



COMENIUS UNIVERSITY IN BRATISLAVA

International Conference

Information Interactions 2019

digital environment and information science



Book of Abstracts

- digital information – benefits and risks in the information society •
“dark side” of the information



Comenius
University

Editors

prof. PhDr. Jela Steinerová, PhD.
prof. PhDr. Jaroslav Šušol, PhD.

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Information Interactions 2019 – International Conference

Main topic

digital information – benefits and risks in the information society (“dark side” of the information)

Topics

• information overload, trust, protection and privacy in digital environment
• information support of scholarly communication • information ethics, behaviour and literacy • digital and open science, social media • academic libraries • information infrastructures, information ecology

Objectives

• presentations of research results • discussions on current topics of theory and practice • presentations of doctoral students’ projects • discussions on methodology of information science

Content

research papers, PhD. students’ research projects

Audience

researchers, doctoral students, computer scientists, practitioners, managers of libraries and information institutions

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Organizing institutions

Department of Library and Information Science, Faculty of Arts, Comenius University in Bratislava and University Library in Bratislava.

Programme chair

Prof. PhDr. Jela Steinerová, PhD.

Organization chair

Mgr. Katarína Buzová, PhD.

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Foreword

Dear participants of Information Interactions 2019,

let me welcome you to our international conference in Bratislava, Slovakia. This year we are getting together for the 7th time to discuss topics of Information Interactions focused on digital information – benefits and risks in the information society, including the “dark” side of information in a digital environment.

The objectives of this conference are again presentations of research results and papers of researchers from information science and related disciplines and projects of doctoral students. The range of topics is broad, however, the common denominator connecting different authors’ topics and approaches is the value of digital information. This is reflected especially in our keynotes focused on social values of digital information and values of information for researchers.

Another common topic emerged with regard to problematic issues of digital information, especially privacy, trust, cybersecurity, information ethics, disinformation, and false information. The contexts of these topics are represented by data literacy, scholarly information and practices, reading and learning, library services, information systems, research infrastructures, and social networks. Our postdoctoral colleagues and doctoral students present their works focused on the covering the topics of information literacy research of students, information behaviour of children, alternative bibliometrics, perceptions of texts and reading, and social media.

This year we organize our conference on a special occasion – the 100th anniversary of the establishment of the University Library in Bratislava. This library is one of the largest and most traditional university libraries in Slovakia and has provided services for generations of students and researchers. Its value for education, research and culture in Slovakia has been indispensable. Let me congratulate to the workers of the University Library to this anniversary. The Faculty of Arts and our Department have always maintained strong connections and fruitful collaborations with the University Library.

The programme of our conference covers two days. The first day is mostly international, we have accepted 12 presentations from 5 countries (Israel, Poland, Hungary, Czech Republic, France). The second day includes pres-

entations from our Department and the doctoral forum. In our Department, we support new trends and collaborations with partners from related disciplines. Therefore, this conference represents one of the outputs of our collaborative project with colleagues from computer science and psychology (APVV-15-0508 HIBER). Following the trends of information research, we can identify other prospective partner disciplines; such as information economics, behavioural economy, educational research, cognitive sciences, sociological studies of science and research, data and social networks, philosophy of information, information ethics. We still need to ask transdisciplinary questions about information infrastructures with regard to library and information services, digital libraries, or open science.

I believe that the space of Information Interactions 2019 will open up discussions on the roles and values of information in the information society, problems of disinformation or ethical issues of social networks. I would like to thank to the University Library in Bratislava for the support and space, to all sponsors and my colleagues in the local organizing committee, especially to Katarína Buzová, Milan Regec and Jaroslav Šušol. It is my pleasure to welcome you all and I hope that we will use this chance to network, discuss problems, share knowledge, learn and enjoy.

On behalf of the Local Organizing and Programme Committee,

Jela Steinerová

Professor of Library and Information Science,
Comenius University, Faculty of Arts

The value of information: theory and empirical evidence

Daphne R. Raban

The information economy has several unique attributes: 1. Goods and services are mostly digital; 2. Goods and services are usually free; 3. Money and power are highly centralized. In the context of the information economy, my research, stemming from a behavioral perspective of the individual information user, focuses on the tension between free and paid information. Through a series of innovative online experiments, we have shown that the economic behavior of information users is irrational, as people prefer to accumulate information however useless it may be. Even in an era of easy access to abundant information, people still prefer to own information. In another set of experiments, we found that voluntary payments for information are an efficient, yet under-utilized form of value-based payment for information. Information is known to be an experience good, i.e. its value becomes apparent only after use. In a more recent series of experiments we showed that a “consumption experience” influenced the subjective value of information to a lesser extent than a “production experience”. We continued to examine similar effects in the presence of digital peers and showed social effects on value perception. In yet another line of research, we studied the co-existence of free and paid information as available on the web. We analyzed a large set of online questions and answers and obtained strong *real-life* support for our earlier *lab* findings regarding voluntary payments. We were able to show quantitatively that in information markets, free activity is a catalyst to paid activity. My presentation will describe the theoretical approach that supported the experimental – and big data-based – studies on the subjective value of information.

