

# DH as tool oriented

PART II: A DH exploration of search tools in practice – tool criticism as method in DH

# Tools in DH

- Berry “Understanding Digital Humanities”:

In Digital Humanities, we investigate the plasticity of digital forms (...). To mediate a cultural object, it needs to be changed in code. Changed into a grid of numbers, that can be manipulated using algorithms. (...) To understand culture through **tools**”.

- Liu: DH investigates how knowledge is transformed into information through computational techniques, and **tools**. **Tools** show patterns.
- Klein: DH is about *tool-building projects* (...) with visualization of large image sets, 3D modeling of historical artefacts, born digital dissertations, hashtag activism, mobile makerspaces

# Building better DH tools (Gibbs & Owens)

- If you build it, the scholars will not automatically use it:  
“...it has been unclear how scholars expect tools to behave, how they want to interact with different kinds of tools, and how they perceive their present and future utility” (p. 1)
- How to make crystal clear what tools offer?
- How to improve ease of use?

# How to enhance use of tools

- How do you design interfaces that help scholars "feel more comfortable with new ways of visualizing, analyzing, and thinking about sources and about data" (p. 2)?
- Surveys: use of databases
- Make tools quick, broad (quantity over quality), easy to understand

# Tools change the research process

- The integration of a digitized/digital corpus into the hermeneutic process of testing ideas
- Change the conceptualization of “the archive” (p. 4)
  - And visualizations could potentially “alter some of the standard narratives” (p.5)
- Do they “do” history? As they do not create meaning from data (p. 7)
- Resist “measure-and-manage control” (p. 7)

# Techno-optimism?

- Expectations too high...
- Questions of how a tool mediates interpretation: is it part of a methodology or an outcome?

# Solutions to enhance user experience

- Provide use cases
- Enhance data literacy of users & explain methodological value
- Spend more resources on user interface development
- Collaborations between users and builders...

S E A R C H

# Search tools and digital humanities

- Digital/digitized archives: The digital turn delegates search and retrieval to machines. Yet, you need context to interpret your search results
- <http://www.connectedhistories.org>

# Tenen: Blunt Instrumentalism - on tools and methods

- What is Tenen's central argument?

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- What is Tenen's central argument?
  - Critical making can teach us about the relationship between tools and methods
  - We are to experiment
- But there is a problem in DH with tools: the inner workings of the technologies used are a black box to the users

# We must understand tools better than makers

- To understand biases and limitations [think back to your research diaries]
- Learning to code is insufficient to understand results, to understand complexity. “We must learn to disassemble our instruments and to gain access to their innermost meaning-making apparatus”.
- Yet how? By documenting development, by documenting our use

# Example: How do digital exploratory search tools reconfigure research practices of humanities' researchers?



1. Understand how technological developments affect engagement with media content
2. Case study of humanities researchers' interactions with DIVE+
3. How interdisciplinary development of the browser reconfigures Digital Humanities as a discipline – linked data as linking disciplines

# Searching for a story, shapes the story

For instance, media researchers increasingly use digital archives to create media texts.

This means that retrieving audio-visual material requires an in-depth knowledge of how to find sources digitally

By understanding how media researchers search and find audio-visual materials, we access insights into tacit knowledge as embodied knowledge (Polanyi) the tactics that are used to “play” the audio-visual archive. And so, grasp how digital search tools reconfigure research practices.



The Netherlands Institute for Sound and Vision  
800.000 hours of audio-visual material

# Interpreting ‘disruptive’ media events as narratives

- Specific actors (newscasters, governments, institutions) use media events to build narratives in line with political, economic or cultural views.
- **Scholars/researchers also build narratives** around events; prior research underlines the importance of visualizing, constructing and storing of narratives during the information navigation to contextualize material (Akker et al., 2011; Kruijt, 2016; De Leeuw, 2012).

