Introduction to Digital Humanities

Christopher Ohge, Martin Steer Riga Technical University, September 2019

Plan for the day

- 1. A brief history of Digital Humanities
- 2. The effect of the digital on humanities research
- 3. Digital citation
- 4. What is Data Management?

What is Digital Humanities?

Digital humanities (DH) is an area of scholarly activity at the intersection of computing or digital technologies and the disciplines of the humanities. It includes the systematic use of digital resources in the humanities, as well as the reflection on their application. DH can be defined as new ways of doing scholarship that involve collaborative, transdisciplinary, and computationally engaged research, teaching, and publishing. It brings digital tools and methods to the study of the humanities with the recognition that the printed word is no longer the main medium for knowledge production and distribution.

'Digital humanities', Wikipedia 30/04/2019

What is Digital Humanities?

The use of information technology to illuminate the human record, and the process of bringing the critical tools of human understanding to bear on information technology.

- "However you define it, we're doing it."
 - --William Blake Archive Staff

(http://whatisdigitalhumanities.com/)

What are Digital Humanities?

- They are behaviours and attitudes for pedagogy (teaching) and research.
- They are methods. E.g., Matthew Kirschenbaum: "tactical term" ("Digital Humanities as a Tactical Turn", in *Debates in Digital Humanities*, ed. Matthew K. Gold [U of Minnesota Press, 2012], 415-28).
- They are problems and biases. (Safiya Noble, *Algorithms of Oppression*; the work of Janice Radway).
- They are experiments that use computation to engage with the intellectual traditions of humanities disciplines.
- They are empowering! The promise of digital literacy.

The "landscape" of DH: hype, technofilia or technophobia?

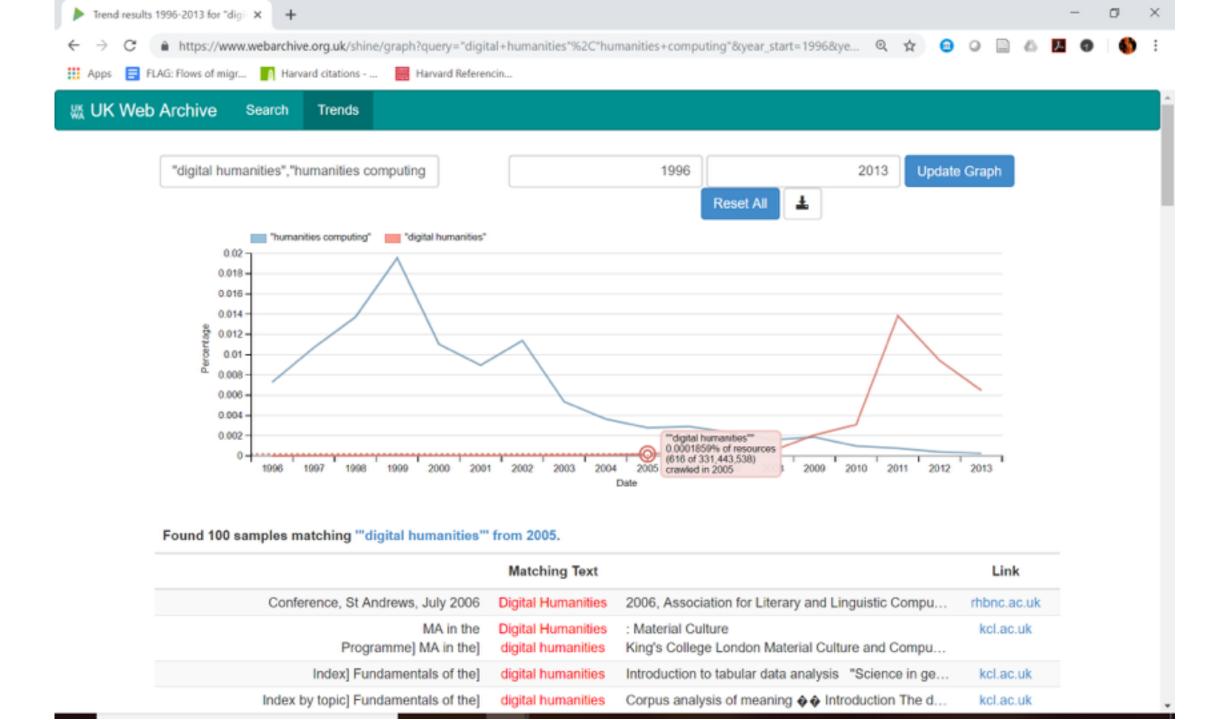
Patrick Svensson's "landscape" (2004): computing humanities; communicative/expressive humanities (blogging); multi-modal humanities. Assimilation versus distinction within and across disciplines. Should DH be a separate field?

Techno-fallibilism: "[T]here is no such thing as errorless data" (Fogel and Engerman, *Time on the Cross: The Economies of Negro Slavery*, 1974).

Jerome McGann (2001): scholars will not take digital humanities seriously until it can be shown how its methods and tools improve interpretation. "Computers are no more able to 'decode' rich imaginative texts than human beings are. What they can be made to do, however, is expose textual features that lie outside the usual purview of human readers."

Neo-Luddites: "Literature is not data" (Stephen Marche); new media pose a threat to wisdom and depth (Sven Birkerts).

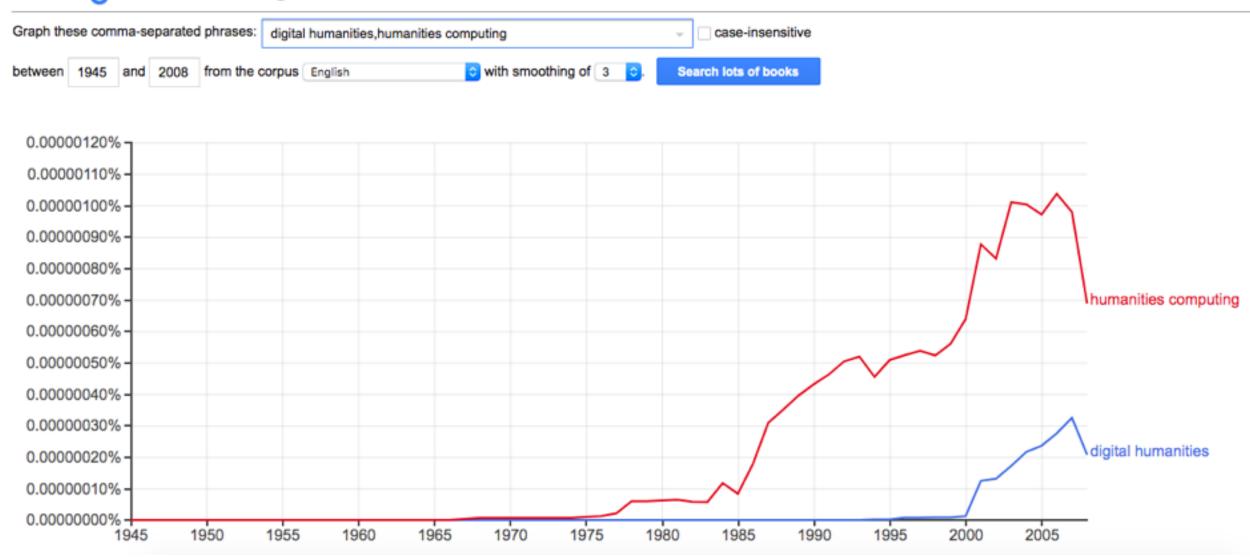
"Digital humanists would build tools; everyone else would use them ... Foundations invested millions of dollars trying to support this quick, painless kind of change. But for the most part, it didn't happen. Instead, change has taken place slowly, and mostly through laborious retraining." (Ted Underwood, *Distant Horizons* [University of Chicago Press, 2019], 144-45).



