





# Digital Humanities: a trial, many tools, some theory and a home in the library?

Wednesday, 04 December

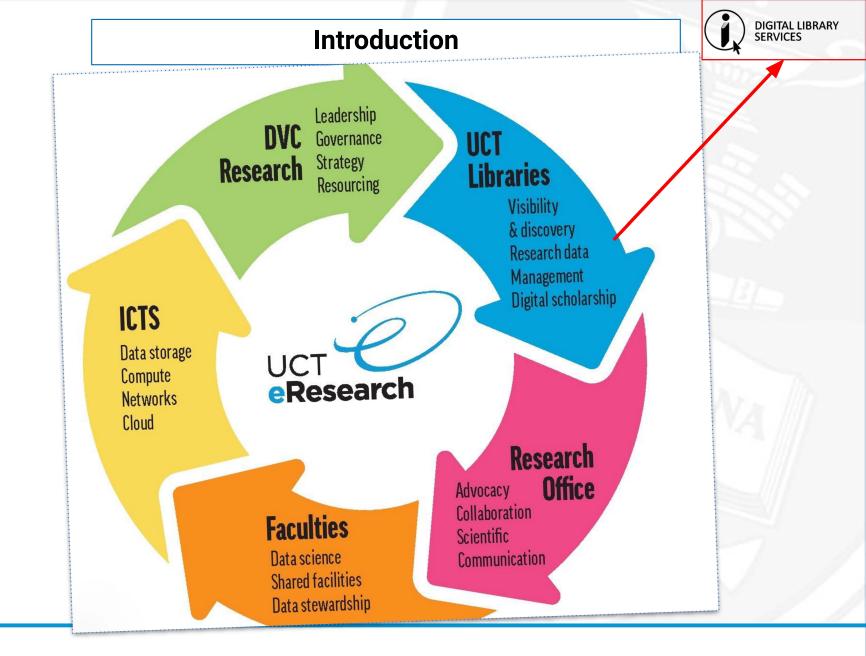
#### **UCT Libraries**

**Digital Library Services** 

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#### Digital Scholarship and DLS | mission & vision

We provide *Digital Scholarship* services to the University of Cape Town, including the following:

- Data Curation activities supporting best practices in Research Data Management (RDM);
- specialist Digitisation services towards Digital Preservation;
- expertise in Geographic Information Systems (GIS).

We advocate for *Open Science*, to make research done at UCT more *efficient, collaborative, accessible, findable and reusable*. We spearhead these practices as contributions to a more equitable and sustainable social order in the higher education landscape.

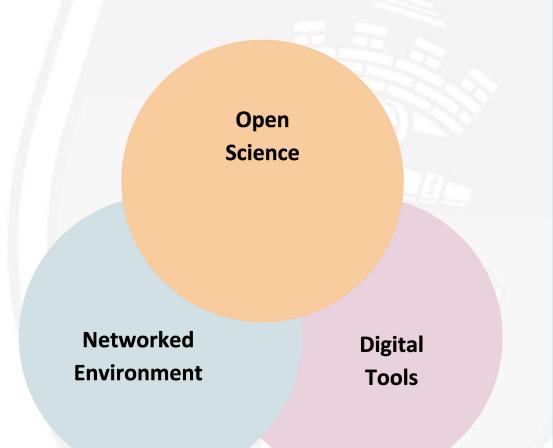
ource: DLS website: http://www.digitalservices.lib.uct.ac.za/



## What is **Digital Scholarship**?



Digital Scholarship is the application and integration of digital tools and methods to discovery, research, teaching and learning.

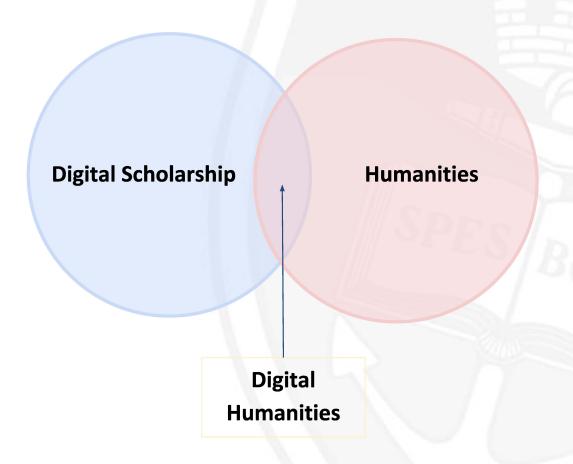


Adapted from: Weller, M. 2011. The Digital Scholar: https://www.open.edu/openlearn/ope



# Where is Digital Humanities? ver 1



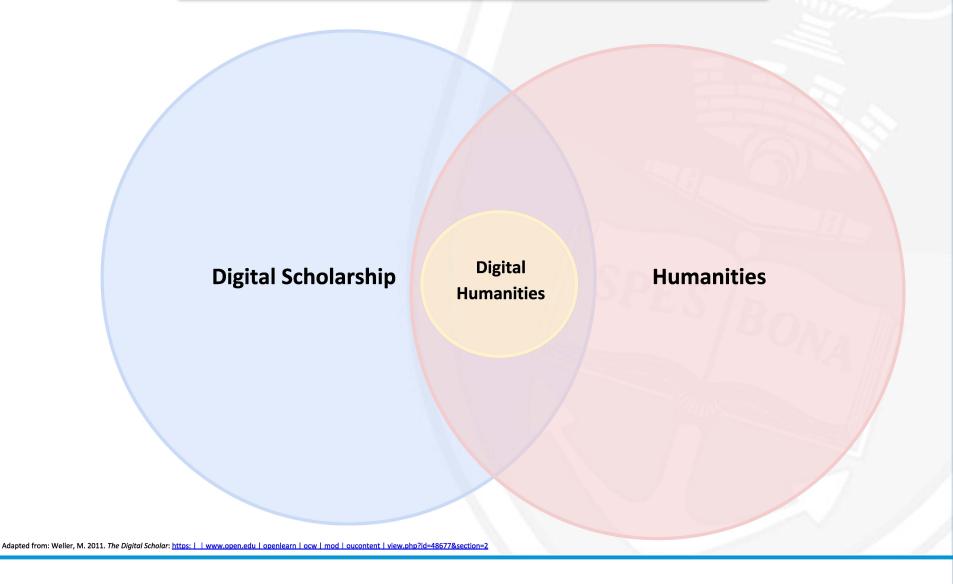


Adapted from: Weller, M. 2011. The Digital Scholar: https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=48677&section=2

