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# Guest Editorial: Advances in Research on Information Creation

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## Introduction

Information creation has long been acknowledged as part of both the information life cycle and the totality of human information behavior (Bates, 2015). For instance, the significance of information creation is represented to differing extents in a number of classic models of information activities and processes (Gorichanaz, 2019). Moreover, calls for research on the creation of information in information science, and the creation of knowledge in knowledge management, date back at least to the 1960s (Brittain, 1970; Kochen, 1969; see also Cole, 2012). Still, there has been rather little explicit attention to information creation in research (Trace, 2007) and practice (e.g. Huvila, 2011; Woxland et al., 2017).

In recent years, a new body of work has embarked on exploring different aspects of information creation. At the same time, information creation has been acknowledged as a key aspect of information literacy (ACRL, 2015). Increasingly, scholars and practitioners alike are recognizing how the usefulness and relevance of the information being sought and retrieved depends on the conditions and process of its creation.

The aims of this special issue are to gather articles highlighting the current state in information creation research and to help this work gather forward momentum. The issue continues the work started as a part of the panel "Conceptualising and studying information creation: from production and processes to makers and making" at the 2020 ASIS&T Annual Meeting (Huvila et al., 2020), organized by the guest editors of this special issue.

The seven articles included here approach information creation from a broad spectrum of different perspectives within the information disciplines, ranging from archival studies to information behavior and practice, information literacy, and scholarly communication. Similarly, the contexts of inquiry range from professional work-related to leisurely and other non-professional everyday life contexts.

In this editorial, we situate these articles in their history and context, provide a brief overview of each article, and share some reflections on future directions for research on information creation.

### **Theoretical Approaches to Information Creation**

Considering both the earlier literature and the current body of research represented by the articles in this special issue, information creation can be fruitfully approached from a number of empirical and theoretical directions. While certain previous studies involve specifically theorizing information creation (e.g. Koh's, 2013a, model of information creation and Savolainen and Thomson's 2022 new model on everyday information practices that accounts for information creation), as a whole the earlier literature showcases an extensive range of references to theoretical underpinnings from phenomenology, hermeneutics and radical change theory to naturalism and ethnomethodology (e.g. Koh, 2013; Suorsa et al., 2021; Trace, 2007, 2017).

Conceptually information creation covers a field of research investigating diverse activities of creating, making, and producing information in different forms. Under the broad umbrella of information creation there are also activities conceptualized in the literature variously as knowledge creation, knowledge production, records creation, information making, documentation and document creation, information production and records creation, information-creating behavior, and making and makerspaces. Similarly to other informational phenomena (Savolainen, 2009), such diverse concepts as information, knowledge, document, and more, have been used to a certain extent synonymously. The same applies to the verb; individual authors discuss 'creation' in terms of creation (e.g. Gorichanaz, 2019; Douglas, 2018), production (e.g. Foster et al., 2013), or making (e.g. Koh et al., 2019; Huvila, 2018).

In documentation studies, documents have been identified as a form of information (Buckland, 1997) and documentation as a kind of creation (Lund, 2004), but the understanding of creation in the context of documentation has not been fully connected to other scholarly discussions of information creation (Gorichanaz, 2017). In archival science, there has long been a focus on documenting contexts and processes of records creation (e.g. Henttonen, 2015). A variety of life-cycle models have been developed, including models that repudiate the life cycle metaphor in favour of a continuum approach (McKemmish, 2001). Despite the ubiquitous emphasis on the importance of records creation, some archival studies scholars argue that the concept of creation itself remains undertheorized and call for better understanding of creation processes (Foscarini, 2010; Douglas, 2018; Douglas and Alisauskas, 2021). Emerging writing on research data management and reuse (Yakel et al., 2019; Faniel et al., 2019) further emphasizes the importance of documenting creation processes as a means to preserve the data itself.

Some of the recent attention to information creation can be attributed to developing awareness of the need for information researchers and professionals to influence how information is created so that it can be used, managed, and preserved in ways that serve present and future needs. For example, in archival theory and practice, it is well recognized that proactive intervention in creation is needed to ensure that digital materials can be preserved as records (Kelleher, 2017). A focus on interventionist or proactive approaches to data creation is also seen in scholarship on organizational knowledge creation, information literacy and research data creation, which also emphasizes the need to improve these processes (Huvila, 2011; von Krogh et al., 2012; Yakel et al., 2019). Another type of proactiveness is evident in the growing corpus of research on making and makerspaces (Blum-Ross et al., 2019), where making is specifically positioned as a method of intervention (Fourie & Meyer, 2015), learning and empowering people as creators (Koh et al., 2019), as well as library makerspaces where a range of information, including and beyond the textual and printed format, is created and shared with a sense of community (Koh et al., 2018).