Google Books Ngram Viewer



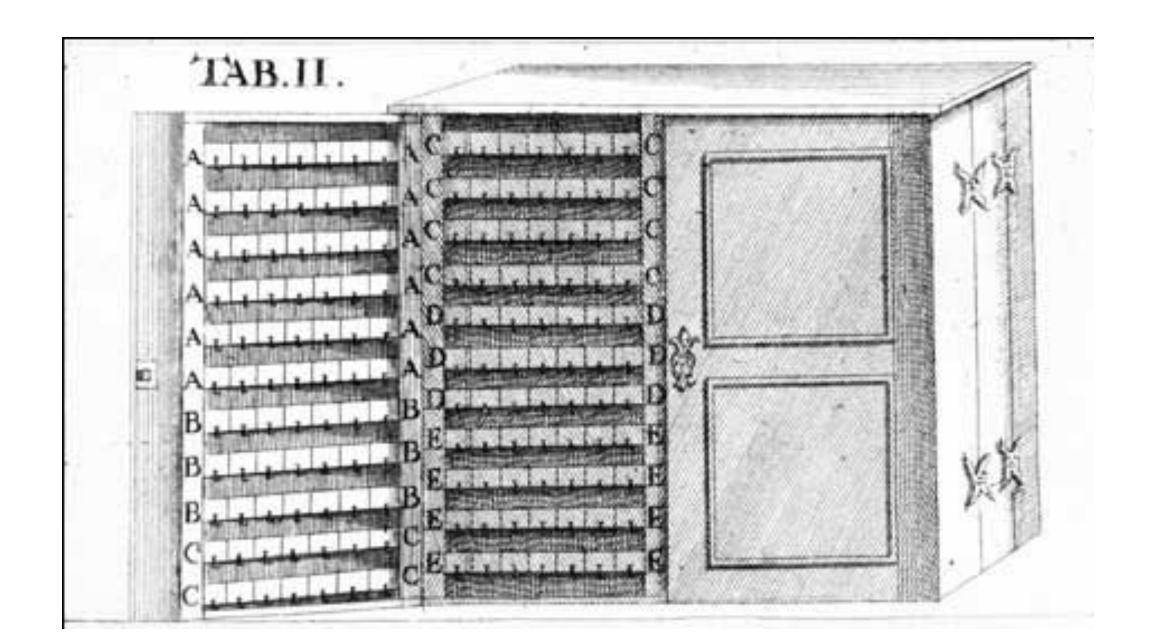
Google Books Ngram Viewer



Going back in time ...

The beginnings of humanities computing are usually located in ... 1640! The Ark of Studies: the first filing cabinet based on alphabetically arranged removable entries that has been designed for scholarly purposes in the 17th Century. Its structure and function illustrate the most significant form of scholarly technology in the modern age before the invention of the World Wide Web.

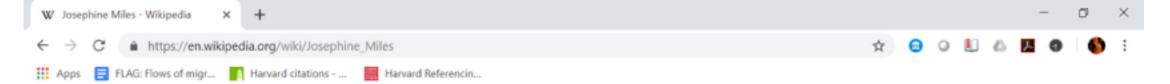
(See Noel Malcolm's 'Thomas Harrison and his 'Ark of Studies' An Episode in the History of the Organization of Knowledge,' *The Seventeenth Century* 19.2 (2004); A. Cevolini's edition of Harrison's manuscript design and plan, published by Brepols in 2017.)



And back to the future ...

- The beginnings of humanities computing are usually located in ... the work of the Jesuit priest Roberto Busa
- In 1949, he began his work to create an *index* verborum for the writings of Thomas Aquinas







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Josephine Miles

From Wikipedia, the free encyclopedia

Josephine Louise Miles (June 11, 1911 – May 12, 1985) was an American poet and literary critic; the first woman tenured in the English Department at the University of California, Berkeley.^[1] She wrote over a dozen books of poetry and several works of criticism.

Miles was born in Chicago, in 1911. When she was young, her family moved to Southern California.^[1] Due to disabling arthritis, she was educated at home by tutors, but was able to graduate from Los Angeles High School in a class that included the composer John Cage.^[2]

Miles attended the University of California, Los Angeles, where she earned a bachelor's degree in English literature before moving to the University of California, Berkeley to pursue a doctorate. She received a Fellowship from the American Association of University Women in 1939. Her dissertation work on Wordsworth led to Wordsworth and the Vocabulary of Emotion, published in 1942.[3]

In her early career, Miles became a foundational scholar of quantitative and computational methods in the humanities.^[4] During the 1930s and 1940s, she conducted quantitative stylistic research projects, first on "the adjectives favored by Romantic poets" and second on "the phrasal forms of the poetry of the 1640s, 1740s, and 1840s."^[4] In the 1950s, she became director of project creating a Concordance to the Poetical Works of John Dryden. The project had previously been based in index cards,



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but Miles worked with the Electrical Engineering department at the University of California at Berkeley to complete the concordance using punched cards and cardreading computers. After six years of work by a team including Miles, female graduate students, and female punch card operators, the concordance with published. [4] Rachel Sagner Buurma and Laura Heffernan describe this as "possibly the first literary concordance to use machine methods"; it was published seventeen years before the first volume of Roberto Busa's *Index Thomisticus*, a work widely credited with this first. [4]

In 1964, she was elected a Fellow of the American Academy of Arts and Sciences. [5] She remained in Berkeley for the rest of her life, receiving many highly coveted fellowships and awards until her death in May 1985. She was the first woman to receive tenure in the English Department at Berkeley and, at the time of her death, held the position of University Professor—one of the rarest and most prestigious honors in academic life. [1]

She was fascinated with Beat poetry, and was both a host and critic to many Beat poets from her chair at Berkeley. Most notably, she helped Allen Ginsberg publish

Busa, three types of textual informatics

- 1. Documentary (databases, archives)
- 2. Editorial (reproduction of books, with additional features)
- 3. Hermeneutic (concordances, thesauruses, and other linguistic tools)

Focal points:

- preserving cultural heritage
- data management (representing and manipulating information and objects)

Some other milestones in humanities computing

1962: first use of computers for stylistic research on disputed authorship, with the Junius letters (Alvar Ellegård), and the *Federalist Papers* (Frederick Mosteller and David Wallace).

Early 1960s: COCOA concordance program, approximately 4000 punched cards of FORTRAN, created at University College London and the Atlas Computer Laboratory. Functionality included word-counting and concordance building.

1965: Yorktown Heights conference initiated collaboration between academics and IBM

Some other milestones in humanities computing

computing 1967: "Generic coding," a text tagging system by William Tunnicliffe and the Graphic Communication Association's (GCA) Composition Committee, was presented at a conference for the Canadian Government Printing Office.

1969/1973: Charles Goldfarb and a team at IBM developed Generalized Markup language (GML).

1970s-80s: Transition from tape to disk storage (meaning files no longer had to be searched sequentially).

Transformation of processing into hardware (Ibycus computer for searching the *Thesaurus Linguae Graecae*).

Some other milestones in humanities computing

1980s: birth of the personal computer and electronic mail.

Apple Macintosh graphical user interface (GUI) allowed people to manipulate special characters and write "programming" code that translates to machine code (0s and 1s).

Hypertext followed soon afterward. E.g., Patrick Connor's *Beowulf Workstation*.

1986: Goldfarb released the Standard Generalized Markup Language (SGML).

1987: Text Encoding Intitiative (TEI): Nancy Ide convened a meeting to create a standard encoding system for scholarly texts in the humanities. It was the first systematic attempt to define and categorise all aspects of humanities texts. In **1994**, the first iteration of the *TEI Guidelines* was published.

Markup and the World Wide Web

1991: Sir Tim Berners-Lee released a document called "HTML tags," which proposed 18 tags based on the SGML language for authoring web pages. Thus the HyperText Markup Language was born.

1994: First official specification of HTML 2.0, published by the Internet Engineering Task Force (IETF). 1999: World Wide Web Consortium (W3C) superseded the IETF, published the HTML 4 standards.

Early 2000s: Schism between XHTML and HTML.

2006: Berners-Lee wrote a blog post that stated the HTML to XML transition had not worked. Changes to web standards need to incremental. Present: most of us still see (and use) HTML5. XHTML still used, though (epub, for example).

http://welcometothemachinemovie.com/

"WE'RE NOT LUDDITES, BUT AT THE SAME TIME WE'RE NOT EXTREME DIGITAL GEEKS EITHER. WE BELIEVE PHYSICAL MATERIALS CHANGE IN A DIGITAL ENVIRONMENT." RICK AND MEGAN PRELINGER