Keywords: information economics, value of information, information consumption

Daphne R. Raban

School of Business, University of Haifa, Israel
draban@univ.haifa.ac.il

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We don't know what we don't know. Discoverability paradox in scholarly landscape

Katarzyna Materska

Background

With science growing (Open Access, Open Data, Big Data) we can observe an increasing gap between accessibility and discoverability. Discoverability is a popular buzzword (with different meanings in different contexts) generally signifying the degree to which scholars can locate the content needed to advance their research, re-use other colleagues' achievements and undertake other creative activities. Discoverability appears in many official documents, as a postulate rather than specific actions or solutions on how to achieve it.

Purpose

The purpose of this study is to present discoverability in the context of the scholarly user's attempts (not always effective) to identify needed research results. This part of the information behaviour of researchers is often neglected. The reasons why we don't know what we don't know will be analyzed. The next purpose is to discover and shortly draft the new ecosystem of stakeholders helping users discover scholarly content in a more efficient way.

Methodology

To determine the essence of the discoverability phenomenon, conducting a literature review has been done without preconceived hypotheses. In this sense, some elements of grounded theory were used. Information about discovery tools and services was derived from accessible business and projects documents, without the intention of completeness.

Findings

Resources discovery does not necessarily start with conscious searching. Quite often researchers and scholars are doomed encountering research outputs unexpectedly (serendipity) in the increasing phenomenon described as "dark knowledge", "dark research", "dark data", "big literature" "invisible

web” etc. Against this background, we should rather talk about interesting than relevant information.

Recently, new initiatives have been undertaken by different participants of scholarly communication to improve the discoverability of scientific resources (some examples will be given).

Conclusions

While a big effort has been made when it comes to accessibility of scientific data, publications, and other research outputs, discoverability is still seriously lacking, even if we can observe the new ecosystem of players who try to help users discover scholarly content in a more efficient way.

Originality/value

Amid the proliferation of projects and conferences, research data and publications, digital libraries, repositories, open journals, etc., discoverability becomes a very important category in the scholarly communication landscape. This article is a contribution to a deeper reflection on this subject and the condition of a researcher not to be lost in knowledge.

Keywords: discoverability, information discovery, discovery services, serendipity, dark knowledge, scholarly users, scholarly communication, open science

Katarzyna Materska
University of Silesia, Katowice, Poland
katarzyna.materska@gmail.com

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Why do I need an embedded librarian?

Emmanuelle Chévy Pébayle

Digital revolution has a profound impact on higher education. Students have access to new ways of reading, writing, accessing and processing information based on digital technologies. Teachers and students can now access to superabundant information. The conditions for producing and disseminating knowledge have become more contributive and collaborative. New uses of communication, new exchange practices, access to services and cooperation on networks are emerging (Chalmel et al., 2015). However, many studies show that students do not master information skills (Le Deuff, 2010, Boyd, 2014) and do not know it (Boubée and Tricot, 2010).

In view of these observations, teaching practices must evolve in order to meet the needs of students who are becoming more and more active in their learning. The increase of online learning opportunities and e-courseware products has developed several options for librarian engagement in higher education coursework and course platforms (Landry-Hyde and Cantwell, 2013).

Among these changes, we examined the integration of a librarian into a first-year course in higher education. Integrated library science is a strategic model that puts information professionals in a position to offer their knowledge and expertise to individuals or working groups who need it (Shumaker, 2012). This relationship produces a shared goal (Shahril and Fazli, 2015).

How can a librarian collaborate in a class with a teacher? And how do the students appropriate this device? These are the questions that this communication proposes to answer.

This contribution examines the effect of an embedded librarian in a reversed class aimed at developing the information skills of undergraduate students. After presenting the current state of research on integrated librarians, we will examine two iterations of the same reversed class device. The experiment was conducted as part of a digital literacy course with two groups of students (G1 and G2) from DUT Information-Communication, in first year (n = 57): these two groups share the same teacher, follow the same specialty option and benefit from the same number of courses. Students in the G1

group had the opportunity to solicit a librarian, identified as a resource person, in addition to the teacher: this group was chosen at random. The communication will present the help formulations expressed by the students, as well as the story of the two librarians who have had this integration experience.

We will observe on the one hand how the librarian integrated the course, the help he gave, his feelings; on the other hand we will present the reception of the device by the students and we will ask ourselves if the students (G1) who benefited from the help of the librarian had better results than the others (G2).