Huvila et al. (2020) suggested recently that it is possible to categorise information creation research according to four dimensions depending on whether studies focus on informational things, actions, actors or contexts:

1. Research on the creation of *things* focuses on information, documents (Lund, 2004), records (Foscarini, 2010; Douglas, 2018), data (Faniel et al., 2019), knowledge (von Krogh et al., 2012; Suorsa & Huotari, 2014; Huvila, 2018), artifacts (Peppler, Halverson & Kafai, 2016a, 2016b), etc.
2. Research centering on the *action* of creation conceptualizes this as production, processes, creation, making, etc. This component seems to be the least theoretically specified dimension, though influences are evident from the literatures on making in anthropology (cf. Ingold, 2013) and management and production in economics (cf. Koskela, 2000)
3. Research foregrounding the *actors* examines who is doing the creation, whether individuals, groups or institutions, and whether in professional settings or not. This is often influenced by the given research tradition in which a work participates (e.g., management-oriented interest in groups and organizations).
4. Research on the *contexts* focus on the situation in which information is being created, including time, location and cultural factors. Of note, much of the recent work in information creation has explored everyday life contexts (e.g., Koh, 2013a; McKenzie et al., 2014; Douglas, 2018) as compared to the earlier organisational and work-related making and production of records, knowledge and information.

## Overview of the Articles

As with the earlier literature, the diversity of theoretical and empirical approaches to information creation is apparent also in the articles included in this special issue.

Campbell-Meier and Krtalić, in "Tattoo information creation: Towards a holistic understanding of tattoo information experience," explore information creation as part of the information experience of getting a tattoo. Their work shows the numerous informational components of tattoos, from the tattoos themselves to the sociocultural processes around them. Based on narrative interviews with nine participants in Aotearoa New Zealand, Campbell-Meier and Krtalić develop a nascent framework for describing information creation

in the tattoo context. This framework includes four phases—conceptualizing, verbalizing, visualizing, and pluralizing—each with an experiential anchor that moves the person toward the next phase.

Given and Kuys' article, "Memorial design as information creation: Honoring the past through co-production of an informing aesthetic," theorizes community-engaged design processes used to create the Melbourne Korean War Memorial (MKWN) as an information co-creation. The case study results in a newly developed model of *informing aesthetic* that includes explicit, implicit, and embodied information within their material designs.

Next, in "How do fans purposively create information to promote a celebrity? An analysis of fans' information practices and literacy improvement," Guo examines how fans create information aiming to inform the public positively about a celebrity within contemporary Chinese fan culture. With unobtrusive observation on social media platforms and semi-structured interviews of active fans, this study illustrates how fans create positive online content and conduct offline advertisements to boost celebrities. Fans also intentionally develop strategies and improve their information literacy to make informational materials more visible and appealing.

Harviainen and Melkko's article, "Organizational information creation through a design game: A sensemaking perspective," investigates organizational information creation through design gaming called Topaasia. The study suggests design games offer effective tools, mindsets, and structures that facilitate organizational information creation by combining structured turn-taking, playful mindsets, topical relevance, and social alibi that often breaks the genres of organizational discourses.

In "Archaeological information-making activities according to field reports," Huvila, Börjesson and Sköld examine the documentation of information-making in archaeology—that is, in a sense, information-making about information-making. They use activity theory as a guiding framework to analyze Swedish archaeological field reports, discovering what aspects of information-making are explicit in these reports and which are left implicit. By using activity theory, Huvila et al. are able to argue that further explicit attention to the social and contextual factor of archaeological information-making would help this work be more fully intelligible and communicable to outside communities and the general public.

Ju, Stewart and Jin focus on barriers of information creation in multidisciplinary research work in the article "'A bit hard for us to explain': Barriers to creating new information in scientific collaboration." Employing semi-structured interviews with researchers in one research center, Ju et al. argue that scientific collaboration can be seen as a process of information creation, where boundary objects can play a mitigating role in research communities striving to create joint accomplishments.

Finally, in "Creating information and records for development work: Working through the lens of information and records continuum models," Khabar and Oliver explore how the "continuum approach" developed in Australia by Frank Upward and colleagues can help to elucidate the importance of information and records creation to organizations' current and long-term needs as well as the complexity of the creation environment. In particular, they show how an application of the records and information continuum models to an analysis of

information creation in the context of development work in not-for-profit organizations can make visible the “empowerment potential of information.”

