Classify gender from weak signals.

Using a state-of-the-art Application Programming Interface (API).

2

Estimate birth cohorts from deaths.

Age, year, quarter, and birthday noise locate cohorts.

3

Convert estates into wealth strata.

Numeric probate effects define gender-specific annual thresholds.

4

Keep non-probate deaths in view.

Unlinked death records become the non-probate comparison group.

5

Generate life-table inputs.

Death counts by age, gender, cohort, and strata are saved.

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Generate life-table inputs.

Death counts by age, gender, cohort, and strata are saved.

Life tables turn linked deaths into survival estimates

We stress-test results across cohorts, wealth groups, matching rules, and smoothing choices.

- We estimate 9,720 life-table specifications.
- We use single-year ages, not abridged life tables.
- Sparse late-age deaths can make unsmoothed life tables fail.
- `pclm` smoothing handles sparse cells where needed.
- Python 3.12 code will be released with the pre-print:

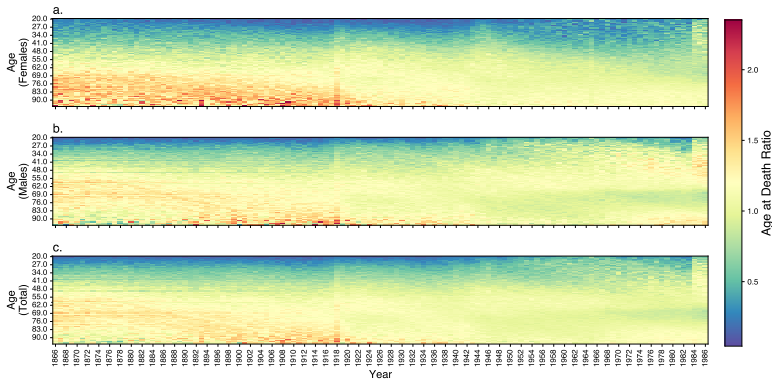
`github.com/reeves-projects/health-wealth`

Riffe, T. et al. (2019). DemoTools: An R package of tools for aggregate demographic analysis. [R package]. URL: <https://github.com/timriffe/DemoTools/>

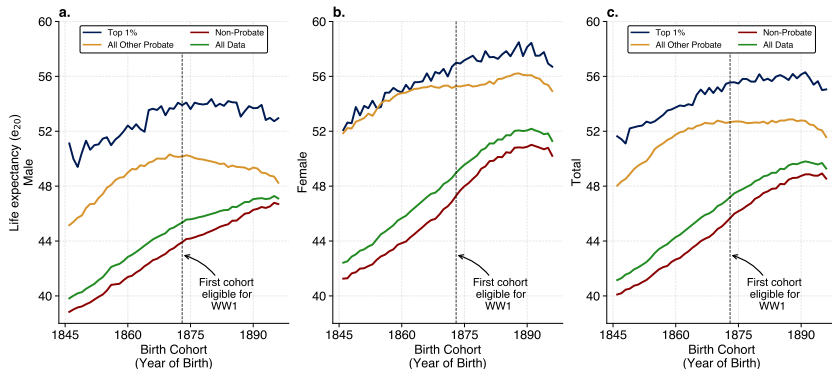
Estimating inequalities in survival and lifespan

Analysis

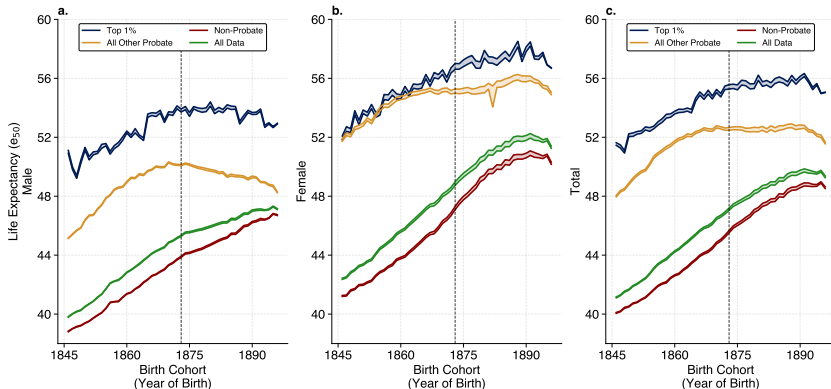
Probate and non-probate deaths differ by age