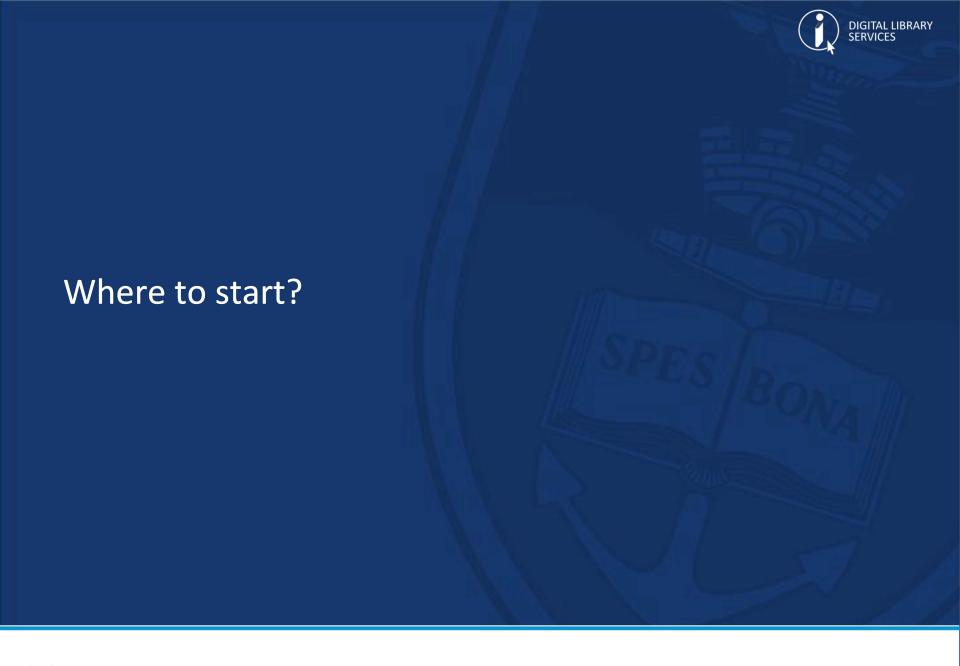


# Where is Digital Humanities? ver 2







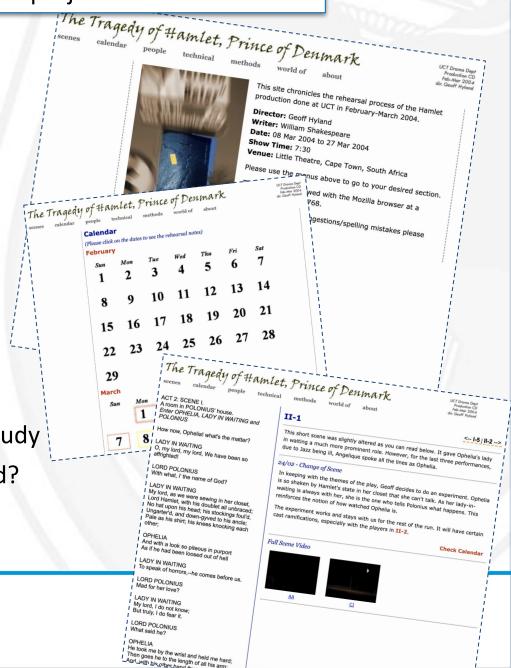






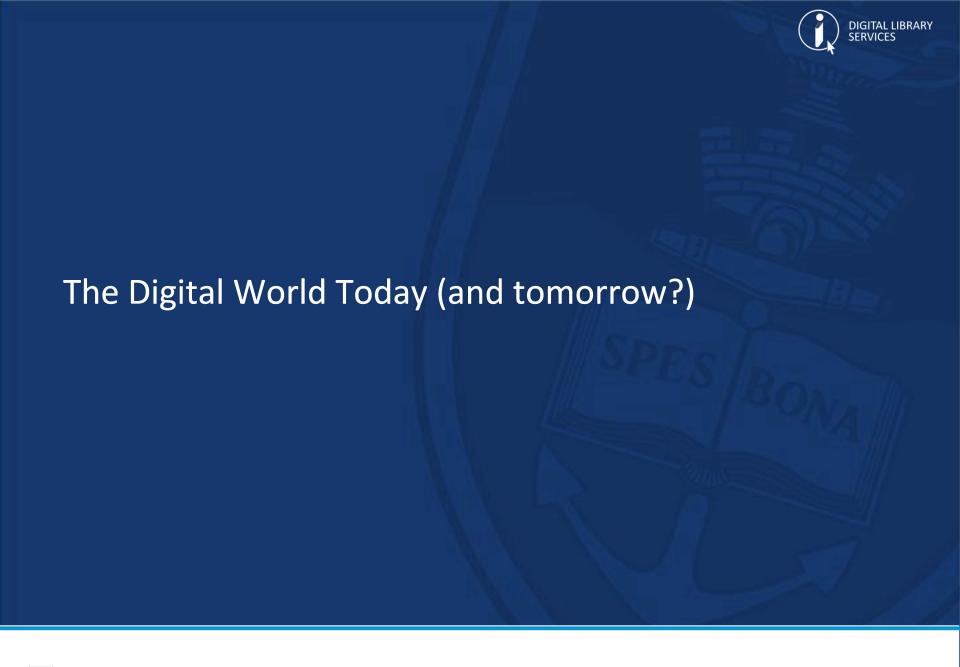
# An old "project"

- 2004
- Honours level
- Documentation of a theatrical rehearsal process through a website
  - no metadata
  - no keywords
  - no complete structure
- A tentative proposal for PhD study
- Is it useful within dramatic field?
- Was it "Digital Humanities"?



Source: DLS website: http://www.digitalservices.lib.uct.ac.za/







# 4IR and the Digital Information Age





3IR



Steam

**Electricity** 

Computing

the personal computer, the network, the internet, the desktop

#### **Connected-ness**

Pervasiveness of the digital,
Everything on the network,
Big data,
Flood of Information,
Internet of things and people

Source: https://www.salesforce.com/blog/2018/12/what-is-the-fourth-industrial-revolution-4IR.html



#### Digital is \*probably\* going to stick around



#### The Digital:

- becoming integral to daily life around the planet,
- exponentially increasing in number of material available,
- contains infinite expressive potential.