Even if it would be somewhat superfluous to draw long-going conclusions on the basis of the contents of this special issue, it is still possible to make certain remarks on the variety of the contributions. Table 1 provides an overview of the articles included in the special issue highlighting their conceptual and methodological approaches to information creation and the aspects of the different dimensions of information creation (following the categories of Huvila et al. 2020) they engage with. The individual articles focus to different degrees on things, actions, actors and contexts of information creation both as an empirical and theoretical focus of inquiry, though names may differ and imply subtle nuances of distinction. Theories informing the contributions range from information experience (Campbell-Meier & Krtalić in this issue) to activity theory (Huvila et al. in this issue), knowledge representation and transformation, and multisensory embodiment practices (Given & Kuys in this issue) and sense-making (Harviainen & Melkko). Their empirical basis stretches similarly from fan culture and tattoos to research work, corporate sense-making, memorialization and beyond.

Table 1: Overview of perspectives to information creation in the articles.

Articles in this issue	Conceptualization of information creation	Methodological Approaches	Theories	Things	Action	Actor	Contexts
Campbell-Meier & Krtalić	Information experience	Qualitative study	Information experience	Tattoos	Tattooing	Tattooers, Persons taking tattoos	Personal, Community
Given & Kuys	Co-design processes	Qualitative case study	Knowledge representation and transformation processes; multisensory embodiment practices	War memorial	Co-design	Multiple community stakeholders	Community
Guo	Social media and off-line information creation	Qualitative study	Information practices Information literacy	Social media and off-line activities	Content creation in social media and off-line	Active celebrity fans	Fan culture (community)
Harviainen & Melkko	Organizational sense-making	Qualitative case study	Sensemaking and sense-making	Information about the organization	Design game play	Organization workers	Work
Huvila,	Documentation	Qualitative	Activity	Information	Scholarly	Archaeology	Work

Börjesson & Sköld	n	study	theory	n about information creation	documentation	gists	
Ju, Stewart, & Jin	Collaboration and research processes	Qualitative study	Scientific collaboration Information creation processes	Scientific activities, including outputs	Scientific collaboration	Researchers	Research centers and institutions (work)
Khabar & Oliver	Empowering beneficiaries of NGO activities	Qualitative study	Continuum approach	Information to support NGO activities	Creating information, records and documentation	Development workers	NGO, Vulnerable communities

In spite of their diversity, the articles also have several points of convergence. In this admittedly small collection of studies, qualitative and observational approaches are in clear majority. The articles also focus on reporting empirical, and in most of the cases also fairly practical, research rather than featuring extensive theoretical and conceptual explorations to information creation. This extends to the fact that this editorial and special issue as a whole are still struggling to define what—or what different *kinds* of things, processes and knowledge (cf. Buckland, 1991)—count as information in the context of information creation literature.

## Discussion

As could be expected, like the earlier work on information creation, the new studies featured in this special issue have affinities with general trends in information science research. In addition to the professional contexts discussed in this issue (e.g., corporate work, research work, tattooing, archaeology, NGOs) and in the earlier literature (e.g. Mathieu, 2022), information creation is and has been studied increasingly in a wide range of non-professional and leisurely activities from genealogy (e.g. Fulton, 2016) to fan culture and hobbies in making (in this issue). However, going beyond this criticized but long-lived dichotomy between the professional and the leisurely (McKenzie, 2020), the Campbell-Meier and Krtalić text on tattoos traverses the two contexts by bringing in both tattoo artists and people getting tattoos, and Guo's study critically addresses the dichotomy by illustrating how fans see their own information creation practices as purposeful and useful, not as a leisure activity.

The texts published in this special issue also highlight that information creation is not a solitary activity. Information is being created collaboratively, within organizations, communities, and often amongst different stakeholders across cultures. Articles in this special issue demonstrate this social nature of information creation. For example, Given and Kuys present the co-creation of memorial design by interdisciplinary teams that involve multiple community stakeholders, while Harviainen and Melkko's study explores a novel approach to eliciting tacit information and generating new information within an organization by playing a design game. Comparably, Ju, Stewart and Jin's study investigates information creation that occurs during scientific collaboration for multidisciplinary research work. The

social and collaborative nature of information creation is obvious also in other texts included in this special issue.

An interesting aspect of the articles from an information creation perspective concerns how the different texts define or describe information creation. Campbell-Meier and Krtalić explore information creation as an aspect of information experience, in their case discussing tattoos as information. They explore how tattoos are created, what actions lead to their creation, who is considered “creator” in the tattoo context, and the sociocultural dynamics surrounding tattoo creation.

Huvila et al. demonstrate that there are multiple orders of information-making to consider. In archaeological data, for example, we can look at field reports as a form of information, and so the scholarly activities of making reports constitute a first-order kind of information making; however, we can also look at the documentation of those information-making activities, which constitutes a kind of second-order information making that is abstract and often overlooked, but vital to understand if we are to improve scholarly communication, improve knowledge sharing, and make further scientific breakthroughs. A parallel could be made with the leap from data to metadata, and from metadata to now metametadata.

