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PANELS AND ALTERNATIVE EVENTS

Amplifying chance for positive action and serendipity by design

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Abstract

In recent years, there has been an increased focus on information encountering and serendipity within information behavior research and practice. Serendipity has the potential to facilitate creativity and innovation in various spheres, including in libraries, archives and museums. However, do we wait for chance to occur, or can serendipity be designed and facilitated? What are the characteristics of systems that support serendipitous discovery, and what methods can be used to study its occurrence? Extending and building on the concepts and definitions introduced at a 2016 ASIS&T Annual Meeting panel led by Erdelez, we feature in this 40-min panel innovative work that creates opportunities for discovery within research spaces. Attendees engage through an interactive two-part discussion and a hands-on ideation session on impacts and guidelines for systems designed to facilitate serendipity, emphasizing sustainable, accessible researcher and user experiences. Presenters focus on the role of socio-technical constraints and affordances to inform systems' design in a variety of research contexts, each contributing expertise in navigating particular issues in serendipity research.

KEYWORDS

Serendipity, humanities collections, digital libraries, digital archives, information behavior

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information behavior; information seeking; serendipity; subject searching; sustainability.

1 | INTRODUCTION

Executive leaders target research investments toward areas that are rich with challenges and unsolved problems. In media spaces, professionals try to navigate vast image banks in order to tell stories, and organizational administrators must deploy the optimal tool to deliver information on time and in place. Information scientists have examined those settings to design assistive *tools*, especially to support a precondition for a serendipitous encounter: chance, noticing, and/or activation of the prepared mind (Burkell, Quan-Haase, & Rubin, 2012). Chance relies on some randomness present in the space, and like noticing, is feasible in many environments. Techniques to support activation emphasize access to comprehensive problem sets, but leave open the degree of personalization. Meanwhile social search, recommender

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systems, and visualizations are three digital tools shown to support key elements of serendipity (McCay-Peet & Quan-Haase, 2016). Yet the uneven uptake of such resource-intensive research tools into practice leaves many more would-be recipients of those investments with still-unmet needs and gaps in our knowledge. A management approach that brings systems and collective purpose together for meaningful and positive action, would accelerate the translating of academic discoveries such as those the panelists have designed.

We define serendipity as the meeting of environmental chance and human agency. Serendipity happens everywhere we might design it to happen, and it has already transformed the public arena of science and the arts. From Velcro and penicillin to travel planning and storyboard writing (Yaqub, 2018), serendipity positively shapes people's everyday lives. We examine the complex phenomenon of serendipity from a variety of disciplinary and organizational perspectives. Panelists will focus on socio-technical constraints and affordances of the systems encountered in the context of research performed for humanities and classics research, media creation and storytelling, and tools for bridging digital and physical re-sources. Below we describe our panel strategy and structure including panelists' particular contributions, detail the anticipated outcomes for prospective attendees, and conclude with panelists' biographical information emphasizing their serendipity research experiences.

2 | PANEL

Each panelist will have 5 min to explain how serendipity is relevant in the collection environment they are examining. We will highlight specific issues and challenges related to collection access, and how serendipitous tools might be best deployed in response to such challenges. Following all presentations, panelists will facilitate a 5-min think-and-share collaborative learning opportunity among the attendees. First, attendees will consider their own pre-session experiences with serendipity and any new insights from one of the presentations, particularly as they relate to the individual's research activities. Second, attendees will share their notes and generate ideas toward the goal of developing a set of principles and guidelines related to serendipitous discovery in collecting institutions. We will then have 10 min remaining for a summative conclusion led by a panelist. Another panelist will record and synthesize attendees' contributions. The summative conclusion will explore new directions for how to design for serendipity in conducting research.

2.1 | Supporting serendipity in media professionals' exploratory search practices

Dr. Sabrina Sauer, Centre for Media and Journalism Studies, University of Groningen, Netherlands.

Serendipitous information encountering plays a large role in the creative practices of media professionals who devise audio-visual narratives using digital cultural heritage collections (Sauer, 2017). In this panel I present insights into the relation between serendipity and exploratory search during professional practices of audio-visual narrative creation. The presentation explicates how users such as news documentation specialists and image researchers who create quiz shows and documentaries play with the constraints and affordances of digital audio-visual cultural heritage collections to explicitly elicit serendipitous retrieval and create innovative media texts. Insights are drawn from two user studies that use qualitative methods such as focus groups and interviews with 20 media professionals, as well as simulated work task data collected using an exploratory Linked Open Data search browser (DIVE+), to further understand how users experience, and make creative use of, serendipitous search results. DIVE+ offers entity-driven exploration of digital heritage material, where events are prominent building blocks in the creation of narrative backbones (de Boer et al., 2015). Conclusions focus on how users elicit and report serendipitous discoveries during exploratory search in the DIVE+ environment and how this informs new search algorithm development.