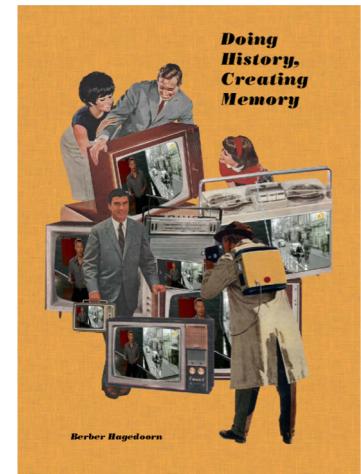
**The Content of the Form**

*Narrative Discourse and Historical Representation*

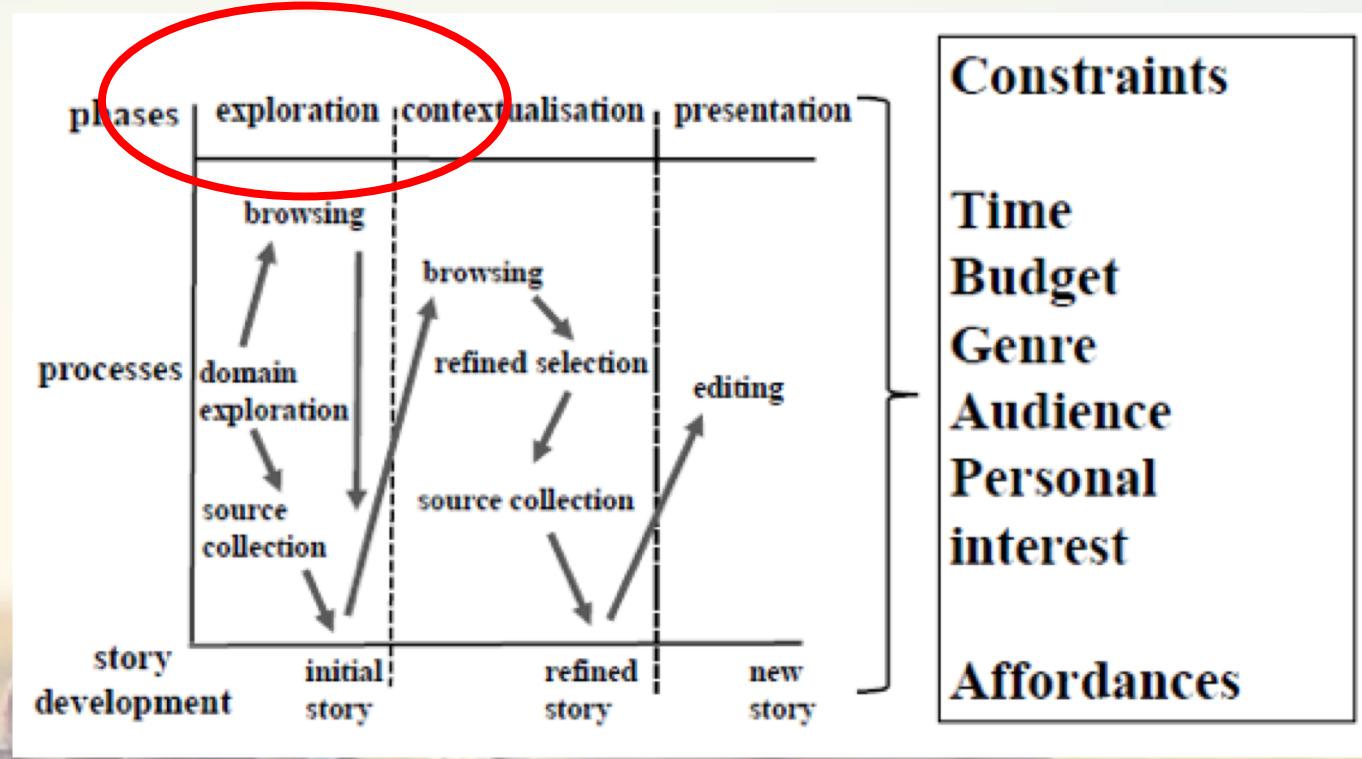
HAYDEN WHITE

Hayden White:  
“How to change knowing  
into telling”