Keywords: embedded librarian, pedagogy of higher education, information literacy, innovation, collaborations between a librarian and learning community

Emmanuelle Chévry Pébayle

LISEC, University of Strasbourg, France

chevry@unistra.fr

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The bright side: a selection of revived and “hidden” topics, related to data and information

Tibor Koltay

Introduction

Examining revived and “hidden” topics, related to data and information may not only teach lessons to us, but bring to the foreground some examples that may strengthen our conviction that information has not only dark sides, but we can see its bright side, as well.

Methods

Based on a non-exhaustive review of the recent literature, selected topics have been chosen.

Results

Despite the fact that data literacy is outspokenly discipline-specific and its community of practice differs from the one of information literacy, one way of its revival can be applying sociocultural theories to it, first of all because they are explicitly grounded in theories of learning.

Besides data literacy, which experiences revival, we have to give attention to “hidden” topics, such as data literacy for safety professionals in safety management, news literacy, and porn literacy. By being outside the traditional realm of library and information science, these topics might have escaped the attention of information professionals, but may have the potential to bring benefits to their work.

As one of the main focal points of data literacy is decision-making, in the context of safety management it involves not only general, data-related approaches, but has to be put into a particular, professional context. In this way, it can enable decision makers to transform data into actionable knowledge in a relatively narrow field. At the same time, it fosters the development of professional and learning abilities, while not losing sight of being critical to information and data.

It is rather well-known that convergences among different forms of media and ICTs have been followed by a convergence between information literacy and media literacy. Such developments provide one of the main contexts to news literacy, which is a type of media literacy, but could be enriched by adding information literacy features to it. This can be understood if we accept that news literacy should foster the awareness of the ways “how and why people engage with news media, how they make sense of what they consume, and how individuals are affected by their own news consumption” (Maksl, Ashley, & Craft, 2015, p. 29).

Porn literacy is also attached to media literacy. It addresses issues that may make feel us uncomfortable and raise curiosity at the same time. Nonetheless, it shares the emphasis on being critical with information literacy. Although the experiences associated with pornography engagement are varied (Dawson, Gabhainn, & MacNeela, 2019), porn literacy’s primary goal is to educate people see sexualized media critically and construct their own meanings from its contents (DeFur, 2014).

Conclusions

Although some of the above, hidden topics may seem curiosities, together with new approaches to information literacy they offer view to the “bright side” of information, because they have the capability to widen information professionals’ horizon.

Keywords: data literacy, data literacy for safety professionals, news literacy, porn literacy

Tibor Koltay

Eszterházy Károly University, Eger, Hungary
koltay.tibor@uni-eszterhazy.hu

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Throwing off the mask of “dark information” – issues of trust in the digital environment in the European Union

Marta Grabowska

The paper focuses on cyber security related issues in the European Union. The information society using digital tools can't operate properly without its safety. It has been understood in the Council of Europe which laid down the *Convention on Cybercrime* in 2001 and in the European Union developing its various actions in this field. In due course numerous programs and tools have been developed in Europe to enable users to act in the relatively safe digital environment. However, the cyber security knowledge is usually not included in the sufficient extent into programs of Library and Information Science Schools. Skills how to deal properly with threats are often incomplete. There are numerous tools to help us to resolve problems. The main division between threats relating to human rights *vis-à-vis* technical threats should enable us to choose a proper way of acting. Some tools are to monitor networks and their technical conditions, others to collect information on evolving threats in order to warn us. There are also services where we can notify problems (incidents) in order to resolve them. The paper focuses on cyber security solutions and describes tools publicly available for everyone in the European Union's digital environment.

Keywords: cyber security related issues, the Council of Europe's Convention on Cybercrime, cybersecurity in the European Union, ENISA, CERTs, CSIRTs, deep web, dark web, FIRST

Marta Grabowska

Centre for Europe, University of Warsaw, Poland
mgrabowska@uw.edu.pl

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Convenience vs privacy

Szabolcs Dancs, Mikael Bak

Introduction

Convenience of the users is not only in the focus of many library services but it is the first among International Cataloguing Principles worded by IFLA. But a contradiction might be detected here, because in many cases convenience raises concerns regarding privacy, and we fear that the price we pay for so called free-of-charge services cannot be measured in money but in our private data which we provide for our convenience.

Methods

Authors draw attention to alternative solutions which can be applied by libraries aiming at developing services which are both convenient and safe from the viewpoint of their patrons' privacy, they even give an example "application package" to demonstrate that there is a life beyond social media and global networks using our data for advertisement and who knows what other purposes.

Analysis

It needs to be subject to further analysis if libraries, which are in many cases not proved to be keen on providing data to commercial stakeholders, are cautious enough when it is not about their digital library data but the private data of their patrons.

Conclusions

In any case, we can conclude that there are ways, even open-source based ones, to build our services without the risk that by promoting free-of-charge commercial providers we will loose our reliability.