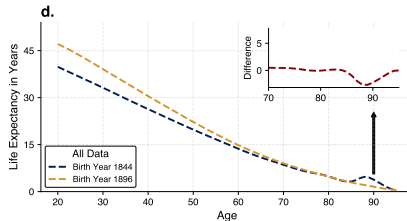
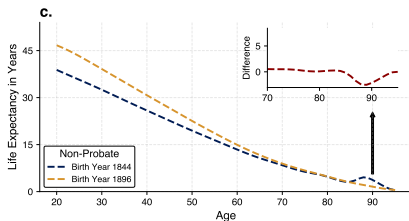
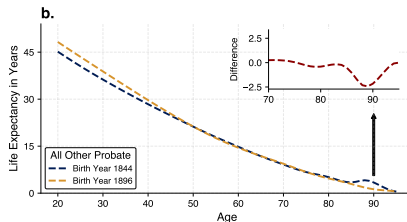
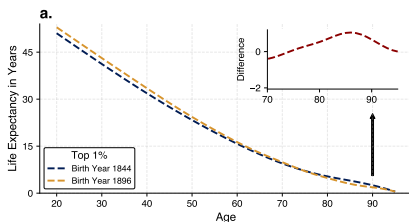
We estimate cohort life expectancy by wealth



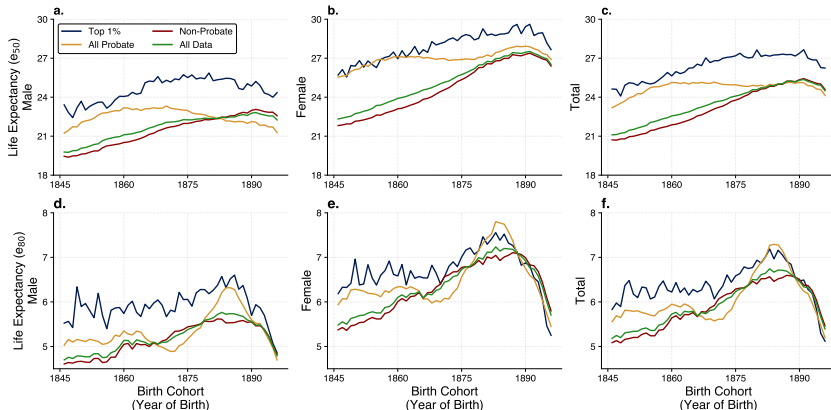
Robustness checks vary cohorts and smoothing



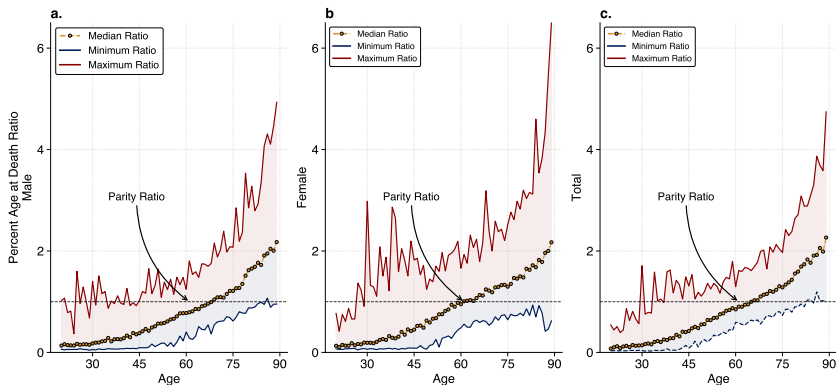
Inequalities are visible across benchmark cohorts