Berber Hagedoorn:  
study of media  
texts/representations  
in relation to media  
makers (**industrial  
actors and memory  
makers**)”



# Prior insights into relation search & storytelling

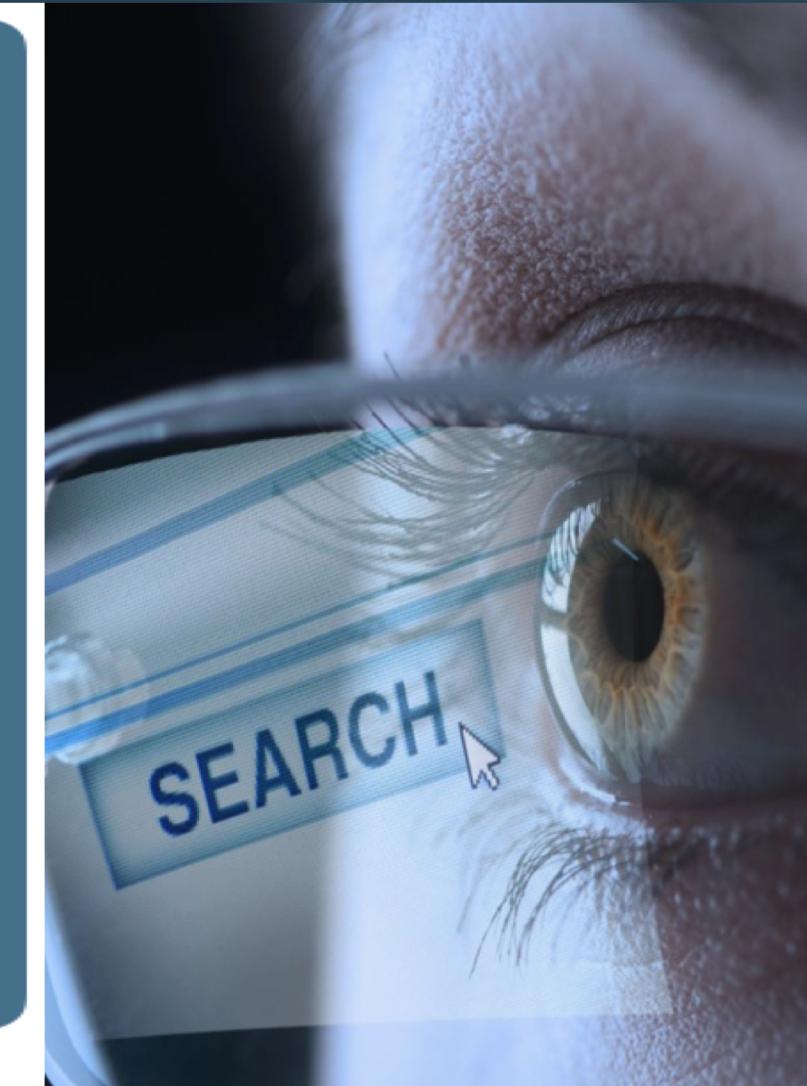


Search and storytelling practices are intertwined & governed by socio-technical constraints and affordances

Tensions between these constraints and affordances shape the narrative creation practice