Keywords: privacy, library services, single sign-on (SSO), tracking, open source.

Szabolcs Dancs

Országos Széchényi Könyvtár, Budapest, Hungary
dancs.szabolcs@oszk.hu

Mikael Bak

Országos Széchényi Könyvtár, Budapest, Hungary
bak.mikael@oszk.hu

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The structure of scientific annotation practices

Michal Lorenz

Purpose

Annotation is a practice widespread among scientists of all disciplines and as such belongs to the so-called scholarly primitives. Despite its indisputable importance, little attention is paid to annotation practices in the studies of the information behaviour of (not only) scientists. Knowledge of annotation practices is crucial in the design of e-books whose usability still lags behind that of traditional paper books. In the presented research paper we analyze annotation practices of twenty scientists working with paper resources, namely with monographs, articles and diploma theses. The purpose of the analysis was to provide programmers with the groundwork for designing the web format of eBook.

Design

The research is paradigmatically based on the framework of information ecology, which allows the interaction of scientists with texts in a working environment to be captured. Specifically, the method of Cognitive work analysis was used. In this paper we cover one particular type of Cognitive work analysis, Work domain analysis, using the Abstraction decomposition space as a visualization tool. Scientists from selected fields (linguistics, psychology, geography and interdisciplinary research) were recruited at two universities (Masaryk University and Palacký University). During the work of the scientists with the documents, video recordings were made, capturing both the scientists' interaction with the text and the scientists' thought processes based on the talking aloud technique. Verbal comments and interactions of scientists with texts and work environment are represented in abstraction decomposition space.

Findings and originality

Annotations in documents are categorized according to C. C. Marshall typology (Marshall 2010). Newly identified types of annotations further expand this typology. Patterns obtained by decomposing each type of notes to five

levels of abstraction are analyzed. The results obtained indicate a topological tension between cognitive functions and note-taking tools. Underestimating the importance of space, haptics and perception in electronic texts, which are typical for human-printed text interaction, leads to the disembodied design of the reading software interface. The disembodied design emphasizes deep cognitive control instead of surface control, which has a negative impact on the effectiveness of cognitive work and the usefulness of eBooks. Abstraction decomposition space and the structure of annotation practices are used for the design of the web-based e-book interface.

Keywords: annotation practices of scientists, analysis of cognitive work, abstraction-decomposition space, typology of annotations, topology of annotations.

Michal Lorenz

Faculty of Arts, Masaryk University, Brno, Czech Republic
lorenz@phil.muni.cz

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MARSHALL, Catherine C. *Reading and Writing the Electronic Book*. Morgan & Claypool, 2010.

Reading as a life support system – postgraduate programme in biblio/poetry therapy at the LIS department of the University of Pécs

Judit Béres

The paper introduces the curriculum of the postgraduate programme in Biblio/poetry therapy offered by the LIS dept. of the University of Pécs, Hungary. Biblio/poetry therapy represents the „white side” of information using books as mental health tools to spark interactive and (self)reflective reading, writing, and discussion that helps people tackle their own subject matter. Biblio/poetry therapy represented by the 'Pécs School' is person-centered in character. However books and other textual materials are key tools and important points of reference in biblio/poetry therapy, the therapy itself does not derive just from the book. The strongest power of bibliotherapy is based on intrapsychic and interpersonal processes. This fact fostered the notion of group process and person-centered biblio/poetry therapy that places emphasis on participants' therapeutic experience, examining therapeutic reading as a group process phenomenon. The aim of our training programme is to offer advanced knowledge and skills in the fields of biblio/poetry therapy, reading and writing for mental health and wellbeing. On completion of the qualification, the trainees (e.g. librarians, teachers, mental health professionals) will be able to plan and facilitate the interactive use of imaginative literature, non-fiction materials and therapeutic writing, promoting personal growth for people from various age groups in different social contexts, living with mental health and emotional wellbeing issues.

Keywords: bibliotherapy, poetry therapy, mental health, wellbeing, postgraduate training, person-centered approach

Judit Béres

Faculty of Humanities, University of Pécs, Hungary
beresjudit76@gmail.com

Information behavior or learning behavior? Empirical experience with web analytics

Michal Černý

The research of the environment is at the forefront of the interest of various scientific disciplines of information science, informatics, pedagogy, marketing, etc. But thanks to the work of George Lakoff and Mark Johnson, the whole subject gets a more profound and more critical framework – the environment is something that affects the entire thought structure of the individual, changing the structuring of knowledge, basic categories, but also the way of all information and cognitive behaviour.

With the advent and development of online courses, this topic becomes even more popular, as it is interesting to measure and analyse. At the same time, my research does not focus on data from learning management systems, which are detailed but very artificial, but from common web pages that are used as textbooks. My research approach seeks to use the maximum of this “natural environment”.