The usefulness of the digital can be seen in the way it can *incorporate* different perspectives and modes of engagement.

Vast new quantities of source material, search accessibility and aggregation and analysis tools, our representations are becoming more extensive and more accurate, offering us what might be a closer approximation to at least the complete historical, literary or visual record...

Source: Svensson, P., 2016. Big Digital Humanities. University of Michigan Press. 9 and Eileen Gardiner, R.G.M., 2016. The Digital Humanities. Cambridge University Press. 19



#### The Humanities



#### David Theo Goldberg:

"I understand the power of the humanities, traditionally and today, to be an engagement in **translating** the human to ourselves: what is to be, what it means and has meant to be, and what it ought to be human?"

Humanities has to deal with the question of how technology, the digital and information has changed these answers - or is it just a tool. Berry - Modern digital culture is said to be "programmed" by algorithms, both in terms of mediation of creation, distribution and consumption but also in the shaping of users.

DTG: "we need revisioned modes of translating ourselves to ourselves"

Source: David Theo Goldberg cited in Svensson, P., 2016. Big Digital Humanities. University of Michigan Press.





#### The humanist and their data meet the digital

Humanists study the world created by humanity and try to model it, acutely aware of their fields' own self-conscious sense of representation.

Basic material of the humanists' study is different from other disciplines - where quantitative data is easily converted into digital data.

But in humanities objects of data don't easily translate to digital

Texts	Documents	Object	Artifacts	Image	Sound   Audio
Film   Video	Space   Place   Environment	Performance   Ritual	Construct   Model	Virtual Reality	Games

Eileen Gardiner, R.G.M., 2016. The Digital Humanities. Cambridge University Press. 15-16



#### First encounter?



In 1949, Roberto Busa, an Italian Jesuit and theologian, approached Thomas J. Watson, founder of IBM, seeking help in indexing the works of Thomas Aquinas. The digital was a means to the qualitative improvement of the humanists' moral goal. In the process Busa and Watson demonstrated that the search-and-sort functions of the computer were compelling tools for certain aspects of research.

"For the humanist perhaps nothing is more important that the capacity to organize and search large bodies of information"

(Katz 2005, 108)

leen Gardiner, R.G.M., 2016. The Digital Humanities. Cambridge University Press. 3



## DH, Literature and the **Text Encoding Initiative**



The **distant** reading of texts using the tools of computers.

Franco Moretti argues that it is impossible to do a complete close reading of the wide corpus of any amount of existing texts (this process is selective and full of omissions), so why not use a computer to study a large volume of texts.

Moretti uses computer data and digitized texts to construct graphical charts out of data from several thousand texts to trace <u>massive patterns</u> in book history, in the development of genres, titles, characters and other features of novels in various national literature, all rendered in graphs, charts and other graphical works.

Hartsell-Gundy, A., Braunsten, L., Golomb, L. (Eds.), 2015. Digital Humanities in the Library. American Library Association. 59

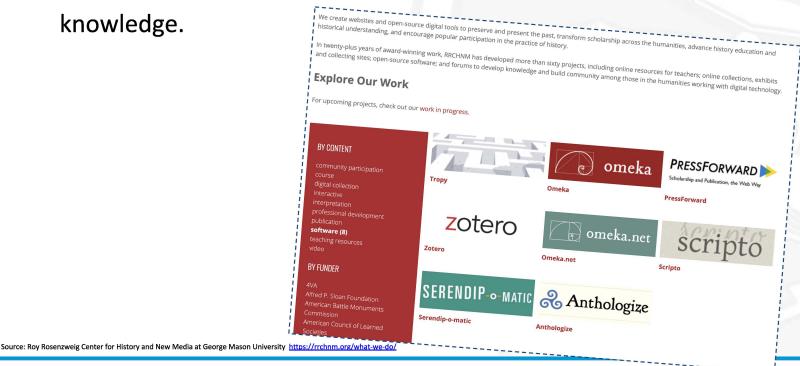




#### DH and Digital History

Digital History is an approach to examining and representing the past that takes advantage of new communication technologies such as computers and the Web. It draws on essential features of the digital realm, such as databases hypertextualization and networks to create and share historical

knowledge.





#### What it is not?



It doesn't do everything at the same time:

... not a discipline,

... not a big tent,

... not a service function,

... not a methodological commons,

... not a way of curing technophobia in the humanities,

... not a way of graciously bringing technology to the humanities.

ource: Svensson, P., 2016. Big Digital Humanities. University of Michigan Press



#### What it is = scholarship linked with technology



Rather, it is an **inclusive meeting place** for the humanities and the digital, a contact zone for a range of epistemic traditions and expert competencies and in infrastructure for empowering participants, creating scholarship of many types, building technological solutions and methodology and curating meaningful intellectual exchange.

Source: Svensson, P., 2016. Big Digital Humanities. University of Michigan Press, xiii



#### Digital Humanities within the Academy?



If digital tools and methods are to become a more integral and iterative part of scholarly work, traditional modalities may simply not suffice as they do not allow integrated dynamic content and access to data and media environments – an increase in alternative types of academic production, pushed by accessibility to digital production and interest in experimental modes of expression, as well as a connection to art-based research practices.

These modes of production, the digital ones, affect the fields of humanities.