# Method: researching DIVE+ as storytelling device

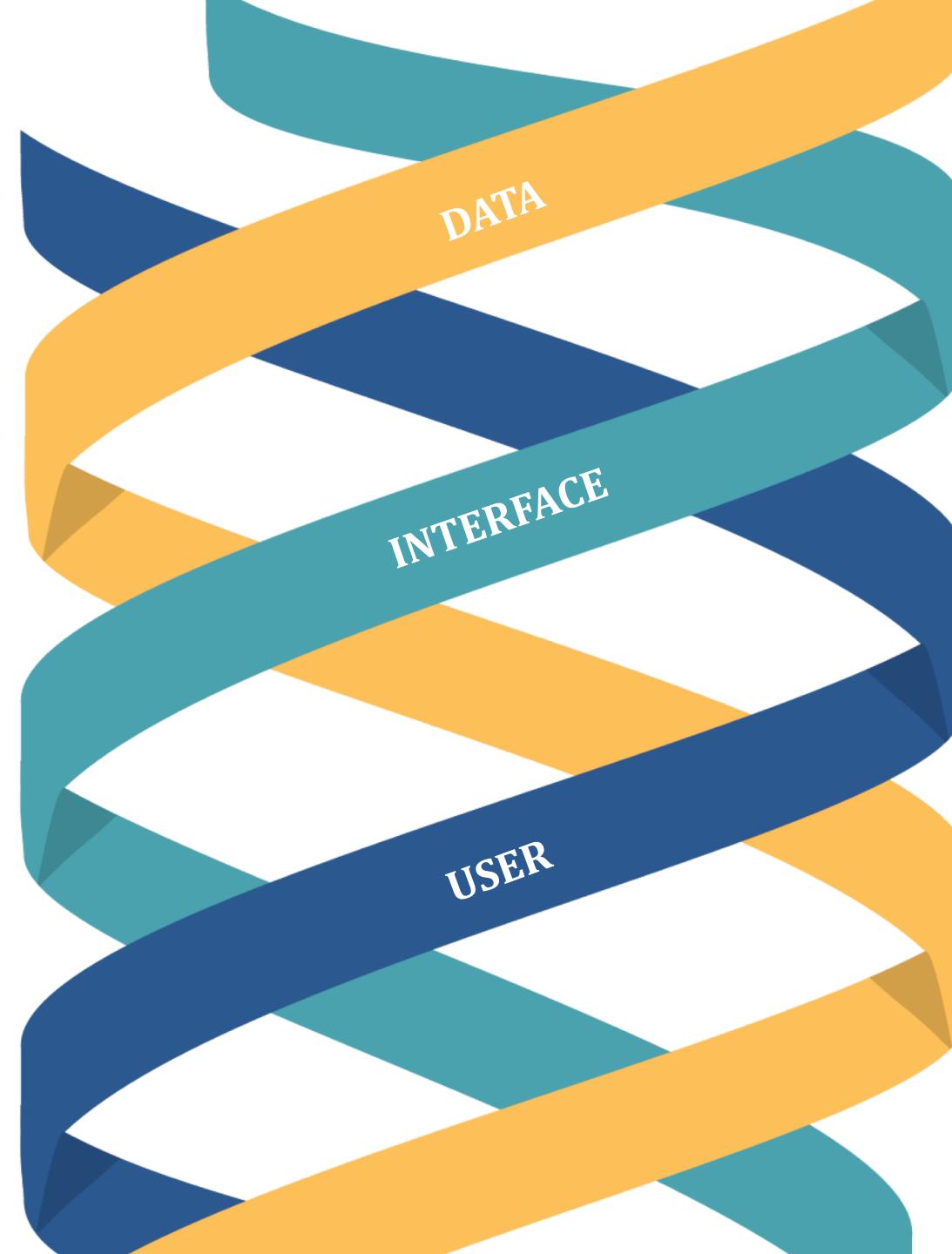
- User-centered design methodology to map search and storytelling practices
- 124 users:
  - 7 Focus groups & 24 interviews;
  - Tasks & talk aloud protocols
  - Surveys/questionnaires & research diaries
- **Insights on data, interface and user level to inform browser development**
- **Insights about interdisciplinary collaboration to understand expertise in Digital Humanities discipline**



## INSIGHTS on different levels

### USER LEVEL

- Relation between exploratory search and & narrative creation
- In-depth insights into search process of media researchers



### DATA LEVEL

- Enrichment of annotation, links, entities, narratives about events

### INTERFACE LEVEL

- Recommendations for automatic suggestions of starting points for search & exploration

# User insights: how exploratory search configures storytelling

- Scholars see themselves as storytellers
- Exploratory search triggers, refines and helps develop research questions but has a steep learning curve
- It affords a “randomness” of source selection that opens up potential to find sources that other methods might not reveal
- Yet expressed need for more control over search filters, as they are used to search interfaces with many search fields
- *Prior experience*, again, is thus an important factor impacting the *interpretation and selection experience*.