In the study of students’ learning behaviour in online courses, we work with a large amount of data that is not usually easily interpreted pedagogically – time spent on the site, number of visits, page passing, site interaction, work with heatmaps, and so on. We get all this data with Google Analytics and Smartlook (a system similar to Hotjar). Also, we can interpret the data based on test results, self-assessment, and other feedback sources.

My research thus compares in a relatively unique way the analysis of information behaviour and web analytics, as a domain connected with information science and the possibility of analyzing learning behaviour, which is a subject matter of pedagogy. It turns out that it is the connection between these two disciplines that can have an exciting impact on both primary research (that is, modelling of how online courses are studied and how the environment, content or design is affected by the learning process). I propose a direct implementation in the area of information architecture change, course content, etc.

Keywords: information behavior, learning behavior, web analytics, MOOC, online courses, education

Michal Černý
Faculty of Arts, Masaryk University, Brno, Czech Republic
cerny@kisk.cz

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Interaction as a source of information for managerial decisions

Anna Novotná (Janíková), Kamil Matula

Introduction

In 2018, Silesian University in Opava was interested in ways how professors, administrative workers and students are using information about university, from which channels they are obtaining it and how well the channels suit them. The main goal was to set a long term plan of improvement of conditions and to adapt information strategy to the results.

Methods

A study was conducted, which consisted of qualitative and quantitative parts and was concerned with information behavior and communication of students, teachers and administrative workers of Silesian University in Opava in the environment of university and used systems.

In the qualitative part of the research we used group interviews. Based on results from group interviews we prepared three types of questionnaires which addressed each group of (university systems) users respectively.

Analysis

Group interviews took place throughout the year 2018. Student groups were composed of students based on their relations to a faculty and to the institute. Only students from higher levels of study were selected, as freshmen do not know about all the information channels used in the university. We included representatives of all of the institutes in all of the faculties of Silesian University in Opava. Some of them were part-time students.

In case of professors we informed the heads of all of the institutes about the survey. We asked them to choose one representative who would be able to give relevant information about the topic. Then we picked representatives of all the administrative departments, we assorted them to groups and interviewed them all in separate phases.

Based on the results from all of these interviews we constructed three types of questionnaires which were sent to the respondents at the beginning of the year 2019.

Results

Results of both surveys (quantitative and qualitative) lead to a good picture of how professors and students from particular institutes communicate. We found out that the style of communication and tools vary a lot from institute to institute. As a matter of fact, each of the institutes has their own information habitat in the university systems and information channels. We also found out that the activators of these dissimilarities are not students but professors who are used to certain systems and carry them over to the new generation. We also found out that even though the used systems and channels differ, the need of students are not so much different, because they are members of the same generation and have common features. This applies to all the groups of users with one exception – students and professors of the Institute of Mathematics who differ a lot from the rest.

The results are also connected to the style of teaching at particular institute.

Conclusions

Thanks to the results of the survey several managerial decisions could be made. A new information system was bought that would fulfill most of the wishes of the students and that would also connect some of the functions of the information systems that were separate so far. Also, a team of programmers was set up to make sure that the rest of the requirements from students and teachers would be fulfilled. It was also found out that the university needs a new mission which would encompass information and communication strategy and connect the mindset of people to the one goal even though the ways of achieving that goal vary.

Keywords: information interaction, survey, Silesian university in Opava, communication, information systems, managerial decisions

Anna Novotná (Janíková)

Silesian University in Opava, Czech Republic

anna.novotna@fpf.slu.cz

Kamil Matula

Silesian University in Opava, Czech Republic

kamil.matula@slu.cz

Towards research infrastructure: data cultures and research platforms

Pavla Martinková, Michal Lorenz

Purpose

Preparing local node of LINDAT/CLARIAH-CZ research e-infrastructure for arts and humanities, we needed to identify all digital research platforms existing at the Faculty of Arts of Masaryk University (FA MUNI) and to select those that are suitable for engagement from the beginning. Because scientific data and data cultures are building blocks of research e-infrastructure (Edwards – Jackson – Bowker – Knobel, 2007), we needed to find out what data formats and metadata are produced and collected in digital platforms, and what is the data culture of the workplaces that create them. In accordance with Human Centered Design principles, we were also interested in the needs of the “web of users” (Millerand – Baker, 2010).

Design

The survey of the digital platforms was carried out by a questionnaire distributed to the heads of the departments. If the questionnaire was not filled in even after a repeated call, we contacted the head of the department by phone and the necessary data was collected by phone interview. As a result, 24 departments participated in the research, operating or developing a total of 50 digital research platforms. In order to decide which research platforms are ready and suitable for involvement in the research infrastructure we grouped them by their purpose and each category was evaluated. We conducted semi-structured interviews with managers and developers of research platforms that were evaluated as potentially suitable for integration into the e-infrastructure.

