

Research Cluster
digital_culture



Book of Abstracts

Digital Hermeneutics II: Sources, Analysis, Interpretation, Annotation, and Curation

Annual Conference of the Research Cluster
digital_culture at the FernUniversität in Hagen

23.– 24. November 2023, Frankfurt am Main



Programme

Thu. 23/11	
12:00 – 12:30	Welcome and Introduction
12:30 – 13:30	Keynote Andreas Fickers: Working on the “Digital Hermeneutics Cookbook”. Some recipes for turning “raw” into “cooked” data
13:30 – 15:00	Panel I: Digital Hermeneutics – Problem Statements
13:30 – 13:45	Michael Piotrowski: Model, Corpus, Interpretation: Elements of Computational Hermeneutics
13:45 – 14:00	Discussion
14:00 – 14:15	Bianca Mix: Towards an Evidence Storage for Hermeneutic Argumentation in a Knowledge Management System
14:15 – 14:30	Discussion
14:30 – 14:45	Carlos Manuel Romero Torrado: Soft and Hard Digital Hermeneutics. From Close Reading to Data Analysis
14:45 – 15:00	Discussion
15:00 – 15:30	Coffee
15:30 – 17:00	Panel II: From Data to Scientific Questions for Digital Hermeneutics
15:30 – 15:45	Isabelle Sarther: Infrastructures of Remembering and Forgetting in the Digital Age. An Empirical Study of the Auschwitz Museum on Twitter.
15:45 – 16:00	Discussion
16:00 – 16:15	Alexander Friedrich: Digital History of Concepts with the Word Sense Induction Based Research Tool SCoT. Application Examples and Methodological Questions.
16:15 – 16:30	Discussion
16:30 – 16:45	Onur Engin: “Noise Everywhere”: A Quantitative Textual Analysis of Travelers’ Accounts in Late Ottoman Istanbul
16:45 – 17:00	Discussion
17:00 – 18:30	Panel III: From Data to Scientific Methods for Digital Hermeneutics
17:00 – 17:15	Alexa Lucke: On the Benefits of Natural Language Processing in the Computational Analysis of Literary Texts
17:15 – 17:30	Discussion
17:30 – 17:45	Shahriyar Babaki, Shital Bagankar: Topic Extraction from Biographical Interviews
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18:00 – 18:15	Lucija Mandić: Topics of the Literary Canon: A Case Study of 19 th -century Slovenian Narrative Prose
18:15 – 18:30	Discussion
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19:30 – 20:30	Keynote Julianne Nyhan: Towards a Digital Hermeneutic Proving Ground? Multimodal Oral History: Prospects and Limits
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Fr. 24/11	
09:00 – 10:00	Keynote Joris van Zundert: Hermeneutics as an Interdisciplinary Means of Understanding
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10:45 – 11:00	Discussion
11:00 – 11:15	Cord Pagenstecher: Oral-History.Digital – Qualitative Data, Quantitative Methods, Ethical Questions
11:15 – 11:30	Discussion
11:30 – 11:45	Snack
11:45 – 13:15	Panel V: Costs and Benefits of Digital Hermeneutics
11:45 – 12:00	Fabio Roman Lieder, Burkhard Schäffer: Reconstructive Social Research in the “Uncanny Valley”? Orientations of Empirical Social Researchers Towards AI-Assisted Interpretation
12:00 – 12:15	Discussion
12:15 – 12:30	Edel Ennis: Applications of Digital Hermeneutics to Suicide Prevention and Digital Mental Health
12:30 – 12:45	Discussion
12:45 – 13:00	Flavia Ferrigno: On the Relationship Between Privacy and Memory
13:00 – 13:15	Discussion
13:15 – 14:00	Conclusion and Outlook

Digitization has reached almost all areas of science and scholarship. And even in the cultural sciences and humanities, computers, databases and digital tools are increasingly important. Last year’s annual conference “[Digital Hermeneutics: Machines, Procedures, Meaning](#)” of the research cluster *digital_culture* dealt with the theoretical and conceptual challenges inherent in hermeneutic methods, tools, and applications. The results of the conference supported understanding and meaning, when algorithms, programs, machines, and other technical procedures contribute to it.¹ Following up on these initial theoretical and conceptual results, we now want to address more technical aspects of methods, technologies, tools, and applications supporting Digital Hermeneutics under the title “Digital Hermeneutics II: Sources, Analysis, Interpretation, Annotation, and Curation” and take a look at digitally supported hermeneutic research processes and anticipate the future of digitized working practices in the cultural sciences and humanities.

Without such digital support systems, it will no longer be possible to index, find, annotate, and curate the ever-growing number of digitally available resources for research data. Digital systems are also already in use for analyzing, indexing, enriching, and annotating multimedia data. But what about systems that support the analysis, annotation, and interpretation of digital research data – thus: representation of hermeneutic methods – and their results as well as supporting machine learning, reasoning, and finally automating the documentation of annotation, interpretation, and understanding?

¹ <https://hagen-up.de/publikationen/von-menschen-und-maschinen-mensch-maschine-interaktionen-in-digitalen-kulturen/>

Thursday, 23/11

12:30 – 13:30

Keynote **Andreas Fickers**

Working on the “Digital Hermeneutics Cookbook”. Some recipes for turning “raw” into “cooked” data

“Information is to data what wine is to the vineyard: the delicious extract and distillate”, said the Canadian philosopher David Weinberger in “Too Big to Know” (2012). As digital humanists know, getting to the “delicious extract” – or turning the “raw” into the “cooked” – is both hard labor and often characterized by unexpected complications if not failure. In this lecture I try to reflect on the “doing” of digital humanities scholarship and argue why such a praxeological perspective can contribute to a “hermeneutics of practice” (Anita Lucchesi) that could serve as a theoretical framework for critical data driven humanities.

Inspired by authors such as Steven Ramsey, I will address some epistemological and methodological tensions in the “trading zone” of digital humanities. By playing with the metaphors of cooking, recipes and the cookbook, I aim at exploring the many challenges that characterize current knowledge production practices in the digital era.

Prof. Dr. Andreas Fickers is Professor of Contemporary and Digital History at the University of Luxembourg. His fields of expertise are European history of technology, transnational media history, digital history and hermeneutics, and public history. He is currently the Director of the Luxembourg Centre for Contemporary and Digital History (C2DH).