# Interface insights: how exploratory search supports storytelling

- **The tool and interface's narrative affordances**
  - 'Meaning is attributed to the way one searches and conducts research' – *Media Studies researcher* [resp. 58]
  - 'The meaning is formed by the search tools you use and the way that you search' – *Media Studies researcher* [resp. 64]
  - 'Real connections still have to be made in an old and traditional way... in the mind of the researcher' – *Humanities researcher* [resp. 14]
- **The resulting search or narrative path, which represents a mediated event as (more or less) a narrative, is not seen as neutral**
  - 'I believe that the narrative metaphor does not really apply to my research, because I do not produce sequential data, but rather a *metastructure*, which cannot be told as a story' – *Humanities researcher* [resp. 56]

# Data insights: how exploratory search supports storytelling

- This last point relates to the data level: Linked open data offers opportunities to explore new knowledge graphs
- However, this seems to be problematic when it comes to investigating and generating narratives in an exploratory search tool such as DIVE+ – because **currently, although exploratory search and the visualization of the search path can support narrative creation, researchers currently do not grasp how the tool mediates an 'attitude' or 'demeanor'.**
  - **'Even a database has a *hidden agenda* (...) Can I trust the *algorithm*?'** – Media professional [resp. 3] (our emphasis).

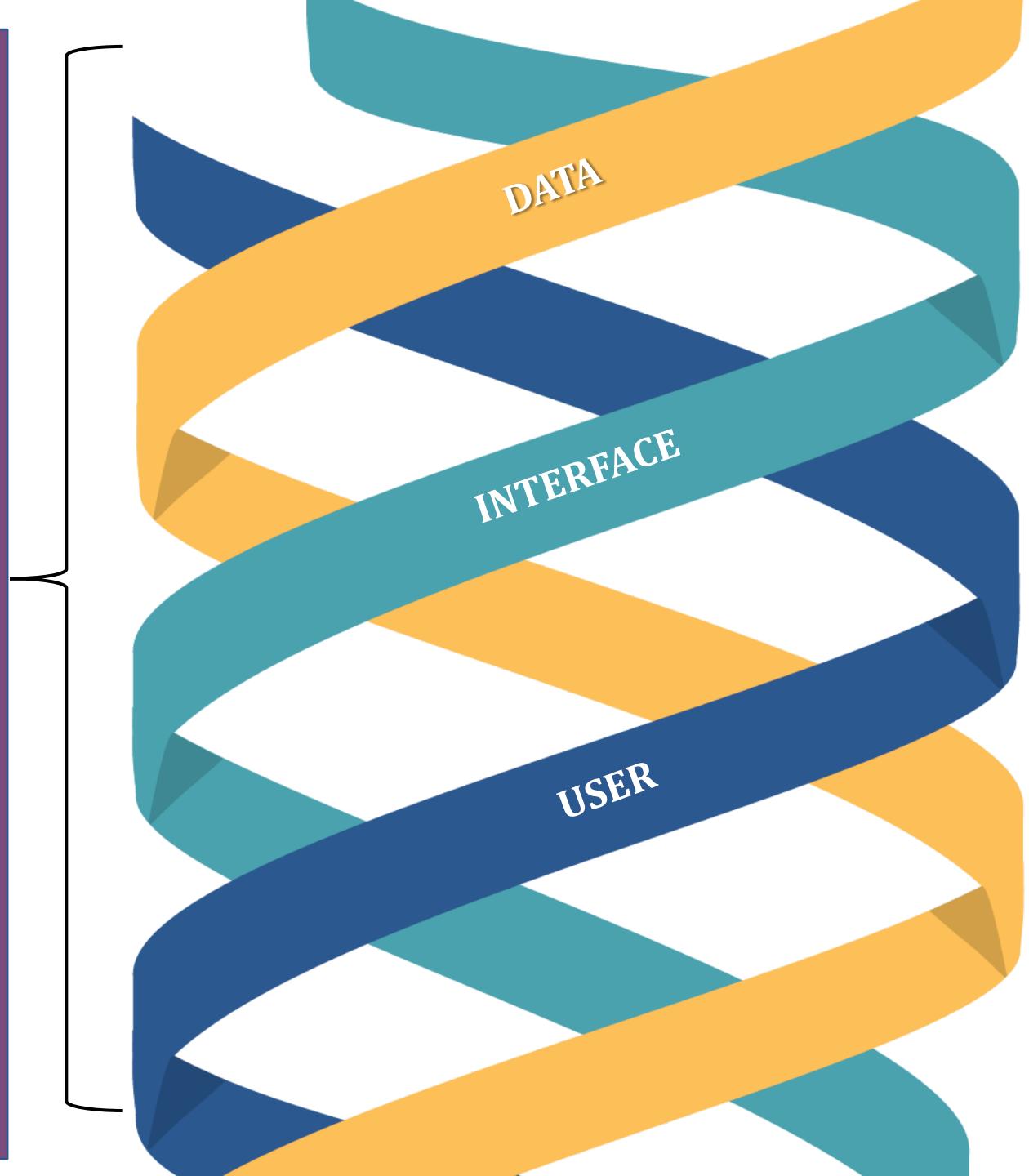
## Linking disciplines as a brokering community practice