Source: Svensson, P., 2016. Big Digital Humanities. University of Michigan Press, 3



#### Modes of engagement with Digital Humanities



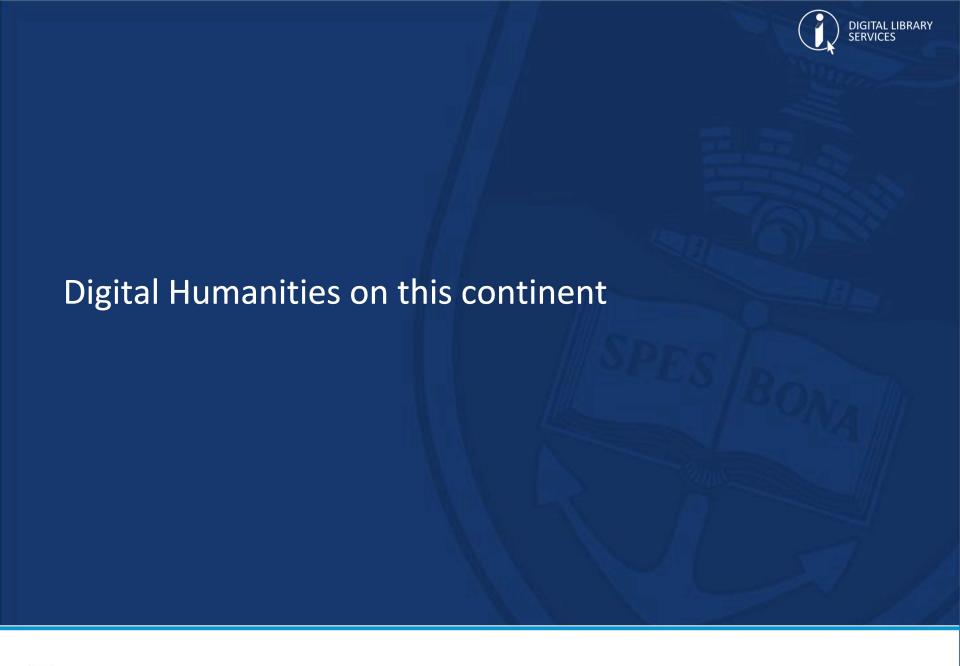
DH should maintain multiple interrelations between the humanities and the digital:

One important mode of engagement is **technology as a tool**, and much of the tradition digital humanities has been built up around this mode: building archives, developing metadata schemas, creating and using tools of different kinds and focusing on methodology.

Other modes of engagement include technology as an object of an analysis and as an expressive medium.

ource: Svensson, P., 2016. Big Digital Humanities. University of Michigan Press, 5







#### African Culture and Digital Technologies



Achille Mbembe - "The Internet is Afropolitan" (2015):

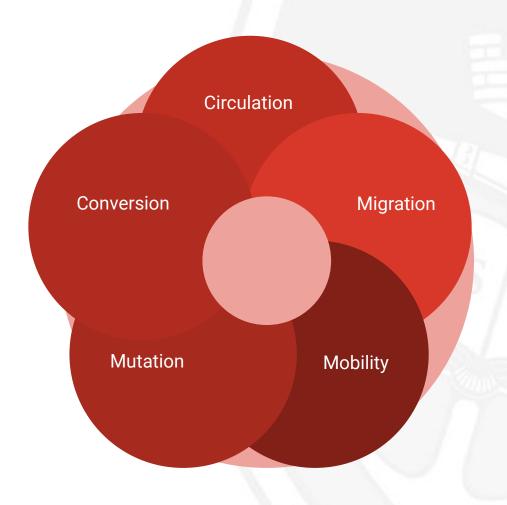
Africa is a fertile ground for the new digital technologies, because the **philosophy of those technologies is more or less exactly the same as ancient African philosophies**. This archive of permanent *transformation*, *mutation*, *conversion* and *circulation* is an essential dimension of what we can call African culture.

ource: http://chimurengachronic.co.za/the-internet-is-afropolitan/



# The Internet is Afropolitan





Source: http://chimurengachronic.co.za/the-internet-is-afropolitan/



#### Spirit of the Digital



This flexibility and this capacity for *constant innovation, extension of the possible,* that is also the spirit of the Internet... the digital, and it is the same spirit you will find in **pre-colonial and contemporary Africa.**(Mbembe, 2015)

ource: http://chimurengachronic.co.za/the-internet-is-afronolitan



#### Exporters of the continent's perspective



...the 'glocalisation' of culture that becomes possible through the use of digital technologies has given us unprecedented access to voices, stories, ideas and views from cultures other than our own, thus resisting cultural hegemony and homogenization. [...] digitization has the potential to make Africans producers and exporters of indigenous information, rather than merely passive consumers of imported knowledge. Digital art has enabled African cultures to affirm their creative identities in a global space.

(Bischoff, 2017)

Source: Lizelle Risschoff (2017) The future is digital: an introduction to African digital arts. Critical African Studies, 9:3, 261-267, DOI: 10.1080/21681392.2017.1376506



#### To construct the encounter



And what needs to be done is to construct **the encounter**, the **reconciliation** between those forms and the cultural archive that is still part of everyday life...

(Mbembe, 2015)

ource: http://chimurengachronic.co.za/the-internet-is-afropolitan











... becoming embedded in the mission-critical aspects of higher education – research, teaching and learning and infusing librarians' particular expertise, collections and values into new types of research...

One of the key elements that subject librarians bring to the ability of libraries to work as partners on digital scholarship is their relationship with academic departments [...] serve as the **library's eyes and ears**.

...embraces materials and methods of interest to many other disciplines apart from English and argues that libraries are particularly well placed to develop networks of expertise in the humanities... (Sula 2013)

Hartsell-Gundy, A., Braunsten, L., Golomb, L. (Eds.), 2015. Digital Humanities in the Library. American Library Association



#### Within the Academy



Digital humanities projects involve *content* (often a combination of analog, digitized, and born digital), *software tools*, and *technology infrastructure*;

They are impacted by policy issues such as **intellectual property** as well as **institutional policies** ..., and they often have a connection with both the **research** and **teaching and learning** programs of their institutions.

Hartsell-Gundy, A., Braunsten, L., Golomb, L. (Eds.), 2015. Digital Humanities in the Library. American Library Association



## Academy and the Library



"... while some of the faculty who have spearheaded large digital humanities initiatives may have had minimal interaction with libraries in the past, they sometimes realize, when they reach a point where they must migrate their project to a new platform or when they don't have the capability to provide for data curation or preservation of their initiatives, that it may be useful to reach out to libraries for certain types of expertise"

Source: Hartsell-Gundy, A., Braunsten, L., Golomb, L. (Eds.), 2015. Digital Humanities in the Library. AmericanLibrary Association. viii



#### It takes a Village to do DH



Digital Humanities projects "shatter the myth of the solitary genius in that they depend upon the sustained collaboration of multiple people with diverse expertise [...] the direct result of sustained collaborative vision, resource development and time management...It takes a village to build a digital project" (Pinto in Hartsell-Gundy et al., 2015, 43)



Source: Hartsell-Gundy, A., Braunsten, L., Golomb, L. (Eds.), 2015. Digital Humanities in the Library. American Library Association. 43



# Academy and the Library



"Perhaps the subject librarian's greatest contribution to digital humanities projects during implementation is to connect faculty to resources in support of digital scholarship available in their university. If subject librarians develop knowledge of the technological tools available, they can contribute an understanding of how one might be used to answer a question from the scholar's disciplinary approach."