Thursday, 23/11

13:30 – 15:00

Panel I

Digital Hermeneutics – Problem Statements

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|---------------|---|
| 13:30 – 13:45 | Michael Piotrowski: Model, Corpus, Interpretation:
Elements of Computational Hermeneutics |
| 13:45 – 14:00 | Discussion |
| 14:00 – 14:15 | Bianca Mix: Towards an Evidence Storage for Hermeneutic Argumentation
in a Knowledge Management System |
| 14:15 – 14:30 | Discussion |
| 14:30 – 14:45 | Carlos Manuel Romero Torrado: Soft and Hard Digital Hermeneutics,
From Close Reading to Data Analysis |
| 14:45 – 15:00 | Discussion |

Michael Piotrowski

Model, Corpus, Interpretation: Elements of Computational Hermeneutics

Contrary to popular belief, hermeneutics or interpretation is not what characterizes the humanities. Disciplines are primarily characterized by their research objects and their research objectives, and only secondarily by the methods they use: a method must be suited to the research object and the research objective, not vice versa.

Consequently, interpretation is also used in the natural sciences; for example, Frodeman (1995) makes a compelling case for geology to be considered an “interpretive and historical science”. Hermeneutics thus doesn’t constitute the difference between the humanities and the natural sciences. In order to advance the development of computational hermeneutics, I believe it is more productive to look for commonalities rather than differences. As Gilles-Gaston Granger notes, the goal of all sciences (in the sense of “Wissenschaft”) is to build coherent and effective models of the phenomena they study (Granger 1967), where the phenomenon could be any research object, whether Alpha Centauri or everyday life in a medieval village in the south of France. Neither of these phenomena is directly nor fully accessible to us, which is precisely why we build models. All sciences construct and interpret models.

The datafication of the humanities through the large-scale digitization of sources and research objects, and the use of computational approaches (under a variety of labels, such as digital humanities, computational humanities, cultural analytics, cultoromics, cliodynamics, etc.) has, at first sight, brought the humanities closer to the natural sciences: whether scientific measurements or literary corpora, it is all data to be analyzed by computers. This is welcome by

some for making the humanities “more scientific”, it is criticized by others as “scientific”.

These seemingly opposing views have in common that they tend to focus almost exclusively on a particular and relatively late stage in the research process, the analysis of the data, which in digital humanities is typically constituted by a corpus, a collection of artifacts, such as texts or images.

But corpora do not occur naturally: they are intentionally constructed by scholars according to certain criteria (Piotrowski 2019) and for a certain purpose. The corpus is not the phenomenon, and not merely a passive “reflection” of the phenomenon either, but a model. A crucial hermeneutic question is then: what is the relation between the corpus and the phenomenon that it is supposed to model? However, following Bachelard (2020), the phenomenon does not exist as such either: corpora are, on the one hand, models of the phenomenon under study; on the other hand, the phenomenon is constructed through the construction of the corpus. In DH, the corpus thus has to be considered as a phenomenotechnical device, like a scientific instrument.

Computational hermeneutics requires that we overcome the Gadamerian notion of hermeneutics as something exclusively governed by tradition and an individual’s *Bildung* (Gadamer 1967). I therefore argue that computational hermeneutics has to take the corpus, the phenomenon, and their mutual relation into account; this is one of the goals of my current SNSF-funded research project “Towards Computational Historiographical Modeling: Corpora and Concepts”.

Prof. Dr. Michael Piotrowski is associate professor of digital humanities in the Department of Language and Information Sciences of the University of Lausanne’s Faculty of Arts. His current research focuses on the theoretical foundations of digital humanities and the use of formal models in the humanities.

Bianca Mix

Towards an Evidence Storage for Hermeneutic Argumentation in a Knowledge Management System

Oral history is an essential branch of biographical and historical research. However, as valuable as the research certainly is, it is without doubt time consuming since it includes searching in hundreds of interviews which are available as audio or video recordings. The interviews with witnesses from different periods in time provide first hand insight into the lives and thoughts of the witnesses. Based on the interview material transcripts are derived, which are the foundation for our research. In this paper we focus on the process of hermeneutic argumentation by implementing machine readable arguments. Machine readable arguments are a well established method in various other fields of research, e.g. medicine. Until now, the application is limited to texts with a complete structure and grammar. In a first step, we are using a manual process to derive machine readable arguments in RDF triple format, but the formalization offers future application in semi automated or automated manner.

Our approach of supporting both complete and semi-complete arguments allows researchers to reflect all kinds of arguments ranging from those found in the raw text using incomplete grammar to analytical and interpretive annotations by the researchers. To address the issue of formalizing arguments in a machine readable manner an evidence storage has been implemented allowing researchers to store arguments in a standardized format and the flexibility to add information, which is missing in the original archive material.

Our approach extends a Knowledge Management System (KMS) by the evidence storage for hermeneutic research. Applying our approach, arguments can be searched and filtered by named entities such as “Wehrmacht” as the subject or the object of an action. Using a structured way of storing arguments also supports automated or partly automated argument retrieval from texts.

Instead of scanning transcripts for words, the evidence storage allows researchers to examine complete arguments with their search. This ensures that the keywords relate to the argument instead of the keyword being only in close proximity in the text. Furthermore, the standardized evidence storage allows for a visualization of arguments. This supports historians in both, speeding up their research and structuring the sources. Moreover, this approach is fundamental for easily gathering arguments from a multitude of interviews and even further using previously drawn conclusions as well.

Bianca Mix graduated with a B.Sc. in Business Information Systems at the Department of Cooperative Studies at Berlin School of Economics and Law back in 2009. In 2017 she received the M.Sc. degree in Computer Science from FernUniversität in Hagen. Currently, she is pursuing a PhD at the same university. In her industrial career she is leading agile teams for automotive software development with a focus on user experience.

Carlos Manuel Romero Torrado

Soft and Hard Digital Hermeneutics, From Close Reading to Data Analysis

The objective of this investigation is to establish a comprehensive framework encompassing a spectrum of methodologies that scrutinize the convergence and divergence within the realm of digital hermeneutics practices. This article will review different digital hermeneutic works such as Lang (2020), van de Ven (2023), and Gerbaudo (2016). These articles review different methods of NLP like Deep Learning and Rule Based algorithms to study meaning and narratives within digital text. The convergence of these studies relies upon the hermeneutic practices of close reading here called soft digital hermeneutics and sampling, data scaling, or data visualization that fall in the category of hard hermeneutics or data hermeneutics. As seen in *The Hermeneutics of Screwing Around* (2010), hermeneutics not only refers to reading but to any form of interpretational technology aimed at understanding any form of human production.