2.2 | Serendipitous discovery in classical studies for any learner

Dr. Sarah A. Buchanan, School of Information Science & Learning Technologies, University of Missouri, USA.

The universe of classical studies spans disciplines, centuries, and national boundaries. While such breadth supports worldwide engagement with topics in the ancient world, it also has produced many localized pockets of expertise about “institutional memory” that may not yet have reached publication stage, and thus far are known only locally. Even teams working in relative proximity may be unaware of the scholarly histories of neighbor institutions. The use of digital tools can support greater information-sharing in this discipline by collapsing the physical barriers that have led to such siloed expertise. To connect students and scholars today with knowledge of the career contributions of prior classical scholars and classical archaeologists, we created the Archives of Classical Scholarship (ArCla) (Buchanan, 2018). ArCla functions as an online directory

to the physical locations of scholars' archival papers and manuscripts. The resource was designed for use by, among others, students and emerging scholars who are at the stage of selecting a research topic and who may be interested in reviving an effort begun by scholars years or decades earlier but forgotten over time. Yet we find that the porosity of the initial scope has created an infrastructure that supports serendipitous discovery in classical studies and broadens the attractiveness of historical research and the study of classical history. The presentation outlines how compilation of specific metadata (physical location, collection finding aid links) created by librarians and archivists builds bridges to physical collections (through the currency of awareness) and mutually benefits classical studies and information research.

2.3 | A serendipitous tool for bridging physical and digital resources

Dr. Anabel Quan-Haase, Information and Media Studies, Western University, Canada.

Historians and humanities researchers engage in the activity of browsing and exploring physical library stacks and state it is important to the success of their research process (Martin & Quan-Haase, 2017). Libraries and archives are actively pursuing digitization as a strategy to broaden access to collections, instead of physical browsing. Yet researchers need tools to guide their movements and exploration through the collection material. Martin, Greenspan, and Quan-Haase (2017) propose the development of new tools that bridge physical and digital collections seamlessly. They present the Serendipitous Tool for Augmenting Knowledge (STAK) as one option to support exploration, an app that uses geolocation to suggest materials that are complementary in some way to those the researcher is currently viewing during in-person browsing. Focusing on two key features of STAK: (a) noticing, and (b) capture and recall, this presentation introduces a way forward for collecting institutions seeking to merge physical and digital means of accessing collections.

2.4 | Applying tool selection for knowledge management (KM) to facilitate serendipity

Dr. Naresh Kumar Agarwal, School of Library and Information Science, Simmons University, USA.

Knowledge management is a set of processes adopted by organizations in order to fulfil its organizational goals in helping people in that organization create and capture, share and transfer, and apply knowledge. In the past few years, there have been increasing calls for libraries, archives and museums to apply KM practices and processes. Agarwal and Islam (2014) mapped various mechanisms and technology tools to phases of the KM cycle in order to help facilitate KM implementation in a library. However, it is not clear which of these tools is best suited to facilitate information encountering and serendipity (Agarwal, 2015; Erdelez, 2004), so as to enable creativity, knowledge sharing and innovation in services. This presentation will explore the use of these technology tools for serendipity, and discuss how KM might be related to serendipity. It will also draw from *Exploring Context in Information Behavior* (Agarwal, 2018) to discuss the role context plays in serendipitous information behavior, and how context must be considered to design for serendipity in emerging technologies.

2.5 | A serendipity perspective on evaluating usability

Dr. Sanda Erdelez, School of Library and Information Science, Simmons University, USA.

Designing and developing information systems for serendipity means that systems facilitate and do not pose barriers for information encountering, or experiencing serendipity in the context of human information behavior. A study of usability of such systems from a perspective of serendipity faces various methodological challenges because many usability evaluation techniques and measures are focused on evaluating information interaction through search tasks (e.g., time on task, task completion, error rate, etc.). An approach to evaluating usability from serendipity perspective is proposed that focuses on the components of the Erdelez (2004) empirically developed model of information encountering (noticing, stopping, exploring, capturing, sharing, diverting, and returning). The presentation will provide an overview of the usability evaluation tasks and user scenarios for each of the model components, which contribute to overall evaluation of usability of both physical and digital systems from serendipity perspective.