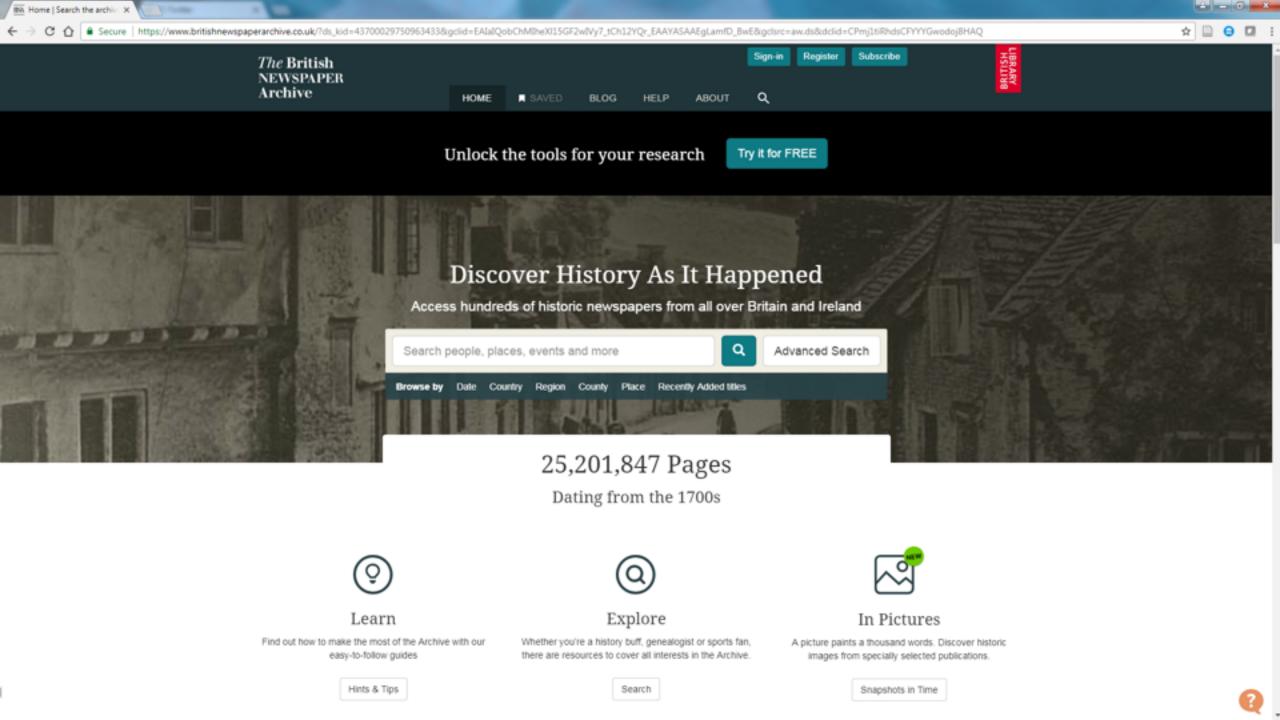


Some things that digital humanities might include

- Text analysis
- New media studies and multimedia
- Mapping and spatial analysis
- Creation of digital objects (e.g. through digitisation)
- Digital publication and scholarly communication
- Digital pedagogy
- Digital ethnography
- Extended reality (XR), including applied augmented reality
- Interactive gaming

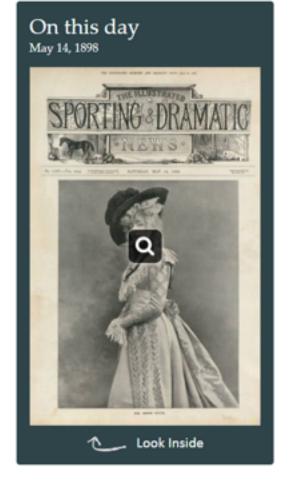
What we'll cover in this course

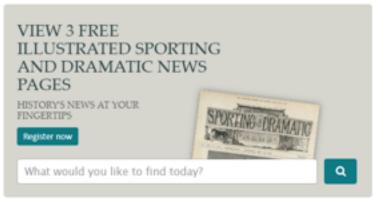
- Working with Text
- Research Data Management
- Web and app-based text analysis
- Corpus Linguistics
- An introduction to R and Regular Expressions
- Statistical and quantitative research in R
- Qualitative research in R (stylometry, TidyText, sentiment analysis)





Home / Titles / Illustrated Sporting and Dramatic News





Illustrated Sporting and Dramatic News

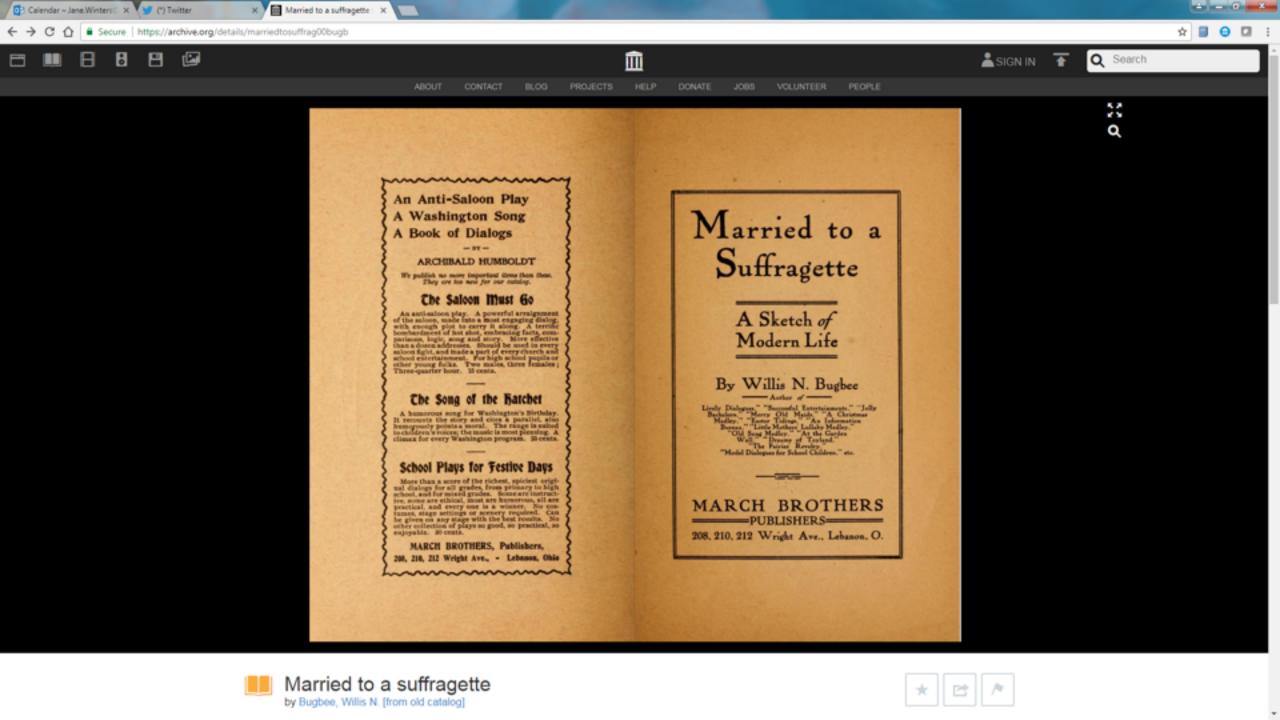
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1874-1970

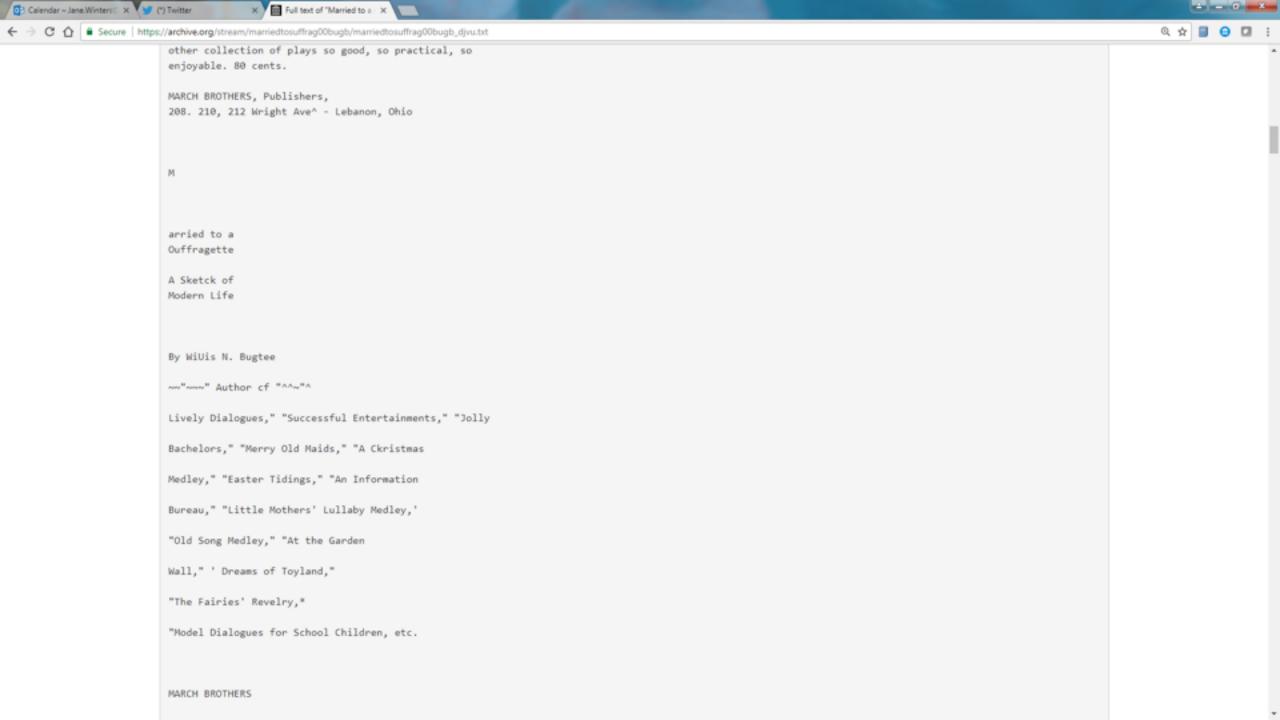
In PICTURES beta Explore this title and see millions of pictures in a new search tool.