First, I will introduce the development of available methods of NLP and the standard practices within digital hermeneutics related to text. Subsequently, I'll delve into a detailed comparison of these methods, emphasizing their varying effectiveness in different contexts. I'll also address the impact of noise, time, and vocabulary on NLP, discussing the role of tailored rule-based algorithms, lexicons, and training data in improving efficiency. It's crucial to stress that hermeneutics goes beyond converting text into data; it's about understanding narratives through their symbolism and constantly comparing parts to the whole. Gerbaudo's work (2016) illustrates how different types of sampling can provide distinct insights into a conversation, granting data a meaningful narrative context. To distinguish digital hermeneutics from digital humanities, it must anchor itself in its hermeneutical

heritage as an open interpretative framework adaptable to diverse textual forms. I argue that adopting a Ricoerian approach, influenced by interpretative sciences like psychology, imbues digital hermeneutics with a unique focus distinct from digital humanities. The researched papers share a common goal: unraveling the narratives symbolized within texts. Consider the case of hermeneutics of medical histories, where comprehending the context and authors' personal lives surpasses the use of mere data from physical analysis in enhancing rehabilitation program efficacy.

Similarly, Van de Ven's work on depression in Twitter (2023) underscores the significance of scaled reading for comprehensive data analysis, understanding digital productions as real-world actions. This knowledge augments and redefines our grasp of data, transcending mere visualization of variables to offer profound hermeneutic insights into text, context, and author. This journey from the whole (data) to the part (text) constitutes a genuine hermeneutic circle that brings forward the narratives that exist in the text.

In conclusion, it is imperative to develop tailored natural language processing tools for labeling, categorizing, and sampling information for more efficient visualization and a better later appliance of close reading. The investigations that were reviewed offer general proposed analytic tools and programs such as VADER, ILDA, FinBERT or ChatGPT. These tools should aim for a more intricate rating of discourse but always complemented with scaled reading and comprehension of the context in which the data was produced.

Carlos Manuel Romero Torrado, B.A. in philosophy by UARM (Universidad Antonio Ruiz de Montoya), works at Digitalization and Codification at Datum International and attorney's office of the Ministry of Education in Peru. Author of "Hermenéutica Digital y Análisis de Sentimiento en Twitter" (2021).

Thursday, 23/11

15:30 – 17:00

Panel II

From Data to Scientific Questions for Digital Hermeneutics

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|---------------|--|
| 15:30 – 15:45 | Isabelle Sarther: Infrastructures of Remembering and Forgetting in the Digital Age. An Empirical Study of the Auschwitz Museum on Twitter |
| 15:45 – 16:00 | Discussion |
| 16:00 – 16:15 | Alexander Friedrich: Digital History of Concepts with the Word Sense Induction Based Research Tool SCoT. Application Examples and Methodological Questions |
| 16:15 – 16:30 | Discussion |
| 16:30 – 16:45 | Onur Engin: "Noise Everywhere:" A Quantitative Textual Analysis of Travelers' Accounts in Late Ottoman Istanbul |
| 16:45 – 17:00 | Discussion |

Isabelle Sarther

Infrastructures of Remembering and Forgetting in the Digital Age. An Empirical Study of the Auschwitz Museum on Twitter

In December 2022 hundreds of followers of the Auschwitz Museum on Twitter were confronted with the situation that the Memorial and Museum Auschwitz-Birkenau's published content no longer appeared in their feeds, while others reported unintentionally unfollowing the museum. This example elucidates the practices of "content moderation" or "curation". Deeply embedded in the technical infrastructures of social media platforms, they are understood as a specific mode of digital hermeneutics, of sense-making, involving both human and algorithmic actors. To make "sense" at all, within the course of these practices content is not only selected and arranged, but also curated and ultimately made (un)available or (in)visible. Due to an extreme lack of transparency exhibited by social media companies regarding the extent of content removal, the reasons behind certain decisions, or the inconsistent enforcement of rules, content curation often appears to be arbitrary, invisible, and devoid of clear rules.

Upon closer examination, research on content curation on social media platforms also poses new challenges to hermeneutic methodologies and methods. Social media platforms must be seen as both subjects of study and instruments for research since we as researchers are also affected by their technical infrastructures of algorithmic software and technology in our study.

The planned presentation investigates how the meaning of the cultural communication of museums is curated by practices of remembering and forgetting and conversely, how museum institutions also curate the meaning of practices of remembering and forgetting.

Engaged in the process of sense-making, content curation exerts influence on the recollection of the past, the understanding of the present, and the shaping of future memory. In accordance with Elena Esposito's theory of algorithmic memory, content curation is therefore conceptualized as a practice of remembering and forgetting. This theoretical vocabulary is then linked with the insights of STS-theorists Geoffrey C. Bowker and Susan L. Star, which enables conceiving social media platforms as infrastructures. It is precisely these social media infrastructures that co-constitute sense-making processes. Building upon this theoretical framework, empirical data from an ethnographic research project is presented, focusing on the practices of content curation and their sense-making processes on Twitter in the context of museums.

The Auschwitz Museum is used as a case study since it publishes content framed as "sensitive" within the Twitter guidelines. The empirical results of the project demonstrate the extent to which social media infrastructures and their transformations (e.g., algorithmic right-wing biases since Elon Musk's Twitter takeover) have become embedded in the social reality of museums on Twitter. In conclusion, the presentation formulates (methodological) opportunities and challenges for further research in the field of digital hermeneutics.

Isabelle Sarther is a research associate and doctoral candidate at the Department of Digital Transformation in Culture and Society at the FernUniversität in Hagen. Her research interests encompass the study of digital publics and social media as well as Human-Animal Studies from the perspective of (Feminist) Science and Technology Studies.

Alexander Friedrich

Digital History of Concepts with the Word Sense Induction Based Research Tool SCoT. Application Examples and Methodological Questions

This paper presents an innovative method of digital hermeneutics in the field of conceptual history that is being used on a large scale for the first time in two research projects.

The tool “Sense Clustering over Time” (SCoT, <https://scot.ltdemos.informatik.uni-hamburg.de>) is based on the method of Word Sense Induction. It allows a pre-knowledge-free detection and visual representation of the semantic structure of words and their changes over time. Unlike lexical databases, such as WORDNET or GERMANET, the semantic networks generated with SCoT are not based on semantic relations identified and defined by lexicographers, but on a semi-automatic statistical induction of different senses of single words as used in different corpora. The underlying NLP technology of Word Sense Induction relies on the “Distributional Hypothesis”: If we define the distribution of words as the sum of all contexts in which they occur, then words can be regarded as similar if their distribution is the same. Based on this distributional approach, SCoT computes the gradual similarity of words by comparing the distribution of their syntagmatic relations in large time-sliced corpora. By this means, different senses of a word (e.g. web as textile fabric or as digital infrastructure) can be distinguished and compared between different historical periods. Polysemic structures and changes of words senses can be visualized by a graph representation. The graphs of the similarity relations of words and their clusters may then serve as the basis of a conceptual interpretation. After statistical analysis, this is where hermeneutics comes into play.