- Translating user insights based on user interactions with affordances of linked data into tool recommendations.
- Negotiations between interests, technical alignment, disciplinary ideas about concepts.

→ interactional expertise trading zones

(Klein 2015)

- Example: “Narrative”
- The tool is a boundary object, part of the trading zone
- Interactional expertise as part of brokering



# *Narrative as example of interdisciplinary brokering*

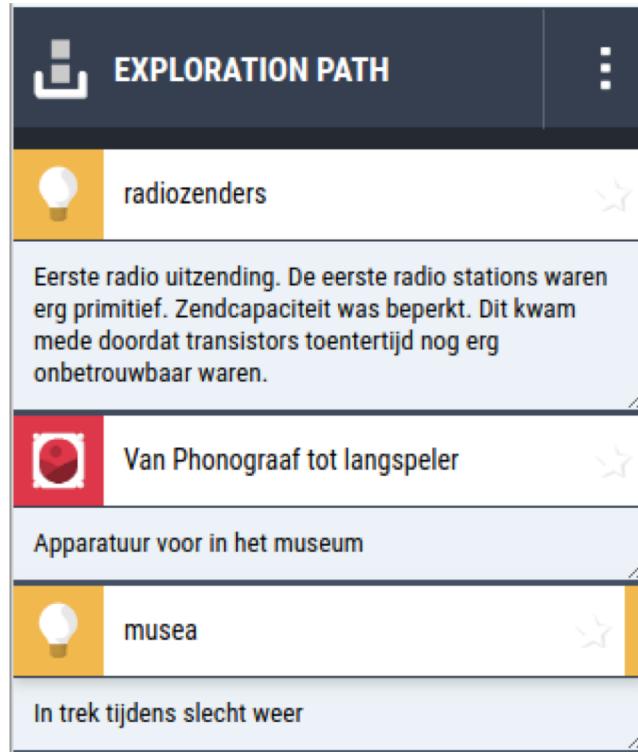
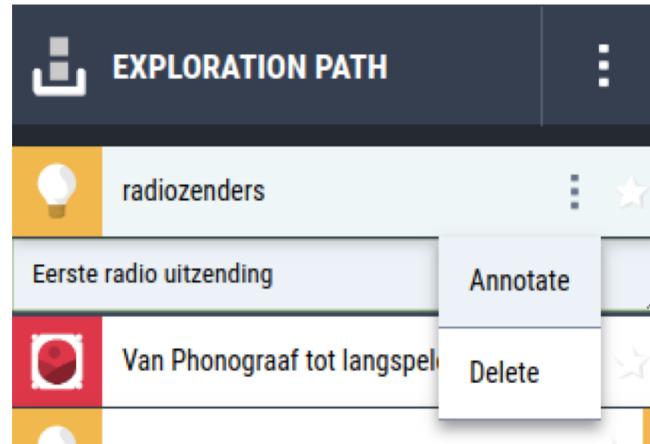
## Recommendations for the tool:

- Visualizations of events in “narratives” or search journeys are greatly valued, yet scholars struggle with contextualizing the presented linked data as entities are from different collections – each with its own socio-technical and historical context.
- Much like our negotiations during meetings – what is a narrative, what is an event?