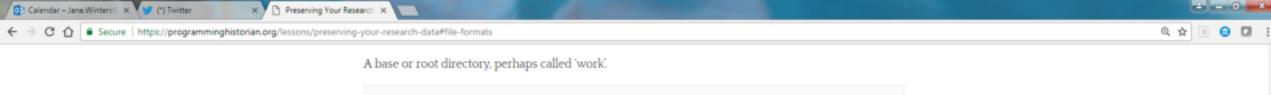
Founded in 1874 and printed in London, the Wustrated Sporting and Dramatic News contained, at first, reporting on sporting events, theatrical news, fictional stories, and a regular chess column, but later it became a more farming orientated publication. This newspaper had two title changes during its publication run; first in 1943 to Sport and Country, then again in 1957 to Farm and Country, which it was known as until it ceased publication in 1970.

The illustrated Sporting and Dramatic News had a focus on equestrian sports and hunting, but also reported on other sporting events such as those of cricket, tennis, rugby, and rowing. By the 1940s it had lost its focus on drama, instead involving itself in matters of country life.

During The Great War its weekly feature 'Sportsman's Roll of Honour' reported on sportsmen who lost their lives during the war. As it also reflected countryside interests, during the Second World War it Seatured promotions of the Woman's Land Army.







\work\

A series of sub-directories.

\work\events\
\research\
\teaching\
\writing\

Within these directories are series of directories for each event, research project, module, or piece of writing. Introducing a naming convention that includes a date elements keeps the information organised without the need for subdirectories by, say, year or month.

\work\research\2014-01_Journal_Articles
\2014-02_Infrastructure

Finally, further sub-directories can be used to separate out information as the project grows.

\work\research\2014_Journal_Articles\analysis
\data
\notes

Obviously not all information will fit neatly within any given structure and as new projects arise taxonomies will need to be revisited. Either way, idiosyncrasy is fine so long as the overall directory structure is consistent and predictable, and so long as anything that isn't is clearly documented: for example, the 'writing' sub-directory in the above structure might include a .txt file stating what it contained (drafts and final version of written work) and what it didn't contain (research pertaining to that written work).

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           </name>
      </authority>
      </variant>

    <extension>

      </extension>
  </mads>

    <mads>

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    cauthority>
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                          <namePart type="given">Diane</namePart>
                          <namePart type="given">Julie</namePart>
                          <namePart type="termsOfAddress">Miss</namePart>
                          <namePart type="date">1953-alive</namePart>

    - <variant type="other" otherType="firstNameUsed">

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                          <namePart type="given">Thomas</namePart>
                          <namePart type="given">Neville</namePart>
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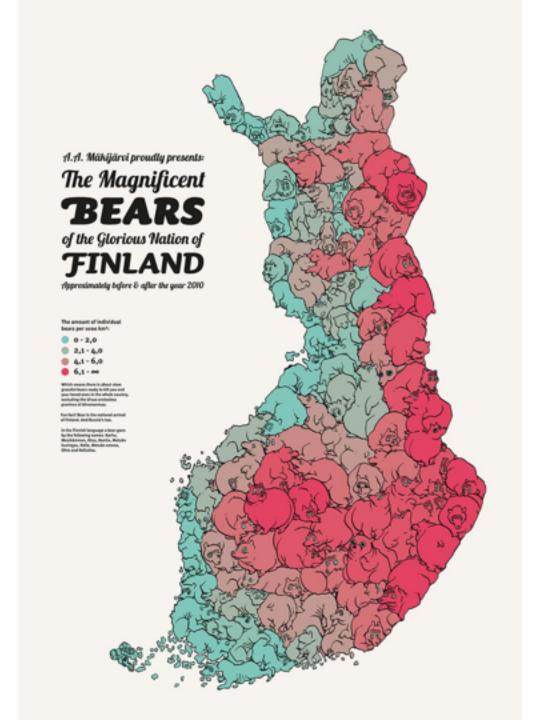
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              <identifier type="Rush Individual ID">8</identifier>
                    <dateOfBirth>1810-12-21</dateOfBirth>
                    <dateOfDeath>1877-07-20</dateOfDeath>
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                - <name valueURI="http://liparm.ac.uk/id/person/person/abercrombygeorge1800-1852" type="personal">
                          <namePart type="family">Abercromby</namePart>
                          <namePart type="given">George</namePart>
                          <namePart type="given">Ralph</namePart>
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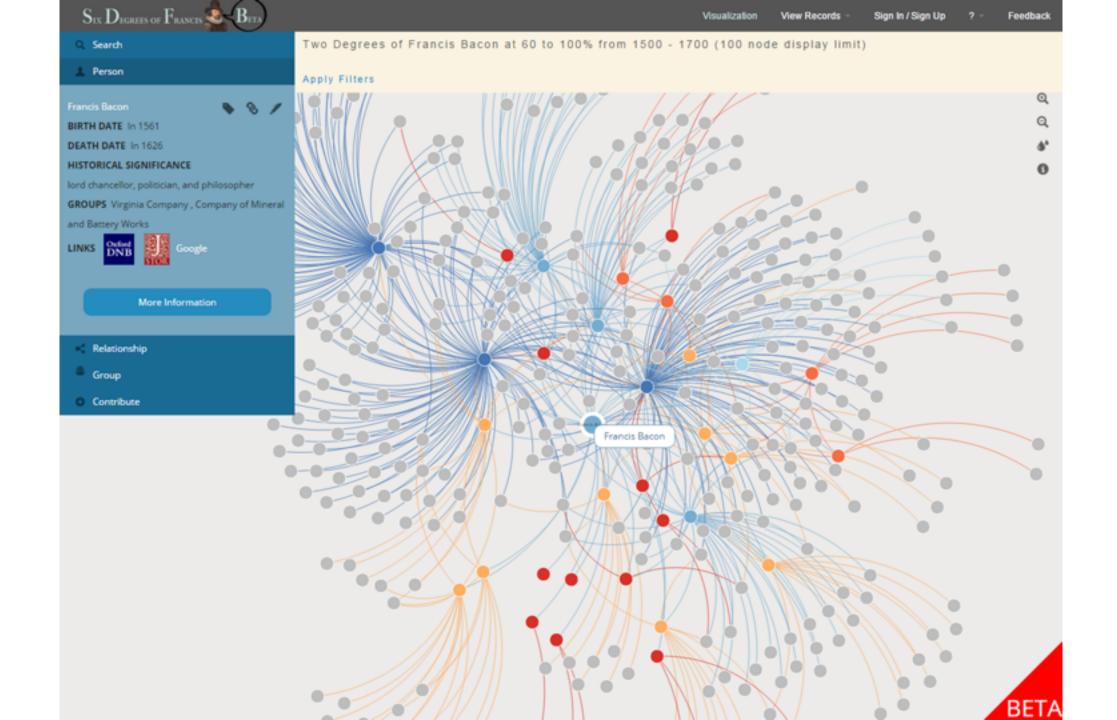
    cvariant type="other" otherType="firstNameUsed">

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                    </name>
              </variant>
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How has the digital affected humanities research?

What do you need to know, and how to do it?

During MLA 2013, Natalia Cecire observed on Twitter, "1. DHers usually don't see dh as panacea. 2. Admins often do. 3. DHers often need for admins to have this erroneous belief."

Quinn Dombrowski, Academic Technology Specialist at Stanford (2019): "I've never felt technical enough to stray anywhere close to titles like 'developer', 'programmer', 'hacker', but looking back over the long arc of my involvement with technology, being one has never been my goal... [Y]ou don't necessarily have to be your idea of 'technical' to undertake this work — by becoming part of a community, you can make it work with curiosity, persistence, and being technical enough."

(https://digitalhumanities.stanford.edu/technical-enough).

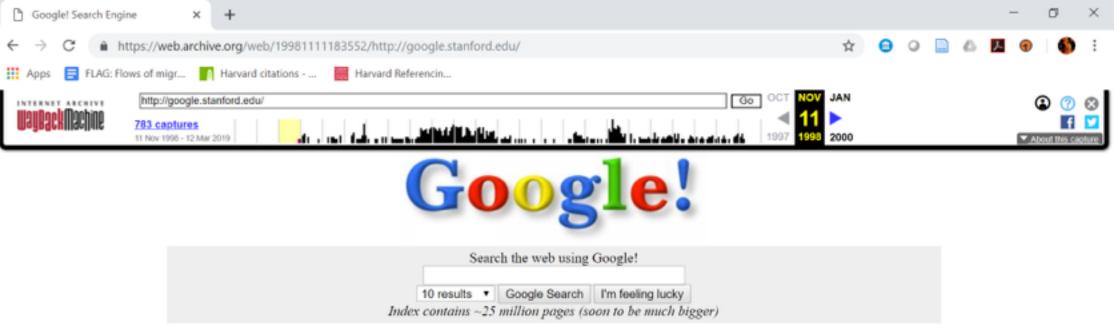
Some 'recent' milestones

- The Text Encoding Initiative project was launched in 1987
- The British Library's OPAC 97 went online in May 1997
- The £50m NOF-digitise programme was launched in 1999
- PROCAT (the Public Record Office Catalogue) was launched online in June 2000
- The Times Digital Archive was first published in 2003, alongside the Old Bailey Online

Running in parallel

- In 1989 Tim Berners-Lee wrote 'Information Management: a Proposal', which led to the WWW
- Google was founded in 1998 by Larry Page and Sergey Brin
- Wikipedia arrived on 15 January 2001
- Facebook was launched in 2004
- Twitter came in to our lives in 2006







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Welcome to Wikipedia, a collaborative project to produce a complete encyclopedia from scratch. We started in January 2001 and already have over 6,000 articles. We want to make over 100,000, so let's get to work--anyone can edit any page--copyedit, write a lot. See the Wikipedia FAQ for information on how to edit pages and other questions. If you're visiting Wikipedia for the first time, welcome! The content of Wikipedia is covered by the GNU Free Documentation License.