With different GUI features supporting the conceptual analysis and hermeneutic process, the tool is particularly suitable for the study of the history of ambiguous terms and concepts (such as Koselleck’s Grundbegriffe). At the same time, it enables the selection of exemplary text passages in which the searched words senses occur. As – unlike in vector space models, for example – the reasons for the computed similarity scores of words remain accessible and comprehensible to humans, SCoT allows a seamless combination of close and distant reading. Questions in the history of concepts that can be investigated with the help of SCoT are, for example: When and where did the various meanings (senses) of basic concepts, such as energy, creativity, crisis, or network, emerge or change, and what related concepts might have been displaced, assimilated, or replaced by them?

The paper will present the tool, its method, and some experiences of its application in the digital history of concepts, discuss selected methodological problems that arise in its use and consider epistemological questions regarding the future work with SCoT as an experimental system for digital hermeneutics.

Dr. Alexander Friedrich is research associate in the project “The 20th Century in Basic Concepts” at Leibniz-Zentrum für Literatur- und Kulturforschung Berlin and Principal Investigator of the ERC Synergy Grant “The Cultures of the Cryosphere”.

Onur Engin

“Noise Everywhere”: A Quantitative Textual Analysis of Travelers’ Accounts in Late Ottoman Istanbul

The lack of sound recordings of everyday life before 1900 makes historical texts and regulations concerning sounds the primary sources for understanding the auditory environment. Among these texts, travel writings, in particular, often present numerous rich and unexplored accounts. This is because when a sound becomes a regular part of everyday life, residents tend to not notice it unless it is overly present or completely absent. Comparing the sounds of Istanbul with those of their place of origin, European travelers listened with fresh ears and emphasized sounds that they considered disruptive (or typical of Istanbul).

Noise, as a multifaceted and nuanced phenomenon, offers ample opportunities and theoretical frameworks for auditory history. Adding a sensorial perspective into digital history, this paper aims to enrich our understanding of the changing nature and role of noise in the urban past, besides observing its organic and dynamic meaning related to each earwitness. It argues that a quantitative analysis of travel accounts can facilitate interpreting changes in urban soundscapes from both temporal and spatial perspectives. When combined with qualitative inquiries, these auditory experiences can lead to richer and more nuanced insights into evolving socio-political, cultural, and urban contexts.

Using text mining on a custom corpus of travelers’ accounts, covering over two hundred texts in the French and English languages published within a span of 110 years and totaling over 30,000 pages, the analysis shows a decrease in the frequency of noise-related terms within travelers’ accounts of late Ottoman Istanbul. This trend could partly be attributed to the industrialization and urbanization efforts during the nineteenth century, which made the Ottoman capital less distinct from the cities of the European visitors. A negative correlation was also observed between the mentions of war and noise-related terms within these travel accounts. As a result, we can assume that the city became quieter during wartime due to the decrease in cultural, commercial, and touristic activities.

Dr. Onur Engin is a Postdoctoral Research Associate at Darwin College and the Faculty of Music at the University of Cambridge. He recently completed his PhD in Art History at Koç University with a dissertation titled “Church Bells, Cannons, and Talking Machines: Sounding Devices and the ‘Modernization’ of Late Ottoman Istanbul.”

Thursday, 23/11

17:00 – 18:30

Panel III

From Data to Scientific Methods for Digital Hermeneutics

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|---------------|--|
| 17:00 – 17:15 | Alexa Lucke: On the Benefits of Natural Language Processing in the Computational Analysis of Literary Texts |
| 17:15 – 17:30 | Discussion |
| 17:30 – 17:45 | Shahriyar Babaki, Shital Bagankar: Topic Extraction from Biographical Interviews |
| 17:45 – 18:00 | Discussion |
| 18:00 – 18:15 | Lucija Mandić: Topics of the Literary Canon: A Case Study of 19 th -century Slovenian Narrative Prose |
| 18:15 – 18:30 | Discussion |

Alexa Lucke

On the Benefits of Natural Language Processing in the Computational Analysis of Literary Texts

In this talk, the heuristic benefits of Natural Language Processing (NLP) for the computational analysis of literary texts will be discussed transdisciplinarily, from the perspective of literary studies and computer science. Along some exemplary literary scientific questions and problems, selected literary texts, which in the traditional literary canon are assigned to either naturalism or (literary) modernism, will be analyzed on the basis of linguistic occurrences that can stand for different literary scientific categories. For this reason, an NLP-based tool (Qualicen Scout) is used, whose original function is to check the quality of requirements for a software product (Requirements Analysis, Femmer 2017).

The tool detects so-called findings in the text, such as imprecise phrases, negative words or vague pronouns, with the help of adjustable filter mechanisms. It is based on typical technologies of NLP such as parsing, tokenizing, lemmatizing and POS-tagging. The tool was used to empirically test whether, on the basis of the frequencies of linguistic occurrences or findings in a limited corpus of naturalistic and modern texts, it is indeed possible to derive unambiguous epochal affiliations. Here, the epistemological added values of digital modeling in the context of the NLP-based tool are the focus of the transdisciplinary approach, such as the hermeneutic validation of digital research results and the requirements analysis or specification in order to meet firstly the formalization of literary studies research categories, secondly the requirements of cultural science-oriented literary studies questions, and thirdly, the quality of requirements.

For this purpose, a mixed-methods research design (Schröter et al. 2021) is used, whereby analysis categories, results, and requirements are reciprocally perspectivized. Hermeneutic methods are thus combined in this respect with NLP-based methods from computer science for text analysis. Literary texts and the modeling of cultural and multimodal artifacts pose a methodological challenge for formalization in computational (quantitative) procedures due to their fictional, aesthetic, and symbolic-cultural, but often also ambiguous or even contradictory aspects. An iterative approach is proposed in the workshop that is transdisciplinarily connectable, both in the sense of an augmented hermeneutic circle in the humanities and cultural studies (Gius/Jacke 2017: 240), and in the direction of iterative procedures (such as the waterfall model) of computer science. In the presented case study, this means a requirement specification after hermeneutic validation of the program's linguistic filters according to the proposed literary analysis criteria and categories (Lucke/Femmer 2024).

Dr. Alexa Lucke teaches and researches at the Department of German Studies at the University of Siegen. Previously, she was a research associate at SFB 1285 "Invectivity. Constellations and Dynamics of Disparagement" at the TU Dresden.