EXPLORATION PATH	
	rotterdam
	ANP Nieuwsbericht - 27-03-1937 - 3
	Algemeen Nederlandsch Persbureau A. ...
	RADIO 2. Tweede uitzending van 16 Feb...
	Hotel EXELSIOR
	Prinses Juliana en Prins Bernhard zijn ...
	Prinses Juliana

# Result of brokering with user as starting point

- Give users agency to annotate how they perceive connections between linked entities to create their narratives about events.
- Provides a way to trace your own research process, documented in search paths.



## Conclusion: Research practices reconfigured by exploratory search

- Linked (Open) Data seems to trigger serendipitous ideas for narratives
- Search tactics are used to find and retrieve sources that the researcher expects, and knows how to ground in a body of knowledge

## Conclusion: Research practices reconfigured by exploratory search

- But contextualizing entities is so essential to researchers that DIVE+ should allow users to ground data.
- Ultimately, this study provides insights into different perspectives that define the framing of mediated events, and offers a critique of digital tools' socio-technical affordances in terms of their support for narrative creation by researchers

# What does this imply about knowledge exploration and interdisciplinary collaboration within Digital humanities

- Brokering via a boundary object: on the level of the tool
- Double dance: understanding users, understanding each other
  - Brokering work = tacit work
  - Tool criticism = also about using tools as boundary objects
  - Understanding collaboration as a brokering community practice paves the way for *a sociology of digital humanities* to also focus on the work that is part of tool research, creation and maintenance.
  - Linked data as a productive metaphor for DH work; to give agency to the process of collaborative tool development, maintenance and use.  
Understand this linking of disciplines through an analysis of collaboration – interactional expertise, boundary objects and practices of translation.

# Reflecting on research practice, together with the tool-building process

- Incorporate culture of search into the tools we use for research
- This relies on search practices, tacit knowledge
- But also on how we view the status of searching, of libraries, archives, databases, as collections of (past) knowledge

# Richard Graham “A ‘History’ of Search Engines: Mapping Technologies of Memory, Learning, and Discovery”

- There is no 1 history of search engines (example of the watch)
- What does the way in which we understand and give meaning to technological developments tell us about our society? Do we think in too linear terms when we think about search?
- Only when we start to worry about the consequences of a technology, do we start to think about technological developments
- He uses 3 concepts to describe history: remembering, learning and discovery

# Remembering, Learning, Discovering

- **Remembering:** View a technological development in its own historical context (p. 112) – search engines as memory devices

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- **Learning:** comparison with libraries – how practical technologies (for instance, sorting books) influence how we organize information (p. 117). Think about how connections between sources guide interpretation
- **Discovery:** Mundaneum – gives a new perspective on search engines (p. 119); this is not the first time that an attempt was made to make “all information” accessible. “To what extent, does a search engine enable unconstrained movement through unexplored information in a way that makes sense?” (p. 118)

Let's compare the intentions of technologies!

# Assignment: How search engines of archive interfaces facilitate remembering, learning and discovery

1. Acquaint yourself with the online audiovisual sources on  
<https://tinyurl.com/y8cw7wc4>

Try looking for a topic that interests you, and note how the online repositories allow you to search

2. Write down:

How does the Libguide allow you to search for this topic:

- Note down which repositories you searched in
- Note down the keywords you used to search
- What research questions are sparked by what you find?
- How do the search affordances of the online repositories shape the research question and your understanding of a particular topic?

# Conclusions: present 5 minutes

- How do search tools such as DIVE+ and Libguides facilitate remembering, learning and discovery?