Guo provides a view on fans creating information on social media platforms and off-line venues to promote celebrities examining different information creation practices and fans’ aims to influence the reputation and popularity of their idols. By concentrating on how and with which premises active fans use their knowledge on social media platforms’ algorithms, formulate their messages and thus aim at creating information which reaches wider audiences and promote their idols, Guo connects the study of information creation to the understanding of information literacy.

Ju et al. examine scientific collaboration as one specific example of an information creation process and see it in light of four dimensions - things, actions, actors and contexts, as suggested by Huvila et al. (2020). Employing the concept of boundary objects, Ju et al. illustrate how scientific collaboration and the creation of new information can be enhanced through the use of different kinds of objects; however, these objects can also contort research projects, and manifest as barriers to new information creation.

Given and Kuys’ study proposes significant intersections between information creation and design processes, from ideation through prototyping to final production. Beyond the predominant form of information in print and text formats, the created information they focus on is a form of artifact (i.e., a war memorial), where information is being represented and experienced in a combination of statistics, storytelling, and visuals.

For Harviainen and Melkko, information creation is a way of sensemaking. The authors suggest people make sense of the world not only by acquiring sufficient information but also by creating new information, which is aligned with what Koh et al. (2019) suggested as “sense-making through creating”. Furthermore, Harviainen and Melkko’s work extends our knowledge on organizational sense-making that is social and collective meaning-making in group processes through fruitful dialogues.

Finally, for Khabar and Oliver, information creation is tied to the continuum of documentation and records creation. Similarly to other contributions—including those of Campbell-Meier and Krtalić, Given and Kuys, Harviainen and Melkko, and Huvila, Börjesson and Sköld—information creation is seen as an intrinsic part of the broader information ecosystem of information creators and users. In this respect, at the same time as the texts in this special issue clearly show the potential and need to inquire into information creation on par with other types of information practices, they also highlight the need to be specific and explicit about what is entailed by information creation. This is an empirical question to the extent that it requires defining and clarifying what is being studied in terms of information creation but also a theoretical and conceptual question aimed at explaining what (all) is considered to be information creation and how it is contextualized in relation to other information practices, for example, information sharing, information use and information management.

### **Future Directions for Information Creation**

As a whole, the current admittedly small collection of papers points to several interesting future directions of information creation research. Besides repeating the half-a-century-old call for studies of all aspects of information creation (e.g. Brittain, 1970; Kochen, 1969) the current work suggests interesting possibilities to broaden, nuance and specify what different modes and types of conceiving information and the making, production and, for example, creation of different types of information can imply for the understanding of informational undertakings. As information creation is without controversy an inherent aspect of every information ecosystem as it is a part of the totality of information behaviour (Wilson, 2000), taking it into account in empirical research, information behaviour and practice theory, and the practice proper alike is as timely as ever. Considering the bulk of the work both in this special issue and elsewhere so far (cf. e.g. Huvila, 2022), perhaps especially welcome in the future would be substantial explorations into the theory of information creation as a complement and extension to empirical and practical inquiries.

Even if not explicitly discussed in the present set of articles, the contemporary worry about the mass production and spread of disinformation is another reason – already briefly touched upon in the recent work (Agarwal & Alsaedi, 2021; Karlova & Fisher, 2013) – to consider information creation as an integral part of the information chain. In this context, especially algorithmically created (dis)information unfolds as an interesting territory of inquiry in information creation with questions on to what extent there is a creator of information, who the creators are, and in what sense the algorithmic outputs qualify as information.

Moreover, we are inclined to stress that the present collection of articles and information creation research as a whole points to a dire need to think about information research beyond individual silos within the broader information field. It is not relevant only to information and knowledge management, information behaviour or information literacy but as, for instance, Suorsa and colleagues (2021) and Huvila (2011) have suggested, it would be highly important to see connections between the different perspectives. To exemplify, information creation literacy has an obvious impact on information creation, what information is created, how it can be organised, management and, for example, how it unfolds as findable. In this special issue, several of the texts make comparable openings. For example, Khabar and Oliver explore the interfaces of information creation and records management



whereas Harviainen and Melkko inquire into the nexus of information creation and sense-making.

As a whole, we are happy to consider that our two ambitions with this special issue— to gather and publish articles highlighting and pushing forward the current state-of-the-art in information creation research—have been fulfilled but also expanded by the new openings made in the contributions. This emphasises the need and benefits of thinking of, about and with information creation in diverse ordinary and extra-ordinary contexts of professional and non-professional everyday life as a vital complement to the existing body of information research.

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