Philosophy, Mathematics, and Natural Science

Astronomy and Astrophysics -- Biology -- Chemistry -- Earth Sciences -- Mathematics -- Philosophy -- Physics -- Science -- Statistics

Social Sciences

Anomalous Phenomena -- Anthropology -- Archaeology -- Countries of the world -- Economics -- Geography -- History of Science and Technology -- Language -- Linguistics -- Politics -- Psychology -- Sociology

Applied Arts and Sciences

Agriculture -- Architecture -- Business and Industry -- Communication -- Computing -- Education -- Engineering -- Family and Consumer Science -- Health Sciences -- Law -- Library and Information Science -- Public Affairs -- Technology -- Transport

Culture

Classics -- Critical Theory -- Dance -- Entertainment -- Film -- Games -- Hobbies -- Literature -- Music -- Opera -- Painting -- Performing Arts -- Recreation -- Religion -- Sculpture -- Sports -- Theater and Drama -- Tourism -- Visual Arts and Design

Other Category Schemes

About Wikipedia category schemes -- Library of Congress catalog scheme -- Dewey Decimal System -- Wikipedia arranged by topic -- Year in Review -- Historical anniversaries -- Reference tables -- Biographical Listing

International Wikipedias

About the International Wikipedias -- [Catalan (Catala)] -- [Chinese (Hanyu)] -- [German (Deutsch)] -- [Esperanto] -- [French (Français)] -- [Hebrew (Ivrit)] -- [Italian (Italiano)] -- [Japanese (Nihongo)] -- [Portuguese (Portuguese (

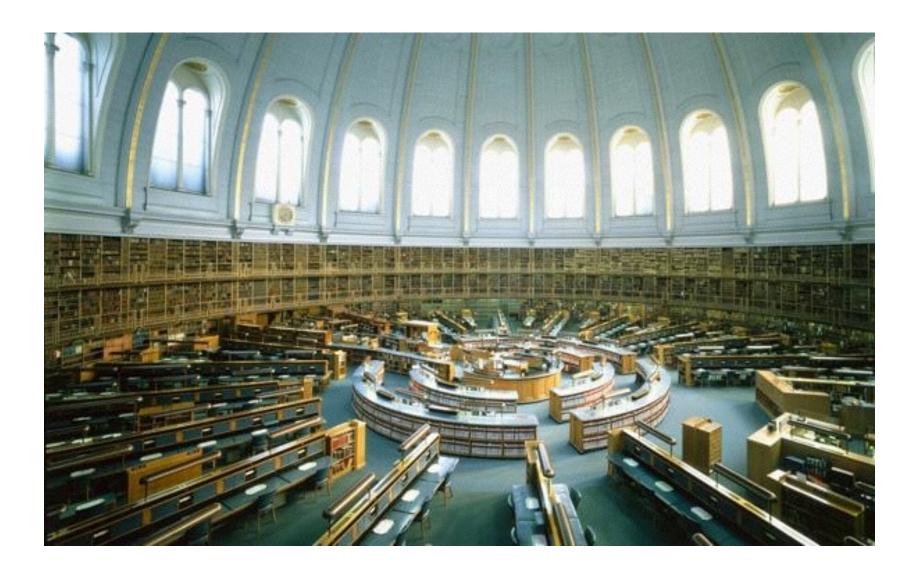
Wikinedia

The impact of the digital

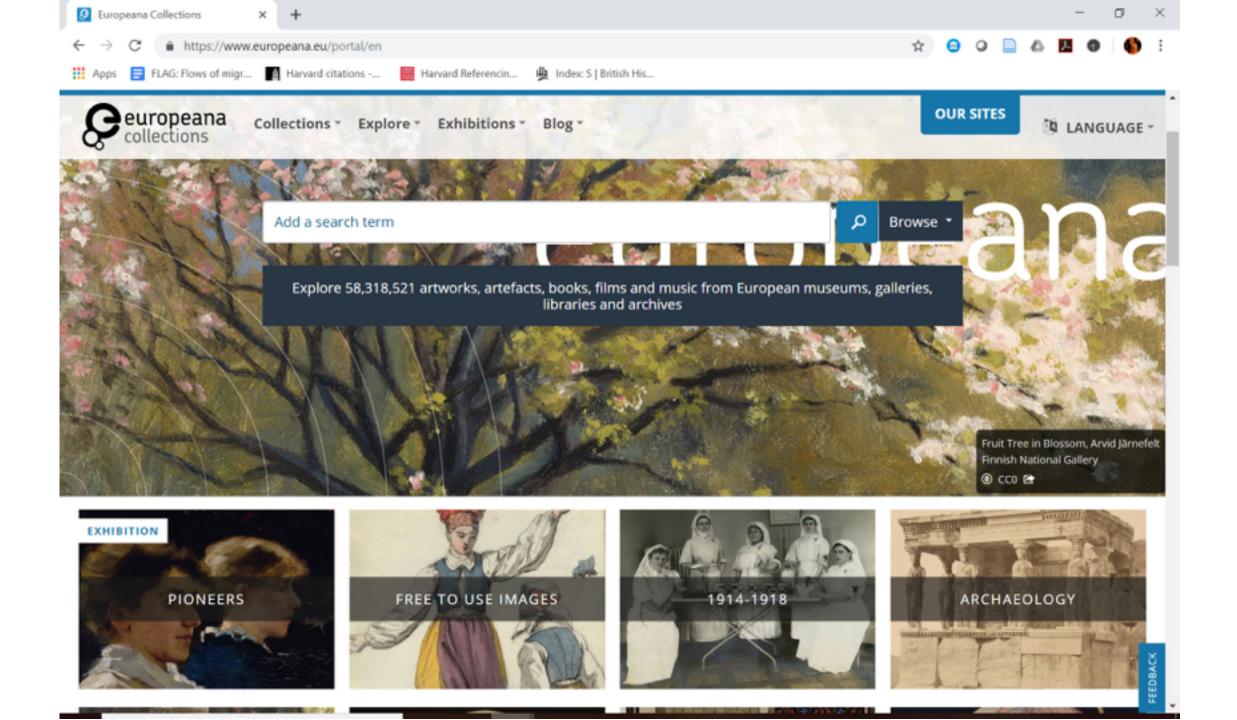
- The digitisation of catalogues was a key first step to opening up archival, library and museum collections
- This was followed by the increasing digitisation of the collections themselves, which has transformed research and access
- The web created new opportunities for communicating research, as well as becoming an object of study in its own right
- Digital tools and methods began to be used to explore new ways







The British Library Reading Room inside the British Museum, Bloomsbury, before the move of the British Library to its current location at St.Pancras https://imagesonline.bl.uk/?
https://imagesonline.bl.uk/?



Are we doing anything new?

- Beginning to move beyond simply answering existing research questions more quickly, using a larger corpus
- Interdisciplinary collaboration is leading the way humanities researchers working with data and computer scientists, archivists and librarians, computational linguists, medical researchers etc.
- Not simply applying computational techniques to humanities research





Figure 2: Graph after running layout algorithm and colored by cluster

The motivation for constructing networks as these is only partly aesthetic. Although it might not seem obvious at first glance, the graph provides a framework for studying the lexical choice of women legislators over time as well as across party. Firstly we can separately scrutinize the clusters and identify the issues they capture. The figures below zoom in on the different communities the Modularity algorithms has detected.