Source: Hartsell-Gundy, A., Braunsten, L., Golomb, L. (Eds.), 2015. Digital Humanities in the Library. American Library Association. 12





#### 1st Order vs 2nd Order



# Phases of a Digital Humanities Project

- First order
  - a digital re-creation of already existing materials with little analysis,
  - i.e. the digitization of letters
- Second Order
  - ... to take digital materials and enhance them, using a variety of digital tools.
  - i.e. Mapping of a letter in a collection to better understand the geographical context in which it was written

Source: Hartsell-Gundy, A., Braunsten, L., Golomb, L. (Eds.), 2015. Digital Humanities in the Library. American Library Association.



# DIGITAL LIBRARY SERVICES

#### Digital Humanities or Humanities Computing

One of the many things that you can do with computers is something that I would call **humanities computing**, in which the computer is used as a tool for *modelling humanities data* and our understanding of it, and the activity is entirely distinct from using the computer when it models the typewriter, or the telephone...

... a practice of representation, a form of modelling and a way of reasoning and a set of *ontological* commitments and its representational practice is shaped by the need for *efficient* computation on the one hand, and for *human communication* on the other.

Source: John Unsworth. What is Humanities Computing and What is not? https://www.ideals.illinois.edu/bitstream/handle/2142/157/whatis.html



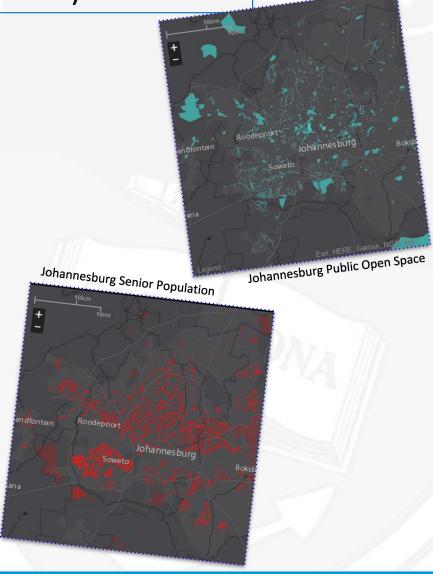
## **Geographic Information Systems**

#### **Everything Happens Somewhere:**

- Because everything happens somewhere everything can be associated with a spatial location.
- These locations can be mapped in space, either for simple visualisation or for complex analyses.

#### **Data Visualisation (Maps):**

- Maps are an incredibly powerful visualisation tool which allow us to view and display our data in interesting and informative ways. They allow us to see patterns in our data, not just find them.
- They also allow us to communicate our findings in a clear and succinct manner.



nages sourced from <u>UrbanObservatory.org's App</u>



### GIS



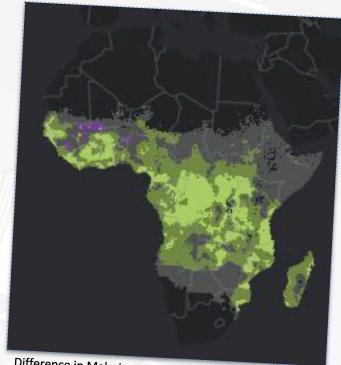
#### **Data Analysis (Making Information):**

The full potential of GIS is realised when performing spatial analyses. Different types of analyses exist to satisfy various needs:

- Overlay Analysis allows us to compare different data types,
   e.g. Mean Annual Rainfall and Crop Type.
- Geostatistical Analysis allows us to perform statistical analyses of correlated spatial data, e.g. Hotspot Analysis.
- Network Analysis allows us to calculate travel times and service delivery areas, e.g. "Golden Hour" coverage or Clinic's Service Area.
- Dashboards of real time sensor feeds for live monitoring,
   e.g. Resource Usage; Traffic Volumes; Fleet Management.

DLS' GIS services assist with GIS software acquisition, project planning, troubleshooting, analysis and cartographic design.

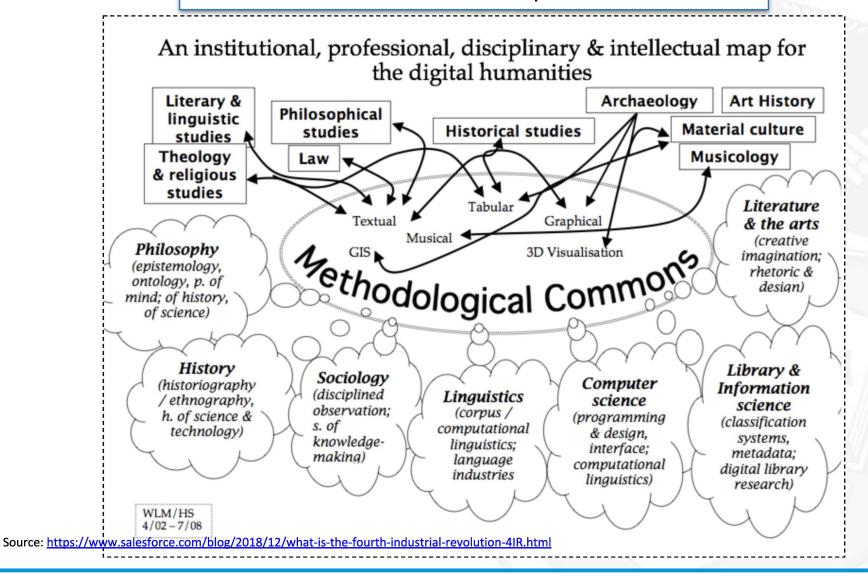
Find us @ www.gis.uct.ac.za



Difference in Malaria rates between 2000 and 2015.



### An "old" map



### **Processes of Digital Humanities Projects**





ensuring access for future generations

Source: Eileen Gardiner, R.G.M., 2016. The Digital Humanities. Cambridge University Press.