Shahriyar Babaki, Shital Bagankar

Topic Extraction from Biographical Interviews

The “Topic Extraction from Biographical Interviews” project is a collaborative endeavor between the Institute of History and Biography (IGB) at FernUniversität in Hagen, Germany, and the Master of Applied Data Science and Analytics program at SRH University Heidelberg. Supported by the extensive research data archive „Archiv “Deutsches Gedächtnis”“ (ADG), the IGB curates a diverse collection of digital transcripts, audio recordings, and video files, housing thousands of interviews from both internal IGB research projects and external sources, thereby constituting a rich repository of historical and personal narratives.

This project centers on a historical interview dataset featuring approximately 145 participants, resulting in a substantial corpus of about 7,200 segments, with each segment comprising 50 sentences. The interviews cover topics ranging from World War II to the present day. The primary aim is to establish a comprehensive Natural Language Processing (NLP) pipeline for the extraction of topics from these interview transcripts to aid interpretation and information retrieval. The pipeline is structured into six key phases: data preprocessing, generation of RoBERTa-based embeddings, dimensionality reduction, clustering, labeling, and classification. The project initiates with data preprocessing to ensure data quality and consistency. RoBERTa, a versatile multilingual transformer model, is utilized for embedding. Dimensionality reduction is undertaken as an initial step before clustering, significantly enhancing program efficiency while allowing clusters to share a common dimensional space. The Uniform Manifold Approximation and Projection (UMAP) technique is harnessed for this purpose. To capture semantic relationships between vectors, the Jaccard method is incorporated within the UMAP process.

Fine-tuning of dimensionality reduction is executed with the optimal number of dimensions determined through a parallel assessment of scores obtained from affinity propagation clustering and Hierarchical clustering. Subsequently, Hierarchical clustering is applied to categorize the dataset, revealing its hierarchical organization. This analysis uncovers three overarching clusters and 146 finely detailed clusters, providing both structural insights into the dataset’s organization. Following clustering, data labeling is performed using Llama-2, a Large Language Model (LLM). This enhances data accessibility and comprehension by assigning labels to cluster content based on the cluster’s centroid. These steps collectively enable efficient topic extraction from interview transcripts, facilitating historical narrative exploration and insightful analysis. During the labeling phase, the results underwent evaluation by domain experts (collaborating researchers), confirming the reliability and trustworthiness of the labels assigned to the clusters. The classification phase served to elucidate cluster-member relationships and assist in selecting topics for upcoming interviews.

In conclusion, the “Information Extraction from Biographical Interviews” project, led by IGB and SRH, not only advances the field of Oral History but also amplifies the collective understanding of human experiences and historical perspectives. It stands as a testament to the power of interdisciplinary collaboration, harnessing technology to unlock the richness of biographical interviews, making them readily interpretable for academic, societal, and historical pursuits.

Engineer **Shahriyar Babaki** blends earthquake engineering, data science, math, and physics, contributing to diverse fields like cancer treatment and finance.

Shital Bagankar is a dedicated student currently pursuing an MSc in Advanced Data Science and Analytics at SRH Heidelberg, hailing from India

Lucija Mandić

Topics of the Literary Canon: A Case Study of 19th-century Slovenian Narrative Prose

Although the literary canon, the privileged subject of literary hermeneutics, has traditionally been approached as a collection of masterpieces that attest to the universality of human experience, a cursory review of historical changes to the canon points to the fact that its establishment was influenced by the value systems of literary scholars, publishers, editors, and, ultimately, readers. In Slovenian literary studies, the belief persists that the emergence of high-brow literature and the birth of the novel — as a more prestigious addition to the short story (Sln. povest) is related to the rise of the bourgeoisie in the 19th century, whose members were also the main protagonists of the new genre. Meanwhile, popular literature — which was published in large print runs and is today largely forgotten — is characterized by greater genre differentiation, as it includes a number of popular genres such as peasant and historical fiction.

This paper examines whether a statistical approach using computer-generated topic models supports the traditional notions about the establishment of the literary canon. Based on the assumption that topic models can serve as an approximation for a form of content that displays semantic coherence and appears with a certain level of consistency and regularity in textual documents, the paper will first investigate how the distribution of computer-generated topics correlates to the manually extracted information on literary genre. Furthermore, it will try to establish a correlation between the distribution of topics and the degree of canonicity, which is in itself a highly subjective category.

For these purposes the paper will analyze the Corpus of longer narrative Slovenian prose KDSP 1.0. The corpus contains longer works of narrative fiction published from 1836-1918, and is provided with metadata which includes information about the degree of canonicity based on inclusion in school textbooks after 1980, as well as information about the genre of individual texts.

Topics will be extracted through Latent Dirichlet Allocation (LDA) using Python's Gensim library and MALLET topic modelling tool for the purpose of comparing two different inference algorithms. The results will be tested both quantitatively and qualitatively: in the former case, coherence score will be used to determine the optimal number of topics; in the latter, the documents with the highest proportions of topics will undergo a close reading. On the basis of this case study, the paper will argue that there is no significant difference among prevalent topics between canonical and non-canonical literary works despite perceived differences in the dominant genres. However, a difference does appear in the distribution of the topics within the literary works, as canonized literary works are more likely to be mono-topical than their non-canonized counterparts.

Lucija Mandić is a doctoral student at the Postgraduate School ZRC SAZU, where she works on a dissertation on a distant reading of the Slovenian 19th century narrative prose. Currently she is employed as a junior researcher at the Institute of Slovenian Literature and Literary Studies at ZRC SAZU.

Thursday, 23/11

19:30 – 20:30

Keynote: Julianne Nyhan

Towards a Digital Hermeneutic Proving Ground? Multimodal Oral History: Prospects and Limits

As ever richer seams of oral history interviews are being mapped and, at least in theory, being made amendable to data-driven oral history research, new opportunities are being opened to reflect on how meaning is made, unmade and remade via the overlaying of digital technology in the oral history domain.

The question thus follows, as to what extent oral history act as a proving ground, or a ground where digital hermeneutic theories and analysis can be applied to historical datasets, and transferred to a broader domain of digital hermeneutic research?

Reflecting on the hermeneutic implications of a so-called “multimodal oral history”, or an oral history that can actively engage with the oral, aural, and sonic affordances of both retro-digitalized and born digital OH (DOH) collections, this lecture will reflect on prospects and futures for oral history and digital hermeneutics in the digital age.

Prof. Dr. Julianne Nyhan is Chair of Humanities Data Science, TU Darmstadt and Professor of Digital Humanities, UCL, where she leads the Towards a National Collection-funded “The Sloane Lab: looking back to build future shared collections”. She has published widely on digital humanities, especially the history of digital humanities and oral history and is a Fellow of the Royal Historical Society, UK. Her most recent book is: Nyhan, Julianne. *Hidden and Devalued Feminized Labour in the Digital Humanities: On the Index Thomisticus Project 1965-67*. Routledge, 2023.

Friday, 24/11

9:00 – 10:00

Keynote: Joris van Zundert

Hermeneutics as an Interdisciplinary Means of Understanding

Hermeneutics has been reconceived multiple times over by a score of scholars. Its definition may therefore seem slippery or evasive, and this seems to alienate researchers at the inductive side of the spectrum of scientific styles of thinking. A most unfortunate situation, because there is a compelling case to be made that hermeneutics is exactly the means that may allow researchers to bridge the infamous gap between humanities approach and scientific method. In this contribution I want to leverage the polysemic nature of the notion of “hermeneutics” to recast hermeneutics as a boundary object. A boundary object is defined as a concrete or abstract object that is “both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites”. Clearly, currently hermeneutics lacks some robustness to exact interest from computational practitioners. However, in the guise of a methodological boundary object, rather than being narrowly defined by one specific discipline, hermeneutics may function as a meta-disciplinary method to facilitate understanding between practitioners of different disciplines about the limits and constraints that govern validity of interpretation and inference in each others’ fields.

As a concrete method this proposed hermeneutics invites researchers in interdisciplinary projects to systematically identify stages of transformation of data, and to reflect from the

perspectives of the disciplines involved explicitly on what constitutes a valid interpretation.

As a thought experiment this contribution subjects two concrete computational literary research projects from the scientific context of the Huygens Institute to such an introspection. The first project tries to computationally gauge the impact novels have on readers. A heuristic model was used to compute reader impact from 500.000 online reviews. Reader impact is subsequently correlated to linguistics, thematic, or narrative features mined from the full text of 20.000 novels. The goal of the other project is to automatically annotate events in story texts. In this case ChatGPT is used as a proxy for human annotation to investigate the overlap and disagreement between large language models based annotation and human expert annotation of narrative events.

The projects themselves yield interesting operationalizations and results. The added value of the hermeneutic introspection of these computational literary studies is to reveal strikingly incommensurate understandings of what constitutes valid interpretation, precision, and accuracy for the different researchers involved. None of these understandings must necessarily be wrong, given particular styles of scientific thinking. Rather the point is to show that a dialectic of the hermeneutics involved facilitates a necessary and productive interdisciplinary methodological dialogue that too often does not happen.

Dr. Joris J. van Zundert is senior researcher and developer with the department of Computational Literary Studies and the Digital Humanities Lab at the Huygens Institute in Amsterdam. His research focuses on computational algorithms to analyze literary texts and on humanities information and data modeling.

Friday 11/24

10:00 – 11:30

Panel IV

Sustainable Data Management for Digital Hermeneutics

- | | |
|---------------|--|
| 10:00 – 10:15 | Isabel Eiser: Co-Creating in Practice. Work Formats, Decision-Making, and Managing Research. Logics in the Interdisciplinary Work for the D-WISE Tool- Suite |
| 10:15 – 10:30 | Discussion |
| 10:30 – 10:45 | Alexander Duttenhöfer: Towards Supporting Digital Hermeneutic Applications with Emerging Knowledge and Argumentation Detection through Vocabulary Evolution Analysis |
| 10:45 – 11:00 | Discussion |
| 11:00 – 11:15 | Cord Pagenstecher: Oral-History.Digital – Qualitative Data, Quantitative Methods, Ethical Questions |
| 11:15 – 11:30 | Discussion |

Isabel Eiser

Co-Creating in Practice. Work Formats, Decision-Making, and Managing Research Logics in the Interdisciplinary Work for the D-WISE Tool Suite

D-WISE is a BMBF-funded interdisciplinary research project between the Anthropological Studies of Culture and History and the Language Technology Group at the University of Hamburg. In a co-creation approach, the interdisciplinary team develops a prototypical work environment – the D-WISE Tool Suite (DWTS) – aiming at linking hermeneutic approaches to discourse analysis with computational methodologies for the sociology of knowledge approach to discourse (SKAD, Keller 2018). The DWTS thus appears as a product and materialization of our negotiations around the questions of how to implement a collaborative and supportive digital tool for qualitative discourse analyses. A constant critical and comprehensive testing and using of digital tools and AI for qualitative analyses are focal part of these interdisciplinary collaborations. Consequently, promoting mutual understanding of the disciplines is necessary to operate in a common interdisciplinary setting.

For these processes of communication, translation, and exploration, we use various co-creation formats such as hands-on sessions and user stories providing feedback loops. Discourse analytical approaches like SKAD aim at investigating the discursively produced social construction of reality, by analyzing interpretative patterns, narrative structures, or the representation of actor interrelationships in discourse (Berger/Luckmann 1990; Keller 2007). The approach of implementing discourses as data in digital structures and to digitally support inter-

pretative processes through filtering, classifying and visualizing, needs to be carefully reflected upon in the software development process as well as in the empirical studies to ensure a meaningful combination of digital and hermeneutic approaches to discourse analysis. Based on manual SKAD-oriented analyses on data protection issues in the German E-Health sector, further investigation of the potentials of manual and digital hermeneutically-oriented discourse analyses as well as the development and implementation of digital tools in the DWTS were evaluated by researchers from informatics and humanities. By using different digital tools to interpret and explore multimodal research data, the development of the DWTS is adapted successively and follows the explorative workflow of the Grounded Theory (Glaser/Strauss 1967). Processes of structuring and filtering on the one hand, and visual techniques on the other hand build the main strands to manage, analyze, and interpret research data as part of conceptual and methodological reflections.

Where can semi-automated tools and explorative applications meaningfully support manual research processes? This paper aims at presenting methodological reflection loops, decision making and exchange processes of this interdisciplinary project within the DWTS development process. In addition to insights into our co-creation work process, we offer conference participants to test the DWTS onsite, and to initiate further discussions and methodological considerations.

Isabel Eiser is research assistant in the D-WISE project at the Institute of Anthropological Studies in Culture and History and PhD candidate at the research center “Hamburg’s (post-) colonial legacy” in Global History at the University of Hamburg.

The BMBF-funded joint research project D-WISE (www.dwise.uni-hamburg.de) is a collaborative and interdisciplinary project at the University of Hamburg between the Institute of Anthropological Studies in Culture and History and the Language Technology Group at the Department of Informatics.

Alexander Duttenhöfer

Towards Supporting Digital Hermeneutic Applications with Emerging Knowledge and Argumentation Detection through Vocabulary Evolution Analysis

In this paper, we present an approach to identify and classify newly emerging medical knowledge within newly emerging medical documents of a medical digital library from medical vocabulary evolution. Furthermore, we present an analogy of opportunities to adapt this method to the field of digital hermeneutics within application domains of Digital Humanities. Hermeneutics is the theory of interpretation and understanding of text or language (Schmidt 2014), while digital hermeneutics (DH) describes the analysis of digitized knowledge, for example, through computer-supported digital methods like natural language processing (NLP), machine learning (ML) and artificial intelligence (AI) (Daquino et al. 2020; Fickers et al. 2022).

New medical knowledge can be represented by emerging named entities (eNEs) or emerging arguments (eAs) which are unknown to the broader research community and are emerging as long as they are not part of formally community-managed medical vocabularies like medical subject headings (MeSH) (Nawroth 2020). MeSH named entities are used in the medical full-text literature archive PubMed Central (PMC) to index and categorize documents. We introduce a medical vocabulary analysis to examine MeSH named entities in PMC documents to identify emerging Named Entities in these documents and evolve it to hermeneutic vocabularies.

In addition, the new NLP-feature emerging Documents (eDs) is presented that classifies documents as emerging or non-emerging and supports ranking emerging Arguments into argumentation structures. This allows chaining arguments based on their emerging state which can support identifying primary or secondary sources. Additionally, a classification pipeline to detect eDs in digital hermeneutic knowledge based on medical subject headings (MeSH) vocabulary is designed to facilitate the introduced feature into NLP pipelines.

Alexander Duttenhöfer is a part-time, external PhD student at the Chair of Multimedia and Internet Applications, FernUniversität in Hagen. His research incentive is to create argumentative tree structures using natural language processing and artificial intelligence to support medical expert decisions.

Cord Pagenstecher

Oral-History.Digital – Qualitative Data, Quantitative Methods, Ethical Questions

Oral history interviews, i.e. audio or video-recorded, narrative biographical interviews, are an extremely rich type of data for different disciplines and subjects, and of interest for the society at large. However, they are very qualitative in nature, scattered over different institutions, and mostly accessible on-site only. Therefore, they have not often been analyzed with digital tools.

Now, Freie Universität Berlin has launched the interview portal Oral-History.Digital allowing for a cross-collection search through manifold interview archives, and enabling the analysis and annotation of videos, transcripts and additional material. At the same time, Oral-History.Digital supports collection holders in archiving, curating and presenting their interview collections in a secure environment with a differentiated user management. Currently, nearly 3.000 interviews from over 20 institutions are available, with more archives being integrated continuously. Being developed together with the community, the new infrastructure tries to anticipate evolving requirements and challenges of digital research with oral history interviews.

Following the F.A.I.R. principles, Oral-History.Digital makes the interviews findable, accessible, interoperable and re-usable. But the understandings and specifications of interoperability and reusability need to be discussed within the community. Given the qualitative and personal character of life-story interviews and the hermeneutic methods of interpretation in oral history, for most researchers, “re-using” means watching, listening, reading and analyzing individual interviews and their transcripts.

There is a growing interest, however, in text mining and other digitally supported research methods. Since the 2015 “Oral History meets Linguistics” workshop, some interdisciplinary explorations have begun in fields like corpus linguistics or multimodal interaction analysis. Automatic speech recognition is widely used now, artificial intelligence tools are being explored with oral history interviews.

But these methods and their requirements regarding accessibility and interoperability might not always be compatible with a respectful use of personal life-stories, with the privacy protection requested by the interviewees or with the original goals of the interview project. Recognizing the collaborative character of producing oral history sources in the dialogical interview process, the oral history community has discussed research ethics early on. With the concept of shared authority, interviewer-researchers have reflected on their responsibility towards narrators and their communities since the 1980s.

Nowadays, the CARE principles put forward similar ideas, although from a different perspective. But are these principles applicable to oral history archives? What degree of decontextualization is necessary and acceptable, which research methods or questions can be seen as adequate, how much authority should the narrators retain about re-using their interviews?

Dr. Cord Pagenstecher is historian in the Digital Interview Collections team at the University Library of the Freie Universität Berlin, where he leads the DFG funded project Oral-History.Digital. He has published on visual and oral history, forced labor in Nazi Germany and tourism research (www.cord-pagenstecher.de).

Friday, 24/11
11:45 – 13:15

Panel V

Costs and Benefits of Digital Hermeneutics

11:45 – 12:00	Fabio Roman Lieder, Burkhard Schäffer: Reconstructive Social Research in the “Uncanny Valley”? Orientations of Empirical Social Researchers Towards AI-Assisted Interpretation
12:00 – 12:15	Discussion
12:15 – 12:30	Edel Ennis: Applications of digital hermeneutics to suicide prevention and digital mental health
12:30 – 12:45	Discussion
12:45 – 13:00	Flavia Ferrigno: Relationship between privacy and memory
13:00 – 13:15	Discussion
13:15 – 14:00	Conclusion and Outlook

Fabio Roman Lieder, Burkhard Schäffer

Reconstructive Social Research in the “Uncanny Valley”? Orientations of Empirical Social Researchers Towards AI-Assisted Interpretation

Media access changes research practices and cognitive possibilities. What is immediately evident in the natural sciences (microscopes or telescopes, for example, open up completely new worlds to researchers) is rather rarely perceived in the social sciences and subsequently black-boxed (Latour 1994), i.e., taken for granted and “natural”. However, social science and humanities writing and interpretation are also subject to media technology-induced change. To clarify: Research processes and their results change whether a researcher uses a traditional approach with paper and pencil or a modern approach with digital word processing software and other digital actors. All media involved have a specific agency and merge with the researcher to form a “hybrid actor” (Latour 1994: 33). From this perspective, a researcher working with paper and pencil is a different epistemic entity than a colleague working with QDA software. Accordingly, this also applies to someone integrating AI into the research process. We want to introduce the hypothesis of media dependency based on the development of DokuMet QDA, a software for interpreting with the documentary method.

We conducted group discussions with software users to study how different actors contribute to interpretation. Based on the reconstruction of this actor assemblage, we have developed a differentiation of conventional qualitative social research workflows. According to our hypothesis, these will change as soon as AI-generated

interpretations through generative language models enter the research process. To support this hypothesis, we demonstrated AI-generated interpretation in situ to researchers. From their reactions, we elaborated a hypothetical anticipated AI workflow, i.e., potential working modes with AI (Lieder/Schäffer 2023). Overall, the results suggest that conventional forms of interpretation are massively irritated by the involvement of AI in the research process.

We identified two spheres based on this irritation: one of familiarity with conventional QDA software and one of complete unfamiliarity with AI involvement. The irritation arises from the interpreting AI model carrying out an activity assigned exclusively to humans. Mori et al. (2012) addressed this already in the 70s by introducing the theorem of the “Uncanny Valley”. It referred to the human acceptance of robots, which abruptly drops if they resemble humans too much.

When using generative language models in qualitative social research, quite a few researchers will find themselves – according to our findings – in the Uncanny Valley. First signs of this show up in the ambivalent orientations of researchers oscillating between fears of losing autonomy and hopes for intelligent support. The relationship between similarity and unfamiliarity is central here: large language models can interpret like humans and yet are utterly alien to us in their stochastic alterity.

Fabio Lieder is a research assistant at the Professorship of Adult Education/Continuing Education at the Bundeswehr University Munich. He focuses on questions concerning distributed research in the social sciences. His research interests are teaching and learning, philosophy of mind, educational implications of AI, and QDA software development.

Prof. Dr. Burkhard Schäffer holds the position of Professor for Adult Education/Continuing Education at the Bundeswehr University Munich. In addition to adult education topics, he works in the area of linking qualitative social research with media theory topics: QDA software development and AI implementation.

Edel Ennis

Applications of digital hermeneutics to suicide prevention and digital mental health

Digital hermeneutics can be understood as involving interpreting verbal or non-verbal communication with machines, and also equipping machines in their endeavours to interpret. Approaches include (i) what are the scientific methods for digital hermeneutics?, (ii) what are the scientific questions for digital hermeneutics? This presentation examines the scientific methods for digital hermeneutics in the context of two applied issues, one within the realm of suicide prevention, one within the realm of digital mental health.

One issue within the realm of suicide prevention is how we determine media adherence to Samaritans guidelines. Research evidence shows that certain types of media depictions can lead to imitational suicidal behaviour among vulnerable people. The Samaritans have developed media reporting guidelines. This brings the challenge of monitoring how all media reports adhere to these guidelines. The challenge of designing a coding framework which allows digital technologies to code large sources of data in a way which is accurate and considers both standardizations and nuances is part of digital hermeneutics. Certain organisations do try to manually code how media text adheres to Samaritans guidelines, but it requires extensive human hours.

Also, different researchers use different coding frameworks. How can machine be equipped in their endeavours to interpret text, and what scientific methods can digital hermeneutics use to develop standardized coding frameworks? This presentation discusses why standardized coding frameworks are important in how we interpret language and record statistics e.g. to

allow trends to be monitored across time and settings through the application of machine learning techniques. Corresponding methods are discussed, with recent strives towards standardized psychological autopsies as an example. Consideration is then given to how these methods would be applied to develop a coding framework to assess adherence of media reports to Samaritans guidelines within a digital platform. Such standardized coding frameworks are essential to equipping machines to interpret data. The second question also relates to equipping machines in their endeavours to interpret, but it looks within the context of digital mental health and asks how we can equip digital interventions such as chatbots in their endeavours to provide satisfactory solutions to the challenges presented by users. Chatbots show great potential efficacy, but this is compromised by low user engagement. Many factors may underlie this, but user satisfaction is one component. From psychological literature, we know that there are many different approaches to coping, and certain approaches are better or less suited to different challenges.

This presentation discusses the methods that digital hermeneutics might employ to ensuring that the solutions posited by chatbots are actually those which are most applicable to the situation. This incorporates ensuring that a database of evidence-based solutions underlies the content development of chatbots. The presentation outlines what such an evidence based database or framework of approaches to coping might look like and considers how such a database might be populated, with clinician input, ChatGPT and Natural Language Processing (NLP) all considered.

Dr. Edel Ennis is lecturer in psychology at Ulster University (Coleraine). Her interests are in mental health, mental illness and suicide prevention. Her focus is on applications of digital technologies within these domains, with emphases on enhancing user engagement through understanding human computer interaction, and ensuring that content development within digital technologies aligns with evidence based practices.

Flavia Ferrigno

On the Relationship Between Privacy and Memory

Memory and privacy are not directly correlated, but they can be interconnected in certain ways. On one hand, memory can be a threat to privacy. When we remember things, we store information about our experiences, thoughts, and emotions. If these memories contain personal or sensitive information, they can be a privacy risk if shared with others or accessed without our consent. On the other hand, privacy can also affect memory. If we feel like our privacy is being invaded or our personal information is being exposed, we may become more guarded and less likely to share our thoughts and experiences with others. This could impact our ability to form strong social connections and create meaningful memories with others.

Digital Memory stores data in a binary format. It can be easily duplicated and shared, making it ideal for storing and transmitting large amounts of information quickly and efficiently. It can be both non volatile and volatile. It has high accuracy providing precise and highly accurate storage and retrieval of data. DM can be scaled relatively easily by increasing the capacity of memory modules or adding more modules. In the context of human memory, digital memory might refer to our ability to store information in a more “modular” or compartmentalized manner, where individual pieces of information are stored and retrieved independently.

Analog memory stores data in a continuous manner, representing values as voltage levels or other analog signals. It can store an infinite number of values within a given range.

It is often volatile, meaning it loses data when power is disconnected or when it’s not refreshed periodically. So, it has less precision than digital memory due to the continuous nature of data representation. It’s susceptible to noise and interference. Analog memory doesn’t scale as easily as digital memory.

The relationship between memory and privacy varies between the digital and analog dimensions of life. Digital memory poses unique challenges related to data permanence, data security, and the right to be forgotten. Analog memory, on the other hand, offers some privacy advantages due to its limited permanence and the ability to physically control and manage records. Balancing the benefits and risks of memory in both realms is an ongoing societal concern in the context of privacy.

There is a sense of being under a perpetual state of surveillance or fear of losing privacy as an increasing number of people come online. Every action we make on the internet leaves traces of data everywhere. Although the usage of personal details for internet services presents risks, that just now became apparent. Such threats arise from private and also from public bodies. In 2012, the United Nations Human Rights Council affirmed that freedom of expression on the internet is a basic human right which implies that the rights of an individual existing offline must also be protected online.

Flavia Ferrigno is a PhD student in philosophy at the University Luigi Vanvitelli and with the TU of Darmstadt and with Telecom TIM company. She previously graduated in Philosophy from the University of Naples Federico II with a research at the Sorbonne University in Paris following on from a semester at the TU Darmstadt.



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