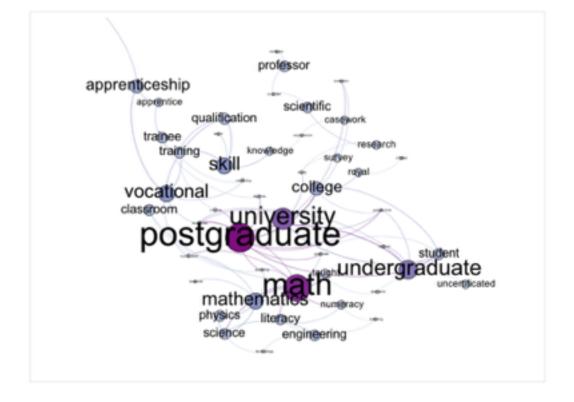
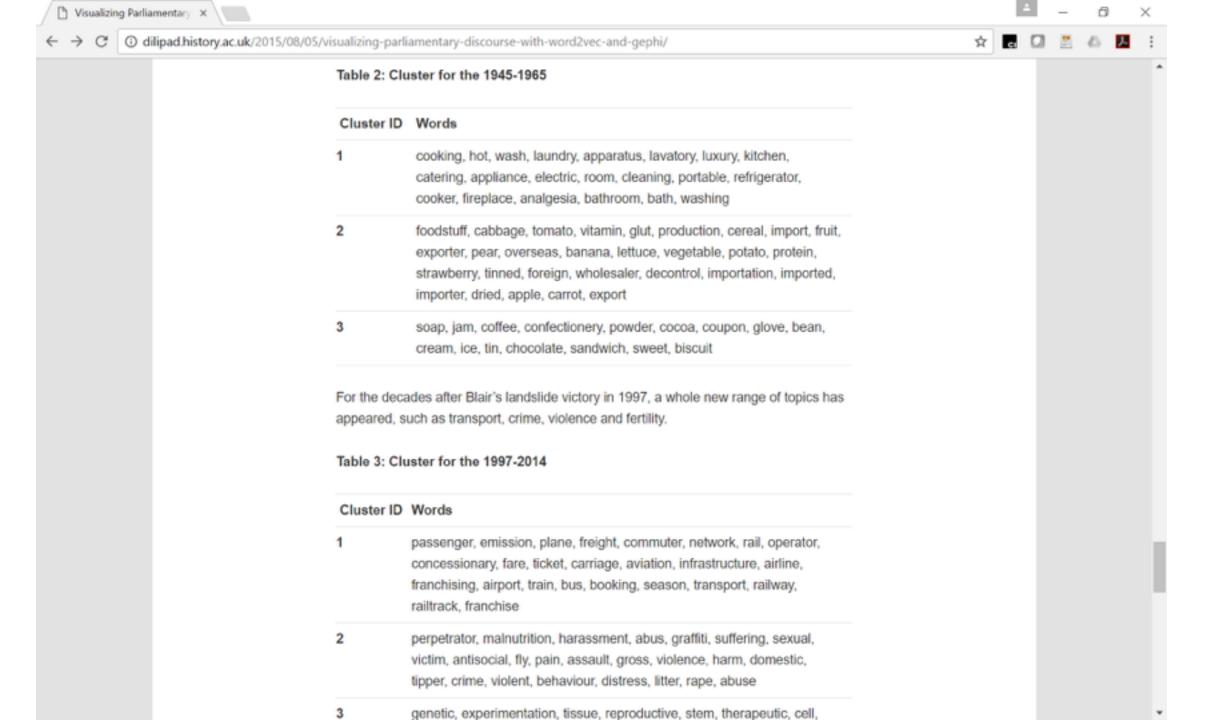
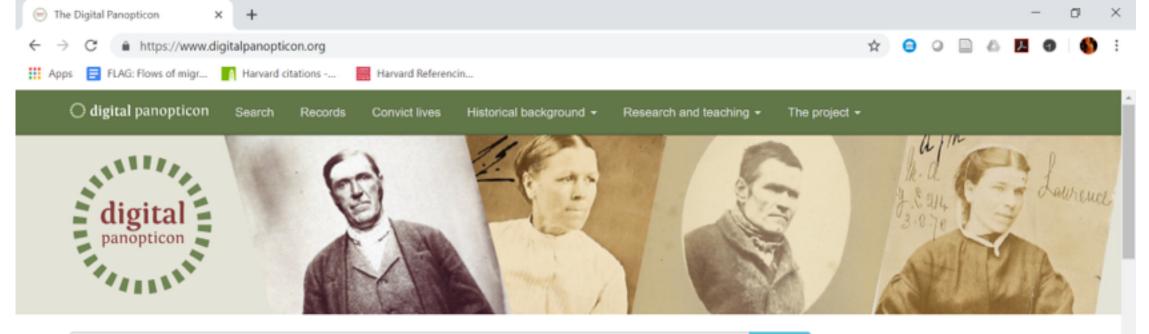


Figure 3: Graph representing the "Education" cluster





Search for names, offences, places, Record ID or Life Archive ID

Tracing London Convicts in Britain & Australia, 1780-1925

This website allows you to search millions of records from around fifty datasets, relating to the lives of 90,000 convicts from the Old Bailey. Use our site to search individual convict life archives, explore and visualise data, and to learn more about crime and criminal justice in the past.

In August 2018 this website was updated to include the following new features:

- · Wildcards in searching
- The ability to search by a wide variety of personal characteristics and life events.
- A new way to visualise results; pie charts.
- · Additional data: Census returns, death records, and records of convicts transported to Western Australia,
- New information pages: on penal outcomes; guides for the use of the Digital Panopticon in teaching in schools and universities; and a guide to obtaining access to our underlying data.

What actually happened to defendants sentenced to death?

Life of the week

Mina jury was a

whose criminal

career spanned

more than four decades. Mina

experienced both

transportation to

penal servitude in

her lifetime. Find

England during

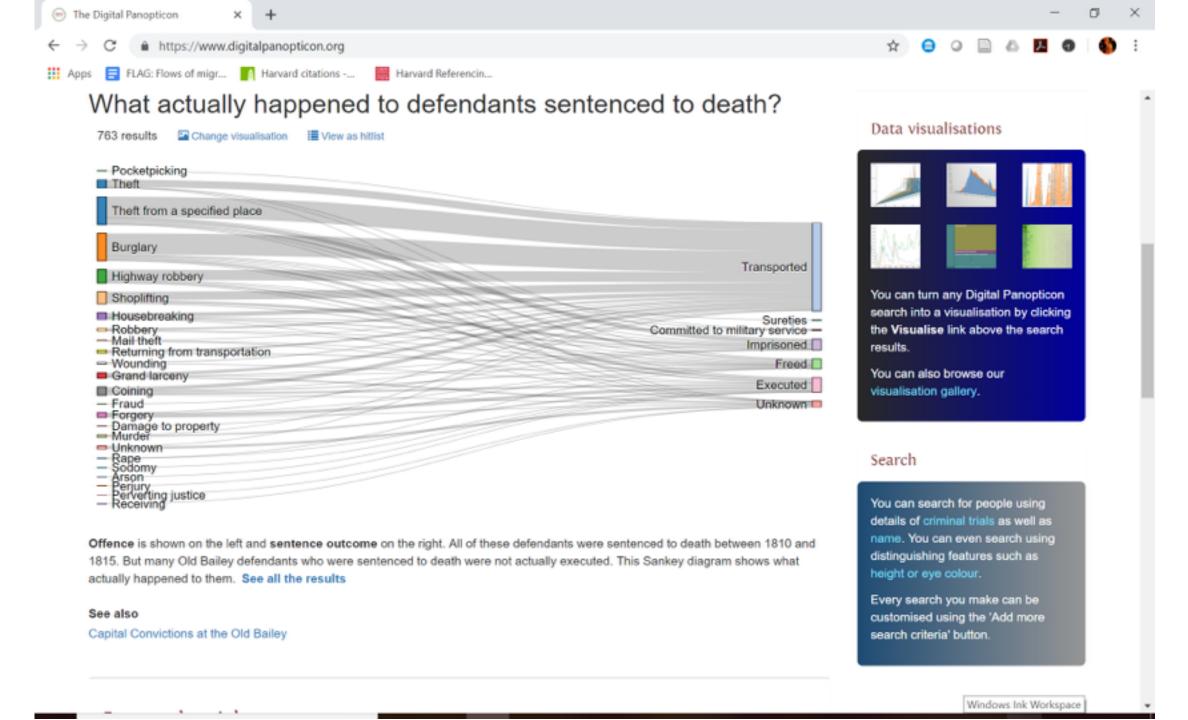
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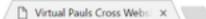
Australia and