#### **Tool Router**

**Text** 

- Text Editing and Processing
- Text Mining
- Text Recognition
- Text Transcription
- Text Visualization

**Data-based Tools** 



- DatabaseManagementSystems
- Data Collection
- Data Analysis
- Data Management
- Data Visualization
- Mapping Tools

Image and Sound Based Tools



- Image Creation
- Image Processing (editing, annotation and markup)
- 3D Modelling
- 3D Printing
- Video and Audio Processing

Outcome-based Tools



- Blogging
- Brainstorming
- Collaboration
- Communication
- Organization
- Publication and Sharing
- Peer Reviewing
- Searching
- Podcasting

Source: Eileen Gardiner, R.G.M., 2016. The Digital Humanities. Cambridge University Press.





### **Qualities of Digital Humanities**



Of all scholarly pursuits, DH ... is obsessed with varieties of representation, the organization of knowledge, the technology of communication and dissemination, and the production of useful tools for scholarly inquiry. But DH is also, itself, a scholarly activity — concerned not just with presenting knowledge or helping to locate it, but with creating it.

(Steve Ramsey cited in Munoz, 2012).

wailable: http://trevormunoz.com/notebook/2012/08/19/doing-dh-in-the-library.html



### The lofty goals of DH



- ...enable new forms of research that were difficult or impossible to undertake before [...]
- to explore facsimiles of rare works and correspondence [...]
- to count word/phrase occurrences or do syntactical analysis...across a whole body of works [...]
- to reflect multiple interpretations of works, authors, or ideas alongside
   each other a realization of decentered critical authority [...]
- to...engage in new activities that we haven't yet envisioned.

Source: A Companion to Digital Humanities, http://www.digitalhumanities.org/companion/





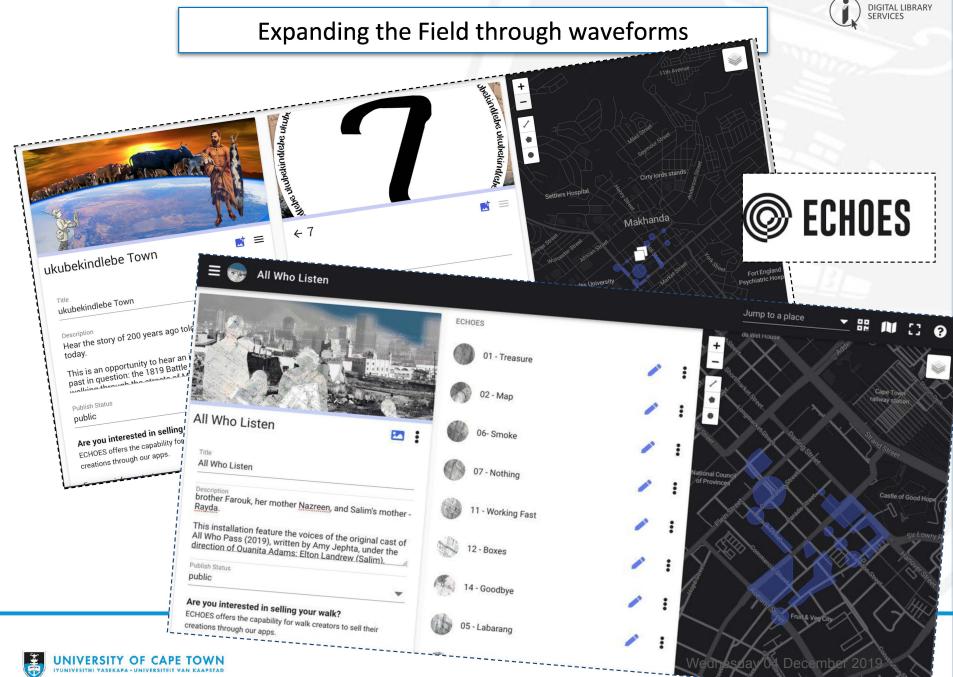
### The Bias of the Digital Humanities

Digital Humanities projects looking into: the cultural histories of aurality and sound ...large-scale quantitative analysis of speech and music datasets...

Yet a lingering textual bias within digital humanities — largely a product of the field's emergence from textual and literary studies — has obscured the significance of this work for the field. In the words of Jonathan Sterne "existing digital humanities work has largely reproduced *visualist biases* in the humanities"

Source: Svensson, P., 2016. Big Digital Humanities. University of Michigan Press, 11







### Where to go from here?

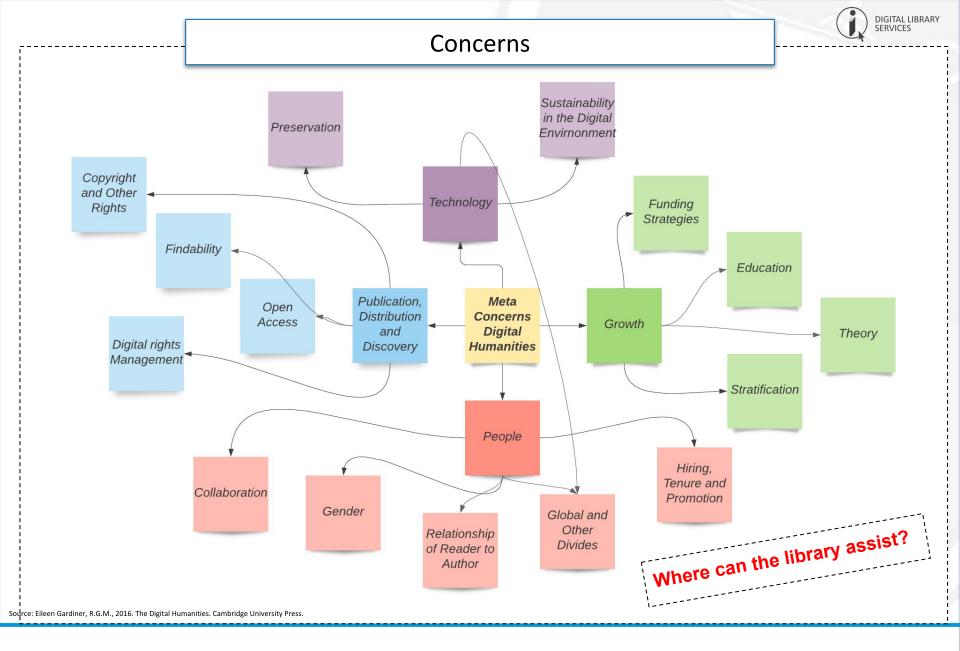


### Digital Humanities should

- not limit itself to a study of digital artifacts,
- not limit itself to a single methodology or focus.
- stay present but stay liminal.
- should maintain multiple identities respectful, renewing and critical.
- continue aiming towards a modeling/representation/link
- challenge the mental, bureaucratic and physical silos of the academy
  - "database is a cultural form in opposition to narrative"