Findings and originality

We have identified six categories of digital research platforms: (a) bibliographic databases; (b) digital libraries (textual, multi-medial); (c) geographic information systems; (d) reference materials (encyclopaedias, dictionaries including explanatory); (e) research data collections; (f) language corpora. The

results of semi-structured interviews with managers and developers showed their needs, common themes in motivation, but also different approaches to data, such as willingness to open the content of the platforms or to solve questions concerning long-term preservation of scientific data. The paper captures the state of research infrastructure at the moment of its formation in one local node and the impact of data culture on the infrastructuring of digital research platforms.

Pavla Martinková

Faculty of Arts, Masaryk University, Brno, Czech Republic
martinkova@phil.muni.cz

Michal Lorenz

Faculty of Arts, Masaryk University, Brno, Czech Republic
lorenz@phil.muni.cz

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Principles and dilemmas of information ethics with regard to the problem of disinformation

Jiří Stodola

Introduction

At present, disinformation campaigns, which are mainly associated with so-called alternative internet media, are widely debated. It seems that a force solution to the disinformation problem consisting in forbidding or stigmatizing these media often conflicts with one of the pillars of Western democracy, – the right to freedom of speech, as it potentially opens space for targeted censorship. Spreading of disinformation on the part of these media, on the other hand, restricts the right of users to information because they are offered as information something that, as a matter of fact, is not likely to be information. Is it possible to find such principles of information ethics, that effectively solve a possible collision between these rights without violating any of these rights, and can they be used to solve the problem associated with the issue of disinformation?

Methods

The main research questions are as follows:

- What are the fundamental principles of information ethics?
- What is disinformation and what role it plays in formulating the principles of information ethics?
- How can we divide information ethics into individual areas and sub-areas and what issues are crucial in individual areas?
- What dilemmas exist in basic areas of information ethics and what role disinformation plays in them?
- How can the principles of information ethics help resolve dilemmas in information ethics and what principles are the most successful?

Analysis

The study describes the principles of information ethics that work with the notion of information and with that of entropy, demonstrating the importance of whether or not truthfulness is a part of the definition of information.

In the adverse case scenario, disinformation (intentionally false information) would constitute a certain form of information and the information ethics' principles would not allow for the rejection of the practice of disinforming, which is a paradoxical situation (nobody wants to be deceived). In addition, the absence of truthfulness from the definition of information leads to the Bar-Hillel paradox (that can be resolved by the theory of "strongly semantic information").

Results

In the study, information ethics is divided into three "branches" according to whether the information is seen as a resource, a product or as a target. Each of the three branches is associated with particular rights, namely the right to information and expression and the right to censorship, which can contradict each other. Unlimited freedom of expression collides with the right to information and raises the question of the justifiability of censorship, which in turn clashes with the above conception of the freedom of expression.

Conclusions

The above conflicts are caused by unclear definitions of information and disinformation and can be resolved by acknowledging that information is not alethically neutral, i.e. that truthfulness is inherent to the definition of information. Although censorship is theoretically justifiable, it is to be avoided – with the exception of socially harmful disinformation – on account of the principle of tolerance.

Keywords: information ethics, principles, dilemmas, information, disinformation, freedom of speech, right to information, censorship.

Jiří Stodola

Faculty of Arts, Masaryk University, Brno, Czech Republic
stodola5@gmail.com

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Academic information ecologies and values of information in information science research

Jela Steinerová

Introduction

The aim of the presentation is to outline the concept of academic information ecologies and values of information based on our studies of information behaviour of different groups of actors in the academic environment. We ask the question: What is the impact of human information behaviour studies on modelling the academic information ecologies? The concept of academic information ecologies is introduced as interactions of people and information in universities. It is regarded as a background of innovative information services of academic libraries.

Methods

Selected related studies of information behaviour are briefly analysed and reviewed. Following our empirical studies, we use conceptual modelling of the information environment and propose two models. The first model is a model of academic information ecologies. The second model is a new model of the interactive academic library.

Analysis

The two models are exemplified by two studies of information behaviour of researchers in Slovakia. A qualitative study was based on semi-structured interviews with 19 researchers and concept modelling. We present examples of concept maps as representations of the discourse of researchers. A quantitative study was based on an online survey of 257 researchers focused on research data literacy.

Results

We determined the values of research, information and data as the main factors of the societal impact of information research. Social values of information, shared understanding and collaboration are emphasized. The model of academic information ecologies includes academic values, adaptations,

socio-technological co-evolution, information re-use, information and data sharing, collaboration and creativity. We explain its applications for innovative services in a new model of the interactive academic library.