habitual thief

Mina Jury b. c.1828-1890

Data visualisations

















Overview Churchyard

Acoustics

Preacher

Occasion

Sermon

Support



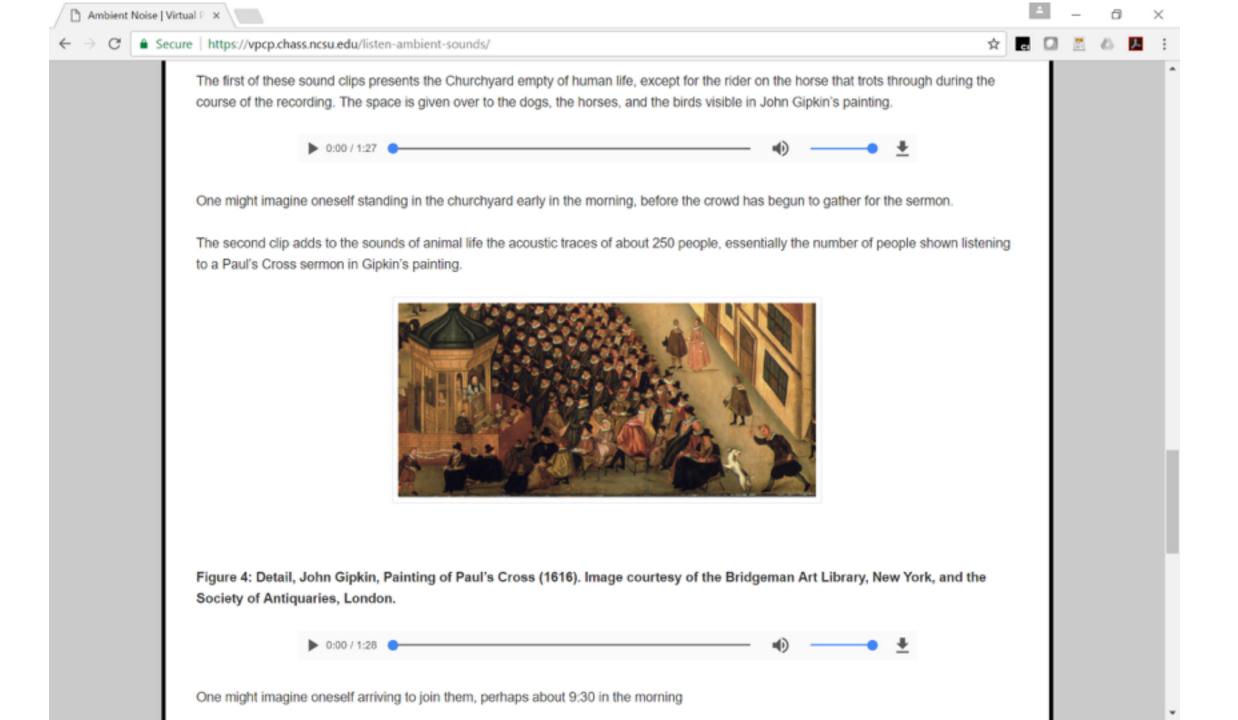
The Virtual St Paul's Cathedral Project will enable us to experience worship and preaching at St Paul's Cathedral and in Paul's Churchyard as events that unfold over time and on particular occasions in London in the early seventeenth century.

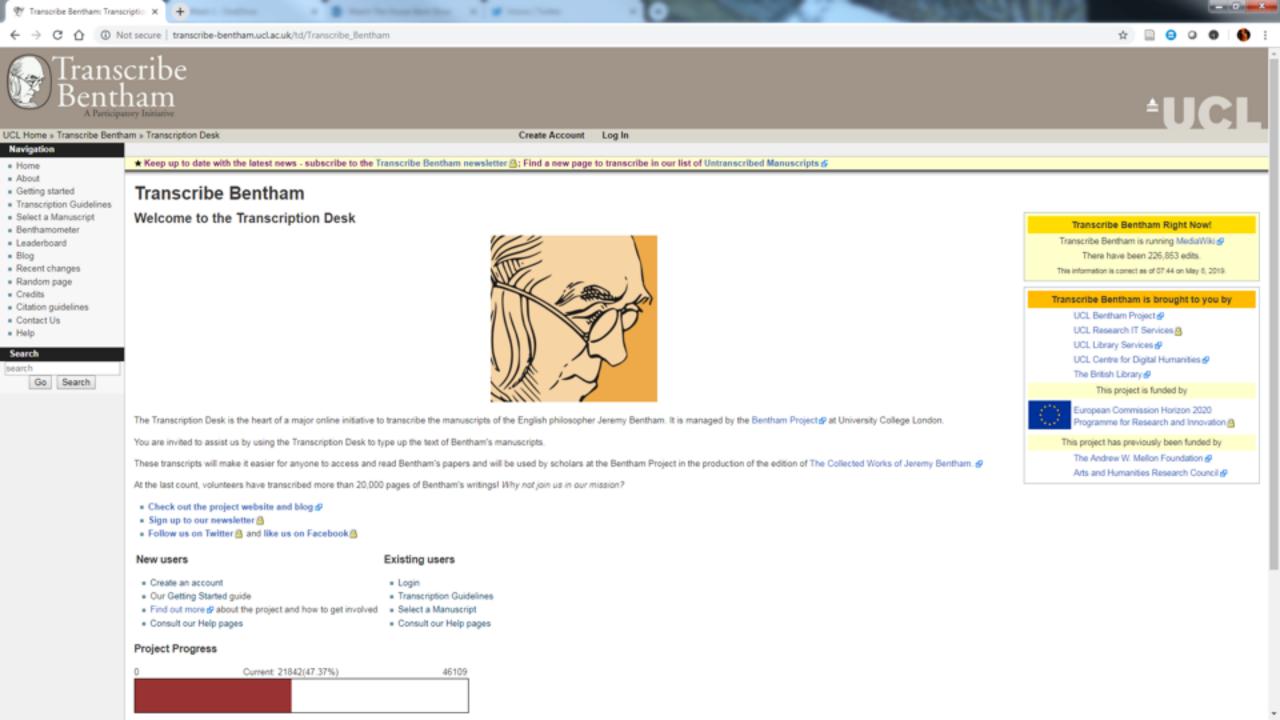
In time, this site will host a visual model of St Paul's Cathedral and the surrounding churchyard, together with a recreation of worship for Easter Sunday 1624, with all the liturgical events of the day, including choir and organ music plus a sermon in the morning by Bishop Lancelot Andrewes and a sermon in the afternoon by John Donne, Dean of the cathedral.

For now, the site hosts the first phase of this project, the Virtual Paul's Cross Project, which has already been completed. This Draiget provides the appearance of bearing John Danne's









What next?

- Ever-improving digitisation techniques, including automatic handwritten text recognition
- Development of new methods for searching sound and image (still and moving)
- The challenge of born-digital data scale, access, trust and authenticity
- A move away from our current (over-)reliance on keyword searching



Digital citation

'Is there any way of obtaining accurate page numbers for parts of the sources? Although the whole site is fantastic for research, it makes citation very difficult'

Reasons for not citing digital resources

- Concern over stability and permanence
- URLs are not easily human readable
- URLs are too long they don't easily fit on the pages of a printed book or journal
- Lack of recognition for new publishing formats (why not cite blogs?)
- Unwillingness to adapt to new citation practices ('it's too hard!')



Original Articles

Confronting the Digital

Or How Academic History Writing Lost the Plot

Tim Hitchcock

Pages 9-23 | Published online: 01 May 2015

References

66 Citations

Metrics

Reprints & Permissions

Get access

BRITISH HISTORY ONLINE

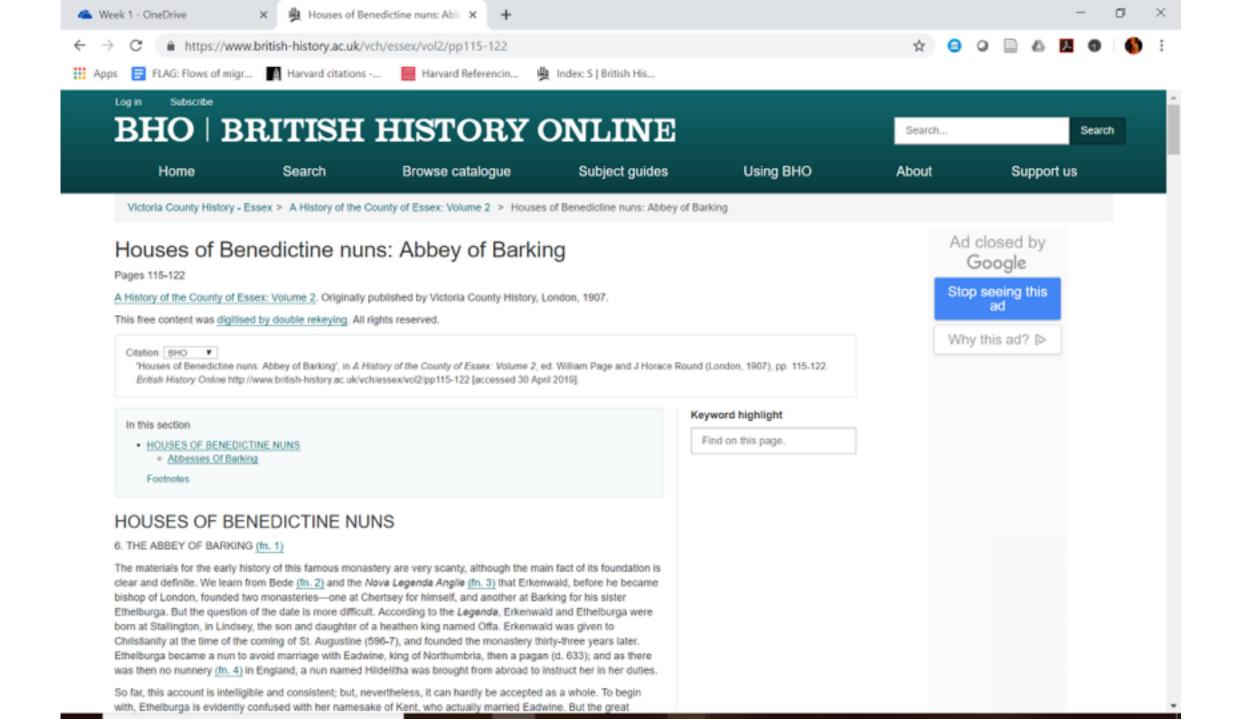
www.british-history.ac.uk/survey-london/vol46/pp280-293