Source: Svensson, P., 2016. Big Digital Humanities. University of Michigan Press, xiii







#### What can Libraries do?



- Attract graduate students whose supervisors might not have the digital skill set, or encourage them with digital scholarship experience that might make them more employable in the future.
- Foster conversations with a variety of faculty on campus from those
  practicing to those interested in "incorporating some digital methods
  into their scholarship".
- Encourage academics to engage their students in new types of digital work through course assignments.
- "construct the encounter, the reconciliation between those forms and the cultural archive that is still part of everyday life..." (Mbembe, 2015)

Hartsell-Gundy, A., Braunsten, L., Golomb, L. (Eds.), 2015. Digital Humanities in the Library. American Library Association



#### What can Libraries do?



#### Librarians are:

"now collection builders and managers, instructors, and evaluators of information – adept at adapting to a changing information environment and to shifts in scholarly production"

A librarian can **increase the odds** that valuable scholarship in digital form will not be lost. In fact, [the librarian's] *goal should be to help make this scholarship easily found, readily used, and permanently preserved.*" The subject librarian can assist in keeping the collection current and relevant by playing a role in the promotion of and access to the completed project through *reference interactions, instruction, and internal and external promotion*.

Hartsell-Gundy, A., Braunsten, L., Golomb, L. (Eds.), 2015. Digital Humanities in the Library. American Library Association. 7 &13



### DIGITAL LIBRARY SERVICES

### Development of Digital Humanities by

- ...engaging on a number of different levels:
  - as a tool,
  - as a study object,
  - as a medium.
- ... articulating:
  - What it is?
  - Where it comes from?
  - How its work contributes to our collective knowledge?
- ... developing:
  - Questions asked by the work
  - The insights revealed
  - Quality of the arguments
  - Novelty of the ideas
  - Number of arguments that sustain its existence

Source: Svensson, P., 2016. Big Digital Humanities. University of Michigan Press, xiii



### DIGITAL LIBRARY SERVICES

### Reimagining Tragedy from Africa and the Global South

This project proposes to take a concept – tragedy - from the very beginnings of theatre in its European manifestation and therefore of the discipline of Theatre Studies which is decidedly European, and to reimagine it from a perspective in Africa that is at once directed at the complex challenges of our global postcolonial present and towards our possible futures both inside and outside of the discipline.

- Aim to reorient thinking theatre by shifting its dominant perspectives:
  - re-read the postcolony through the frame of tragedy rather than romance;
  - explore the relevance of tragedy for a young generation today;
  - adopt a methodology rooted in art practice and consolidating that methodology and its application across the various hemispheres.

Source: Fleishman, M - Concept Note on Reimagining Tragedy from Africa and the Global South



### **ReTAGS** and Digital Humanities



#### Phase one

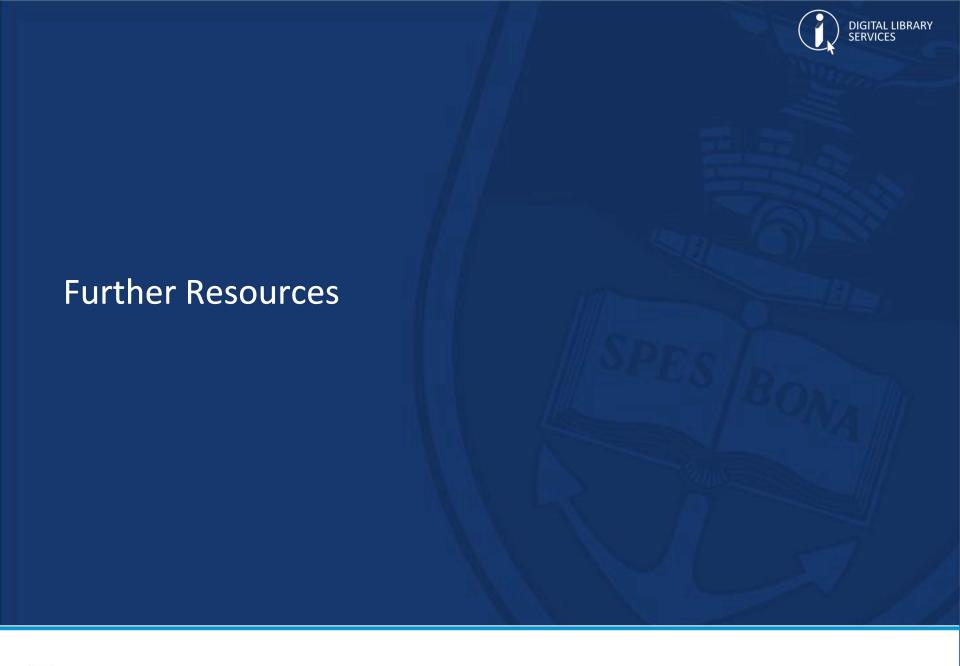
- To build a repository/archive/collection that is digital
  - searchable, taggable, linked

#### Phase two?

- Encounters with the archive
- Questions of documenting performance
- Computing the archive (humanities computing)

When does it become a Digital Humanities project?









### **Selected Online Training**

Course	web address	what for?	software
Reproducible Research Reporting with R and RStudio	https:     authorcarpentry.github.io   executable-documents-rstudio	Documenting Data	RStudio
R for Reproducible Scientific Analysis	https:     swcarpentry.github.io   r-novice-gapminder	Manipulating Data	RStudio
R for Social Scientists	https:     datacarpentry.org   r-socialsci	Manipulating Data	RStudio
OpenRefine for Social Science Data	https:     datacarpentry.org   openrefine-socialsci	Organizing Data	OpenRefine
Data Organization in Spreadsheets for Social Scientists	https:     datacarpentry.org   spreadsheets-socialsci	Organizing Data	CSV
OpenRefine	https:     librarycarpentry.org   lc-open-refine	Organizing Data	OpenRefine
WebScraping	https:     librarycarpentry.org   lc-webscraping	Collecting Data	
Tidydata for Librarians	https:     librarycarpentry.org   lc-spreadsheets	Organizing Data	
Data Intro for Archivists	https:     librarycarpentry.org   lc-data-intro-archives	Organizing Data	







### **Programming Historian**

### Lesson Index

Our lessons are organized by typical phases of the research process, as well as general topics. Use the buttons to filter lessons by category. If you can't find a skill, technology, or tool you're looking for,



### FILTERING RESULTS: ALL LESSONS DATE \*



BRAD RITTENHOUSE, XIMIN MI, AND COURTNEY ALLEN Beginner's Guide to Twitter Data

Learn how to acquire Twitter data and process them to make them usable for further analysis.