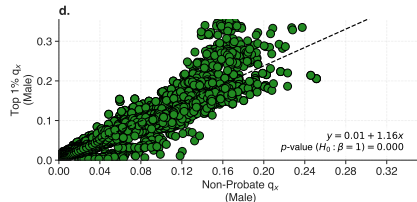
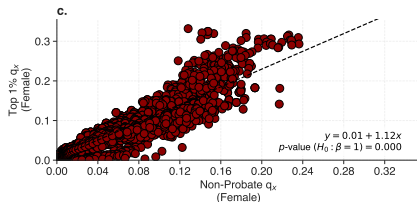
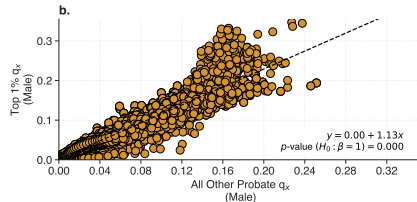
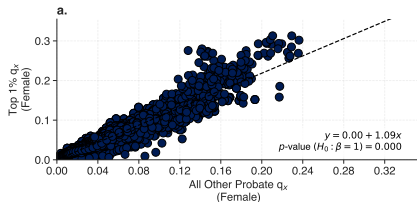
The wealth gradient persists at older ages



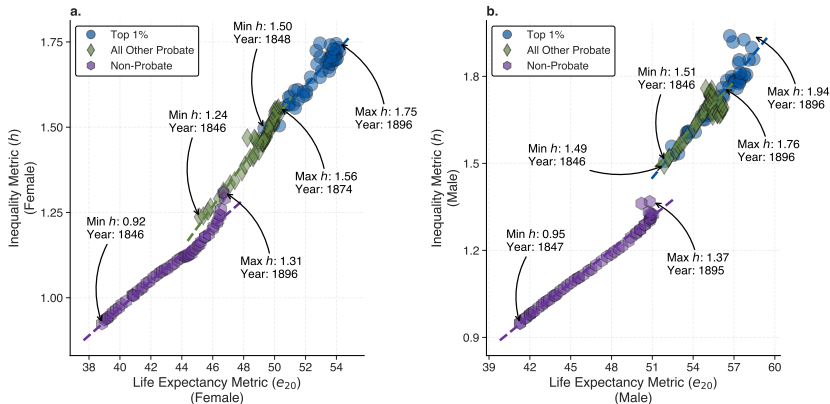
The wealthiest deaths are shifted to older ages



Survival probabilities expose where gaps emerge



Lifespan inequality changes with wealth



Moving from own wealth to parental wealth

Genealogies

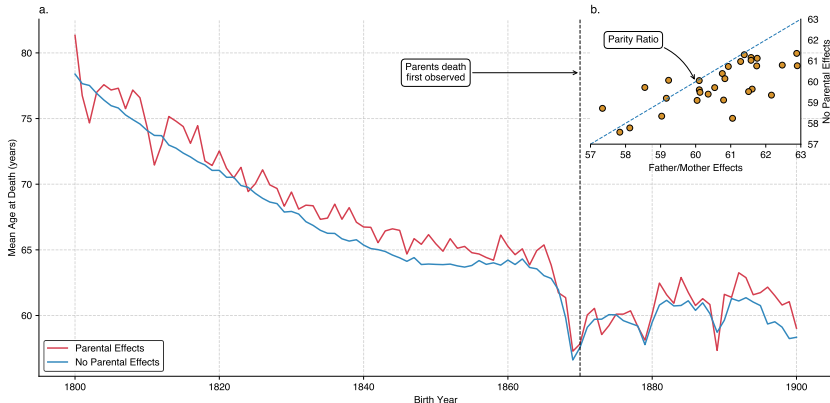
WikiTree adds intergenerational context



- Collaborative genealogy platform for family-tree research.
- Users contribute to one shared global family tree.
- API access covers **36 million records** globally.
- This lets us stratify e_0 by **parental wealth at death**.

Why genealogies matter: wealth at death mixes lifetime resources with late-life spend-down or accumulation. Parental wealth lets us ask the life expectancy of people **born into wealth**.

Parental wealth links genealogy to mortality



Wealth predicts who reaches old age, how long they live, and how advantage carries across generations.

1. Probate is selected, not neutral.

Probate deaths are older; the wealthiest are shifted furthest towards later ages.

3. Gaps persist at older ages.

Survival probabilities and e_{50}/e_{80} estimates locate where inequality remains visible.

2. Own wealth predicts life expectancy.

Cohort life tables show a durable gradient across benchmark cohorts and robustness checks.

4. Family wealth adds context.

WikiTree links move the analysis from personal estates to parental wealth.

The project turns administrative records into a population-scale account of health inequality over the very long run.

Thanks to all the wonderful collaborators!