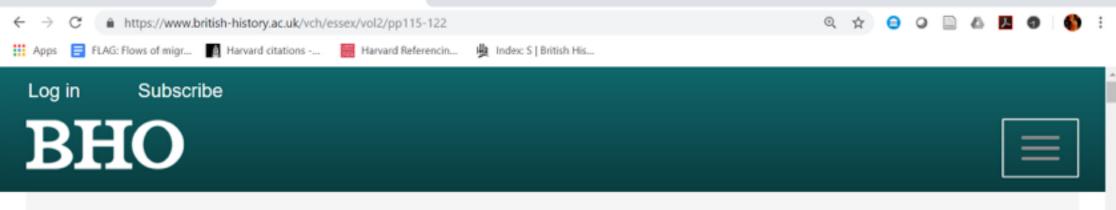
domain

series

volume

page range





Victoria County History - Essex > A History of the County of Essex: Volume 2

> Houses of Benedictine nuns: Abbey of Barking

Houses of Benedictine nuns: Abbey of Barking

Pages 115-122

A History of the County of Essex: Volume 2. Originally published by Victoria County History, London, 1907.

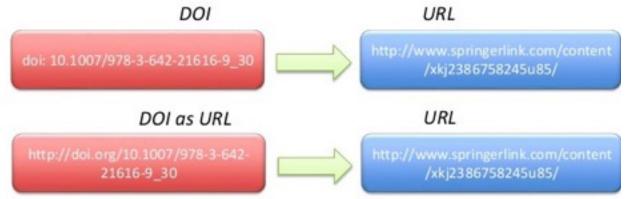
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Citation: BHO ▼

'Houses of Benedictine nuns: Abbey of Barking', in *A History of the County of Essex: Volume 2*, ed. William Page and J Horace Round (London, 1907), pp. 115-122. *British History Online* http://www.british-history.ac.uk/vch/essex/vol2/pp115-122 [accessed 30 April 2019].



Digital Object Identifier



Why do you cite something?

- To demonstrate that you've read something
- To allow others to retrace your steps, sometimes even to reproduce your research
- To alert readers to the existence of primary and secondary sources that are relevant/interesting and, crucially, to allow them to find those sources themselves
- Citation underpins academic research, so why are so many people actively misleading their readers by citing something they haven't in fact read?



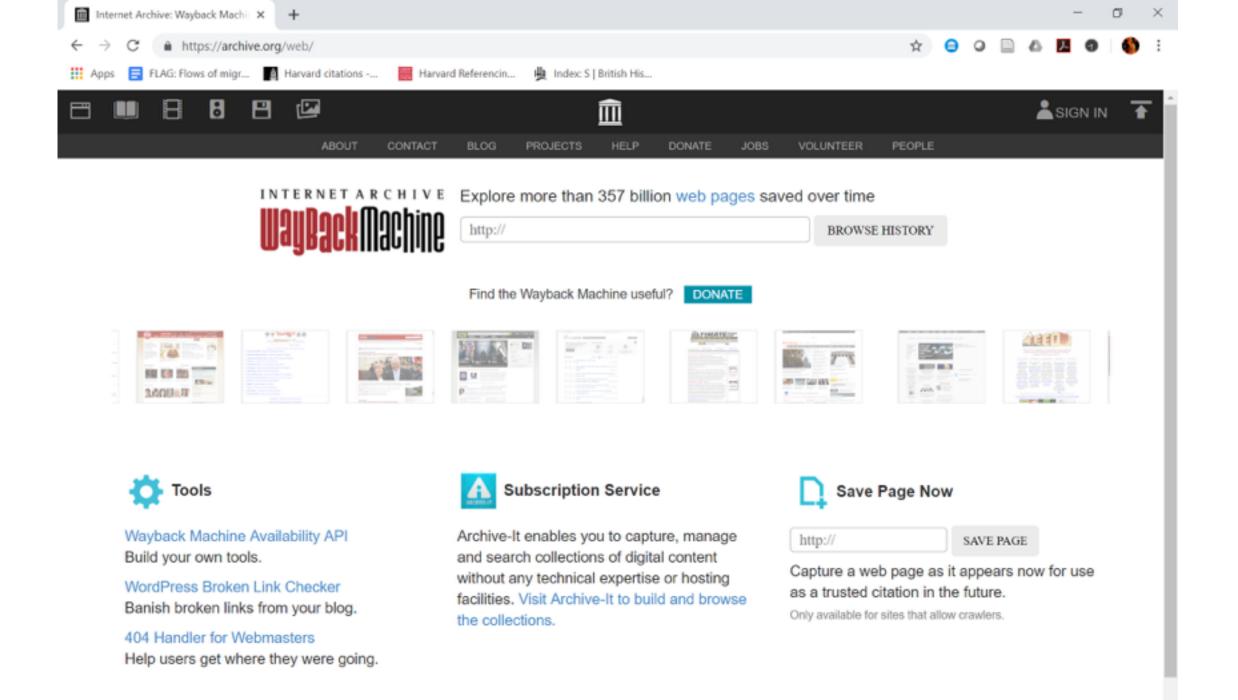


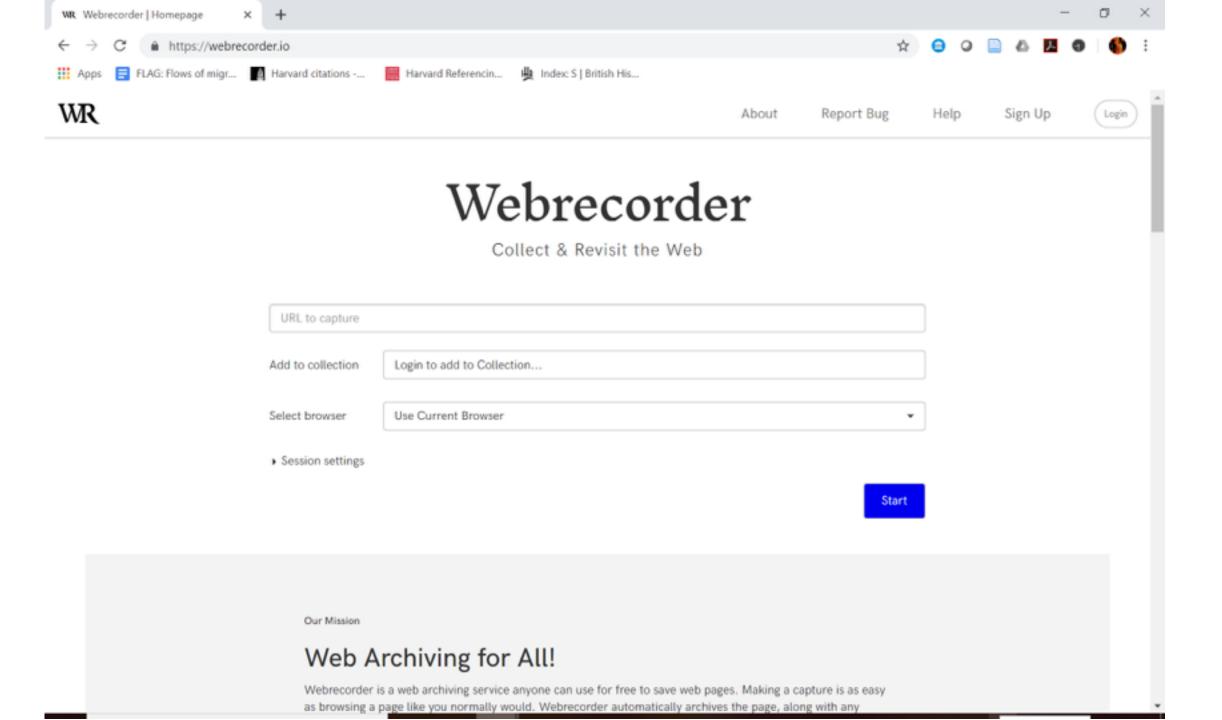
Websites change. Perma Links don't.

Perma.cc helps scholars, journals, courts, and others create permanent records of the web sources they cite.

Perma.cc is simple, easy to use, and is built and supported by libraries.







Why is digital citation important to get right?

- The version of a text that you looked at is very important, and this needs to be apparent to your readers
- The digitised version of a newspaper or book is a completely difference object from its analogue original, and this may affect your findings
- The creators of digital resources need to be able to demonstrate usage, and their labour deserves to be recognised
- Digital resources are mutable, and it is important to identify the point at which you consulted them

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