### Introduction to Populating a Website with API Data

This lesson introduces a way to populate a website with data obtained from another website via an Application Programming Interface (API). Using some simple programming, it provides strategies for customizing the presentation of that data, providing flexible and generalizable skills.



MATTHEW J. LAVIN

### Analyzing Documents with TF-IDF

This lesson focuses on a foundational natural language processing and information retrieval method called Term Frequency - Inverse Document Frequency (tf-idf). This lesson explores the foundations of tf-idf, and will also introduce you to some of the questions and concepts of computationally

oriented text analysis.



# The Programming Historian

We publish novice-friendly, peer-reviewed tutorials that help humanists learn a wide range of digital tools, techniques, and workflows to facilitate research and teaching. We are committed to fostering a diverse and inclusive community of

### Learn

Use our lessons to teach your self new technical skills or understand how humanists are using new digital tools, methods, and research processes.

### Teach

Use the *Programming Historian* in your classes or workshops! Please let us know how we can improve our lessons to suit your needs, or if you run into trouble



### **Humanities Commons**

Humanities Commons is a trusted, nonprofit network where humanities scholars can create a professional profile, discuss common interests, develop new publications, and share their work. ... open to anyone.

...designed by scholarly societies in the humanities to serve the needs of humanists as they engage in teaching and research that benefit the larger community. Unlike other social and academic communities, Humanities Commons is open-access, open-source, and nonprofit. It is focused on providing a space to discuss, share, and store cutting-edge research and innovative pedagogy

The network also features an open-access repository, the Commons Open Repository Exchange...



### DH Groups in South Africa













### Selected analysis tools

tool	web address	what for?
Tableau	https:     public.tableau.com	interactive data visualization software
ArcGis	https:     www.arcgis.com   home   index.html	tool for developing your own maps and analyzing spatial data
Amnesia	https:     amnesia.openaire.eu	data anonymization web-tool, that allows you to remove identifying information from data.
Rstudio	https:     rstudio.com	a set of integrated and productive tools for statistical computing and graphics programming language R
NVivo 12	https:     www.qsrinternational.com   nvivo   home	qualitative data analysis software
SPSS	https:   www.ibm.com   za-en   analytics   spss-statistics-software	software package used for interactive, or batched, statistical analysis.
ATLAS.ti	https:     atlasti.com	workbench for the qualitative analysis of large bodies of textual, graphical, audio and video data
Otter.ai	https:     otter.ai	Generate rich notes for meetings, interviews, lectures, and other important voice conversations
OpenRefine	http:     openrefine.org	helps with cleaning up of messy data, especially text based



### DIGITAL LIBRARY SERVICES

### Digital Scholarship at DLS | mission & vision

We provide Digital Scholarship services to the University of Cape Town, including the following:

- Data Curation activities supporting best practices in Research Data Management (RDM);
- specialist Digitisation services towards Digital Preservation;
- expertise in Geographic Information Systems (GIS).

We advocate for **Open Science**, to make research done at UCT more *efficient, collaborative, accessible, findable and reusable*. We spearhead these practices as contributions to a more equitable and sustainable social order in the higher education landscape.

Source: DLS website: http://www.digitalservices.lib.uct.ac.za



### DIGITAL LIBRAR' SERVICES

### Examples of sustainably planned, strategic support

### **Proposal | Planning**

- Data Management Planning (DMPonline, examples of existing DMPs)
- Advice on best practices for research data workflows

#### **Process**

- Advice on ways to better manage your data
- Where to find tools for collection, capture and analysis
- Advice on doing geospatial analysis

#### **Publication**

- Advice on what can be published (ethically; in terms of dataset size; ...)
- Advice on where to publish (i.e. a subject repository, ZivaHub; ...)
- Support on curating and developing an online showcases of data

#### **Preservation**

- Transfer analogue objects to digital files
- Ensure that your files will be accessed in perpetuity

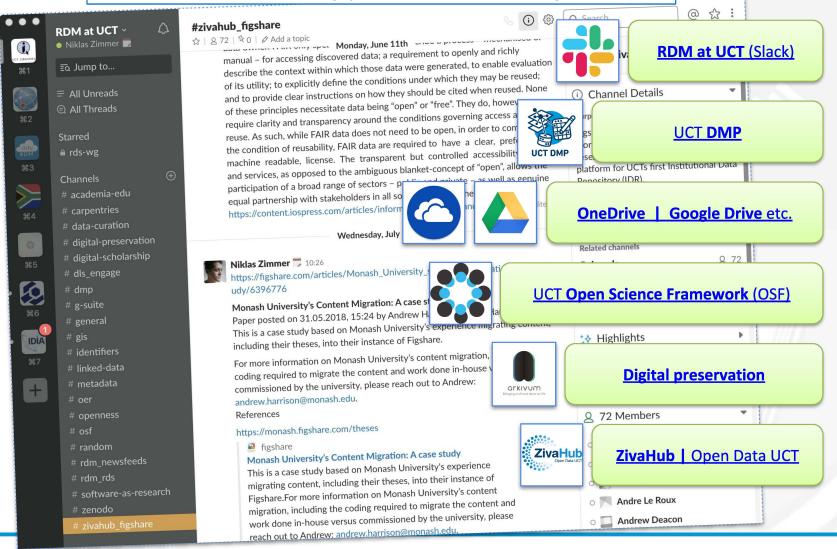




### 'RDM at UCT' Slack workspace



Slack = Searchable Log of All Conversation and Knowledge





Let's change what we value in research.





## Thank you!



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http://www.digitalservices.lib.uct.ac.za

Want to leave some feedback?



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