3 | PANEL STRUCTURE AND PARTICIPANT ENGAGEMENT

In the first portion of the session, panelists will address the idea of serendipity and information-encountering in the contexts of particular physical and digital collection spaces. Their presentations will provide attendees with formative background and context for considering the constraints and affordances of certain systems for

providing access to collections based in information institutions. Panelists will invite attendees in the next portion of the session to think-and-share to recall research experiences that did or did not involve serendipitous discovery (as a starting point to collaboratively design methodologies to study serendipity) and reflect on new insights from one of the research tools discussed in the presentations. Following the audience members' efforts, the organizers will invite attendees to share the ideas generated in response to the presentations and experiences. The organizers will work to identify factors that support serendipitous discovery and that might form the basis for creating a set of principles or guidelines for physical or digital systems design. Researchers and practitioners of work involving information-encountering or search in libraries, archives, and museums will benefit from the community-driven discussions and will gain ideas for future work and research.

4 | IMPLICATIONS FOR RESEARCH COMMUNITIES

Members and attendees at ASIS&T who have an interest in supporting researcher and user satisfaction with collection access systems will find our topics applicable to their work (Erdelez et al., 2016). Participants will contribute to ongoing research around issues of system design and user experience and evaluation. Recently researchers from around the world have formed the Serendipity Society to facilitate a scholarly community in which to continue exploring these topics in a collaborative fashion. We anticipate that this panel will provide direction for that work and foster related interdisciplinary research.

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Sarah Buchanan is an assistant professor at the School of Information Science & Learning Technologies (iSchool) at the University of Missouri. She studies how people interact with cultural heritage, from museum and archival studies perspectives. Her research interests include digital classics, data and provenance issues in archaeological archives, and arrangement and description of special collections. A

current project, Archives of Classical Scholarship (ArCla), creates a directory to the archival papers of American classicists and classical archaeologists. Her teaching promotes community engagement and service-learning in the information professions.

Sabrina Sauer is an assistant professor of media studies at the University of Groningen, at the Research Centre for Media and Journalism Studies. She has a background in Media Studies and Science and Technology Studies, and studied as an actor prior to writing her dissertation about user-technology improvisations as a source for ICT innovation. Her current research focuses on audiovisual narrative creation around disruptive media events, the agency of users and technological artefacts, exploratory search, and serendipity. Apart from that, she is keenly interested in digital humanities, and questions around digital materiality.

Anabel Quan-Haase is professor with a joint appointment in the Faculty of Information and Media Studies and the Department of Sociology at Western University. She received her Master's degree in psychology from Humboldt University in Berlin in 1998, and her PhD from the Faculty of Information Studies (now iSchool), University of Toronto. She has examined the component parts of serendipity, how digital technologies affect opportunities for serendipity and the role of serendipity in the humanities. Her work has also sparked the design of a tool STAK that bridges information encountering in physical and digital environments. Through her policy work she has cooperated with the Benton Foundation, Partnership for Progress on the Digital Divide, Federal Communications Commission (FCC), and Canada's Digital Policy Forum. She is the author of *Technology and Society* (Oxford University Press, 3rd ed., 2020) and co-author of *Real-Life Sociology* with Lorne Tepperman (Oxford University Press, 2018), and co-editor of *The Handbook of Social Media Research Methods* with Luke Sloan (Sage, 2nd ed., 2021).

Naresh Agarwal is an associate professor and director of the Information Science & Technology Concentration at the Simmons School of Library and Information Science, Boston. He earned his PhD from the National University of Singapore's Department of Information Systems, School of Computing. In his research in information behavior and knowledge management, Naresh looks at the way people look for information and the contextual factors that impact their choice of information sources. His book *Exploring Context in Information Behavior: Seeker, situation, surroundings, and shared identities* was published by Morgan & Claypool. Naresh also studies serendipitous information encountering and the causes and effects of information avoidance behaviors by smartphone users. He has held various leadership positions at ASIS&T and was awarded the James Cretsos Award in 2012. Prior to his PhD, Naresh worked for 6 years in technology roles in the voice-over-IP, bioInformatics, and digital cinema industries. You can learn more at http://web.simmons.edu/~agarwal and http://www.projectonenessworld.com.

Sanda Erdelez is professor and director of the School of Library and Information Science at Simmons University. Her research interests include human information behavior, human-computer interaction and usability evaluation in online environments. She has been internationally recognized for her pioneering research in information encountering. She is the recipient of the 2015 “Outstanding Contribution to Information Behavior Research Award” from the ASIS&T SIG USE. Her research has received funding from both corporate and government sources including Dell Inc., SBC Communication, Texas State Government, and NSF.

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