Conclusions

We recommend to pay more attention to values of information, data and value-added services of academic libraries in digital information environment. Academic information ecologies connect theory, methodology and practice of information behaviour in the university information environment.

Keywords: academic information ecologies, values of information, information behaviour studies, a model of the interactive academic library

Jela Steinerová

Faculty of Arts, Comenius University in Bratislava, Slovakia

jela.steinerova@uniba.sk

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Are social networks antisocial?

Milan Regec, Pavol Rankov

Since the onset of television, its impact on society and social wellbeing has been widely debated. With the onset of wide-spread internet, voices grew only stronger with numerous studies warning about so-called “internet paradox”, proving that greater use of the Internet is associated with declines in participants’ communication with family members in the household, declines in the size of their social circle, and increases in their depression and loneliness [1]. The arrival of social networks over 10 years ago redefined the perception of on-line society residing in a digital space, intertwining real and virtual social connections in a new concept of “interreality” [2]. Inability to effectively distinguish between real and unreal leads to a new set of paradoxes putting the social-ness of social networks into question, at least in terms of positive impact on our social wellbeing. The impact is especially hard on the young people among which the above-average use of social networks is associated with higher incidents of mental health issues from the lack of self-esteem to the sharp rise of depression, self-harming behaviour and ultimately suicides [3]. Consumption of information on social networks is also associated with false self-impression, lack of self-control [4] and the shortening of attention span. Overstimulation of dopamine cycle through simple actions such as liking or swiping leads to mood-swings and is potentially dependency inducing. Scholars allege that social networks are deliberately designed along this phenomenon [5] to prolong the time spent and users’ engagement in order to increase the revenue from advertising, their primary goal, to which meaningful social interaction plays only a secondary role.

The distortion of our social-reality impression on social networks is augmented with widespread of false information and “fake-news” whose impact is strengthened by the design of the networks itself – encapsulating their users in information bubbles and environment of self-acknowledgement. Real-world implications span from influencing democratic process (notably but not limited to U.S. presidential elections) through health risks (e.g. anti-vac movements) to genocide, such as the one in Myanmar [6]. The giant leaps in the development of artificial intelligence scale this problem massively, with “deep-fakes”, people can now alter reality without advanced technical

skills and create armies of autonomous fake accounts to create and spread desired content. Latest focus on funding research developing artificial intelligence for detection of content created or altered by another artificial intelligence [7] is a clear sign that in recent years we have created a problem we will never solve: the definitive proof that something is human-made. The “Turing-test” of the quality of artificial intelligence is quickly flipping sides.

Keywords: social networks, interreality, post-truth, fake news, artificial intelligence, depression

Milan Regec

Faculty of Arts, Comenius University in Bratislava, Slovakia
milan.regec@uniba.sk

Pavol Rankov

Faculty of Arts, Comenius University in Bratislava, Slovakia
pavel.rankov@uniba.sk

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The research of information literacy of newcomers university students in Slovakia

Jakub Fázik

The paper presents the most important theoretical background, the course, and results of the author's phenomenographic research of information literacy of forty beginning students of teacher training programs at the Comenius University in Bratislava, members of the Z generation (Fázik 2019).

Within the theoretical background, the author distinguishes between traditional approaches to information literacy, represented by competency models and standards, and alternative approaches, from which he focuses more on the psychological and phenomenographic (socio-psychological) research stream. According to Whitworth (2014), information literacy has a strong intersection with pedagogical disciplines and the context of secondary and tertiary education, in which several authors have conducted phenomenographic research of the phenomenon on a sample of educators, students or librarians; part of the presentation is a detailed overview of these researches.

The main aim of the author's own research was to identify and describe the diversity of concepts of information literacy of both beginners and future teachers based on their own experiences from secondary schools. The research was carried out in autumn 2018 at five faculties of Comenius University in Bratislava; data collection was carried out using three methods – semi-structured individual interviews, writing and drawing. The result is presented by three separate categories of information literacy (the conception of digital technology, the conception of knowledge and the conception of truth), framed in two alternative models. In the research, the author also focused on five selected attributes of information literacy and information behavior (use of information sources, emotions, barriers and uncertainty in working with information, evaluation of truthfulness of information), which he describes in the presentation in more detail.

The most important results of the research include finding out about the blurring of boundaries between information literacy and digital literacy concepts, as well as the need for more intensive development of individu-

al competencies of information literacy during secondary school, which the students themselves pointed out.

Keywords: information literacy, newcoming university students, phenomenography

Jakub Fázik

Faculty of Arts, Comenius University in Bratislava, Slovakia
jakub.fazik@uniba.sk

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Briefly from ongoing research of the use (and interpretation) of alternative bibliometric indicators

Michaela Melicherová

The paper discusses the current research project, which is being prepared as a part of the dissertation thesis focused on the use of alternative bibliometric indicators for the evaluation of science. We present briefly the theoretical part of the thesis, the key features, nature, and importance of altmetrics through selected definitions. We describe potential and also limits of altmetrics as a supplementary method for the evaluation of science, as well as various approaches to research of altmetrics and alternative indicators (for example, studies of the correlation of citations and values of concrete alternative indicators; research of the interpretation of alternative indicators, or surveys characterizing users or scientific areas in relation to tools of altmetric). The altmetrics is defined as a tool for evaluating science, but it can also represent the descriptive potential of data obtained from altmetric tools. The aim and methods of the research are presented, as well as the present state of the ongoing research. The level of acceptance and perceived usefulness of alternative bibliometric indicators is being explored by means of interviews (already completed) and a questionnaire survey among Slovak scientists – authors. The research sample is described and possible limits of research and proposals of other possible ways of research in the field of science evaluation through alternative bibliometric indicators are identified.

Keywords: altmetrics, use of alternative indicators, interpretation of alternative indicators, research of alternative indicators.

Michaela Melicherová

Faculty of Arts, Comenius University in Bratislava, Slovakia
michaela.melicherova@uniba.sk

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Information behaviour of children research trends – is there a gap to fill in?

Zuzana Struháriková

The paper deals with methodological trends of children's information behaviour research. It focuses on twenty-six studies realized from 2000 to 2017 and summarizes their methodological approaches with the emphasis on the techniques used within data collection, research setting as well as its age group orientation. The paper also deals with the limits of research and suggests possible solutions that could contribute to their elimination. The analysis is compared with two similar analytical studies realized in 2014 – one in the case of setting and age group orientation (Foss and Druin 2014) and the other one in the case of data collection techniques (Greifeneder 2014). Considering relative lack of knowledge within this field the main goal of the analysis is to identify methodological gaps, reason them and offer possible solutions to fill them in.

Keywords: information behaviour of children, methodological trends, analytical study, comparative study, data collection techniques, research setting, age group orientation

Zuzana Struháriková

Faculty of Arts, Comenius University in Bratislava, Slovakia
zuzana.struharikova@uniba.sk

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What can eye movements tell us about our perception? Research of the reading using an eye-tracking method

Annamária Brijaková

Eye movements represent the intersection of cognitive systems such as processing of language structures, together with attention, vision and oculomotor processes. Measurements in the area of text perception are predominantly focused on evaluating how a person processes a given text during reading, assuming an existing relationship between eye movement control and mental processing of the text. This determines where and when the eyes move.

The author will introduce the basic variables that are measured in the context of the study of eye movements during the reading and will present the research background – objectives of the research, together with the methodological determination. Upcoming study of reading will focus on the perception of the scholarly texts using an eye-tracker method.

Keywords: eye tracking, perception, reading, scholarly texts, reading research.

Annamária Brijaková

Faculty of Arts, Comenius University in Bratislava, Slovakia
annamaria.brijakova@uniba.sk

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Social media as a tool for marketing of books and readership

Veronika Kociánová, Kamil Matula

Social media is a powerful marketing tool used by many commercial, non-profit and other companies and organizations to self-present or promote the products they produce or distribute. The same is true of books and reading. The paper summarizes the key findings of a survey on the impact of selected social media in the field of book promotion and reading, which was conducted in May 2018 as part of the author's thesis.

In the questionnaire survey we have collected responses from 537 participants. The questionnaire was distributed to users and customers of libraries and bookstores. Of the total number of respondents, 89.6% of women and 10.4% of men participated in the survey. The aim was to find out what social media and platforms they use to make a decision about a book, and what factors, activities and techniques have an impact on it.

Respondents identified Facebook, Instagram, and Twitter as the most used social media, with Instagram as the most progressive. It was also found that blogs and portals focused on books and readers also have an impact. Selection and purchase of the book have been influenced by recommendations of friends, but also members of social networking groups and profiles of influencers, or physical contact with the book. The most interesting forms of submission are pictures, photos, or content shared by a group or friends. The findings can help institutions with a decision about editorial strategies, strategies of acquisition and organizations actively involved in the promotion, sale or distribution of books and the development of reading.

Kamil Matula

Silesian University in Opava, Czech Republic
kamil.matula@slu.cz

Social media as an information source

Vojtěch Svačina, Anna Novotná

The paper will introduce basic definitions and the concept of the information source. We will focus on the most used information resources, both in the Czech and international environment. In a synthesis of the most important aspects of information sources we will describe the basic characteristics of social media in terms of their position as an information source. We will choose approaches that characterize social media based on the nature of this phenomenon. Interactivity seems to be the key element. Furthermore, the paper presents results of international surveys and defines the basic criteria by which we can understand and describe social media as an information source.

Anna Novotná (Janíková)
Silesian University in Opava, Czech Republic
anna.novotna@fpf.slu.cz

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