

JASIST Special Issue on “Conceptual Models of the Sociotechnical”

Overview

Information Science has long worked at the intersection of technology development and the critical study of technologies in particular places, serving particular people, at particular points in time. Conceptual models—the abstract and formal representations of how systems work, and of the information objects they store, process, and transmit—are fundamental to each of these research activities in Information Science. Conceptual models enable and constrain how people *can* use digital information systems and with *what* impact. Database and metadata schemas, data structures, algorithms, encoding and markup standards, ontologies—each of these technologies instantiate a conceptual model that both manifests and obscures information representation choices.

When conceptual models represent information about real-world entities they also enable the legibility and the manipulation of that information. Thus, conceptual models determine, in a fundamental way, how technologies may be leveraged to benefit or harm people, how they may contribute to or inhibit the advancement of knowledge, and how they may support or undermine decision- and policy-making. We have argued that although conceptual models are critical to sociotechnical systems they are often overlooked or under-described in Information Science research (Weber et al., 2019, 2020). Current environmental, political, and economic conditions require a renewed attention to how conceptual models are implemented in sociotechnical systems and with what impacts on people and communities. This work is particularly needed given on-going racial violence and global health crises, as well as the numerous fractures these events have revealed in our knowledge infrastructures (Shankar et al., 2021).

Call for Proposals

There are numerous examples of sociotechnical systems that are fundamentally shaped by the conceptual models that they enact, including: how classification systems enact epistemic and systemic violence (Adler, 2016); the ways in which classification systems and algorithms are used to mitigate access to information resources (Bullard 2017; Noble 2018); the use of encoding schemes like UTF that impact—and sometimes limit—the representation of knowledge systems (Lampland and Star, 2009); the governance of data access through APIs (Asad et al., 2018); the affordances and limitations to standardization in online social networks (Brubaker et al., 2016); etc. Each of these interventions shape and are shaped by conceptual models of information and their appropriate use. Further, the affordances and limitations of a conceptual model impact the ways in which a user can become informed, can operate with autonomy, and can produce new knowledge (Sovacool & Hess, 2017). Without a critical interrogation of conceptual models in practice we risk overlooking the negative impacts they may have—such as alienating, disenfranchising, or significantly restricting the liberties that a sociotechnical approach seeks to engender (Fuenfschilling & Binz, 2018).

This special issue is meant to convene researchers in information science interested in critical, careful examination of how information representations are modeled in sociotechnical systems.

By interrogating the conceptual models underpinning sociotechnical systems we believe there is a unique and important contribution to be made by information scientists in combating misinformation, reducing bias, promoting fairness, and producing the types of information systems that allow people and communities of practice to flourish.

Themes

We invite contributions that address the following and related themes:

- Critique of conceptual models in practice (e.g. in databases, digital libraries, retrieval systems, and in many other information systems).
- Design and construction of conceptual models in any domain, particularly with regard to sociotechnical implications.
- Consideration of models for curation, preservation, and sustainability of information objects embedded in sociotechnical systems.
- The impact of conceptual models on public knowledge, research, and scholarship.
- Methods for and applications of the critical study of conceptual models in sociotechnical systems: deconstructing an API; conducting algorithmic or other technology audits; close readings of standards and their implementation; critical histories of standards; evaluations of use, implementation, and impact; etc.

Introduction to Guest Editors

Katrina Fenlon (kfenlon@umd.edu) is an assistant professor in the College of Information Studies at the University of Maryland. Her research focuses on digital curation and the changing shape of the scholarly knowledge ecosystem.

Peter Organisciak (peter.organisciak@du.edu) is an assistant professor of Library and Information Science at the University of Denver. His research focuses on content-based methods for studying large-scale digital libraries.

Andrea Thomer (athomer@umich.edu) is an assistant professor at the University of Michigan School of Information. She conducts research in the areas of scientific data practices, data curation, and computer-supported cooperative work.

Nic Weber (nmweber@uw.edu) is an assistant professor in the Information School at the University of Washington. His research addresses the development and long-term maintenance of data infrastructures.

Paper Development Workshop: ASIS&T 2021

Prospective authors are strongly encouraged to participate in the ASIS&T 2021 workshop, “Fairness and Accountability in Conceptual Modeling”, which will provide authors with an opportunity to receive feedback on draft versions of their submissions. The workshop will be held Saturday October 30th online. More information about the workshop may be found here:

<https://www.asist.org/am21/2021-annual-meeting-workshops/>

Submission Guidelines

Submissions should comply with JASIST criteria for a [‘Research Article’](#) and be at most **7000 words** in length.

Special Issue Timeline (subject to change)

- Submissions due: **February 16, 2022**
- Notifications of peer-review decisions (Mid June). Note - Authors will be notified about publication decisions on a rolling basis (as peer review is complete). Once a submission is accepted and author revisions are complete the article will be published online.
- Special Issue to be published in Winter 2022-23

Criteria for Acceptance

Peer reviewers will be asked to evaluate papers following JASIST guidelines (which are described here:

<https://asistdl.onlinelibrary.wiley.com/hub/journal/23301643/homepage/forauthors>)

For inclusion in the special issue reviewers will also be asked to judge the strength of a submission in three ways:

1. Does the submission make a substantive practical, theoretical, or methodological contribution to conceptual modeling?
2. Do the authors successfully situate their work in a sociotechnical context (e.g. the political, economic, civic, organizational, or cultural environment in which a conceptual model is used)?
3. Does the submission advance our understanding of the sociotechnical implications of conceptual models?

References

- Agre, P. (1994). Net presence. *Computer-mediated communication magazine*, 1(4), 6.
- Asad, M., Le Dantec, C. A., Nielsen, B., & Diedrick, K. (2017, May). Creating a sociotechnical API: Designing city-scale community engagement. In *Proceedings of the 2017 CHI conference on human factors in computing systems* (pp. 2295-2306).
- Brubaker, J. R., Ananny, M., & