



COLIS¹⁰

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10th international conference

BOOK OF ABSTRACTS

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CONCEPTIONS OF LIBRARY AND INFORMATION SCIENCE (CoLIS)

BOOK OF ABSTRACTS

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PROGRAMME

SUNDAY 16. 6.

17:30 – 19:00 Welcome drink & registration (location: Faculty of Arts)

MONDAY 17.6.

8:30 Registration

9:30 – 9:45 Opening (room 34)

9:45 – 10:45 **SESSION 1: Keynote** (room 34)

Sarah T. Roberts: *Behind the screen: the internet's invisible information workers*

10:45 – 11:15 Coffee break

11:15 – 12:30 **SESSION 2:**

TRACK 1 (room 34)

The discipline of LIS, I

Chair: David Bawden

Jenna Hartel: *Turn, turn, turn*

Sarah Polkinghorne & Lisa M. Given: *Holistic approaches to research: From rhetoric to paradigm*

Fidélia Ibekwe, Tatjana Aparac-Jelušić, & Ernest Abadal: *The quest for umbrella terms in LIS: Tracking the paternity of informatology and informatics*

TRACK 2 (room 4)

Information behavior, I

Chair: Michael Olsson

Deborah Hicks: *Understanding identity in information behaviour research: A conceptual analysis*

Jela Steinerova: *The societal impact of information behaviour research on the information environment and library services*

Sally Irvine-Smith: *Representation, mediation and agency: Examining the role of the artefacts of decision-making*

TRACK 3 (room 13)

Workshop

Anna Maria Tammaro, Primož Južnič, & Kendra Albright: *Conceptions of LIS profession and education globally: An IFLA study*

12:30 – 13:30 Lunch

13:30 – 15:00 **SESSION 3:**

TRACK 1 (room 34)

The discipline of LIS, II

Chair: Birger Hjørland

Claudio Gnoli: *Levels of information and LIS as a science of mentefacts*

Dan Albertson: *Comparing Twitter activity from different LIS conferences: Current observations and future research directions*

Ryan Shaw: *The missing profession: Toward an institution of critical technical practice*

TRACK 2 (room 4)

Information ethics

Chair: Tatjana Aparac-Jelušić

David Bawden & Lyn Robinson: *"Essentially made of information": Concepts and implications of informational privacy*

Kathleen Burnett & Gary Burnett: *Information domains, information ethics*

Lisa Engström & Johanna Rivano Eckerdal: *Public libraries as promoters of social sustainability?*

TRACK 3 (room 13)

Workshop

Gunilla Widén, Annemaree Lloyd, Karen Fisher, & Nadia Caidi: *Integration, resettlement and repatriation: Revisiting the information landscape of refugees*

MONDAY 17.6.

15:00 – 15:30 Coffee break

15:30 – 17:00 **SESSION 4:**

TRACK 1 (room 34)
Search/Knowledge management
 Chair: Polona Vilar

Trond Aalberg, Kin Tall-erås, & David Massey: *The impact of new bibliographic models on the search experience*

J. Tuomas Harviainen & Sanna Kumpulainen: *Service design for information searches*

Urbano Reviglio: *Towards a taxonomy of designing ethically for artificial serendipity in personalized information streams*

Maija-Leena Huotari, Sanna Tuomela, Teija Keränen, & Anna Suorsa
Conceptualizing multidisciplinary interaction by Gadamerian play for creating transdisciplinary knowledge

TRACK 2 (room 4)
Information behavior, II
 Chair: Lyn Robinson

Isto Huvila, Heidi Enwald, Noora Hirvonen, & Kristina Eriksson-Backa: *The concept of usefulness in library and information science research*

Pia Borlund & Nils Pharo: *A need for information on information needs*

Muhaimin Karim, Gunnilla Widén, & Jannica Heinström: *Influence of demographics and information literacy self-efficacy on information avoidance propensity among youth*

Anna Mierzecka, Jacek Wasilewski, & Małgorzata Kisilowska: *Cognitive authority, emotions and information quality evaluations*

TRACK 3 (room 13)
Institutions
 Chair: Alenka Šaupelr

Michael Widdersheim & Masanori Koizumi: *Research foundations related to the public sphere and public libraries*

Ragnar Audunson, Cicilie Fagerlid, Erik Henningsen, Henrik Jochumsen, & Håkon Larsen: *Libraries, archives and museums as democratic public spaces*

Ragnar Audunson, Hans-Christoph Hobohm, Máté Tóth: *ALM in the public sphere: How do archivists, librarians and museum professionals conceive the respective roles of their institutions in the public sphere?*

Andreas Vårheim, Roswitha Skare, & Noah Lenstra: *Institutional convergence in the LAM sector: A contribution towards a conceptual framework*

17:15 – 18:00 Short guided tours of National and University Library (register at info desk)

18:00 **Welcome reception** (at: National and University Library Ljubljana, sponsored by IZUM)

TUESDAY 18.6.

9:00 – 10:00 **SESSION 5: Keynote (room 34)**
Sabina Leonelli: New frontiers in data curation: A view from scientific practice

10:00 – 10:15 *Silver sponsor presentation*

10:15 – 10:45 Coffee break

10:45 – 12:15 **SESSION 6:**

TRACK 1 (room 34)

Knowledge organization

Chair: Maja Žumer

John Budd & Kristine Stewart: *A phenomenological scheme for information organization*

Deborah Lee: *The classification of musical transformation: A conceptual approach to the knowledge organization of musical arrangements*

Ronald Day & Robert Montoya: *“What is (a) disease?”: Disease as events and access to information*

TRACK 2 (room 4)

Information literacy

Chair: Maija-Leena Huotari

Helena Hollis: *Critical thinking and information literacy: Different concepts, same conceptions*

Alison Hicks: *The theory of mitigating risk: Transition and information literacy practices*

Sonja Špiranec, Denis Kos, & Michael George: *Searching for critical dimensions in data literacy*

Jutta Haider & Olof Sundin: *The materiality and fragmentation of facts in contemporary society: Infrastructural meaning-making and new demands on information literacy*

TRACK 3 (room 13)

Panel

Jenny Bronstein, Noa Aharaony, Ina Fourie, Heidi Julien, & Amy Van-Scoy: *The LIS professions: Building on the past to shape the future*

12:15 – 13:15 Lunch

13:15 – 14:45 **SESSION 7:**

TRACK 1 (room 34)

Bibliometrics

Chair: Jonathan Furner

Lucie Loubere & Fidélia Ibekwe: *Appropriation of social sciences and humanities literature in the public arena*

TRACK 2 (room 4)

Embodiment

Chair: Olof Sundin

Michael Olsson & Joacim Hansson: *Embodiment, information practices and documentation: A study of mid-life martial artists*

TRACK 3 (room 13)

Panel

Stephen Pinfield, Simon Wakeling, David Bawden, & Lyn Robinson: *Open access in theory and practice*

TUESDAY 18.6.

Tove Faber Frandsen, Rasmus Højbjerg Jacobsen, Jeppe Nicolaisen, & Jakob Ousager: *Pressure to publish: A bibliometric study of PhD students (1993–2009)*

Aira Huttunen, Lottamari Kähkönen, Heidi Enwald, & Terttu Kortelainen: *Embodied cognition and information experiences of transgender people*

Tzipi Cooper, Noa Aharony, Judit Bar-Ilan, & Sharon Rabin Margalioth: *Women in the academia: A bibliometric perspective*

Hilary Yerbury, Simon Darcy, & Nina Burrige: *Accessing information: Digital and social capital of students with disability*

Lai Ma: *From metrics to representation: The flattened self in citation databases*

Anna Suorsa, Teemu Suorsa, & Rauli Svento: *Embodied and dialogical nature of human beings shaping organizational knowledge creation: Developing scientific knowledge for a Virtual Power Plant*

14:45 – 15:15 Coffee break

15:15 – 16:15 **SESSION 8: Poster session**

Marcia Zeng, Maja Žumer and Ying Zhang: Revealing the innovation history by using smart data

Yuko Yoshida: A reexamination of the public library based on the American public library model: Rethinking from the perspective of alternative public libraries

Jette Hyldegård and Morten Hertzum: Mastering life abroad as an international student – seeking, learning, growing

Rikard Friberg von Sydow: The construction of consensus: Analyzing “facts” in the Flashback.org contemporary crime sub-forum

Tahereh Dehdaridad & Marco Schirone: Use of social media sites and readership diversity: A case study at Chalmers University of Technology

Terry Weech: The impact of information science on library studies: The perspective from an iSchool

Shona Gallagher, Michael Olsson, & Helena Heizmann: The business of medicine: Using critical discourse analysis to explore constructions of identity and information practices among Australian surgeons transitioning between training and professional practice

Giovanni Forero & Michael Olsson: Scientists, bacteria and microscope: A study on the development of information

Kai Nishikawa: Understanding the complexity of knowledge production, sharing, and management: Knowledge commons as a method of institutional analysis in Library and Information Science

Jan Pisanski: Rethinking the IS-related study programs at University of Ljubljana (Slovenia)

19:00 **Conference dinner (location: Ljubljana castle)**

WEDNESDAY 19.6.

9:00 – 10:00 **SESSION 9: Keynote (room 34)**
Ross Todd: *Safe information lives: Conceptions and practices*

10:00 – 10:30 Coffee break

10:30 – 12:00 **SESSION 10:**

TRACK 1 (room 34)

Documents

Chair: Fidélia Ibekwe

Ola Pilerot & Hanna Maurin Söderholm: *A conceptual framework for investigating documentary practices in prehospital emergency care*

Trine Schreiber: *Examining documents as material manifestation of organisational practices*

Martin Nord: *The ethics of documents in relationships: The United Church of Canada and its reconciliation documents*

TRACK 2 (room 4)

Methodology

Chair: Tanja Merčun

Sabina Cisek & Monika Krakowska: *The diary method and analysis of student's mental representations of information spaces as the research approach in information behaviour research*

Eystein Gullbekk: *What can we make of our interview data? From interdisciplinary to intra-disciplinary research*

Noora Hirvonen & Anna-Maija Huhta: *Employing nexus analysis in investigating information literacy*

Amy VanScoy: *Conceptualizing reference and information service using Q methodology*

TRACK 3 (room 13)

Workshop

Jutta Haider, Lucia Cedreira Serantes, Elisabeth Davies, Björn Hammarfelt, Jenna Hartel, Alison Hicks, Veronica Johansson, Pamela McKenzie, & Paulette Rothbauer: *About time: Re-thinking information through the lens of time and temporality: A conversation café*

12:00 – 13:00 Lunch

13:00 – 14:00 **SESSION 11:**

TRACK 1 (room 34)

Information behavior, III

Chair: Jenna Hartel

Simon Burnett & Annemaree Lloyd: *The road not taken: Locating desire lines across information landscapes*

TRACK 2 (room 4)

Information management

Chair: Jan Pisanski

Hana Marčetić & Maja Krtalić: *Transformative power of information: Managing your personal history and culture*

TRACK 3 (room 13)

Library use and users

Chair: Hans-Christoph Hobohm

Bo Skøtt: *Newcomers at the library: A library perspective on the integration of new citizens*

WEDNESDAY 19.6.

Isto Huvila: *Rethinking context in information research: Bounded versus centred sets*

Jamie Johnston & Gunilla Widén: *Integration, information behavior and social capital: A process of mutual influence*

Frances Ryan, Hazel Hall, Peter Cruickshank, & Alistair Lawson: *Build, manage and evaluate: Information practices and personal reputations on social media platforms*

Joacim Hansson: *Recognising the other through promotion of reading, collection development and communal collaboration: Rural public libraries in the far-north of Sweden and their relation to the indigenous Sámi population*

Leanne Bowler, Tom Akiva, Sharon Colvin, & Annie McNamara: *Facilitation in library makerspaces: A prototype for a professional development model*

14:00 – 14:30 Closing (room 34)

KEYNOTES

Behind the screen: the internet's invisible information workers

Sarah T. Roberts

*Graduate School of Education and Information Studies,
University of California, Los Angeles, United States*

Faced with mounting pressures and repeated, very public crises, social media firms have taken a new tack since 2017: to respond to criticism of all kinds and from numerous quarters (regulators, civil society advocates, journalists, academics and others) by acknowledging their long-obfuscated human gatekeeping workforce of commercial content moderators. Additionally, these acknowledgments have often come alongside announcements of plans for exponential increases to that workforce, which now represents a global network of laborers – in distinct geographic, cultural, political, economic, labor and industrial circumstances – conservatively estimated in the several tens of thousands and likely many times that. Yet the phenomenon of content moderation in social media firms has been shrouded in mystery when acknowledged at all. In this talk, Sarah T. Roberts will discuss the fruits of her decade-long study the commercial content moderation industry, and its concomitant people, practices and politics. Based on interviews with workers from Silicon Valley to the Philippines, at boutique firms and at major social media companies, she will offer context, history and analysis of this hidden industry, with particular attention to the emotional toll it takes on its workers. The talk will offer insights about potential futures for the commercial internet and a discussion of the future of globalized labor in the digital age.

New frontiers in data curation: A view from scientific practice

Sabina Leonelli

*Department of Sociology, Philosophy and Anthropology,
Exeter Centre for the Study of the Life Sciences, University of Exeter, United Kingdom*

Making Big Data more open and reusable is a defining challenge for researchers today, with Open Data guidelines, tools and requirements being implemented across both private and public funding and research institutions, and the need for accountability over data sharing becoming increasingly recognized. The availability of usable data from diverse sources is crucial to the development of artificial intelligence and machine-learning algorithms. However, making data move across sites and communities of users continues to pose enormous logistical, scientific and ethical challenges, given the variety of conceptual backgrounds, material environments and social landscapes in which data are produced, evaluated and traded. This talk builds on extensive empirical studies of data curation and re-use across several research fields to consider the conditions under which data can effectively travel across settings, groups and locations - and with which implications. Understanding these conditions is particularly relevant in the context of interdisciplinary, global collaboration and Open Science, where the linking of data coming from different sources constitutes at once a tantalizing opportunity and a significant problem. By illustrating what it takes to mobilise data across settings, the session will: (1) elicit debate over the enormous complexity of Big and Open Data governance and its various publics; (2) highlight the crucial role of data curators in ensuring modes of data re-use that are sustainable, reliable and trustworthy; and (3) reflect on the implications of this opportunity for the status and training of curators within the wider research landscape.

Safe information lives: Conceptions and practices

Ross J. Todd

*Department of Library and Information Science, School of Communication & Information,
Rutgers, The State University of New Jersey, United States*

The information and digital literacy agenda is a central part of library and information science discourse and practice. It seems beset with competing conceptions, definitions and approaches, with considerable attention given to explication of competencies and interventions underpinned by an assumption of human deficit. Shifting the focus to the human, and particularly in the context of the immersive digital environment, an emerging discourse and arena of research and development is centering on the concept of digital wellbeing - positioned as the capacity of people to look after their personal health, safety, relationships and work-life balance in digital environments. This presentation will explore conceptions and practices of digital wellbeing of young people in school settings, with particular emphasis on digital safety. The emergence of this focus has been mostly driven by concerned educational leaders and parent organizations, and puts emphasis on challenges such as cyberbullying, stranger danger awareness, sexting, and identity protection, but often without deep knowledge of the conceptions and practices of the school students themselves. It will present research undertaken by the author since 2016 centering on aspects of digital safety. This research suggests that young people's predominant conception of being unsafe online centers on aspects of access, technical structures, potential for technical harm, and limited acknowledgement of role of self in the safety equation. The presentation will also explore research opportunities, as well as approaches for library and information professionals and researchers to gather data on conceptions and practices of digital safety as a data foundation for the design of meaningful information intervention practices.

PAPERS

Turn, turn, turn

Jenna Hartel

Faculty of Information, University of Toronto, Canada

This intellectual history article identifies and illustrates a series of theoretical *turns* that have occurred within library and information science. The goal is to help students and scholars become more aware of the trends that sweep across a discipline. That way, in the future, new approaches can be employed in an enlightened manner and with a modicum of levity. Starting in 1986, and in loose chronological order, seven theoretical turns within library and information science are described: the cognitive turn, the affective turn, the neo-documentary turn, the socio-cognitive turn, the everyday life turn, the social constructionist turn, and the embodied turn. Each turn is profiled with attention to its origins, tenets, key players, signal concepts, influential publications, concomitant methods, and enduring contributions. Each turn is also assigned a visual logo for quick identification in the future. Two scholars are then profiled who have taken archetypical positions: Birger Hjørland (a dedicated turner) and Marcia J. Bates (a non-turner). The article closes with reflections on the positive and negative impacts of turns for knowledge production in our field and playful suggestions for future turns that may enrich the library and information science enterprise.

Keywords: information science; information science history; information science theory; information science metatheory; information science paradigms

Holistic approaches to research: From rhetoric to paradigm

Sarah Polkinghorne¹ and Lisa M. Given²

¹ University of Alberta, Canada

² Swinburne University of Technology, Australia

Introduction. Many researchers in library and information science claim that designing studies that are *holistic* is critical to understanding various phenomena. On closer examination, however, the use of this term is mainly as a rhetorical device in the literature, rather than as one that embraces the tenets of holism and applies these to research design. This paper examines this rhetorical use in the discipline, and it also asks what it would mean, and why it would matter, to adopt research approaches that are substantively *holistic*.

Method/Analysis. Content of relevant literature in the discipline of library and information science is reviewed to position past uses of *holistic* and compare these to the conceptual intentions of *holism*. We also outline the concept of *holism*, itself, with a focus on *methodological and ontological holism*, which can most deeply inform research design in our field. We illustrate this conceptual discussion with an example of holistic research design drawn from an original study of everyday information practices.

Results. Within the library and information science literature, the term *holistic* predominantly serves as rhetoric, supporting calls for change, and especially for more expansive perspectives, approaches, and ways of understanding. Wider adoption of interpretivist and critical approaches to research can address the concerns that currently underlie the use of *holistic* rhetoric.

Conclusion. It is possible to shift away from predominantly rhetorical use of *holistic*, toward substantially holistic priorities and perspectives.

Keywords: holism; information behavior; qualitative research

The quest for umbrella terms in information science: Tracking the paternity of *informatology* and *informatics*

*Fidelia Ibekwe*¹, *Tatjana Aparac-Jelušić*² and *Ernest Abada*³

¹ Aix Marseille Univ, Université de Toulon, IMSIC, Marseille, France

² Emerita Professor, retired from the University of Zadar and University of Osijek, Croatia

³ Faculty of Library and Information Science, Universitat de Barcelona, Spain

Introduction. We report in this paper on our quest to track the paternity and different conceptions of two umbrella terms, informatology and informatics suggested as more adequate names for the field of Library and Information Science between the 1960s-1980s.

Method. Our method consisted in gathering bibliographic materials of written records which pointed to the earliest occurrences of these terms and reading them in order to identify the priority claims about the paternity of these two terms.

Analysis. We carried out content analysis of the written documents we found which helped inform our understanding of how these two terms were perceived. Our method of analysis is thus hermeneutics, i.e. based on our personal perception of what the authors had written. Our quest took us all over Europe and the United States.

Results. Our main findings are that despite efforts to promote the two umbrella terms, they failed in supplanting information science or library and information science as the preferred name for the discipline. A possible reason may be that scientific fields are in horizontal rather than hierarchical relation with one another and umbrella terms suggest some sort of hierarchy.

Conclusions. Our quest also brought home the difficulty of establishing the paternity of concepts and ideas with an absolute degree of certainty.

Keywords: conceptions of LIS; European origins of LIS; informatology; informatics

Understanding identity in information behaviour research: A conceptual analysis

Deborah Hicks

School of Information, San Jose State University, United States

Introduction. Using a conceptual analysis approach, this study explores how identity has been conceptualized in the information behaviour literature. The study of identity in relation to information behaviour provides a way to explore individuals' and groups' understanding, assumptions and implicit theories of information and how this relates to their information practices.

Methods. Data for this study were collected by conducting keyword searches of core library and information science databases using the keywords "identity," "selfhood," "information behavior/behaviours," and "information practices." The final data set consisted of 29 articles.

Results. Identity as personal project, identity and social groups, and identity as self-presentation were the three most common conceptualizations of identity. Two conceptualizations of identity (discursive and intersectional) were often acknowledged by the authors, but were rarely the focus of study. However more recent studies have employed these conceptualizations in order to add nuance to previously examined phenomena.

Conclusion. Identity is a core concept for information behaviour research, especially as it relates to affective information activities and practices. Discursive and intersectional conceptualizations of identity offer exciting opportunities for information researchers examine the information behaviours of people whose identities are not currently well captured in the information behavior literature.

Keywords: conceptual analysis; identity; information behaviour; information practices

The societal impact of information behaviour research on the information environment and library services

Jela Steinerová

Department of Library and Information Science, Comenius University in Bratislava, Slovakia

Introduction. The paper outlines the issues of the societal impact of information behaviour studies. Information environment is determined as a system of people, information resources and information technologies which forms a space for innovative information services. We ask the question: What is the impact of human information behaviour studies on the information environment and library services?

Methods. Related studies of information behaviour research are briefly reviewed. We report on two studies of information behaviour of researchers in Slovakia based on semi-structured interviews with 19 researchers and an online survey of 257 researchers, using qualitative analyses and concept modelling.

Analysis. We analysed the information environment with respect to values of research and information and present examples of concept maps as representations of critical and constructive discourses of researchers.

Results. The societal impact of information behaviour studies is interpreted at the level of the information environment by the proposed model of academic information ecologies. At practical level we present a new model of the interactive academic library. Social values of information use, information products and societal benefits of information are emphasized.

Conclusions. We recommend to pay more attention to societal impact of information behaviour studies and explore values of information, informed information policies, truth, trust and value-added services of libraries in digital information environment.

Keywords: information behaviour research; information environment; societal impact; academic information ecologies; interactive model of the academic library

Representation, mediation and agency: Examining the role of the artefacts of decision-making

Sally Irvine-Smith

University of Technology, Sydney, Australia

Introduction. Practice theory suggests that human practices are mediated in the first instance by language, but also by tools and artefacts. This paper investigates the role material objects – documents – play in the actions of decision-makers in local government.

Method. Decision-makers in local government - council employees, elected officials and members of a community panel - have been interviewed to determine how they generate and share knowledge.

Analysis. Using a practice theoretical framework, data is analysed to build a detailed picture of the information activities of the participants. The role documents play in the information activities of the decision makers is analysed with reference to themes conceptualised in sociocultural and actor network theory (ANT).

Results. The research finds that documents are essential artefacts of decision-making, and are integral to the activities of the participants. Their use is routine, normative and, often, unremarked.

Conclusion. The documents are more than simple mechanisms for transport of transmission of information, but do not play the equal agential and transformative role that ANT would suggest. Rather, they are representations of work done given meaning by the contextuality of practices in which they are embedded.

Keywords: sociocultural theory; practice theory; actor network theory; mediation; documents; information behaviour

Levels of information and LIS as a science of mentefacts

Claudio Gnoli

Science and Technology Library, University of Pavia, Italy

Introduction. This article reconsiders some basic notions in library and information science (LIS), including those of work, knowledge organization system (KOS), information and LIS itself, in light of the theory of levels of reality.

Method. This theory is briefly outlined, especially in its version by Nicolai Hartmann, which considers “ideal being”, matter, life, mind and “spirit” (culture) as major levels, and analyzes spirit into personal spirit, objective (social) spirit and objectivated (intellectual) spirit. Objectivated spirit has been further analyzed into artefacts and mentefacts in Gnoli (2018).

Analysis and results. Mentefacts is a notion of special relevance to LIS. As suggested by commenters, works are mentefacts, although not the only type of them. For example, knowledge organization systems (KOS) are also mentefacts, and should therefore be studied in all their three levels of personal, objective and objectivated spirit. Information as conceived by Floridi is a fundamental entity pertaining to all levels, rather than only to the level of mentefacts which is the focus of LIS.

Conclusion. This suggests that theoretical foundations of LIS should not rely exclusively on Floridi’s philosophy of information, but more on notions specific to the level of mentefacts, such as those of concept, argument, work, citation, bibliographic family, subject, KOS etc. To be distinguished from other disciplines, LIS should be conceived as a science of mentefacts.

Keywords: information theory; knowledge organization systems; levels of reality; work; document

Comparing Twitter activity from different LIS conferences: Current observations and future research directions

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Introduction. Twitter activity from different 2018 library and information science (LIS) research conferences are analysed, compared, and reported.

Method. Twitter activity was collected after three 2018 LIS research conferences. The conferences included the Annual Meeting of the American Society for Information Science and Technology, the ACM/IEEE Joint Conference on Digital Libraries, and the Libraries in the Digital Age conference.

Analysis. Twitter data elements were collected and analysed, which included the number of original tweets, retweets, likes, and unique users. Other derived counts were tallied for the number of original tweets and retweets (as combined), likes and retweets (as combined), the number of tweets that were retweeted, and all actions combined.

Results. The levels of activity across each of these elements and counts are presented overall and based on different time-points during the conferences. Results are combined across the three conferences and presented separately.

Conclusion. Social media at academic conferences provides for a unique and important context of scholarly communication. It is important to understand the nature of such communications that occur online during academic conferences and the eventual impact on scholarly and professional movements. Opportunities remain for further in-depth studies of social media use at academic conferences and its broader implications for scholarly communication.

Keywords: Twitter; social media; scholarly communication; academic conferences

The missing profession: Toward an institution of critical technical practice

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Introduction. Despite rapid advances in the technical aspects of our networked computational infrastructure, there is growing sentiment that society is ill-served by what we have built.

Aim. I take the position that the failure of our networked computational infrastructure to serve the common good is due to the lack of an authoritative institution that might govern it. I outline a rationale for such an institution, modelled upon Vesa Suominen's rationale for the institution of librarianship.

Method. I put Suominen's ideas in dialogue with the work of Luc Boltanski, who supplies insights into the functioning of institutions and the interdependency of institutions and critique.

Results. I identify three aspects of Suominen's rationale for librarianship of particular importance to rationalising an institution of critical technical practice: his critique of userism, his vision of a reflexive institution, and his conception of the relation between research and practice.

Conclusions. I conclude that information schools, despite having distanced themselves from institutional conceptions of their mission, are well-positioned to develop a new institution of critical technical practice.

Keywords: information professions; infrastructure; ethics

“Essentially made of information”: Concepts and implications of informational privacy

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Introduction. This paper presents an approach to a conceptual understanding of privacy issues, rooted in Luciano Floridi’s philosophy of information and information ethics. It draws from Floridi’s ideas of ontological information privacy, in combination with other frameworks.

Methods. Qualitative conceptual analysis of a set of material found by a comprehensive search for articles and books discussing Floridi’s informational privacy, and a selective search for related relevant materials; sources used were Web of Science, Library and Information Science and Technology Abstracts, and Google Scholar. A detailed evaluation of Floridi’s ideas of informational privacy within his philosophy of information, and a comparison with other informational privacy models, leads to an analysis of their applicability to research and practice in the library and information sciences.

Results. There are five major considerations: each person is constituted by their information, so that informational privacy is fundamental, overlaying other privacy type; breach of informational privacy is an aggression against personal identity and self-development, and hence protection of privacy should be based directly on the protection of human dignity; explicit protection for group privacy as important as for individual privacy; digital technologies can both defend and damage privacy, and can also change our understanding of it; information friction, anonymity, and obscurity are key concepts.

Conclusions. Floridi’s conception of privacy, within his philosophy of information, offers, in our view, the best basis for developing information privacy as a field of research, study, and practice within the library/information disciplines and professions. Suggestions for future research include: formulation of informational privacy issues in terms of Floridi’s conception, to assess its value; introduction of information privacy concepts into models of information behaviour and information literacy; investigation of quantitative and semi-quantitative privacy modelling, based on a formal analysis of informational frictions.

Keywords: philosophy of information; information ethics; privacy; conceptual models

Information domains, information ethics

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Introduction. This paper begins with a discussion of information domains, a theoretical framework, which frames an examination of the ethical implications of digital technology use. The analysis focuses on two areas of concern in which moral disengagement appears to be implicated: cyberbullying and immigration.

Framework. The framework consists of three “domains” for understanding the role of information in people’s lives: the domain of the individual refers to the characteristics of individuals who seek, encounter, use, and otherwise interact with information. The domain of the social refers to the influences of the social contexts within which individuals live. The domain of signification refers to the broad set of representational tools and practices used to understand, embody, and communicate information.

Analysis. The theoretical framework is applied to analyses of information ethics in the contexts of cyberbullying and immigration policy, and is furthered by insights derived from the philosophy of information (Feenberg, 2010; Floridi, 2014, 2017).

Conclusion. Because these three domains interact with each other and function as the structure within which information has relevance in day-to-day life, analysis of how contemporary ethical norms are being re-ontologized by third order technology use (Floridi, 2014, 2017) needs to account for all three.

Keywords: information domains; information ethics; cyberbullying; ethnic intolerance; climate change; information theory; information behavior

Public libraries as promoters of social sustainability?

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Introduction. The aim of this paper is to critically examine how public libraries are portrayed as contributing to social sustainability. Meanings ascribed to the concept are investigated and if, and then how, the public library is shaped in relation to it.

Method. Library plans from five municipalities in Sweden are analysed and discussed in the light of previous research.

Analysis. Bacchi's method 'what's the problem represented to be' is used to scrutinize what problem the public library is supposed to be part of the solution of.

Results. Three policies represent the 'problem' as a current threat to democratic values, safety and stability. By favouring social sustainability, the library contributes to robust communities and to enable trust. In two policies sustainability is related to development and change.

Conclusions. When libraries are put forth as places fostering users to take responsibility for social sustainability a tremendous responsibility is placed on individuals. Our suggestion for disrupting this argument is to recognise social unrest as a consequence of inequalities and unequal distribution of resources and to acknowledge pluralism and difference. Thereby, libraries may contribute to social sustainability and democracy by being places where social antagonism can be transformed to agonism.

Keywords: public libraries; cultural policy documents; social sustainability; policy study; critical theory

The impact of new bibliographic models on the search experience

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Introduction. In this study we compare the IFLA Library Reference Model and the Library of Congress Bibliographic Framework model and identify characteristics that affect their usability in bibliographic end user search.

Method. A source collection of bibliographic records is used to generate comparable test collections implementing each of the models. Keyword based search is implemented for each test collection, using bag of words extraction of subgraphs for work entities.

Analysis. The generated collection is analysed, and major differences are described and discussed. A set of queries and result metrics is used to identify and describe how the models perform with respect to search and interactivity.

Results. A test collection and a framework for evaluating library information models. The models produce approximately the same number of entities but differ in their ability to connect and relate entities.

Conclusions. Findings show that the BIBFRAME model tends to reflect and express the same entity structure as the LRM model but does not provide the same consistency and simplicity in interlinking and grouping of intellectual products that can be achieved with the entities in the LRM model. BIBFRAME result sets are generally longer, whereas LRM result list are compact and may show very big differences in the size of the publications they cluster.

Keywords: Library Reference Model; BIBFRAME; user interface; user experience; search and retrieval

Service design for information searches

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Introduction. This conceptual paper discusses the ways in which service design and design thinking can be applied to improve information search processes.

Method. The paper shows possibilities for combining searches with service design and presents a persona-based, fictional case example of how a search might be improved.

Analysis. By using the case example, the paper shows that this approach can be used to improve searches and to develop search engine selection and search engines further.

Results. As the paper is focused on theory development through extrapolation, the key result is a recommendation for further research and experimentation on how to use service design to improve information searches.

Conclusions. The paper concludes with several directions for further research, including search engine marketing and design, task stage optimization, and the crowdsourcing of searches.

Keywords: information searching; service design; user experience

Towards a taxonomy of designing ethically for artificial serendipity in personalized information streams

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Introduction. Given the interdisciplinary and elusive nature of serendipity, different yet related disciplines have interpreted and employed the concept of artificial serendipity in different ways.

Method. The article is a theoretical and interdisciplinary investigation on the research history of serendipity in digital environments. It seeks to map the conceptual space of artificial serendipity and its research to arrive at conceptual distinctions. This is done through carrying out an interdisciplinary literature review informed by Floridi's philosophy of information.

Analysis. It is discussed the development of artificial serendipity introducing fruitful distinctions between kairos (hyper-personalized serendipity), 'chance serendipity' (pseudo-personalized serendipity), 'individual serendipity' (filter bubble-related serendipity), 'political serendipity' (echo chambers-related serendipity), 'sensational serendipity' (fake serendipity) and serendipity agency (active serendipity).

Results. In order to increase serendipity designers and engineers -particularly in the context of social media content personalization- should recognize the nuances of designing for serendipity and accuracy and, therefore, from an ethical standpoint, attempt to balance hyper-personalized and pseudo-personalized recommendations – as they are competing design goals – even by stimulating users' information seeking by design and through discovery tools.

Conclusions. The conceptual dimensions explored in the article represent an initial attempt to develop the study of serendipity in digital environments so as to avoid conceptual overlaps, prevent misconceptions and, eventually, trigger further ethical and technical discussions.

Keywords: serendipity; information research, information retrieval; social media; design; ethics; filter bubbles; echo chambers

Conceptualizing multidisciplinary interaction by Gadamerian play for creating transdisciplinary knowledge

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Introduction. The study aims at increasing understanding of knowledge creation in a multidisciplinary working community. The theoretical framework, based on H.G. Gadamer's conceptualisation of play along with its three dimensions, may allow examination of a knowledge creation process when setting up a novel terminology 'Clean Energy Research'.

Method. The study is explorative and has features of auto-ethnography. Qualitative data consist of documents, videos, emails and notes. The empirical environment is a research and development consortium involving five disciplines.

Analysis. The data are content analysed by applying the three dimensions of the Gadamerian play concept, namely, temporality, structure, and mode of being in play.

Results. The framework was applicable to outline the process, which consisted of four phases. Of these, the third one focused on the interactive workshops for defining the final terms of the terminology. Three stages of this phase were identified, namely, Pre-Clean Energy Research Play, Semi-Clean Energy Research Play, and Deep-Clean Energy Research Play. These stages proceeded from multidisciplinary through interdisciplinary towards cross-disciplinary definition of the terms.

Conclusion. The Gadamerian concept of play along with its dimensions is promising to examine knowledge creation in organisational settings. Future research may focus on a more comprehensive analysis of the data already collected in the study's R&D environment.

Keywords: knowledge management; knowledge creation; interaction; terminology; phenomenology; qualitative research

The concept of usefulness in library and information science research

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Introduction. There is not much doubt that information, information services and systems need to be useful. In this light, the relatively lack of conceptual elaboration of the concept of usefulness in the library and information science literature can be regarded as somewhat surprising.

Method. This paper provides a conceptual overview of the use of the notion of usefulness in library and information science literature, explicates its relation to key parallel concepts, and on the basis of an empirical vignette in the context of health information research, discusses the potential limits and advantages of referring to usefulness instead of and together with other related concepts.

Analysis. A review of literature relating to the concept of usefulness was conducted to examine how it has been used in library and information science.

Results. A close reading of the literature shows an overlap between related concepts but at the same time, diverging foci of interest in and emphasis on what and how information, information services and, for instance, information systems are considered beneficial or suitable for their users and particular uses.

Conclusion. There is a need for better conceptual clarity in the literature regarding usefulness and related concepts. The review shows that usefulness can be literally a useful concept for addressing the user and use (versus e.g. system, content or topic) perspective to engagements with people, services, systems and beyond.

Keywords: relevance; usefulness; information behaviour

A need for information on information needs

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Introduction. We report a study on everyday life information needs in order to obtain a deeper understanding and insight of what constitute information needs, and how they can be characterised.

Method. The information needs stems from three different simulated work task experiments where the real needs served as baseline. The users in Set 1 were bachelor and master's students from several disciplines resulting in 26 information needs. Set 2 provided 23 information needs from bachelor students in Library and Information Science. Set 3 was from a boarding school and consisted of 38 information needs from pupils and teachers.

Analysis. The users answered three questions: 1) What are you going to find information about?; 2) Why are you interested in this information?; and 3) What are you going to use the information for? In the subsequent coding, the three questions formed the basis for identification of the topic, domain and purpose of the information needs. The data were coded inductively.

Results. The information needs belonged to three different domains (work, studies and personal interest). The needs served ten different types of purposes (to decide between two or more alternatives, to make a decision influencing your personal life, to make a decision changing your life; to find inspiration for something you want to achieve; to find information supporting you in hobby/leisure activities; to learn something new about a phenomenon; to plan a holiday trip; to compare prices, quality etc. for purchasing something; to let time pass by; and to write an assignment, report or similar).

Conclusion. The nuances and depths of the information needs are best understood in the light of the domain and purpose, because they add insight about the context of searching and the motivation for searching.

Keywords: information needs; interactive information retrieval; methodology

Influence of demographics and information literacy self-efficacy on information avoidance propensity among youth

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Introduction. The aim of the study was to observe the propensity of actively avoiding information among the youth and explore whether their demographics and perceived information literacy have any influence on this tendency.

Method. An online questionnaire survey was conducted and young people between 15 and 29 from different countries in Europe participated. Out of 7,368 responses, 3,324 complete responses were selected for further analysis.

Analysis. Frequency analysis and mean comparison were used to understand the extent of information avoidance within the youth. Linear regression analysis was used to explore the influence of demographics, and information literacy self-efficacy on information avoidance.

Result. The study revealed that approximately 25 % of the respondents would actively avoid information if they suspect it to be negative. The result indicated that higher education and higher information literacy self-efficacy can reduce the propensity of information avoidance. It was also observed that the respondents coming from rural areas and respondents who are not employed are more inclined to avoid information.

Conclusion. The study showed that one fourth of the youth avoid information in their daily lives. This underlines the importance of information avoidance as a natural part of information behaviour in everyday life. It also discloses the link between education, information literacy, and information avoidance which paves the path for future research.

Keywords: information avoidance; information behaviour; European youth; information literacy

Cognitive authority, emotions and information quality evaluations

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Introduction. This exploratory study contributes to the research on information evaluation as well as emotions' role in the process. The project was inspired by the cognitive authority theory by Patrick Wilson. Its goal was twofold, to explore: 1) if media may fulfil the role of cognitive authority, and 2) if (and to what extend) emotional reactions to specific citations depend on the presented source of information.

Method. We conducted exploratory research using biometric methods (face-tracking and eye-tracking), completed by a questionnaire survey, to examine the influence of a source on the information assessment process. The research sample consisted of 100 respondents of similar sociocultural background: students of journalism.

Analysis. Intensity of emotional reactions (mimic expressions) to presented texts was recorded and measured with the FaceReader. Statistical data were collected and calculated, concerning reactions for 6 emotions (joy, anger, disgust, surprise, sadness, fear), as well as information evaluation expressed in a survey.

Results. The results confirm importance of institutional source in contents' assessment, as we observed changes in emotional attitudes towards information at the moment its source is known. The questionnaire also confirmed relations between emotional attitude and evaluation of information credibility.

Conclusion. The study confirmed the role of medium as a cognitive authority. We observed common (for the research sample) trends in perceiving selected sources as more credible than others. The results showed also a higher level of negative emotions for information from a source evaluated as less credible. The results showed also that (as for statistically significant differences in the research sample) a higher level of negative emotions was observed for information from a source evaluated as less credible.

Keywords: cognitive authority; credibility; face-tracking; emotions

Research foundations related to the public sphere and public libraries

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Introduction. The research area related to the public sphere and public libraries is home to disparate themes and methods. Fundamental conceptual differences exist despite calls for more focused research programs. The purpose of this study is to clarify the research foundations of the field in order to chart a productive path forward.

Method. This in-depth literature review collected n=120 works related to the public sphere and public libraries. The works were comprehensively identified in key journals, conferences, web searches, library collections, and databases.

Analysis. The literature was systematically described using qualitative content analysis. Results are presented qualitatively and quantitatively. Research foundations were coded according to eight categories: 1) methodology, 2) data collection methods, 3) data analysis methods, 4) evidentiary basis, 5) resulting knowledge, 6) ontology, 7) epistemology, and 8) paradigm. Before coding, the frame was pilot-tested to ensure validity and reliability.

Results. There is a tendency toward qualitative methods, descriptive knowledge, and a reliance on other literature as an evidentiary basis. Idealist ontologies, interpretivist epistemologies, and constructionist paradigms are prevalent.

Conclusion. A combinatory approach following a constructionist, social science realist, positivist paradigm sequence may produce more focused research programs moving forward.

Keywords: public sphere; public libraries; paradigm; ontology; epistemology; methodology

Libraries, archives and museums as democratic public spaces in a digital age spaces

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Background: The Almpub-project, which is financed by the Norwegian research council, studies libraries, archives and museums as public sphere institutions in a digital age. This papers analyzes the fruitfulness of different theoretical perspectives for eliciting the LAM-institutions as democratic public spaces.

Method: Similarities and differences between the LAM-institutions as public spaces are discussed in a historical perspectives and the effects of digitalization are analyzed. Based on empirical findings from subprojects in the Almpub-project, the fruitfulness of different theoretical perspectives such as public sphere theory, Bakhtin and the realms of everyday life, Sennet's perspective on public spaces as arenas where one is exposed to strangers, Oldeburg's concept of third places.

Findings: LAM institutions are frequently analyzed as public sphere institutions based on the theoretical approaches of Habermas. Our study indicates that this is too narrow to grasp the complexity of libraries, archives and museums as democratic public spaces.

Conclusion: A public sphere approach has to be supplemented with other theoretical approaches to grasp the complexity of the LAM-institutions as public spaces.

Keywords: LAM-institutions; democratic public spaces; public sphere

ALM in the public sphere: How do archivists, librarians and museum professionals conceive the respective roles of their institutions in the public sphere?

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Background. There is an increased focus on libraries, archives and museums as meeting places and public sphere institutions as well as on digitization of the institutions' services. We term these trends the social and technological turn. How do professionals in the three fields adapt to these trends?

Method. A questionnaire was distributed to librarians in public libraries, archivists and professionals in museums in Denmark, Norway, Sweden, Germany and Hungary aiming at measuring the attitude to the legitimacy of the institutions and the role of non-traditional services in that respect, the degree to which the institutions in which they work have developed services related to the social and technological turn.

Findings. All three institutions have adapted to the social turn with physical meetings as an important part of their service portfolio. Lending of e-books is an important part of the service portfolio in all countries except Germany. Apart from that, digital services in libraries tend to be offered to their users in the physical premises of the library, e.g. computer classes. In the museum field there are larger national variation as to the development of digital services. Digital exhibitions are rare in all countries. Services related to the traditional roles of the institutions are regarded to be more important as legitimations of libraries, archives and museums than services rooted in the social and digital turn.

Conclusion. In spite of the preoccupation with libraries, archives and museums as meeting places, experience centers, public debate, makerspaces etc., traditional roles related to the preserving and promoting the cultural heritage and promoting learning is still regarded as the most important legitimations by professionals in the three fields.

Keywords: public libraries; archives; museums; professional perceptions; public sphere; comparative research

Institutional convergence in the LAM sector: A contribution towards a conceptual framework

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Introduction. This paper presents and discusses a historical institutional framework for studying institutional change processes in Library, Archives, and Museum (LAM) institutions. A limited application of this framework is applied to the case of modern public libraries in Norway and Sweden, for illustrative purposes.

Method. We conducted a literature review on institutional and organizational convergence among LAM institutions, which is contextualized and discussed in the context of literature on institutional theory. A historical institutional framework developed through these methods is then applied to the case of modern public libraries in Norway and Sweden.

Analysis. Qualitative analysis was carried out, using institutional theory and a review of previous literature to develop and apply a novel approach to understanding the convergence of LAM institutions.

Results. The studies conducted on institutional change during LAM convergence processes are few, limited in empirical scope and under-theorized. Drawing upon institutional theory presents new ways to approach this topic, as illustrated in this paper's limited application to the Swedish and Norwegian contexts.

Conclusion. Additional historically oriented research is needed to comprehensively understand the multiple ways the institutional bases of LAM institutions and LAM institutional change processes unfold.

Keywords: digital convergence; LAM convergence; institutional convergence; institutional isomorphism; libraries; archives; museums; institutional change

A phenomenological scheme for information organization

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Introduction. The organization of information and knowledge is one of the essential concerns of librarianship and information studies. To say that the organization of information is challenging is a truism, and the discipline has been attempting that challenge for centuries. This paper explores the nature of this challenge and makes suggestions for addressing it.

Analysis. Recent attempts to conceive of organization represent advances in the idea of enhancing the ability of seekers to retrieve information. For example, the Functional Requirements for Bibliographic Records (FRBR) and Resource Description and Analysis (RDA) are efforts aimed at replacing former standards and guidelines for cataloging informational objects and helping users gain access to the objects. FRBR and RDA represent altered ways of thinking about the description of objects, and one purpose is the identification of works and instantiations of works.

Conclusions. The proposed paper will build upon Smith's ideas, in which entropy inheres, to suggest a naturalistic design for organization (one that incorporates cultural objects and subjects of intentional activity).

Keywords: organization of Information, phenomenology, intentionality, ontology

The classification of musical transformation: A conceptual approach to the knowledge organization of musical arrangements

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Introduction. The purpose of this paper is to provide a conceptual analysis of the knowledge organization of musical arrangements found in notated Western art music.

Analysis. Four areas of arrangements are analysed. Inter-medium arrangements are explored, which are arrangements that transform one musical medium into another. Arrangements which involve changes of difficulty or pitch are discussed, as well as transformations between notation and performance. Arrangements of forms and genres are analysed, including sub-genres such as literal transcriptions, fantasies, virtuosic arrangements and pot-pourris. The function of arrangements is also discussed.

Results. This study introduces additional facets, foci and types of information. These include the development of musical themes as a classification principle, the concept of a performance-arrangement, and the idea of functions specifically associated with transformation. A categorisation is proposed for the various types of form/genre arrangements, which shows blurred boundaries between types. The impact of time on arrangements is demonstrated, and that there is a non-binary division between the original and the arranged.

Conclusion. Two models demonstrate the complexities of musical arrangement, and how information specific to arrangements needs to be considered within music knowledge organization. Furthermore, the results suggest novel ideas about classifying change and transformation more generally.

Keywords: music; music knowledge organization; arrangements; conceptual analysis; classification of music

'What is (a) disease?': Disease as events and access to information

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Introduction. This paper outlines how classes of diseases are dependent on social, cultural, and physical dispositions and contingent affordances (events). They are part of an assemblage of components (social, technical, intellectual, disciplinary, etc.) that create historically-situated notions of what it means to have a disease. This complexity is often obfuscated from a patient. Access to authoritative and balanced knowledge that leads to an informed sense of the contingency of the category of disease is a social justice issue that merits more examination.

Method. An autoethnographic case study is presented.

Results. Ready access to accurate and transparent information sources (publications, social networks, etc.) is a necessary prerequisite if we are to expect patients to make informed choices that best meet their situational needs, as well as give patients an understanding of what it means to 'have' a disease.

Conclusion. A disease is dependent on social beliefs and conditions, individual epistemological stances, and the tools of observation at our disposal. Due to a lack of access to information about these realities, patients are disempowered not only from making what may end up being better decisions about their symptoms, but from understanding that a disease is less an 'it' and more an event.

Keywords: classification; disease; information literacy

Information literacy and critical thinking: Different concepts, shared conceptions

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Introduction. Information literacy and critical thinking are discussed as distinct concepts by authors in different disciplines. This paper seeks to analyse their conceptions to determine the extent to which they overlap, and identify areas for collaboration across disciplinary lines.

Method. A hermeneutic literature review was conducted, followed by a content analysis of information literacy papers discussing content evaluation, and critical thinking papers from key authors.

Analysis. Proportions of identified themes represented within the two groups of papers were compared. Similarities and differences were assessed in conjunction with findings from the hermeneutic literature review.

Results. Though divergent in their basic underpinning skills, critical thinking and information literacy conceptions pertaining to content evaluation were found to be strongly overlapping in their broader conceptions. Modern pressures giving rise to content evaluation concerns such as the 'fake news' phenomenon suggest a need for strong sense conceptions, and an avenue for integration between information literacy and critical thinking when evaluating information.

Conclusion. Taken in their strong sense, information literacy and critical thinking conceptions show a high degree of overlap. Engagement across disciplinary lines could offer an enrichment to both concepts.

Keywords: information literacy; critical thinking; conceptions; content analysis

The theory of mitigating risk: Transition and information literacy practices

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Introduction. This paper proposes a theory of mitigating risk, a grounded theory of transition that emerged from research into the everyday information literacy practices of language-learners (Hicks, forthcoming). This study presents a rich picture of the important role that information plays in helping to mediate these complex processes of change.

Method. Semi-structured interviews and photo-elicitation methods were used to examine the actions of 26 English-speakers who were learning a language overseas for between 4 and 12 months.

Analysis. This qualitative study employed constructivist grounded theory (Charmaz, 2014) and situational analysis (Clarke, 2005) methods to analyse audio-recorded interview data and participant photos. Findings were explored through a practice theory (Schatzki, 2002) and transitions theory (Meleis, 2010; Rogoff, 2003) theoretical framework.

Findings. Findings led to the proposal of the theory of mitigating risk. This theory explains how the academic, physical and financial stress that is produced through language-learner engagement abroad catalyses the enactment of information literacy practices that mediate students' transition from acting like a language-learner to becoming a language-learner within the structures of their new setting.

Conclusion. The theory of mitigating risk extends understanding about the complex dynamics that impact engagement within a new and unfamiliar information environment.

Keywords: information literacy; information practices; transition; practice theory; international students

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Searching for critical dimensions in data literacy

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Introduction. The data-turn is starting to have a significant impact on library and information sciences. In an era of abundant growth of data and supporting infrastructure, proposals for the twinning of information and data science in library and information science schools aim to create expertise which would cater to the job market in need of data-oriented specialists. While data literacy creates the main line of discourse alternative approaches are being considered such as the concept of critical data literacy.

Method. A comprehensive thematic analysis of the critical data literacy discourse is undertaken to construct a comprehensive definition of critical data literacy and conceptualize its relation to the general thinking on related concepts. The articles were chosen based on the PRISMA instrument for construction of samples for systematic reviews and when submitted to its eligibility criteria 30 articles remained which were thematically analysed using the MAXQDA software.

Findings. Our interpretive analysis uncovered five major themes: ontological treatment of data; critique of the epistemological status of data; literacy rationale situated in key problem accentuations; critical pedagogic articulation; and critical data literacy as ethics.

Conclusions. We conclude that there is a growing need for terminological clarity in relation to the concepts of data and information considered in the context of the established discourse on critical data literacy.

Keywords: critical data literacy; data turn; library and information sciences

The materiality and fragmentation of facts in contemporary society: Infrastructural meaning-making and new demands on information literacy

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Introduction. This paper presents a theory-driven discussion on the role of facts in society, couched between a brief historical overview and a discussion of the contemporary situation, exemplified in particular by openly available web-based fact services. Implications for the conceptualisation of information literacy – and in particular information literacy in relation to today’s dominant algorithmic information infrastructure – are considered throughout.

Method. This is a conceptual paper where theoretical reasoning is accompanied by examples from a small empirical material. This material consists of the use and observation of three web-based fact services as well as expert interviews with three producers and one user of one of the services. In particular Hannah Arendt’s essay “Truth and politics” is drawn on to contextualise and understand the role of facts in society.

Results. The web-based fact services investigated here facilitate and describe the creation of facts based on open data in a rather traditional way, i.e. by providing references and pointing to sources. However, the established facts are then inserted into today’s networked information landscape, which is an arena for competing knowledge claims working according to the market’s principles of popularity, and this leads to conflicting situations and poses new demands on information literacy.

Conclusion. This paper suggests the need for a view of information literacy that accounts for infrastructural meaning-making at the same time as it enables the political dimensions of the way in which facts and factual information are created and valued in contemporary society to be taken seriously.

Keywords: infrastructural meaning-making; factual knowledge; Hannah Arendt; conceptual paper; fact services; information literacy

Appropriation of social sciences and humanities literature in the public arena

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Introduction. We propose a methodology and tools for exploring the citation contexts of scholarly publications on the web.

Method. From the logs to Open Edition pages, a platform that hosts scholarly publications in the Social Sciences and Humanities, and the digital traces left on the web by the visitors, we identified web pages that cited publications from the Open Edition platform and delineated the citation contexts using the Texttiling thematic segmentation library. With Unitex, a Natural Language Processing engine, we identified noun phrases from the citation contexts of the citing web pages and built a co-occurrence graph linking the cited Open Edition publications to the phrases found in their citation contexts on the web.

Analysis. We generated a dynamic and interactive graph interface allowing the user to navigate between the cited publications from Open Edition and their contexts of citation.

Results. The exploration of the graphs revealed the citation themes, their provenance (citors) and other features such as the purpose of citation, actors and events surrounding the cited publications and the polarity of the citation (positive or negative).

Conclusion. This study showed that there was a strong lexical coherence between the cited publications from Open Edition and their appropriation in the public arena.

Keywords: knowledge appropriation; dissemination practices; re-appropriate academic resources; lexicometric

Pressure to publish: A bibliometric study of PhD-students (1993-2009)

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Introduction. Academic advancements as well as funding depend on publications and thus pressure researchers to publish. The perception of the pressure to publish is tied to career stage. The uncertain future careers of PhD-students and postdocs cause them to be more aware of publication pressure.

Method. Using a data set of health sciences PhD-students from the University of Southern Denmark, this paper investigates whether the productivity and citation impact of PhD-students has increased over time. We use a pseudo-experimental matching method to ensure that former and contemporary PhD students have similar characteristics as measured by a number of balancing variables.

Analysis. The matching method enables us to estimate productivity and impact by an ordinary t-test using standard statistical software packages.

Results. Collectively, after completion of the PhD-program the PhD students from the new cohort published more than the PhD students from the old cohort. The results of the citation analyses show that on average, the publications by the new cohort from years 1 through 5 after graduation receive more citations than the publications from the old cohort. Yet, when comparing normalized and fractionalized citation counts, the cohorts are remarkably similar.

Conclusion. PhD-students have increased their publication rate although the citation rates have not changed.

Keywords: publication pressure; bibliometrics; publishing; PhD students

Women in the academia: A bibliometric perspective

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Introduction. Our aim in this project was to assess the outputs and the citations to these outputs by gender and academic rank in a selection of disciplines in the Israeli universities. Three fields were chosen: Linguistics (Humanities), Psychology (Social Sciences) and Public Health (STEM).

Method. The name, the rank and the gender of the researchers were collected from the website of the researchers and their departments. Number of publications and citations were retrieved from Scopus.

Analysis. Data were analysed quantitatively using Excel to highlight the differences between gender by subject, by academic rank and collaboration.

Results. Considerable differences were observed between the disciplines. The opposite is true for Linguistics, where female publications are cited more on average than male publications, even though the average number of publications by men and women is nearly the same. In Public Health and Psychology men publish more, but male and female publications receive nearly the same number of citations per publication on average.

Conclusion. The major conclusion is that it is not enough to look at gender disparity at a general level, but it is important to consider each field's specific issues. In the specific sample we found both female and male dominated fields. In all three fields women produce less but in Linguistics they are cited more than men, and in Public Health women authored/co-authored publications receive more average citations per publication than men. In terms of collaboration, again we see field specific differences.

Keywords: bibliometrics; gender differences; academia; Israel

From metrics to representation: The flattened self in citation databases

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Introduction. Citation data are used in bibliometric analyses to describe scholarly communication networks, while citation-based metrics are widely used in the evaluation of research performance at individual, institutional, and national levels. The meaning of metrics changes when they are used in different contexts and for different purposes. In everyday academic discourse, citation-based metrics have become representation of persons and work.

Method. This paper is a conceptual piece about the nature of metrics, as well as representation in citation databases and scholarly communication networks using concepts developed in sociology and science and technology studies.

Analysis. The analysis is consisted of (a) the necessity of representation in databases and the nature of metrics as representation in scholarly communication networks and evaluative practices; (b) metrics as 'numbers that commensurate'; (c) decontextualisation and the flattened self in citation database; and (d) quantified control facilitated by information infrastructure.

Conclusions. There is a danger of metrics exerting strategic influence on the decisions of academic work. Although most cannot change how these metrics are being accessed, manipulated, ranked, added or removed in citation database, we can defend, explain, justify, protest about their validity and legitimacy in evaluative practices.

Keywords: metrics; representation; citation databases; information infrastructure

Embodiment, information practices and documentation: A study of mid-life martial artists

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Introduction. This study explores the concepts of embodied documentation (Hansson, 2017) and embodied information practices (Olsson & Lloyd, 2017) in the context of a study of martial artists in mid-life and beyond. The focus of this paper will be the practices through which they develop, maintain and share the embodied knowledge needed to pursue their martial arts.

Method. Data collection included semi-structured interviewing, participant observation, auto-ethnographic diaries and reflective writing.

Analysis. Analysis was undertaken using an inductive, thematic approach.

Results. Participants' information practices are social, multi-sensory and embodied in nature. The findings reveal the importance of nonconscious information practices aligned with the Zen Buddhist concept of mushin (無心の心). The study's findings demonstrate that martial arts embodied information practices are unquestionably codified, embedded in long standing traditions of 'correct' practice.

Conclusions. Participants' embodied practice related explicitly to the codified martial arts form manifested through movements, technique and postures. That what is learnt is not random or situational in an ontological sense. Instead, codification challenges the established notion of tacit knowledge as it carries in it structured rules which relate to a documentary status of the embodied practice.

Keywords: information practices; embodied information practices; embodied documentation; documentalism

Embodied cognition and information experiences of transgender people

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Introduction. This paper examines how the concept of embodied cognition can be used to better understand information experiences where an individual's body plays a major role. We will examine information grounded in body-based actions, as well as information sharing through bodies and gender expression on transgender people. The term 'transgender' is used as an umbrella term for diverse gender-variant identities.

Method. The data includes 25 semi-structured interviews with Finnish binary and non-binary transgender people.

Analysis. Interviews were analysed with a combination of theoretically and empirically driven content analysis.

Results. Embodiment plays a significant role in transgender people's information experiences in relation to their gender identity. These information experiences involve knowledge derived from emotions, affects and senses. Gender expression happens in relation to others. Moreover, gender expression is constantly created and shared with others through dress and style.

Conclusions. In the context of information seeking and the sharing of intimate and personal topics, the concept of embodied cognition deepens the understanding of information as embodied, situational and social. This concept offers a new perspective of information experiences as embodied, and it helps to dismantle the body-mind dichotomy.

Keywords: information needs; embodiment; transgender

Accessing information: Digital and social capital of students with disability

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Introduction. This study investigates the experiences of students with disability in an Australian university as they engage in their online learning activities and asks the question: How can the experiences of these students help us to re-conceptualise what it means to access learning resources?

Method. Students who had identified themselves as having a disability were invited to complete a questionnaire using the Qualtrics survey platform and usable responses were received from 200 students, of whom 26 agreed to take part in a semi-structured interview.

Analysis. Descriptive statistics were derived through Qualtrics; qualitative data were analysed using Leximancer to identify key concepts supplemented by a discourse analytic approach to content analysis providing access to the language of the students.

Results. Some barriers to accessing learning resources arose from incompatibilities in assistive technologies and from decisions made by staff, but a significant barrier was a lack of social capital.

Conclusions. While policies are important in facilitating access to learning resources for students with disability and the skills and expertise of those involved are also significant, the strength of social relationships and the inequities resulting from unbalanced engagement in these relationships must be considered in any discussion of access and barriers to information.

Keywords: information access; students; disability; learning resources; social capital

Embodied and dialogical nature of human beings shaping organisational knowledge creation: Developing scientific knowledge for a virtual power plant

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Introduction. The study introduces a theoretical framework and results of an empirical examination, based on hermeneutic phenomenological approach, emphasising the dialogical, embodied nature of human beings, who act and interact in their material environment.

Method. Ethnographic approach, focusing especially on the interactive events, is used to examine the process of knowledge creation in a multi-disciplinary research community.

Analysis. The data sets were analysed in different stages, focusing on the content of the discussions, modality of interaction and the phenomena of knowledge use, sharing and creation in the process.

Results. The results of this study suggest that to create interdisciplinary knowledge, there has to be means to move flexibly from ideation and face-to-face discussions to more detailed means of sharing, using and creating scientific knowledge, to produce joint publications and new, interdisciplinary concepts.

Conclusions. Examining knowledge creation as a dialogical, hermeneutic process enables us to see, how the problems faced can be understood and solved by acknowledging the embodied nature of the human beings, their limits and possibilities.

Keywords: knowledge management; knowledge creation; interaction; materiality; phenomenology

A conceptual framework for investigating documentary practices in prehospital emergency care

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Introduction. The area of documentary practices in complex, mobile, unpredictable and time critical contexts is understudied. This paper outlines a conceptual framework suitable for empirical studies of the use and production of documents in such contexts.

Method. The development of the conceptual framework is grounded in a set of empirical observations from previous studies of prehospital emergency care, and conceptually shaped by practice theory and critical document theory.

Analysis. By drawing on a set of key concepts from critical document theory and materiality oriented practice theory, three empirical examples from prehospital emergency care, in which documents are in focus, are analysed.

Results. The empirical cases illustrate that the use and production of documents must be seen as integral with, and in some cases inseparable from, the overall work of the emergency medical services (EMS) clinicians.

Conclusion. By conceptualizing documents as agents and that which is going on in the empirical setting as practices and bundles of practices, the paper demonstrates how documentation is incorporated in context and functions as a mutually shaping part of the arrangement in which it takes place. The prime novelty in the study is the innovative combination of practice theory and critical document theory.

Keywords: prehospital emergency care; documentary practices; practice theory; critical document theory

Examining documents as material manifestation of organisational practices

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Introduction. Digital tutorials designed in a user participation project in 2018 are seen as documents. The aim is to examine these documents as manifestations of the project and to analyse how two theoretical approaches, actor-network-theory (ANT) and the concept of documentary practices, complement each other in such analysis.

Method. Ethnographic-inspired methods have been used to study the project. The author followed the design processes of the tutorials and the translations among actors involved. In this paper, four tutorials are analysed.

Analysis. Firstly, the paper applies ANT-based concepts of network and translation in analysis of four documents. Secondly, an analysis including the concept of documentary practices is suggested and discussed (e.g. Frohmann, 2004a; Lundh and Dolatkah, 2016).

Results. Each document represents different networks and practices. By opening up documents, libraries got information about strategies shaped by relationships and translations. Thus, document analysis might become a key site for improving organizational practices.

Conclusion. ANT analysis illustrates relationships and translations by which four documents were constituted. Frohmann's approach indicates that the documents were connected to different documentary practices. The two approaches generate insights into how activities as part of user participation project bring particular forms of documents and their outcomes into being.

Keywords: actor-network; documentary practices; document work; digital tutorials; library management

The ethics of documents in relationships: The United Church of Canada and its reconciliation documents

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Introduction. Documents may play an important ethical role in relationships in the absence of face-to-face contact. The field of information science's focus on information and knowledge is not able to support the ethical dimensions of understanding that are necessary to consider this role. A hermeneutic approach to understanding may offer the field a way to reconsider understanding.

Method. I conduct a literature review on the concepts of aboutness and understanding in information science and compare this to ethical understanding in Levinas and Gadamer. I read this conversation against a case study of documents created by the United Church of Canada as part of its reconciliation efforts with Indigenous people.

Analysis. My archival research places the case study in public and historical context. A hermeneutic reading of the case study provides clues as to how ethical relationships to the other may occur on the documents' own terms.

Results. The United Church of Canada's documents cannot initiate an ethical relationship to the Indigenous other because they do not offer an experience of the other's whole complexity. However, the documents allow a different kind of ethical response wherein readers become aware of their own limitations in relationship to the other.

Conclusions. Documents have the potential to increase ethical understanding. Studies of ethics and documents offer a more complete picture of how documents function in people's lives.

Keywords: aboutness; understanding; documents; ethics

The diary method and analysis of student's mental representations of information spaces as the research approach in information behaviour research

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Introduction. This paper focuses on the usefulness of the diary method enriched by the drawings technique along with the concept of mental models to explore personalized information spaces in everyday life and to identify their components, including social and affective factors, basing on a case study of the undergraduate information management students of the Jagiellonian University in Krakow in year 2018/19.

Method. The research employs a multimethod approach, including critical literature review, case study and a comparative strategy. Empirical data were gathered by means of diary and drawings techniques, and analysed with thematic analysis.

Analysis. A rich empirical material was obtained, and subsequently qualitatively analysed to find categories of information actions, as well as individual mental models of information spaces and its core components, embodied in the existing, selected information behaviour concepts.

Results. The diary method, enriched by the drawings technique allow for identification and categorization of information behaviour and personalized information spaces and its components.

Conclusions. The triangulation of research methods offers a multidimensional insight into the information space, but also fortifies understanding of contextual information behaviour, providing the starting point for enhanced didactic activities and research within multiple groups of users in information science.

Keywords: diary method; information behavior; mental representations; personal information spaces; pictorial representations; case study

What can we make of our interview data? From interdisciplinary to *intra-disciplinary* research

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Introduction. This paper considers materially enriched interview data through practice lenses and explores how performativity in practices is accentuated in the data. Particular emphasis is placed on the kinds of knowledge that are justified by the data.

Method and analysis. The paper distinguishes between element-based and post-humanist practice lenses. The distinction is exemplified by an analysis of two interview abstracts from a study on literature searching among interdisciplinary scholars.

Results. Depending on the lenses applied, materially enriched interviews produce different epistemic objects, enabling different kinds of research results. The element-based lenses are attuned to practices as ordered products, indicating that interviews re-enact practices. The data justifies knowledge about dynamics inter disciplines or inter scholars. The post-humanist lens views practices as a mode of ordering, where interviews (and the data produced) become a part of an intra-disciplinary becoming through the intra-acting of human and non-human agencies alike.

Conclusion. The element-based lenses indicate that interviews inform about performances happening in situ elsewhere, whereas the post-humanist lens views the interviewing researcher as part of practices-in-their-making. This entails a shift from a concern about researcher reflexivity and valid representations, towards an awareness of researchers' responsibilities in the joint performance of the phenomenon studied.

Keywords: qualitative data; interviews; information practices; practice theory; interdisciplinarity; performativity

Employing nexus analysis in investigating information literacy

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Introduction. This study discusses the potential of nexus analysis in information literacy research. Nexus analysis is a methodological framework that can be applied to examine social action by focusing on the ways actors' histories and identities, discourses circulating in a scene and mutually produced interaction order intersect in a specific moment in time in a nexus of practice.

Method. Nexus analysis is discussed in relation to other socially oriented approaches to information literacy research. Moreover, an empirical example is used to demonstrate the use of this methodology.

Analysis. The key ideas and concepts of nexus analysis are explained, compared to related approaches, namely, practice and sociocultural theories and discourse analysis and illustrated with an empirical example.

Results. Nexus analysis can be viewed as located under the umbrella of practice theoretical studies but also as a form of discourse analysis and a way of doing ethnography. To socially oriented information literacy research, nexus analysis may offer new perspectives where different types of data are combined with an aim to unfold the historicity and situatedness of social action.

Conclusions. Nexus analysis is a useful methodological framework to examine phenomena that are complex and changing in nature such as information literacy.

Keywords: information literacy; nexus analysis; social practices

Conceptualizing reference and information service using Q methodology

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Introduction. Reference and information service has historically been conceptualized in a variety of ways. This Q methodology study identifies which conceptualizations are espoused by practitioners and how they compare with those in the literature.

Method. Q methodology was used for the study which involved a card sort of 35 statements featuring differing conceptualizations of reference and information service and a brief interview. The preliminary data includes 35 participants from academic, public, school, and special libraries in South Africa and the United States.

Analysis. Ken-Q Analysis, a web app designed for Q methodology was used for the quantitative analysis of the card sorts. Centroid analysis identified three factors on which at least two participants loaded.

Results. Preliminary results identified a three factor solution to the data. Factors are interpreted as listening and information provision, counseling, and instruction.

Conclusion. Although final results are not yet available, preliminary results indicate that the method can make sense of the disparate approaches to reference and information service described in the literature and facilitates participant reflection on their conceptualizations

Keywords: reference and information service; Q methodology; theory development

The road not taken: locating desire Lines across information landscapes

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Introduction. The concept of desire lines is defined, contextualised and explored within the area of information landscapes. It problematises the existence of desire lines in relation research which has been conducted with various refugee groups.

Method. The concept of desire lines is expanded and linked to the library and information science field by drawing from the authors empirical research projects and from the scant literature from geography, urban planning and from a social theory.

Conclusion. The concept of desire lines contributes to the nascent research area of fractured information landscapes and offers a way of understanding how information landscapes are shaped when people are resettling into a new setting. While the work presented in an emerging conceptualisation, the authors also believe there is potential to conceptualise the rebuilding of landscapes as an occurrence within any transitional environment (e.g. starting a job, moving to a new country, or transitioning from university to work).

Keywords: desire lines; information landscapes; refugees; theory

Rethinking context in information research: Bounded versus centred sets

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Introduction. Context is one of the key concepts in library and information science research.

Method. This paper provides a conceptual overview of the use of the notion of usefulness in library and information science literature, explicates its relation to key parallel concepts, and on the basis of an empirical vignette in the context of health information research, discusses the potential limits and advantages of referring to usefulness instead of and together with other related concepts.

Analysis. The paper is based on conceptual discussion and a selective review of literature. Results. This paper explicates the implications of the traditional approach of conceptualising context in information research as bounded sets or 'quasi-bounded-sets', and to contrast an alternative view of treating them as centred sets or processes. Instead of seeing context as a single- or multi-layered surrounding, describing it as a centred set makes it a position with affinities to different factors, situations, people or things.

Conclusion. Even if all of the approaches have their inherent limitations, the notion of centred set provides means to rethink context and to help to avoid the temptation to treat it as an unspecified container and make it possible to explicate its constituents and their movement toward or from its nucleus.

Keywords: context, information behavior, bounded sets, centred sets

Integration, information behavior and social capital: A process of mutual influence

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Introduction. This paper analyses the ability of language cafes to support information behaviors that can facilitate integration as a process of mutual influence.

Method. The methodological approach is a reanalysis based on a theoretical reading of the findings from a multi-case study of language cafes and integration that was conducted at public libraries in Sweden and Norway.

Analysis. The theoretical lens utilized is a conceptual model connecting information behavior and social capital. The outcomes of the model are related to four proposed outcomes of intergroup contact. The combination of the model and proposed outcomes provides a theoretical basis for understanding the role that information behaviors play in the outcomes of intergroup contact.

Results. It appears that language cafes can facilitate mutually centrifugal information behaviors between immigrant groups and members of the majority while still allowing for centripetal information behaviors. This makes possible for program attendees, both members of the majority and immigrants, to maintain their own cultural identity and group unity while supporting the formation of bridging social capital; thereby, supporting integration as a process of mutual influences.

Conclusion. Language cafés have the potential to support information behaviors needed for integration as a process of mutual influence to occur.

Keywords: information behavior; social capital; integration; public libraries; conversation-based programming; immigrants; refugees; intergroup contact

Transformative power of information: Managing personal history and culture

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Introduction. This study explores how personal information management practices could be used to help individuals manage their cultural heritage legacy and to investigate how digital collections of libraries, archives, museums and other information organisations could be utilised by individuals to support discovering and learning about their cultural heritage.

Method. This paper presents the results of qualitative research on the purposive sample of ten Croatian expatriates living in Europe and expatriates from other countries living in Croatia. Interviews were used to collect data on participants' personal information management practices with the focus on immigration experience and cultural information needs. The participants were then asked to use an information source that responded to one aspect of their personal collection or need and to describe the experience in semi-structured diaries. A follow-up interview was used in the third step.

Results. This research showed that there is a stronger motivation to use libraries, archives and museum's collections if there is an obvious connection to personal dimension that personal information management practices can make a significant difference in managing personal cultural heritage legacy and that collections by information institutions can be a part of those practices.

Conclusion. This paper promotes personal information management and its potential in using digital cultural heritage collections.

Keywords: personal information management; information behaviour; cultural heritage; expatriates; immigrants; information institutions

Build, manage and evaluate: Information practices and personal reputations on social media platforms

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Introduction The broad theme of this paper is the use of information to build, manage and evaluate personal reputations. It reports the findings of a study that considered the extent to which social media users replicate in online environments the established information practices of academics when they assess their peers. The three platforms considered are Facebook, Twitter, and LinkedIn.

Method. A multi-step data collection process was implemented for this work. Forty-five UK-based social media users kept journals and took part in semi-structured interviews.

Analysis. A qualitative analysis of the journal and diary data was undertaken using NVivo10. Information practices were analysed to consider the similarities or difference between social media practices and related practices deployed by academics related to citations.

Results. The findings expose the ways in which social media users build, manage, and evaluate personal reputations online may be aligned to the citation practices of academics.

Conclusion. This work shows where the similarities and differences exist between citation practices and related information practices on social media as related to personal reputations. Broadly, the findings of this research demonstrate that social media users do replicate in informal online environments the established information practices of academics.

Keywords: everyday life information seeking; social media; personal reputations

Newcomers at the library: A library perspective on the integration of new citizens

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Introduction. The first integration efforts in Danish public libraries were aimed at the proletariat to be trained as a resource for the industry as well as citizens in the liberal democracy. Since the 1960s, intensified migration movements have changed the nation-states' cultural composition, why integration efforts increasingly are targeting new population groups. In 2007, a reform of the public administration in Denmark entered into force resulting in the closure of branches and a changed relationship with the public. The purpose of this article is to investigate what this Structural Reform meant for the integration work.

Method. The article is based on selected research articles and reports on the changing missions, visions, and objectives of Danish public libraries. The subject content of the articles and reports are used as a theoretical framework for the analysis of an interview with an integration librarian at the main library from a larger Danish municipality.

Findings. The Structural Reform changed the public library paradigm and promotes an administration perspective that focuses on the public's prior knowledge of the library institution, which is why recommendations may be regarded as 'one size fits all'; focusing on better and more efficient use of libraries - and a better outcome for the public. This task requires a professional upgrading of library employees as teachers.

Vice versa, the integration perspective is based on the target groups' ignorance of the library institution why integration activities strive to create equality through compensatory discrimination. The main purpose of the integration work is to minimize this ignorance, which especially certain non-Western target groups tend to exhibit. Hence, public libraries initiatives must be personalized, which require education, specialization in combination with personal experience and interest in the target groups in practice.

Conclusion. The Structural Reform and the integration work relate to two different target groups, but the implementation of the reform in the public library area creates a change in the integration work nevertheless: When the professional attention shift from compensatory discrimination to formalized lifelong education, the awareness of culture politicians, public libraries and the public about public libraries' *raison d'être* is changed, too.

Keywords: public libraries; integration; Denmark; ethnic minorities

Recognising the other through promotion of reading, collection development and communal collaboration: Rural public libraries in the far-north of Sweden and their relation to the indigenous Sámi population

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Introduction. This study reports findings from a study on the relation between rural public libraries and the Sámi population in northern Sweden, placed in the context of minority priorities given required by the Swedish Library Act.

Method. Full day workshop focus-group interviews were made with public librarians from 33 rural counties in Northern Sweden, and follow-up interviews were conducted with representatives of the Sámi library sector.

Analysis. Qualitative analysis was carried out inspired by the concept of institutional ethnography. Capturing the relation between individual experiences and institutional structures, results were related to the concept of recognition as a moral basis for legitimate indigenous struggle.

Results. Results indicate that rural public libraries have difficulties meeting the requirements of the Library Act. Reasons are lack of general resources, lack of knowledge in indigenous librarianship and limited production of literature in the Sámi language varieties spoken in Sweden.

Conclusion. Further development of Sámi designated administrative areas and increased production of literature in Sámi language varieties stand out as the two most important factors in making daily work in public libraries able to reach the requirements of the Library Act in terms of recognition of the informational and cultural needs of the Sámi people.

Keywords: rural librarianship; public libraries; indigenous librarianship; multilingual librarianship; theory of social recognition; institutional ethnography

Facilitation in library makerspaces: A prototype for a professional development model

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Introduction. This paper presents *Remake Making*, a research project that explores an interactive, constructivist professional development methodology for people who work with youth in library maker spaces, asking the research question, *How can a constructivist system of professional development support facilitated making in libraries?* The goal of the project is to provide library staff with a set of heuristics to support self-awareness, intentionality, and relevance around their facilitation practices with young people at the library.

Method. The project applied methods of improvement science to iteratively design and test a range of professional development innovations around facilitation. Through a participatory process, 18 library staff, grouped into four cohorts, met for multiple sessions over the course of two months (five sessions in the first two cohorts; six sessions in the last two). They considered their own problems of practice and used improvement science methods to establish practitioner know-how.

Results. One of the central contributions of this study are a logic model and a set of strategies to support a constructivist professional development program that arises out of the real-world experiences of practitioners. For the participants, the act of reflecting on practice through an improvement project surfaced an awareness about themselves as facilitators, suggesting that the end game for professional development should not be a packaged, one-size-fits-all training program but rather, a methodology that allows library staff to design a set of reflective activities contextualized for their own use, in their own communities.

Conclusion. By treating the facilitation of activities in library maker spaces as a practice that requires expertise, the project gives serious attention to an (often unacknowledged) aspect of library service. This research study also advances broader knowledge in the area of professional development, specifically as relates to *Improvement Science*, an applied science useful for investigating change-in-context for the purposes of improvement.

Keywords: communication practices, facilitation techniques, makerspaces, participatory design, professional development, teen library services

POSTERS

EXTENDED ABSTRACTS

Revealing innovation history by using smart data: A conceptual and methodological exploration and demonstration

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This poster reports a data-driven project that reveals the innovation history of the Liquid Crystal Institute at Kent State University, the birthplace of liquid crystal displays.

Background

The Liquid Crystal Institute (LCI)¹, the birthplace of liquid crystal displays, is one of the most prominent innovation centers in the United States over the past five decades. Through the work of its faculty and alumni, LCI has had a significant impact on the way the world sees things – on our smartphones, tablets, and computer screens (Bos 2015). However, there is no systematic research or report about the history of this innovation institute, including the key personnel and networks, the major events, and the milestones in its 50 years of research and development.

Goals and outcomes

Initiated three years ago, the project “Digital Humanities Research with Smart Big Data — A Network Framework of Innovation History” aims to develop and demonstrate a network framework of innovation history by using smart data, dealing with unknown unknowns. It intends to use comprehensive data from across disciplines and perspectives to discover meaningful patterns in the history of innovation, using LCI as a case subject. Through collaborations of researchers from various domains and the implementation of information organization processes, the project team has delivered a network framework and timeline to reveal the innovation history of the LCI. The final reports and the products are currently at the final review stage. The project team also aims to demonstrate the roadmap of this project and share a platform for any other research on innovation history.

The challenges

Using data to reveal the innovation history of LCI has faced unconventional challenges.

First, the availability of data resources in historical data could not be obtained through web crawling or scraping. The project relies heavily on heritage materials carrying verifiable facts which are not machine-processable, such as archival files, annual reports, and oral history materials, digitized or not.

Evidence of the achievements reflected in patents and publications have been carried by various data warehouses separately; none of them are complete, and most are not freely accessible. After gathering facts about the people and organizations involved in the research, the project has to try to effectively utilize existing databases and textual materials for patents, grants, academic publications,

¹ <https://www.kent.edu/amIci> Named as Advanced Materials and Liquid Crystal Institute (AMLICI) since Fall 2018.

archival materials, personal profiles, named entities, geographical locations, etc. and align them with the correct timeline.

Second, many of the key persons involved in the dramatic movement of this institute do not have social media accounts or web presences. The popular methods of tracking publications and impacts through products such as Google Scholar do not provide information for these people since they do not even have a Google account, nor are they registered in a digital repository. Additionally, the status of many of the identified people have changed since they first contributed to the LCI. In order to manage such dynamics, a name authority created by the team actually has to contain more biographic data than just name control. Meanwhile, because innovations and inventions by their nature demand more collaborative efforts than individual hero-inventors, this project needed to focus on a community of scientists in one large institution and international collaborators instead of individual scientists when revealing the history of the innovation.

Third, the fields that the Liquid Crystal Institute initially focused on have already experienced extraordinary changes and extensions internationally during the last 50 years, especially in the digital age. The dedicated thesaurus created 25 years ago here, the national and international patent classification schemes, the subject terms and descriptors that occur in secondary databases, as well as the categorizations in impact analyses, all have had significant changes. Their corresponding meanings at various time periods could vary so that our quantitative analysis and visualization processes could not be completed using normal methods.

Fourth, there are no standard models or best practices in terms of using data to research and reveal the history of innovation. The models commonly applied in library, archive, and museum (LAM) communities in handling unstructured and structured data could not be adopted directly in either the process of datafying the raw data collected, nor in the steps of unifying and presenting the complicated classes and relationships of the involved entities.

This Poster

The poster explains the concept of smart data (Kobielus 2016; Schöch 2013), which emphasizes the organizing and integrating processes from unstructured data to structured and semi-structured data, to make the big data smarter. The concept needs to be understood in relation to big data, especially the “V”alues represented by the multiple “V”s (volume, velocity, variety, variability, veracity, value), as well as methodologies that reveal *unknown-unknowns*, instead of the commonly used approach of either proving or disproving *known-unknowns*.

The poster presents the integrated research findings regarding the sophisticated relationships and networks of contributing factors and impacts in the 50-year history of LCI that complement the traditional study of the history of science and technology. It also aims at sharing our lessons and roadmaps from taking smart data approaches.

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A reexamination of the public library based on the American public library model: Rethinking from the perspective of alternative public libraries

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Background

Public libraries are educational institutions that support public values such as equal access to information and lifelong learning. It is necessary to view the achievement of these objectives from a long-term perspective. Having accomplished this purpose, stability is the highest priority. Municipal government is the most appropriate way to reliably supply the financial resources and professional staff needed to form the core of library management.

Research problem

Neoliberalism and market fundamentalism have had a great impact on public management, including public libraries. A variety of models have consequently appeared in public services, including outsourcing to private organizations, private financial initiatives (PFI), and the privatization of public institutions. In response to these changing circumstances, it is necessary to articulate the *raison d'être* of public libraries through a theoretical examination of the foundation of library philosophy.

Research methods

This paper takes American Public Libraries as its model for public libraries, based on the three principles of 1) being free of charge, 2) open to the public and 3) under municipal governance. We then describe alternative public libraries, which are an extended version of the American public library model, and reexamine the philosophical foundation of public libraries using these different models.

Examples of alternative public libraries as extensions of public libraries are placed in four categories. We then investigate the characteristics of these libraries in reference to the philosophies of the American public library model. This process is necessary to illuminate and reevaluate the essential factors of the American public library.

In the IFLA/UNESCO Manifesto, published in 1994, the conditions for a public library were defined as being the responsibility of local authorities, and operating through a public budget.¹ In the IFLA Public Library Service Guideline published in 2010, however, these conditions, notably being the responsibility of local authorities and operating through a public budget, had disappeared.² Many new types of public libraries, which would not satisfy the principles of the 1994 manifesto, would now, according to the definition of the guideline in 2010, be recognized as public libraries.

The public library model is defined in this study as a library founded in a specific community that is open to the public free of charge. Municipal governance, however, is not an essential condition. It is

¹ IFLA/UNESCO Public Library Manifesto 1994, <https://www.ifla.org/publications/iflaunesco-public-library-manifesto-1994>

² Christie Koontz and Barbara Gubbin, eds., IFLA Public Library Service Guidelines, 2nd completely revised edition (IFLA Publications 147) p. 1.

possible to include a wide range of alternative libraries in the public library model by deregulating these conditions. These libraries basically share the fundamental philosophies of the American public library model. This study explores alternative public libraries of this type.

Extended public library models: Four categories

The extended public library model can be divided into the following four categories.

Category 1: Public libraries commissioned by a municipal government and run by public service corporations.

Public libraries in the Netherlands are examples of this category. Most public libraries in the Netherlands are not directly managed by local municipalities, but are operated by nonprofit foundations that have been delegated administrative rights by local governments. Private reading circles run by private organizations, which were established at the beginning of the 20th century, are the origin of the modern public library in the Netherlands.

Category 2: Public libraries established in developing countries under impoverished public governance conditions

Some public libraries in developing countries are examples of this category. Public libraries called “community libraries” offer basic library services to all residents free of charge. These libraries are operated by NGOs whose aim is to support the building of community libraries and communicate the modern philosophy of public libraries.

Category 3: Public libraries that are not incorporated into the municipal library system

Public libraries in indigenous communities are examples of this category. They exist outside of municipal government because indigenous people have their own residential areas. For instance, in the U.S., public libraries are generally established by municipal governments. However, tribal libraries for Native Americans are not included in this library system, which is based upon municipalities.

Category 4: Public libraries that exist independently of the municipal library system

Small independent private libraries are examples of this category. These exist independently in local communities, where they offer free-of-charge library services for specific communities. These kinds of libraries were common in the early stages of the establishment of the modern public library system. After the completion of the public library system, most of them were integrated into municipal libraries.

Discussion

A close examination of the differences between the traditional/American public library model and the extended public library model gives significant insights into the philosophical foundations of public libraries. From a holistic viewpoint, the extended public library model shares its basic values and philosophy with the traditional model that is based on equal access to information, rooted in social justice and fundamental human rights.

From the micro viewpoint, conflicts and tensions exist between the traditional public library model and the extended public library model. For instance, collections at indigenous community libraries

contain “culturally sensitive materials,” such as confidential documents regarding the indigenous community and traditional crafts for specific ceremonies. These materials are open to only a few members of the community.

In this case, maintaining confidentiality takes precedence over the principle of “open access” to the modern public library, the result being that some indigenous libraries do not satisfy the basic conditions of a public library service: the extended public library model has its own characteristics which are built upon the social, political and cultural background of the local community. This means that alternative public libraries will sometimes challenge the traditional public library model.

Conclusion

The four categories of public libraries examined in this study are regarded basically as minority and anti-mainstream libraries. Nevertheless, the existence of these alternative libraries highlights the legitimacy of the principles of the American public library model, and illuminates the essential philosophy of the public library that is rooted in social justice and fundamental human rights. Furthermore, the differences between the two models spur a reexamination of the theoretical foundations of public libraries that contribute to public values such as equal access to information and lifelong learning.

This presentation was based on the following study: Yuko Yoshida and Yoshitaka Kawasaki: Reexamination of the Public Library Model Based on American Public Libraries, *The Library World*, vol. 70, no. 4, 2018.11, p. 526-538 (in Japanese)

Mastering life abroad as an international student – seeking, learning, growing

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Introduction. International students' transition to a foreign culture and a foreign educational system disrupt their general order of things. This poster presents and discusses the results from a survey study of international master students' information seeking behaviour while preparing their stay and study in Denmark. Three issues of the pre-settlement period are in focus: international students' background, importance of information needs and hopes for the stay..

Method. Sixteen participants completed a questionnaire about their background, information needs, information seeking, self-efficacy statements and hopes for their stay.

Analysis. A conceptual model of everyday-life information seeking and cultural adaptation in context framed the analysis.

Results. Participants have high self-efficacy, rate both everyday and study-related needs as highly important in preparation of their stay abroad, and they hope to learn and grow.

Conclusions. International students seek study-related and everyday information before arrival to master life in the host culture. This makes insights into pre-settling activities valuable to both researchers and host institutions.

An increasing number of students study abroad (OECD, 2018) facing a foreign educational system (e.g. Hughes, 2013; Liao et. al, 2007; Mehra and Bilal, 2007; Song, 2005) and a foreign culture (e.g., Jeong, 2004; Khawaja and Stallman, 2011; Kim, 2001; McLachlan and Justice, 2009; Shafaei and Razak, 2016) that disrupt their general "order of things" (Savolainen, 1995). This poster presents and discusses the survey results from a study of sixteen international master students' information seeking behaviour while preparing their stay and study in Denmark in 2017. The study focuses on three issues of this often ignored *pre-settlement* period:

1. Perceived characteristics of language skills and self-efficacy
2. Perceived importance of study and everyday information needs
3. Hopes for the stay

The research is part of a longitudinal (diary and interview) study of how international students cope with study-related and everyday information needs abroad and how their information seeking blends with their cross-cultural adaptation and mastery of life.

Theory

The study is framed by Savolainen's (1995) approach to Everyday Life Information Seeking (ELIS) in the context of 'mastery of life'. To operationalize ELIS we employ McKenzie's (2003) understanding of ELIS as a dynamic process that includes different phases and modes of information practices. Inspired by Shafaei and Razak (2016) we conceptualize that gaps in international students' cross-cultural adaptation, psychological wellbeing and academic satisfaction are key drivers for their everyday information seeking. Figure 1 shows our conceptual model of international students' ELIS.

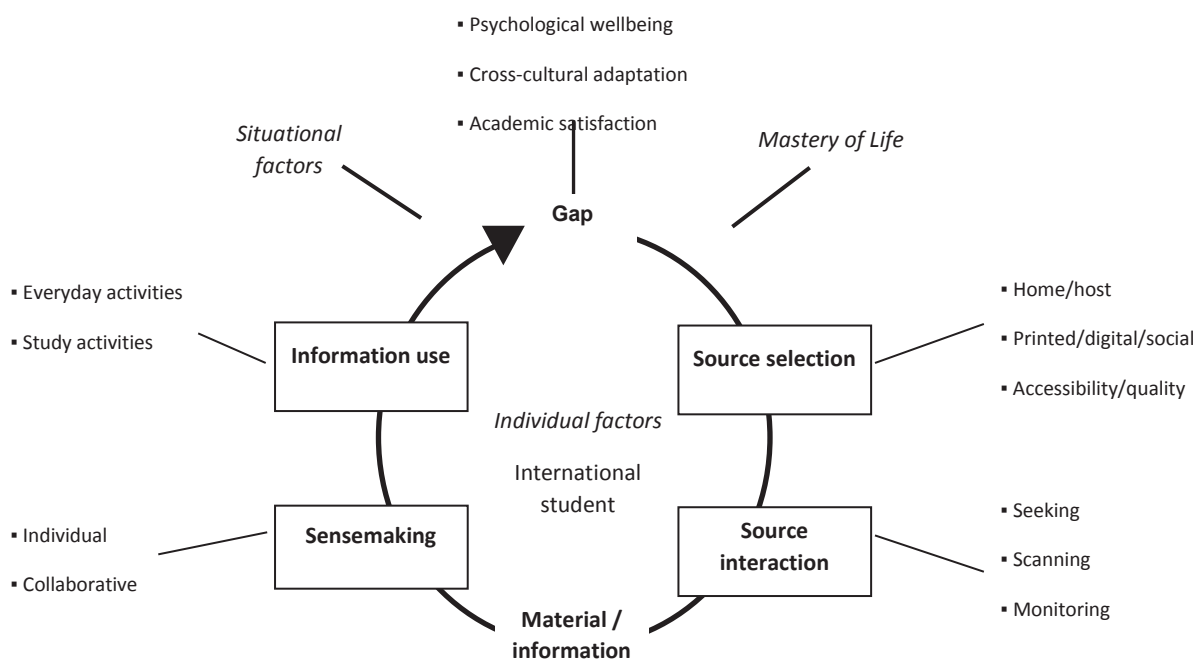


Figure 1: The international student’s everyday-life information seeking in context

Method

Before arriving in Denmark the participants (7 exchange, 9 full degree; 10 female, 6 male) with different bachelor degrees and nationalities completed a questionnaire about their background, language skills, self-efficacy, information seeking and hopes for their stay. Participants rated their language skills (Danish/English), everyday information needs, study-related information needs and ten self-efficacy statements (Schwarzer et al., 1997) on scales from 1 (low/disagree) to 7 (high/agree).

Results and discussion

Results of the questionnaire study and the accompanying issues for discussion are presented below.

- Participants perceive themselves as skilled in English, but with no skills in the local language (Table 1) implying risks of double-language barriers (Sin and Kim, 2013).

Table 1: Background information of participants

| | Mean | Std. deviation |
|------------------------|------|----------------|
| Age (years) | 25.1 | 3.21 |
| English skills (1 - 7) | 5.63 | 0.89 |
| Danish skills (1 - 7) | 1.81 | 0.98 |
| Self-efficacy (1 - 7) | 5.59 | 0.86 |

- Self-efficacy (Table 1) correlates positively with prior experience (8 had prior experience, 8 had none), but is in general high across participants. The reason may be pre-arrival preparedness, personality or inherent in the decision to go abroad.

- Information on 'housing' issues is more important to full degree participants, indicating that 'length of stay' affects ELIS. This is supported by Oh and Butler (2016;2019) and Yoon and Chung (2017).
- The top-five needs during planning are a mix of everyday and study-related issues (e.g. housing and coursework) (Figure 2). Needs of lower importance may though become relevant after arrival.

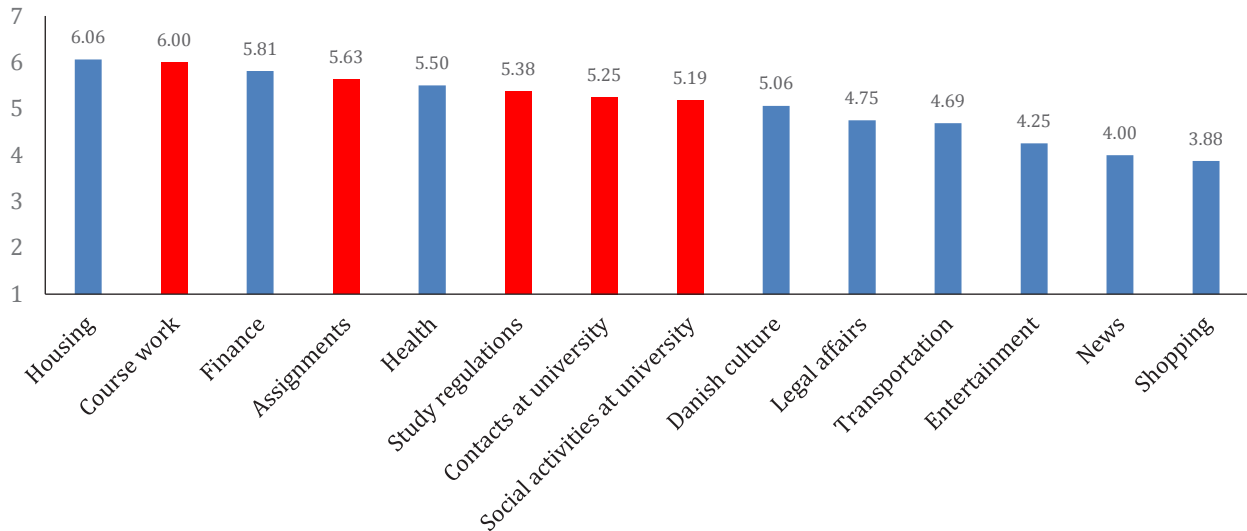


Figure 2: Importance of Information needs before arrival

- The important information sources for planning life abroad (Figure 3) are online and social sources (people in Denmark). This ties in with findings in Yoon and Chung (2017)

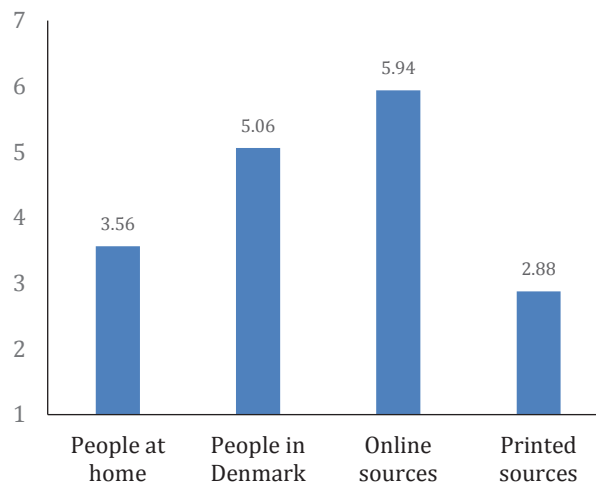


Figure 3: Use of information sources before arrival

- Linking Savolainen's (1995) four ideal types to the self-efficacy-responses, we speculate that international students have an optimistic-cognitive or defensive-affective approach to their "mastery of life" before arrival
- Participants hope to learn, but also to grow, make friends and see the world.

Conclusion

International students seek study-related and everyday information *before* arrival to master life in the host culture. This makes insights into pre-settling activities valuable to both researchers and host institutions.

Acknowledgements

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The construction of consensus: Analyzing “facts” in the Flashback.org contemporary crime sub-forum

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Introduction

Flashback Forums is a Swedish discussion forum that have existed on the internet in different versions since 1996. Since after the millennium it has got a reputation being very active discussing contemporary criminal cases. The discussions are often harsh and vibrant, not minding any of Swedens laws regarding slandering or regulation of press, the servers being located to North America. Lawless or not – the forums have been involved in several criminal cases, supplying information to the public that has not been publicized in the press. Because of this Flashback Forums has gained a reputation among journalists, police and the public. It is now used as a source of information by different agents in society. It is possible to consider it a quite powerful actor and information provider in Swedish society.

Purpose and method

The main purpose of the study is to establish an understanding of how consensus is created in the Flashback-forums. The part of the forums that will be used are two threads regarding murders in Upplands Väsby during 2015, discussed in the contemporary crimes sub forum. Consensus, in this case, is when the participants in the discussion begin to consider something a fact. Facts in this case will be defined as a statement taken for granted by the majority of the users involved in the discussion. The focus will be on consensus regarding official documents, but other external information will be considered as well. There is also a second purpose: to test the method, explore an area of research, and consider which terminology can be used in future research.

The discussion in the Flashback forums is not completely open. Forum posters do not like when discussions are stalled or when they are derailed by posters. Moderators will try to keep the process going and trolls will try to derail the discussion. Moderators can erase posts to keep the process going in an investigative direction. What we will see in the end is a moderated version of a discussion. Alison Pickard (2013) mentions a method called “Online focus group” in her book *Research Methods in Information*. An online focus group is a group discussing a topic online. The researcher monitors the group and takes notes of how the discussion evolves (Pickard 2013: 47). My research is similar to this, but it uses a discussion that already has happened. I am not, in any way involved in the discussion, just monitoring a finished, moderated conversation that has already happened. Looking for clues of how people use information, and how they decide what evidence is legit and what is not. To make this possible I use four themes that accompany my analysis of the use of official documents in each thread.

- Negative critique and discussion regarding official documents, of work done by police and other government agencies, and of documentation done by the same agencies.
- Positive critique and discussion regarding the work of government agencies.
- Disagreement between users of the interpretation of the official document.
- Interaction and use of official documents.

These themes will be used to put focus on certain qualities of the discussion.

The Cases

Two forum threads from the Flashback forums, each regarding different murders that happened in Stockholm, are used. People usually take murder seriously and they create a lot of online discussion. The two threads used are about two murders that happened in the locality of Upplands Väsby 2015. Upplands Väsby is a small locality in the north of the Stockholm area, close to Arlanda airport. Both murder victims are girls in their twenties, but the cases are very different in other aspects. The first case (Madelene) is drug related and no one was convicted for the murder. In the second case (Ida) the murder happened during an attack in a jogging track, and the murder and the victim had never met each other before.

Conclusions

The users are in general positive to the Police and other agencies' work. Official documents are seldom doubted. The media suffers more from the users' critique. The only occasion when governmental agencies (and their documentation) are heavily criticized is in thread 2 when there is something wrong with the manipulated photograph of the murder scene. Making the victim possible to see. But it is important to understand that there is a divide between at least two opinions among the users in this case. Some of the posts show the picture for other users to see. Some criticize these posts. The first opinion seems not to have any support among the moderators.

Sharing and discussing official documents, the Flashback users actually start what we could say is a unique conversation between government and public. This is a raw, open conversation, without the distortion of journalism. You could be of the opinion that this conversation actually is beneficial for a transparent democracy. We have a lot of people that are engaged, as users (participants) and as lurkers (persons observing) in these threads, and they will see, and maybe understand, the administrative procedures of the court. This should be beneficial for a democracy that values transparency and engaged citizens.

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Flashback Forums

Thread 1:

"Upplands Väsby: 29-åriga Madelene, försvunnen 2015-11-06, funnen död (2016-02-08)"

<https://www.flashback.org/t2650410>

Thread 2:

"Upplands Väsby 2015-08-05: Ida Johansson mördad vid motionsspår"

<https://www.flashback.org/t2604060>

Use of social media sites and readership diversity: A case study at Chalmers University of Technology

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Introduction

Social media has provided new opportunities for academics to disseminate their research results. They allow users to upload academic papers and links to published papers, track demand for their published articles, and engage in professional discussions with other users (Meishar-Tal and Efrat Pieterse, 2017). This paper aimed to study the use of academic and non-academic profiling sites and platforms amongst scholars at Chalmers University of Technology. We were also interested in the purpose that scholars had for using these platforms. Furthermore, using data about people who register in Mendeley as readers of papers, this article explored diverse types of users of scientific papers by scholars at Chalmers. These gave us insight into the different social media platforms being used, the purpose of use, the readers' status and their topics of interest at Chalmers. Furthermore, this helped us to provide statistics on how scholarly publications at Chalmers are used for scientific, educational, or other professional purposes.

To do so, this study aimed to answer the following research questions:

1. Which forms of social media (academic and non-academic) are the most popular amongst scholars at Chalmers University of Technology?
2. Who uses which services and for what purposes? Are there different usage patterns in terms of gender or age?
3. What are the reasons given by scholars that choose not to use academic profiling services such as ResearchGate?
4. Who are the readers of scientific papers published by scholars at Chalmers University of Technology?
5. Which topics attract more readers?

Methodology

Data collection and analysis

Using Mendeley API, we collected readers data of Chalmers researchers' publications using EIDs. Mendeley readers were grouped into the following user types, as per the studies by Haustein & Larivière (2014) and Zahdei & Van Eck (2018).

Table 1. Mendeley user status aggregated into sector and user types

| Mendeley Status | Sector type | User type |
|--|-----------------------------------|--------------------|
| Students (Bachelor), students (Master), students (postgraduate), doctoral students, and PhD students | <i>Scientific, educational*</i> | <i>Students</i> |
| Postdocs, researchers (at non-academic institutions), and researchers (at academic institutions) | <i>Scientific, professional**</i> | <i>Researchers</i> |
| Assistant professors, associate professors, professor, lecturers, and senior lecturers. | <i>Scientific, educational***</i> | <i>Professors</i> |

| Mendeley Status | Sector type | User type |
|---|--------------|---------------------|
| Librarians or other library professionals | professional | Librarians |
| other professionals (including medical doctors, nurses, nutritionists, lawyers, etc.) | Professional | Other professionals |

*For Students (Bachelor), students (Master), and students (postgraduate)

** For researcher at non-academic institution

*** For lecturers and senior lecturers

For Questions 1-3, we collected data using a survey which was previously used by Manca (2014) in Italian universities. The survey was carried out online using Google forms and it was sent to both teaching and research staff at Chalmers (accounting for 1,788 scholars). The aim was to investigate the use of both academic (ResearchGate, Academia, etc.) and non-academic (Twitter, Facebook, etc.) social media platforms amongst scholars at Chalmers. We were also interested in the purpose behind using these platforms and trends based on age and gender.

For Question 2, ANOVA and T-test were used to compare different genders and age groups¹ in terms of average use for different purposes (personal, educational, professional).

For Questions 4-5, we used a data set of papers published by scholars at Chalmers indexed in Scopus between 2012-2017. This accounted for 18,028 publications.

Results

Question 1

Only 188 (~10%) of 1,788 scholars completed the survey. Whilst 112 scholars used non-academic platforms, 132 used academic platforms.

As can be seen from figure 1 (a, b), ResearchGate and Facebook were the most used academic and non-academic social media platforms.

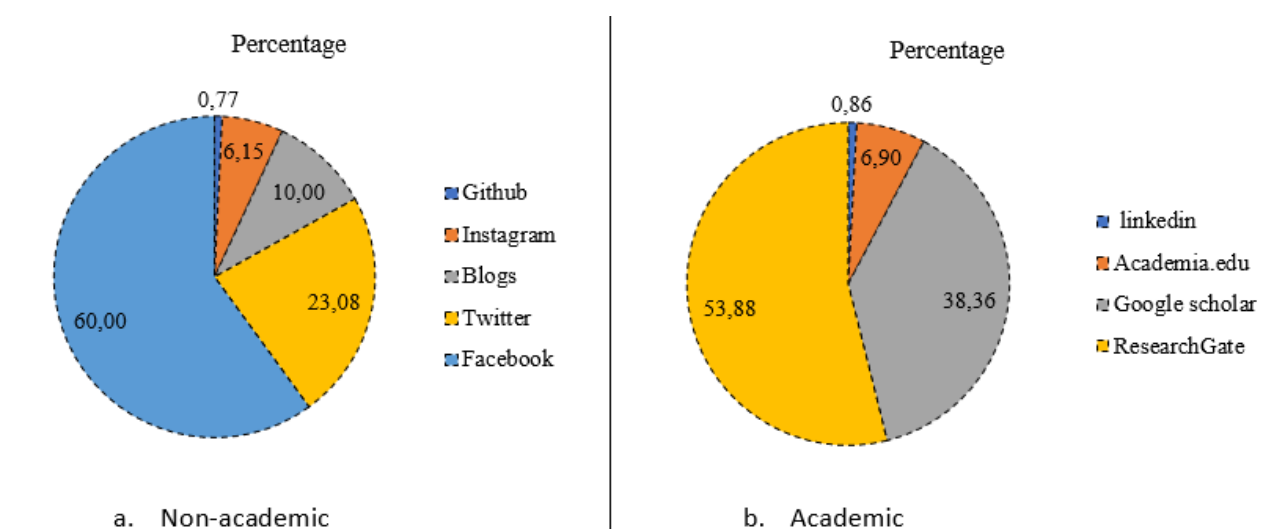


Figure 1. The percentage of use of academic and non-academic social media platforms amongst scholars at Chalmers

¹ 1 (<30), 2 (30-40), 3(41-50), 4 (>50)

Question 2

Regarding gender, the results of T-tests showed significant differences between female and male scholars regarding the use of **twitter** ($t=-2.07, P=0.03$), and **LinkedIn** ($t=-2.01, P=0.03$) for professional purposes. This was in favour of men.

Table 2. Mean of personal, educational and professional use of social media platforms by gender and age at Chalmers

| Platform | Purpose of use | Age | | | | Gender | |
|-----------------------|----------------|-------------|-------------|------|------|--------|-------------|
| | | 1 | 2 | 3 | 4 | F | M |
| Twitter | Personal | 1.16 | 1.19 | 1.30 | 1.07 | 1.13 | 1.25 |
| | Educational | 1.41 | 1.23 | 1.30 | 1.10 | 1.22 | 1.31 |
| | Professional | 1.41 | 1.41 | 1.52 | 1.14 | 1.26 | 1.53 |
| Facebook | Personal | 3.77 | 3.09 | 2.58 | 1.81 | 2.79 | 3.09 |
| | Educational | 1.64 | 1.41 | 1.35 | 1.16 | 1.39 | 1.43 |
| | Professional | 1.72 | 1.64 | 1.55 | 1.38 | 1.52 | 1.68 |
| ResearchGate/Academia | Personal | 1.49 | 1.28 | 1 | 1.25 | 1.25 | 1.30 |
| | Educational | 2.10 | 1.68 | 1.16 | 1.31 | 1.51 | 1.75 |
| | Professional | 2.21 | 2.23 | 1.74 | 1.50 | 1.89 | 2.16 |
| LinkedIn | Personal | 1.74 | 1.59 | 1.35 | 1.38 | 1.11 | 1.22 |
| | Educational | 1.97 | 1.60 | 1.35 | 1.22 | 1.22 | 1.28 |
| | Professional | 2.41 | 2.21 | 1.77 | 1.56 | 1.27 | 1.53 |
| Blogs or Wikis | Personal | 2.36 | 2.08 | 1.48 | 1.25 | 1.77 | 2.04 |
| | Educational | 2.54 | 1.76 | 1.19 | 1.22 | 1.59 | 1.92 |
| | Professional | 2.49 | 1.93 | 1.45 | 1.22 | 1.73 | 1.99 |
| SlideShare | Personal | 1.15 | 1.05 | 1 | 1 | 1.08 | 1.03 |
| | Educational | 1.36 | 1.16 | 1.06 | 1.03 | 1.18 | 1.14 |
| | Professional | 1.26 | 1.19 | 1.06 | 1 | 1.18 | 1.11 |

Regarding age, the results of one way-ANOVA tests showed the following results:

Significant differences between age groups regarding the use of **Facebook** for personal purposes ($F(3,173) = 8.94, P < 0.001, \eta^2 = 0.13$). Furthermore, the results of Tukey post hoc test showed a significant difference between 1, 3 ($P = 0.01$) and 4 ($P = 0.001$).

Significant differences between age groups regarding the use of **ResearchGate/Academia** for personal ($F(3,173) = 6.07, P < 0.001, \eta^2 = 0.09$), educational ($F(3,173) = 12.12, P < 0.001, \eta^2 = 0.12$), and professional purposes $F(3,173) = 7.98, P < 0.001, \eta^2 = 0.17$). The results of Tukey post hoc tests showed a significant difference between groups 1 and 3 for personal ($P = 0.02$) purposes, groups 1, 3 and 4 for educational purposes ($P = 0.001$) and groups 2 and 4 for professional purposes ($P = 0.02$).

Significant differences between age groups regarding the use of **LinkedIn** for educational ($F(3,173) = 4.17, P = 0.007, \eta^2 = 0.06$) and professional purposes $F(3,173) = 3.96, P = 0.009, \eta^2 = 0.06$. Tukey post hoc tests showed a significant difference between 1, 3 ($P = 0.04$) and 4 ($P = 0.007$) for educational ($P = 0.007$) purposes and 1 and 4 for professional purposes ($P = 0.01$).

Significant differences between age groups regarding the use of **Wiki/Blog** for personal ($F(3,173) = 6.07, P < 0.001, \eta^2 = 0.09$), educational ($F(3,173) = 12.12, P < 0.001, \eta^2 = 0.12$), and professional purposes

$F(3,173) = 7.98, P < 0.001, \eta^2 = 0.17$). Tukey post hoc tests showed a significant difference between age group 1, 3 and 4 for personal, educational and professional purposes ($P < 0.001$).

Significant differences between age groups regarding the use of **SlideShare** for educational ($F(3,173) = 2.95, P = 0.03, \eta^2 = 0.04$). Tukey post hoc tests showed a significant difference between 1 and 4 ($P = 0.04$).

Question 3

The reasons for not using RG were categorized in the 6 following categories:

- Copyright issues
- Lack of time to create and maintain a profile
- No knowledge of RG
- Prefer to contact colleagues in real world than social media
- Not relevant to their work and field
- RG profile not required

Question 4

As can be seen from figure 2, ~78 % of Chalmers papers' readers are active in the scientific and educational sectors. Furthermore, students are the largest users of Chalmers' papers.

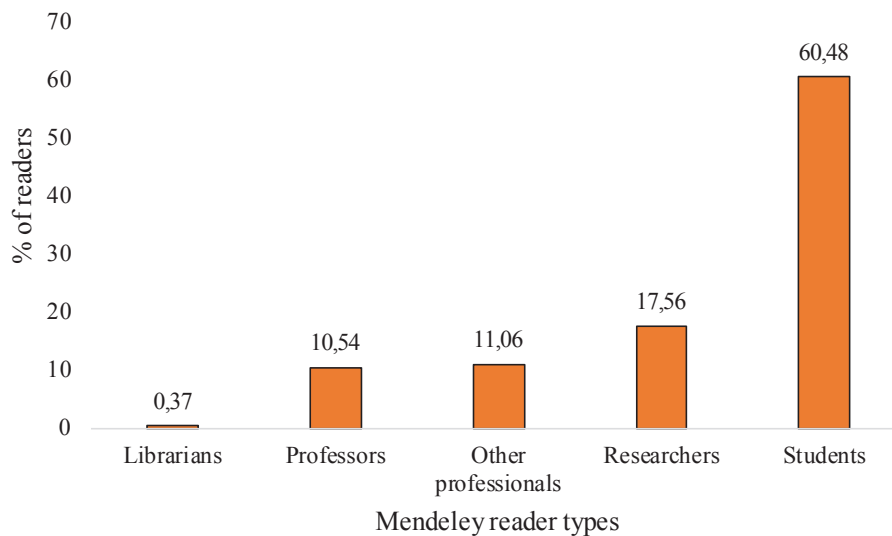


Figure 2. Percentage of the user types for Chalmers publications

Question 5

Figure 3 shows the top 10 topics which have attracted more readers at the Chalmers. "Genes, gene regulatory networks" was the first topic followed by, "Graphene" and "Electricity, energy" as the second and third topics, respectively.

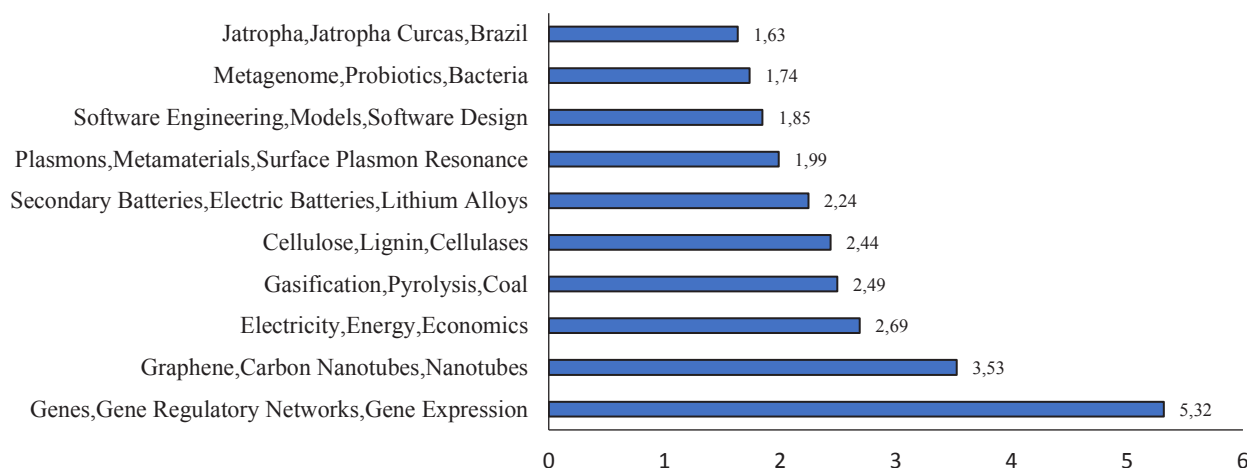


Figure 3. Top ten topics in terms of the percentage of readers at Chalmers

Conclusions

Our study showed that **ResearchGate** and **Facebook** were the most used academic and non-academic social media platforms. Regarding gender, results showed that male scholars used **twitter** and **LinkedIn** more for professional purposes compared with females.

Regarding age, the results showed that group 1 (<30) used **Facebook** more for personal purposes, whereas used **Wikis**, **SlideShare** and **LinkedIn** for educational and professional purposes. **ResearchGate** was used mainly by group 2 (30-40) for professional purposes. Group 4 was the group which used social media platforms the least for all purposes compared to the other three groups.

Regarding readers' status and topics, we found that ~78 % of readers were active in the scientific and educational sectors with students being the largest users. Furthermore, *Genes*, *Graphene* and *Electricity, energy* were the top three most read topics.

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The impact of information science in library studies: The perspective from an iSchool

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Library studies have a long history in North America, with the first educational program established at Columbia University in New York in 1887 by Mevil Dewey. Evolving during the 20th century through the efforts of the American Library Association's establishment of a committee on accreditation of library study programs and the accreditation of such programs throughout the U.S. and Canada that focused on the profession of librarianship. In the mid-20th century, the profession of information science evolved out of the American Documentation Institute. The research that grew from information science was selectively incorporated into the profession of librarianship, and perceived as relevant to the goals of the library profession. By the last quarter of the 20th century, the impact of the literature of information science was deemed sufficiently relevant to librarianship that many library study programs added "information science" to the names of their library studies programs. Thus LIS acronym came to represent "Library and Information Studies" or "Library and Information Science" as the appropriate label for former library study programs.

However, a tension developed between information scientists and librarians as information scientists were perceived to consider library studies as a subset of the larger domain of information science. This tension was further heightened with the development of the iSchool (information schools) in the last decade of the 20th century. The iSchools fully developed in the first decade of the 21st century, resulting in the further diminishing the role of library studies worldwide as the iSchool movement expanded internationally. By the end of the 2d decade of the 21st century, the question was raised as to the extent to which library study programs were impacted by information science in terms of changes in the curriculum, in recruiting, placement, and number of students matriculated, as well as in the impact on the labeling and self-descriptions of program goals and degrees offered. Definitions of terms are based on the definitions developed by appropriate professional organizations and governmental agencies.

This study uses prior research and professional literature as the foundation for the data analyzed to answer the following research questions:

1. What impact has information science had on the curriculum of library studies?
2. What impact on the degree programs offered?
3. Impact on enrollment and placement of students in library study programs?
4. Impact of the professions of information science and of librarianship?
5. Relevance of findings to the future of library studies, of information science, and to the future of education for the information professions beyond both LS and IS?

In addition to the information science and library study literature, data from the American Library Association (ALA), Association of Information Science and Technology (ASIS&T), and Association of Library and Information Science Education (ALISE) and other relevant organizations will be used. A case study methodology will be used to analyze data in more detail. As a preliminary study, the focus will be on library study programs in the U.S. and Canada because of the existing structure of data gathered for library study programs found there. The preliminary results will be used as a basis for determining the feasibility of expanding the study beyond the U.S. and Canada.

The initial results of this study suggest that there is some impact of information science on the content of the curriculum and even greater impact on terminology used to describe the curriculum, especially in those library study programs embedded in iSchools. There has been a greater impact on degree programs offered, especially in terms of labels and nomenclature. In the case of the latter variable, the preliminary results suggest that the terminology adopted suggests expansion beyond traditional library studies, while the content of the program courses still primarily reflects the competencies established for library studies. Evidence indicating the impact on the number and types of programs and degrees offered by former library study programs is much stronger, with many new degree programs offered at the graduate and undergraduate levels, although these degrees tend to be directed toward information science professions beyond library studies.

Enrollment in library study programs have generally increased during the period when programs move to using information science terminology within their library study programs. Placement data is less complete and thus more difficult to use as a basis for drawing conclusions regarding the impact of information science on library study programs.

Business of medicine: preliminary findings from a research study of the interaction of information and identity practices of surgeons transitioning between training and professional practice

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Introduction

This study explores the interrelation of constructions of identity and knowledge among Australian surgeons using critical discourse analysis in conjunction with two social constructivist theories, Savolainen's (2007) information practices, and Alvesson and Willmott's (2002) identity regulation and identity work (jointly referred to here as identity practices).

Background

Australia has a two tier health system, public and private, with the majority of specialist surgeons earning part or all of their income in the private sector. Surgeons train for an average of thirteen years. During this period they receive little or no formal instruction in the business aspects of private practice. As a result the extent of their formal knowledge in the clinical aspects of their profession contrasts starkly with their knowledge of the business aspects of their profession. This contrasting of the status of expert and novice existing simultaneously in the same individual provides a rich environment in which to explore information practices.

The surgical profession receives public, government and academic attention. Currently in Australia there is much public discussion surrounding surgeons both in terms of the fees they charge and the way they often mistreat minority members of their profession (Hill et al. 2014; Liang, Dornan & Nestel 2019; McDermott & Michelmore 2015; Royal Australasian College of Surgeons 2015). Surgeons are required to constantly update their physical skills and knowledge in a highly competitive environment dominated by a positivist epistemology while being inundated with new information and knowledge regarding advances and innovations in both the delivery and administration of treatment. Library and information science research has historically studied surgeons as either information users or the less problematic half of the doctor-patient relationship (Booth et al. 2009; Clarke et al. 2013; Grant 2017; Ward et al. 2008).

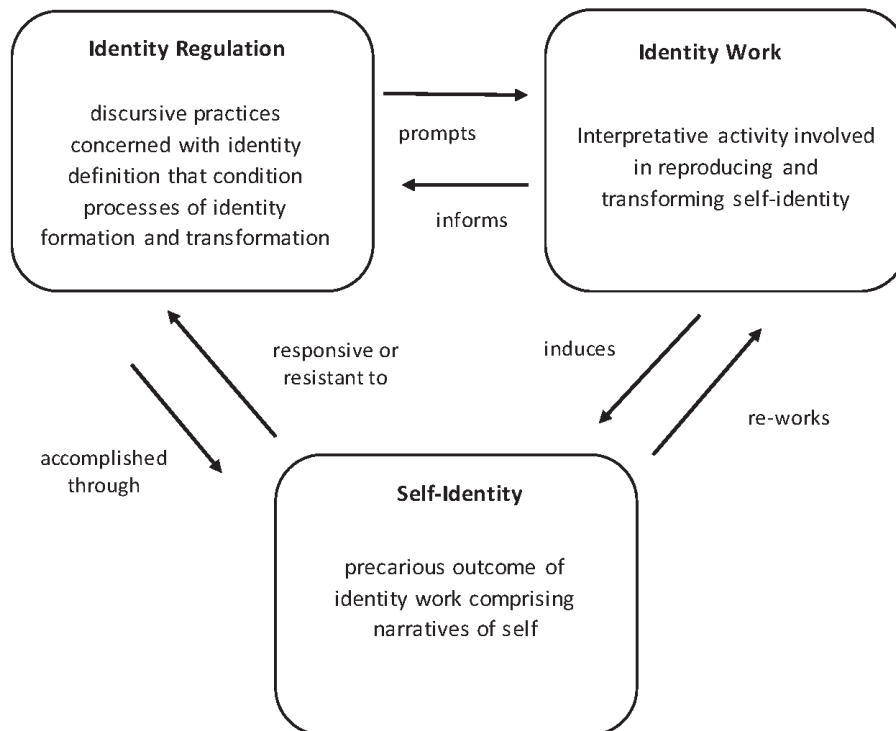
Surgeons may work in a combination of public and private settings, and if their public setting is a public teaching hospital then they are also responsible for training and assessing surgical specialty trainees. Only 11% of specialist surgeons are women as opposed to 40% of all medical practitioners (Australian Institute of Health & Welfare 2016).

Theoretical Concepts

This study uses a Foucauldian approach to professions centred on 'governmentality' (Foucault 1980). In this view, the professions are seen as social constructions of power/knowledge involving the 'institutionalisation of expertise', in which professional bodies, teaching institutions, hospitals etc. become central actors in the discursive landscapes of the professions they engage with. Individual members of

a profession must construct their own professional knowledge and identity in the context of the rules and norms defined and policed by these institutions. This discourse analytic way of constructing the nature of the professions has strongly influenced the present study.

The two social constructivist theories used in this study rely upon critical discourse analysis as a theory and a methodology. They include Reijo Savolainen’s information practices (Savolainen 2007), and Matts Alvesson and Hugh Willmott’s identity regulation and identity work, jointly referred to here as identity practices (Alvesson & Willmott 2002).



Identity Regulation as Organisational Control (Alvesson & Willmott 2002)

Methods

In depth, semi-structured interviews were conducted with early career surgical specialists transitioning from accredited training to private practice. Participants were asked how they navigated two identity discourses in constant tension, ‘doctor as clinician’ and ‘doctor as entrepreneur’. Interview transcripts were reviewed by an inductive process approach of constant comparison.

Results

Participants described the difficulty of being caught between two worlds. Analysis revealed a number of professional identity and information discourses used by the surgical profession to shape appropriate individuals consistent with Alvesson and Willmott’s research. Participants described using their individual agency to resist or accept these attempts, therefore confirming their participation in active identity work. Repeatedly these discourses were simultaneously engaged in identity and information practices. Participants also engaged in different information practices whilst functioning in different professional contexts.

Discussion

For many of the study's participants the business aspects of private practice pose a challenge as well as a prompt for their identity work as they seek to create a coherent self-narrative of their position within their profession and broader society. Analysis of preliminary findings has suggested a number of identity discourses. These can also be framed as information practice modes of discourse critical to library and information science (LIS). This suggests that identity, information and constructions of power and authority are entwined in ways which provide an opportunity for further exploration.

Rather than the individuals' identities being ruled by prevailing discourses, initial findings reveal micro-emancipations consistent with Alvesson and Willmott's model of identity work. This suggests that the 'battle for truth' (Foucault 1980) takes on new levels of complexity, along with the possibility of greater individual agency, when viewed from the level of the practices of the individual practitioner rather than the more macro-sociological level more usual in the Foucauldian tradition. These micro-emancipations involved both intellectual and emotional labour. The cost of this labour over time within a profession is a potential area for additional research.

Conclusion

Preliminary findings suggest that critical discourse analysis is a useful tool for exploring the organisational control of professions. It suggests a strongly entwined relationship between information and identity practices. Preliminary data also demonstrates the precarious ongoing process of identity work of early career surgeons, which is likely to be similar for many other early career professionals, and shows an ongoing state of individual reassessment in order to develop a cohesive self-narrative. This co-existence of multiple identities which vary depending upon context raises multiple questions for academics and professions and suggests many future directions for identity/knowledge discourse research. It also raises a question for library and information science; what is the relevance of the concept 'information in everyday life' if individuals live everyday life constantly responding and resisting to multiple societal discourses?

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Scientists, bacteria and microscope: A study on the development of information

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This investigation shows how scientists interact with their objects of study, in order to build information fundamental for the construction of knowledge in scientific papers. This investigation has been carried out in a micro-biology laboratory at an Australian university.

The study uses Latour's Actor Network Theory (ANT) as a conceptual framework and methodological approach in order to understand the interactions between scientists, bacteria, and the full range of entities involved within the laboratory. As a conceptual framework ANT's most salient distinction is perhaps its view about the agency of non-human entities (Latour 2015). Through this, ANT offers the researcher a fresh perspective for understanding the participation and dynamics not only of human agents, but also of the bacteria and physical objects and their influences on the development of new information.

To gather data, a series of interviews, observations and documental analysis are employed to understand how each actor in the network is contributing to the overarching informational landscape. Five research scientists agreed to take part in the study; each was interviewed twice and observed once during the course of their experiments.

Three key findings are presented below:

The bacteria as relational informational objects: This investigation shows that the process by which the scientist attains understanding from the bacteria is a relational process, in which the bacteria themselves influence how the scientists view the biological processes surrounding this entity. The following quote from one of the senior researchers highlights such interaction:

I think there is not information just in my head, because the way I do something, does modify also the way they behave, so there is a bit of an exchange, so if I do, change one thing, they'll react in a different way, so I can see that as them telling me that what I did is not what I thought... You know, I am doing this because it is going to lead to that! And them [are] like no, no, no, I am going to do this instead, so they're telling me what you just did has caused us to behave this way. So it is in a way... They don't talk to you, but it is in a way an exchange of information, so is not just me having information and thinking something.

Metaphor as a conceptual tool: Scientists, in order to explain or conceptualise the bacteria's states and processes, apply anthropocentric and everyday categories. For example, scientists will refer to the bacteria as being "happy" or "communicating" with the rest of the community to achieve common goals such as colonisation. Knorr-Cetina (1999) refers to the imaginative vocabulary scientists use when referring to other entities as **Symbolic Classifications**, a figurative vocabulary that in many cases supersedes the technical classifications in order to refer to complex processes in an everyday vocabulary.

Microscope as an actor: The group of scientists participating in this laboratory each stated, in different ways, that one of the distinctive features of the laboratory was their emphasis on observing the bacteria, "a love of watching". As they themselves note, the technology they have today allows them to gain an understanding that would be impossible otherwise.

However, the microscope in many cases becomes more than a mere mediator between the scientists and the bacteria. It becomes a participant, a provider of signals and signs for the scientists to interpret. Here, the engagement is not directly with the bacteria, but with the microscope that, through a series of signal transformations, brings the bacteria closer to the scientists' understanding. It is so important within the laboratory and exerts such influence on the staff that even its presence demands a certain level of care ("[at first] we weren't allowed to [approach the microscope unsupervised]") and adds credibility to the results within the papers (Van House 2003).

These few examples show that the study of the informational processes through the lens of ANT has implications for information studies. The first implication is that contrary to the influential cognitive approach to information, the construction of information seems to be a more complex and relational process than admitted through these traditional perspectives. The generation of information should not be considered a private affair of the observer, but, on the contrary, the testimony of the scientists through the study, shows that the objects they study do affect them. The bacteria actively participate, exerting their agency, and that the scientist is more than a series of cognitive processes, instead being a social being inter-connected and affected by its environment.

ANT's symmetry principle opens up the social landscape, highlighting material agents that otherwise were muted, but here they acquire their own voices, ("they can't talk ... but their behaviour tells me"). The bacteria and the microscope both let their presence be known to the scientists.

Not only do these agents participate in the social environment that develops information, they influence the way that scientists identify new processes or knowledge. This often leads to the use of metaphors, the use of an "**imaginary repertoire**" as described by Knorr-Cetina (1999). This allows the scientists to explain complex processes through common and ordinary ones, as well as to map out characteristics of what they see and discover through the everyday, in order to conceptualise new discoveries.

Hence, this investigation challenges traditional understandings of information as a private process in the brain of the observer, supporting instead the idea of a more interactive and multi-participatory process in which many actors that may not be human leave their traces on the informational process, which in many cases are expressed through metaphors and figurative language. The investigation found that ANT provides a rich description of the entities and forces participating in the informational processes in this laboratory.

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Understanding the complexity of knowledge production, sharing, and management: Knowledge commons as a method of institutional analysis in library and information science

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Introduction

Digital knowledge resources flow in different paths than analogue resources. For example, the appearance of digital heritage platforms (e.g. Google Books, Europeana) and open science platforms diversifies the actors and institutions involved in the production, sharing, and management of knowledge resources and creates a more complicated ecosystem. In this study, I present an institutional analytic approach in the field of knowledge commons as a systematized method for analyzing the phenomena outlined previously. In particular, this study aims to clarify the outline of the approach and consider its significance in library and information science.

Method

I first conducted a systematic review focusing on the development of the research project that systematizes knowledge commons research methodology—established by Hess & Ostrom (eds.) (2007)—to clarify the core concepts, theoretical background, and methodological details. I reviewed databases (Digital Library of the Commons, ProQuest, SSRN, Web of Science) and authoritative texts, which are listed on the Workshop on Governing Knowledge Commons website. Search keywords are “knowledge commons” and “cultural commons,” which is used interchangeably with “knowledge commons” (Frischmann 2013; Hess 2012). Publications included met the following criteria: i) published in English from 2007 to November 2017; ii) journal articles, theses, working papers, or books accessible online; iii) theoretical, methodological, or empirical studies; or review articles, case studies, legal papers, or historical researches. I collected 657 publications by the method mentioned above and conducted a review in two phases. In phase 1, titles and abstracts were assessed against the review criteria. In phase 2, full papers that met the review criteria in phase 1 were assessed. Finally, 88 publications met the review criteria were included in the final review.

Second, I conducted a preliminary empirical case study based on the methodology detected by the systematic review to explain the details of this research approach and provide theoretical consideration on the significance of applying it to the study of library and information science. In this case study, I focused on Aozora Bunko (Open Air Library), which is one of the most successful digital libraries in Japan whose collections are digitized and provided mostly by volunteers. Empirical data were collected with web survey.

Results

In contemporary knowledge commons studies, “commons” refers to a form of institutionalized governance and management of resources (Frischmann et al. 2014). The Knowledge Commons Framework (KCF), which is a research tool that unifies general variables relating to knowledge commons, is being

established based on the outcomes of Elinor Ostrom's natural resource commons research (e.g. Ostrom 2005). Case studies through KCF enable researchers to collect standardized data inductively and allow for comparative institutional analyses in the future. The KCF approach presumes that there is a dichotomy that knowledge resources can be governed by Intellectual Property law (market type) or public intervention (state type), but there are various governance types between them in reality—that is, knowledge commons (Frischmann et al. 2014; Madison et al. 2010). This approach also prepares general research questions for future case studies (Frischmann et al. 2014). Multiple studies have utilized KCF.

The findings of Aozora Bunko case study support the presumption of KCF approach. Aozora Bunko is governed through neither pure market type nor state type. Volunteers are motivated by norms that aim to foster the mass digitization of literary works in the public domain. The budget of Aozora Bunko mainly depends on donations. It has not been supported by public subsidies regularly and does not depend on IP law because its product—digital files of public domain literature—are published freely as public domain without any regulation. Several hundreds of volunteers participate in the activity of Aozora Bunko but strengthening and bureaucratizing its secretariat are deliberately avoided.

Conducting case studies based on the KCF approach includes standardizing variables, which enables the establishment of a typology of knowledge commons and differentiation of other types, such as the market type. In addition, clarifying the governance mechanisms of sustainable mass digitization cases, such as Aozora Bunko, will contribute to designing digital libraries in the future. The KCF approach provides a lens that captures the governance of knowledge resources and clues with which they may be analyzed.

Conclusion

In the case study of Aozora Bunko, collected data are primarily published documents and narratives. When applying the KCF approach for a single case study, researchers must collect further data using other methods, such as semi-structured interview based on general research questions or participant observation. When conducting comparative case studies, researchers may be able to find factors that influence achieving mass digitization or sustainable development by comparing a case that has similar governance mechanisms (e.g. Wikipedia, in the case of Aozora Bunko), or similar outcomes and different mechanisms (e.g. Google Books). Using the KCF approach will be informative for researchers who seek a systematic approach to commons-related phenomena, such as data sharing or mass digitization of cultural heritages.

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Rethinking the IS-related study programs at University of Ljubljana (Slovenia)

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This paper describes the state of information science related study programs at University of Ljubljana (Slovenia), as well as the challenges in the intended reshaping of the programs.

Currently, as part of Bologna system (3 years + 2 years), there are two bachelor's programs and a master's program offered by the Department of Library and Information Science and Book Studies, Faculty of Arts at the University of Ljubljana. In addition to the well-established single-major program, a double-major bachelor's program was introduced in the present school year (2018/2019). This addition was a direct response to demand from potential students and potential employers, as well as an opportunity to attract different types of students. There is also a doctoral program, which is not the focus of this paper.

While in the first two years of bachelor's studies, all students have the same obligatory courses, in the third year the program is split into three fields: Information Science, Librarianship and Book Studies.

Most of the students enrolled in the master's program have our bachelor's degree. During the first year of master's studies all students share the same obligatory courses, while in the second year there is again a split into the three fields.

Most of the graduates at both levels in the field of IS find »traditional« jobs in libraries. However, the wish of the Department is for them to get employment in a wide variety of institutions, including those in the private sector. Unfortunately, IS in general and IS students in particular are not very well known or highly regarded in Slovenia. Additionally, the number of enrolled students is in steady decline due mainly to ever-smaller generations. Therefore, crucial work must be done in promotion of the field and awareness of benefits of the competences of students/potential employees to both the potential students and the potential employers.

To help with this, the redesign of programs at all levels must include bringing contents up-to-date, as well as focusing on a fresh set of competences. Revamped programs should aim to equip students with more competences in programming, modelling, knowledge management and better knowledge of the bordering fields such as statistics, mathematics and computational linguistics, as well as the theory of information science. This also means that in practice studies should be more competences-oriented and crucially depend upon motivation and competences of faculty members.

The question remains, whether we need to have three fields (especially at bachelor's level), especially since their overarching theme is organization of information. Should we move towards overall more IS-oriented programs? While job market in Slovenia is strongly library-oriented, the faculty is perhaps the strongest in IS. The opportunity to change the programs also affords us a chance to alter the mind-set of faculty members, employers, students and society in general, towards IS.

PANELS AND WORKSHOPS
EXTENDED ABSTRACTS

Conceptions of LIS profession and education globally: an IFLA study

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The IFLA Building Strong Library and Information Science Education (BSLISE) Working Group emerged out of deliberations at the 2016 IFLA Satellite Meeting (Dublin, Ohio, USA) <https://publish.illinois.edu/ifla-set-ltr-2016/> on quality assessment of LIS education programs, hosted by the IFLA Section on Education and Training and the Section on Library Theory and Research. The BSLISE Working Group is comprised of members from across the globe and is an initiative of the IFLA Section on Education and Training (SET), LIS Education in Developing Countries (LISED) SIG, and Section on Library Theory and Research (LTR).

As part of the research endeavours of the BSLISE Working Group, in 2017 much of its time was dedicated to the development of an international survey as part of a study on qualification requirements for library and information “professional” practice in different parts of the world, in order to understand equivalence of credentials. Conducting research that is international is always a challenge, and in our case, various issues were addressed: reach, accessibility, understanding of terminology, regional use of terminology, and local knowledge and perspectives to ensure appropriate interpretation of practices.

Many critical questions emerged from the findings analysis, such as:

What is LIS? Library and information science is, as the name implies, a combination of two fields: i) library science; and, ii) information science. The joint term is associated with schools of library and information science (SLIS).

Who is the information professional? For what qualifications, roles, and working positions are SLIS programs preparing students?

What are the core competencies in traditional profiles and in emergent profiles?

How feasible is the generation of a set of international standards for the assessment of quality in LIS education?

A key conclusion of the BSLISE White Book¹ report suggested that:

A formal undergraduate or graduate degree is required in many countries; however, there is no correspondence/equivalence among degrees; for many programs, there is no international or recognized standard against which they can be benchmarked for transferability or reciprocity (p. 20).

The White Book identified the recommended action to “identify core and other competencies for transferability and reciprocity.”

¹ White book <<https://openbooks.uct.ac.za/liseducation/index.php/liseducation/catalog/view/1/1/11-2>>

Organization of the Workshop

The purpose of this Workshop is to build our collective knowledge and understanding of the competencies of the field and the future role of the profession for society.

Duration: The proposed workshop will last 1 ½ hours.

Introduction

Findings from this first international survey of its kind have been published in a White Book and will be presented by the BSLISE team at the introduction of the Workshop (30 minutes).

The survey consisted of an online questionnaire (in six languages) which included eight multiple choice and three open-ended questions examining: (1) LIS/librarian qualification and certification requirements; (2) the definition and meaning of an LIS “professional”; and (3) authorities that determine professional entry requirements and certification. The survey was made available via an online survey platform. The link to the survey was disseminated through various LIS professional associations’ email discussion lists to reach both LIS practitioners and educators. The survey was available from March to May 2017. We targeted respondents that were mainly LIS practitioners, LIS educators and representatives from professional organizations. The survey received 706 fully usable and complete responses from 101 countries.

Key questions

Who is the information professional? For what qualifications, roles, and working positions are SLIS programs preparing students?

According to the findings from the survey, the undergraduate degree in LIS is the most common credential, with two exceptions. In Europe both graduate and undergraduate degrees in LIS are common; the European higher education reform process called the Bologna Process, which commenced in 1998/99, might be the main reason why European countries also went in this direction, moving from an undergraduate LIS degree to a Master’s degree. In North America, the Master’s degree in LIS has been the longstanding prerequisite for LIS/librarian entry into the job market, which is less common in other parts of the world.

College diplomas or apprenticeships are still quite common in some regions. Countries where any undergraduate or graduate degree is sufficient and no LIS education is required still exist, as in Europe as in other regions. These can sound strange as some remains from the “distant” LIS field history. Our results show that these countries are clear exception and interesting anomaly to otherwise clear picture of the LIS profession in the world. Although some answers to open questions suggest that, certain de-professionalization of LIS is raising in different regions of the world. That gives SLIS programs different perspective as it is traditionally defined as programs preparing for the profession. It was also evidenced the need of more cohesion among stakeholders.

The important question for LIS field is the certification as a formal recognition that an individual has demonstrated a proficiency within, and comprehension of, a specific body of knowledge and skills. Often prior to the certification, a certain level of education is required. About two thirds of the countries, certification for professional librarians is required, and almost half (42%) in broader library and information field.

The definition of LIS professional was an open question so further coding was needed. Four categories of definitions emerged that related to: credentialing, knowledge, work environment and job

experience, with most regions defined an LIS professional with the credentialing designation that is someone with an LIS degree. A great number of respondents indicated that an LIS professional can be also designated someone who worked in not only a library but also in other information institutions (work environment).

What are the core and new competences? The issue of transferability and reciprocity

The majority of responses indicated that there is no existing legislation/policy that mandates librarians' qualifications, which is particularly notable in Asia and Oceania, Latin America and the Caribbean, and North America. The situation is mixed in Africa, and legislation/policy exists in most of Europe. So in the survey, 'professional' entry requirements to the LIS field, a notable difference was found between Europe and other regions of the world. Professional associations followed by government agencies play a predominant role in roughly one third of European countries. The National library authority seem to be present in many new EU member states that may stem from the historical tradition in several eastern European countries. Only 12% reported the absence of an authoritative body associated with professional requirements compared to 30% in other countries.

Qualifications and certification in LIS field is much more common in European countries. According to the survey, most two thirds (64%) European countries have legislation regarding LIS qualification, compared to one-third countries in other part of the world.

International framework for assessment of quality, aligned with IFLA Global vision and UN Agenda 2030 SDG. The issue of how to link education to community needs

Discussion in tables

Critical engagement will be stimulated with participants on main questions and controversial issues of the White paper (30 minutes)

1st table: What are the core competencies? What distinguish our profession and identity?

2nd table: What are the new competencies: interdisciplinary, technological, soft skills?

3rd table: What is the future role of the profession for the society? SDG and IFLA Global vision framework

Conclusion

Wrap up and follow up will finish the Workshop (30 minutes)

Integration, resettlement and repatriation. Revisiting the information landscapes of refugees

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This workshop will focus on **refugees' information landscapes** as a contribution towards a more unified understanding of integration. Information landscapes (Lloyd 2010) embrace those methods, sources and channels of information which people need and use in their everyday lives. Information landscapes vary with different communities and cultures and when people enter a new landscape (e.g. new home country, workplace, educational institution or health system) they have to learn the characteristics of it to be able to cope and act (Lloyd 2017, 39). Highlighting the importance of access to correct and understandable information in a stressful situation, adds a critical dimension to the already existing strategies and policies on migration and asylum seeking processes¹ as well as the service-providing practices that are imperative for integration (Ager and Strang, 2004, 2008; Cheung & Phillimore 2017). There is a big need for more coordination of services to refugees as well as research about refugees, while integration is strongly fragmented, there are many institutional players, complex regulations, and policy gaps. Furthermore, it is highly changeable and is designed to a strongly heterogeneous public (Scholten et al. 2017). Focusing refugees' information landscapes brings strongly forward the voices of refugees, which is needed to develop policies, strategies, and services to meet the needs of that particular group. This workshop will combine conceptual considerations with methodological, **to reach a deeper understanding of how to best study the the role of information in integration, resettlement and repatriation processes**. This panel also continues the important work started in an international seminar on the topic in 2017².

This 90-minute workshop will be organised as follows:

1. An **introductory panel** will start the workshop, situating the debates, and offering short overviews of key issues and contemporary research in the topic area. Speakers include:
 - Professor Karen Fisher, University of Washington, on how to increase educational opportunity, livelihood and social connectedness at the UNHCR Za'atari Refugee Camp in Jordan. <https://ischool.uw.edu/people/faculty/profile/fisher>
 - Professor Annemaree Lloyd, London University College, on the impact of information practices on information resilience and social inclusion. <https://anniemlloyd.com>
 - Professor Nadia Caidi, University of Toronto, on the policy context for global migration, and the implications for information institutions and information professionals serving the everyday needs of migrant and refugee communities. <https://ischool.utoronto.ca/profile/nadia-caidi/>

1 Common European Asylum System. European Commission, Migration and Home Affairs. https://ec.europa.eu/homeaffairs/what-we-do/policies/asylum_en. European Agenda on Migration: Continuous efforts needed to sustain progress. http://europa.eu/rapid/press-release_IP-18-1763_en.htm

2 A Nordic Seminar on Integration in Cooperation: Developing information services for refugees in collaboration with key actors, 15-16 May 2017, University of Borås and Åbo Akademi University

- Professor Gunilla Widén, Lbo Akademi University, on the effects of social media on information behavior and the role of information and media literacy among young migrants. <https://www.abo.fi/en/contact/gunillawiden/>
- 2. **Group discussions** will follow with the aim to share research practices, methodological experiences, and methods used in studying refugees' information needs and practices.
- 3. Short group presentations and a discussion on how to develop the workshop results
 - a. The possibility to submit a joint **methods paper**
 - b. **Strengthening the MaRIS-network** (Migrant and Refugee Studies) that was established during the seminar in 2017. <https://www.facebook.com/groups/1003696439712401/>

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The LIS professions: Building on the past to shape the future

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Background

Information work has always been about connecting people to knowledge. Library and information science (LIS) professionals bring people together with past and current intellectual content so they can create new knowledge. Although the essence of the professions has not changed (Bronstein, 2015) we have been defined by a constant need for change and redefinition (Allen and Taylor, 2017; Fourie, 2004). LIS professionals are continuously looking for new challenges, new technologies and new services to design and implement (Aharony and Prebor, 2015; Cherinet, 2018).

The Internet shaped the last years of the 20th century as a revolutionary time in the LIS field. Hence, in 1998-2000 Baruchson and Bronstein (2002) used a Delphi study to understand how LIS professionals viewed the future of the professions. They reviewed the opinions of an international panel of 40 experts that included directors of large public and academic libraries, heads of LIS departments, and managers of large corporate information centers. The experts presented their views concerning probability and desirability of issues: (1) the transition from the traditional library model to a hybrid digitally oriented library model, (2) the transition from a technical to a more user-centered approach, and they (3) examined the skills and competencies LIS professionals would need.

Nowadays, the LIS professions face many new challenges. The ways that people create, seek and share information have been transformed by social media platforms that have fostered a renewed discussion about the evolving nature of the library (Dorner, Campbell-Meier and Seto, 2017). LIS professionals need to fulfill research and research support roles (Kavanaugh, Lavalley and Miller, 2018), deal with big data (Robinson and Bawden, 2017), support curation and digital preservation (Kaushik, 2017), and empower people through information access and skills (McGowan, Martinez and Marcilla, 2018). They need new skills to face the challenges ahead (Huvila, et al., 2013; Williams, 2018), and LIS services and education must be adapted (Allen, Stewart and Wright, 2017).

The Delphi technique has been used in several LIS studies that investigated the views and opinions of experts in a variety of subjects (Baruchson-Arbib and Bronstein, 2002; Bronstein and Aharony, 2009; Cherinet, 2018). The Delphi method has been called the “cornerstone of futures research” (Baruchson-Arbib and Bronstein, 2002, p. 399) and is designed to systematically elicit judgments and opinions from large groups of experts in their field of expertise, avoiding many of the psychological distractions inherent in roundtable discussion (Ono and Wedemeyer, 1994). The technique is particularly well suited for areas in which no real models exist and for which hard data is insufficient (Fischer, 1978).

Based on the Baruchson-Arbib and Bronstein (2002) study and a review of more recent LIS literature, we selected the following continuing and emerging themes and questions for discussion:

- 1. Globalization:** increased globalization intensifies users’ interaction with and need for information from around the world. Problems that affect one community quickly affect others. This challenges professionals who must develop new expertise and create new tools, but also creates

opportunities to develop relationships and exchange information with colleagues around the world (Pareek & Gangrade, 2016). How can professionals:

- a. Ameliorate challenges and maximize benefits of globalization for information users?
- b. Contribute to knowledge creation and information dissemination reaching all communities?

2. Sustainability: related to globalization is the worldwide concern about sustainability (Lala and Buente, 2017). How can professionals:

- a. Contribute to the complex problems of sustainability, where information must be drawn from many sources and “answers” are not necessarily easy or possible?
- b. Explore indigenous knowledge, and represent data, information and knowledge to support sustainability?

3. Social inclusion and social justice: the LIS professions’ traditional focus on equity of access and attention to diversity, multicultural users and materials has transitioned to a focus on social justice. Social justice implies action and advocacy, recognizing the needs of marginalized and vulnerable groups, cultural diversity, disability and valuing indigenous information and knowledge (Allen and Taylor, 2017). How can professionals:

- a. Move from a more passive and library-focused concept of diversity to actively furthering equity, social justice and social inclusion?
- b. Enhance access to information for all?

4. Responsible use of social media and social networking: social media offers new platforms for information creation and dissemination, and raises the need for protection against cyber bullying, fake news awareness, education on information privacy and copyright issues, digital and critical literacies (Anderson, 2017). How can professionals:

- a. Play a role in the social media arena?
- b. Strengthen critical literacy skills?

Panel purpose, expected outcomes, structure and outline

Purpose: we intend to generate opportunity for an engaging discussion about key trends and issues currently facing the LIS professions and to draw on the expertise of the session participants to generate questions/statements for a new international Delphi study examining the future of the LIS professions.

Expected outcomes: sharing of participant viewpoints of the future of the LIS professions; generation of questions/statements for a Delphi study.

Duration: 90 minutes

Participants: no limit on the number of potential participants

Outline - draft schedule:

1. Panel purpose, goals and short summary of findings of an earlier Delphi study (BaruchsonArbib & Bronstein, 2002) – 10 minutes (Bronstein)
2. Summary of current work on the future of the LIS professions and roles of libraries – 10 minutes (Julien and Fourie)
3. Summary of the Delphi technique and its value– 10 minutes (Aharony)
4. Discussion in small groups, then as a whole group on (a) appropriate issues to consider when engaging with this question (i.e., the future of the LIS professions) and (b) possible questions for participants in an international Delphi study – 55 minutes (VanScoy)
5. Summary of issues and questions – 5 minutes (Bronstein)

Appeal to audience: Examination of the future of the LIS professions captures the imagination of many who are engaged in scholarship and teaching in the discipline. In addition, attendees will have the opportunity to shape an international research project that will reflect the discipline broadly, and will be sensitized to curriculum and LIS service needs relevant to their own contexts.

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Open Access in theory and practice

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Summary

This proposed workshop will focus on two phenomena and explore the relationship between them: firstly, open-access (OA) publishing and dissemination of research outputs as part of scholarly communication; and, secondly, the interactions of theory and practice (and, theorists and practitioners), in the Social Sciences and Humanities (SSH) in general and Library and Information Science (LIS) in particular. It will explore the ways and the extent that theory and practice have interacted in the development of OA approaches to scholarly communication, and discuss what this reveals about the nature of the OA phenomenon and the relationship between theory and practice.

The workshop will discuss the findings of an 18-month research project running from January 2018 to July 2019 (funded by the UK's Arts and Humanities Research Council) investigating these issues. It will include a detailed discussion of the theoretical foundations of the study, a systematic review of the literature, and analysis of empirical data gathered during the research. The empirical data comprises 38 interviews with practitioners and policy makers associated with OA (funders, publishers, OA service providers, consultants, librarians and OA advocates) as well as researchers, about their views on the extent to which theory has been helpful in explaining OA and has been used to inform action by practitioners. The workshop will be of interest to a similar profile of participants: those working on OA research and implementation, as well as those interested in the theory-practice relationship.

The research discussed in the workshop aims to contribute to the understanding of the relationship between theory and practice, an ongoing focus for debate and policy. It will do so as part of contributing to a better understanding of OA itself, including the views of some of its key implementers, on the ideas which shape their perceptions of OA. The workshop will cover these areas by focusing on following themes: the nature of theory in LIS and SSH, the theory-practice 'gap' (as it is often characterised), theoretically-informed (and other) understandings of OA, the way in which OA policy and practice have been formed in relation to theory and other factors.

The workshop will focus on five main issues:

1. How existing theory has been used, or new theory developed, in relation to the phenomenon of open access;
2. The extent to which practitioners (including policymakers, information professionals, publishers and others involved in implementing OA) been influenced by or have themselves influenced theoretically-informed accounts of OA in their attitudes, policies or activities relating to OA;
3. The nature, purpose and role of theory as perceived by researchers (particularly those who have incorporated theory or generated theory in their research on OA), practitioners and policymakers (involved in implementing OA);
4. What the (perceived) relationship between theory and practice tells us about OA as a phenomenon and movement;
5. What it tells us about the relationship between theory and practice in general, and how the relationship between them may be studied, for LIS in particular and SSH more widely.

Outline

The workshop will be divided into the following sessions:

1. *Welcome and introduction*

This session will introduce the main focus of the workshop: the theory-practice relationship, particularly in the context of OA. It will briefly define key concepts, such as 'theory', 'practice', and 'open access'. It will discuss ways in which the theory-practice relationship has been discussed in different contexts, particularly relating to theory and practice in areas relevant to SSH. The session will also provide a brief overview of the current 'state of the art' of OA developments as a context for the workshop as a whole.

2. *Theory and the theory-practice 'gap'*

This session will discuss in detail different conceptions of 'theory' – what it is and what it is for. It will interact in particular with various typologies of theory in SSH developed, for example, by Gregor (2006) and Reynolds (1971). It will examine the extent to which theory needs to underpin robust research, and how different research approaches have developed 'theory', 'models' and 'frameworks' as ways of analysing and explaining reality, as well as predicting developments or prescribing actions. This session will go on to analyse ways in which the relationship between theory and practice have been discussed in SSH. The main contours of the debate around the 'theory-practice gap', prominent in a range of applied fields (including management, nursing, and education) will be discussed.

3. *The uses of theory in open access*

Theory has been used in a range of ways in relation to open access, both in terms of using pre-existing theory and also generating theory as part of studies of OA. This session will provide a systematic review of the literature on OA which uses or generates theory, exploring the different theories used to investigate OA, the specific aspects of OA they have been applied to, why and how they are used, and nature of theories generated as a result of OA research. As well identifying commonly used theories, the session will provide an overview of work done by different types of authors (e.g. researchers, librarians and consultants), in different research paradigms, and on different aspects of OA. The session will also identify some key themes to emerge from the analysis.

4. *The theories and practices of open access in perspective*

This session will report empirical research involving interviewing key actors in the scholarly communication space about their perspectives on the theory-practice relationship. Participants include practitioners and policy makers (funders, publishers, OA service providers, consultants, librarians and OA advocates), as well as theorists, drawn from the UK and internationally, with a variety of perspectives on OA and the theory-practice relationship. As well as researchers, practitioners will include those who themselves have published on questions of professional practice in general and OA in particular, some whom have made use of theory. Others are those who have not made use of theory and those who have not published at all, but are prominent in their professional domains, particularly in aspects of OA implementation.

5. *Making sense of open access in theory and practice*

This session will bring together the different strands of the project and make sense of them in understanding OA in particular and the theory-practice relationship in general. As part of the discussion,

it will consider the possible ways in which OA itself has been discussed as a way of addressing the theory-practice gap and assess its potential role in doing so.

Participants: Expected/preferred number of participants c.20 delegates

Proposed format:

The workshop will take the form of a set of facilitated discussions on major themes, each introduced by a short presentation by the workshop organizers. For each of the major themes, the initial presentation will be followed by a very short response from a discussant identified in advance, and not from the session organizing team, who will set discussion going. Discussion will be guided with the help of a briefing document distributed to participants in advance (which include references to key works on the topic including those produced by the organizers) allowing those involved to prepare. Discussion is expected to be a combination of small group and whole group interaction, but this will, of course, depend on numbers of attendees.

Outline structure:

| | Theme | Leader | Timing |
|----|---|-----------------|----------------------------------|
| 1. | <i>Welcome and introduction</i> <ul style="list-style-type: none"> Working definitions of key concepts, such as 'theory', 'practice', and 'open access' Overview of the theory-practice relationship in different contexts Summary of the current 'state of the art' of OA developments | SP | 15 min intro + 10 min discussion |
| 2. | <i>Theory and the theory-practice 'gap'</i> <ul style="list-style-type: none"> Conceptions of 'theory' – what it is and what it is for (including various typologies of theory in LIS and SSH) The nature of 'practice' and 'practitioners' (particularly relating to OA implementation), and the 'theory-practice gap' | DB & LR | 20 min intro + 15 min discussion |
| 3. | <i>The uses of theory in open access</i> <ul style="list-style-type: none"> Exploration of the use of theory to explain OA, based on the peer-reviewed and practitioner literature | SP & SW | 20 min intro + 25 min discussion |
| | Break | | |
| 4. | <i>The theories and practices of open access in perspective</i> <ul style="list-style-type: none"> Overview of empirical findings of the research – including perspectives practitioners and policy makers (funders, publishers, OA service providers, consultants, librarians and OA advocates), as well as theorists | SP & SW | 25 min intro + 25 min discussion |
| 5. | <i>Making sense of open access in theory and practice</i> <ul style="list-style-type: none"> Summary and ways forward | DB, SP, LR & SW | 5 min intro + 20 min discussion |

The workshop will be aimed those working on or affected by different notions of theory and the question of the relationship between theory and practice, in Library and Information Science (LIS) in particular, and the Social Sciences and Humanities (SSH) more generally. Since the workshop will frame

this discussion with reference to open access (OA) and open science, it will also appeal to academic researchers and practitioners with an interest and/or involvement in OA. These different participants will be able to make a contribution to the session and it is hoped to attract a variety of them to attend in order to encourage the contribution of a range of perspectives in the discussion. The workshop will combine the findings of a current research project with the contributions of participants to identify key issues which may inform both future research agendas and practice-based activity.

Purpose, goals and expected outcomes

Using the research undertaken as a starting point, the purpose of the workshop is to enable better understanding, and highlight key issues raised, on the relationship between these two phenomena: firstly, open access as an approach to the publishing and dissemination of research, and, secondly, theory and practice (and, theorists and practitioners) in the Social Sciences and Humanities in general and Library and Information Science in particular. It is envisaged the workshop will identify and clarify key current challenges in this area of scholarly communication and highlight areas for future research. It will also contribute to wider discussions on the theory-practice relationship. We hope that it will attract people who might take part in future research collaborations, which may or may not involve the session organizers. The session will also help to identify actions relevant for practitioners in the area of policy and service development.

Value for R&D

Our research has uncovered widely varying perspectives on what theory is and on what value theory has in practice. Such perspectives can help inform the work of researchers interested in theory, theory generation and theory usage in research. Our work also makes a significant contribution to the question of the theory-practice relationship. This relationship is often characterised as a 'gap' – and the characteristics of that gap and how it might be narrowed are addressed by our findings. Whilst the research is focused on these questions in relation to open access publishing and dissemination specifically, the research has wider implications for information science, SSH, and the areas of practice associated with these disciplines.

About time: Re-thinking information through the lens of time and temporality

A conversation café

Jutta Haider, Lucia Cedeira Serantes, Elisabeth Davies, Jenna Hartel, Alison Hicks, Veronica Johansson, Pamela McKenzie and Paulette Rothbauer

Introduction

This session engages with the issue of time and temporality in relation to information. Time and temporality are relatively understudied and undertheorised notions in the field of LIS. The session seeks to address this by instigating a series of interconnected discussions in order to explore how the notions of time and information can be developed in relation to each other.

Guiding questions

The following overarching questions guide the presentations and discussions: (1) What can a focus on time and temporality add to information-focused studies? (2) How can theories of time and temporality contribute to established approaches in LIS? (3) In which ways can information phenomena be understood (otherwise) through the lenses of time and temporality? (4) How can theories of time connect LIS research to conversations going on in other disciplines and in society at large? While these questions work as guiding posts they are translated into more concrete questions in the respective empirical and theoretical presentations.

Background: Time and Information

What is time? And why is it interesting to think about information in relation to time? Time forms one of the most fundamental structuring devices for our understanding of society. It is so foundational that we cannot think without it. We do not see time, yet it helps us to make sense of the world and our social life, as various metaphors suggest. In English, we assert that *now is the time*, the *time is right*, that something was *bad or good timing*, or that *she came in time*. We lament that we have *no time* and that *time is running out*. We celebrate what is *the time of our life*. We measure distances in time. *Time flies*. We *take our time* and of course, as a society, we have learned to accept that *time is money*. We talk of time all the time. But what does this even mean? Do all these references to time refer to the same entity? Is the “time” in “time is money” the same time that we have when we have “the time of our life” or when we take the time to do something? Barbara Adam, in her influential book, ‘Timewatch. The social analysis of time’, highlights that time is the most used noun in the English language. She writes:

The different uses of the concept entail diverse qualities and meanings of the common term. Time is multifaceted: It is involved in physical processes and social conventions, in abstract relation of mathematics and concrete relations between people. We measure it in clock-time unit and by celestial motion, with the aid of recurrent moments and through the changes in our bodies. We utilize it as medium of exchange for goods services of payments. (Adam, 1995, p.20)

Clearly, time is not one ‘thing’, one experience or one easily defined concept. It is also clear that, as a foundational social element, time must be seen as intricately linked to the concept of information. Most obviously this is the case in how information technology is implicated in the perceived acceleration of

society (Moran, 2015; Wajcman & Dodd (eds.), 2013) and in particular in relation to how capitalism structures progress (Nowotny, 1994; Rosa, 2015), but also regarding how information retrieval technology and ubiquitous internet access re-configure public and personal memories (Hellsten et al. 2006; Zavadski & Toepfl, 2019). Both time and information are notions with a great many colloquial and academic meanings. These meanings are very powerful and have far-reaching consequences; control of time is as essential as control over space or information and considerable power is invested in it. Frequently problems of information are even formulated as problems of time and vice-versa. When time is considered chronologically, or in terms of the measurable time of clocks and calendars (McKenzie & Davies, 2002, p.2), it forms what Reijo Savolainen (2006, p.116) refers to as a “temporal constraint” that qualifies a person’s decision-making behavior as well as the shape and structure of their ongoing engagement with information (Greyson, 2016). When time is understood in terms of temporality, which refers to the “past-present-future dimensionality of activity” (Schatzki, 2012, p.18, with reference to Heidegger), it can also be seen teleologically, or as playing a vital role in shaping the ways in which people prepare for and are motivated to act within an information environment (Hicks, 2018). The relation between time and information is also implicated in how generations are seen to relate to each other and life-time plays a key role in conceptualisations of information as a social resource, with the young typically considered as having too much and the old as having too little information (or not the right kind). Similarly, the issue of societal and economic development problems is often framed in terms of a time and information problem, where the acceleration of access to information is presented as part of the solution for problems related to economic advancement (Haider, 2018). Time and its various associated constructs are routinely used as structuring devices for the organisation, representation and contextualisation of information in order to find, understand and use information more efficiently (Johansson, 2012). In many ways, temporal practices and informational practices are profoundly interlinked and time is a key dimension of ordinary, everyday cultural and informational practices such as pleasure reading (Cedeira Serantes, 2016), using search engines (Haider & Sundin, 2019) or various leisure activities (Hartel, 2010). And with every new content, modality and user interaction, we also need to critically consider the modes of knowing, the types of knowledge, the ways of thinking, and the actors and interests that these temporal representations support or hinder and with which consequences.

Presentations (part 1)

The session organisers, with backgrounds in a variety of LIS perspectives and interests in different empirical issues, will present reflections to initiate discussions intended to identify further possibilities for future research initiatives and collaborations. Rather than comprehensively examining each aspect, the purpose of this panel is to stimulate discussion across boundaries and thus to highlight connections that might otherwise be hidden. Each presentation is 10 minutes long and addresses a question weaving together different aspects of information and time. These short presentations will be followed by a conversation café style debate (40 minutes) involving the remaining participants (audience) of the session.

- **Search and the temporal structure of everyday life:** How does the algorithmisation of everyday life reconfigure the temporal structures of (information) practices? The case of search engines. (Jutta Haider)
- **Three temporal arcs and their relationship to information:** What is the nature of information in the pleasures of life? (Jenna Hartel)
- **Time and temporality within information literacy research:** How does a focus on time and temporality challenge or support our understandings of information literacy as both a chronological and sequential process? (Alison Hicks)

- **The work(ings) of time and temporality in data visualisations:** What work do temporal representations in visualisations of data do, and what critical implications can we draw from this? (Veronica Johansson)
- **Multiple temporalities and information practices:** What are the temporal aspects of information practices, and what are the informational and documentary aspects of temporal practices? How do multiple temporalities shape the ways that people engage in information and documentary practices? (Pam McKenzie and Elisabeth Davies)
- **Making time to be a reader: The multiplicity of time in the reading experience:** How do temporal structures and experiences cultivate past-present-future reader identities? (Lucia Cedeira Serantes and Paulette Rothbauer)

Conversation café (part 2)

Following the above presentations, a structured discussion drawing loosely on the conversation café framework (Brown & Isaacs, 2005) aims to take the topic further and to enable additional contacts between the organisers themselves and other interested conference participants.

The organisers will host and facilitate conversations at one of four tables. At each table, different aspects of researching time and temporality in relation to information and LIS will be discussed.

- Table 1: Time and memory/cultural heritage
- Table 2: Time and discourse (discursive resource)
- Table 3: Time and practice (everyday life)
- Table 4: Time and politics (acceleration/deceleration)

Halfway through the session, after 15 minutes, participants will be asked to move table. The conversation will thus be held in two rounds.

- 1st round: The first group initiates by brainstorming ideas to open up the discussion.
- 2nd round: The second group starts with a summary of the first group discussion and uses their ideas to move the topic further.

Mind-maps, concept-maps and other forms for capturing the discussions will be used with one or two session organisers acting as facilitators at each table.

Organisers

Jutta Haider is an Associate Professor in Information Studies at the Department of Arts and Cultural Science, Lund University, Sweden. She has recently researched search in everyday life and also applied a temporal perspective on various other information phenomena, including research data, information inequality and open access.

Jenna Harte is an Associate Professor at the Faculty of Information, University of Toronto, Canada. She investigates the nature of information in the pleasures of life through the concatenated study of serious leisure realms, which are crossroads of information and enjoyment. Viewing serious leisure as it unfolds in time has necessitated a close look at the relationship between information and temporality.

Alison Hicks is a Lecturer (Assistant Professor) in Library and Information Studies in the Department of Information Studies at University College, London (UCL), UK. Her recently completed doctoral research explored the implications of time and temporality upon information literacy practices as well as broader questions of transition.

Veronica Johansson is a Senior Lecturer at the Swedish School of Library and Information Science (SSLIS), University of Borås. Her research is focused on visualisations of data from critical perspectives, exploring not least power aspects and mutual shapings of time-related visual representations and user interactions and actions.

Pam McKenzie is a Professor and Elisabeth Davies is an Assistant Professor and Research Assistant in the Faculty of Information and Media Studies at The University of Western Ontario, Canada. Their research together has considered the ways that temporal boundary objects shape collective information practices, and their current work looks at how people “keep track” over time and space.

Lucia Cedeira Serantes is an Assistant Professor in the Graduate School of Library and Information Studies at Queens College, CUNY, USA. Paulette Rothbauer is an Associate Professor in the Faculty of Information & Media Studies at the University of Western Ontario, Canada. In their various research projects with both young and older adult readers they have explored how the meanings of reading, and what it means to be a reader, intersect with time and temporalities of everyday life.

Length and time plan

Length: 2 hours

Part 1: Setting the scene and initiating the discussion (1 h 10 min)

Introduction: 10 minutes

Presentations: 60 minutes

Break: 10 minutes (this also allows people to leave and others to join the session)

Part 2: Conversation café (40 min)

Table discussions in two rounds @ 15 minutes (30 minutes)

Closing discussion and way forward (10 minutes)

Purpose, goals and expected outcomes

The purpose of the session is two-fold. Firstly, it wants to shed light on and contribute to a theoretically informed development of notions of time and temporality in LIS thus facilitating a rich exploration of this complex and emerging field of study. For this, the participants draw upon research they have carried out in different empirical settings and in relation to different theoretical approaches to time and temporality. Secondly, an additional, but equally important, purpose is to initiate further collaboration amongst interested parties working on related issues and to garner interest for an edited volume on the topic amongst participants and other conference participants. To accommodate these two purposes the session combines six short presentations (part 1) and discussions employing a conversation café model facilitating dialogue (Brown & Isaacs, 2005) (part 2).

Further outcome: To sum up the discussions during the conversation café the organisers will briefly summarise the conversations at the tables for the entire audience trying to establish connections on different levels. A short discussion involving all participants concludes the session. The session organisers will facilitate and document the process at each café table, and also send out the thus compiled notes to the participants (if they choose to sign up for an email list).

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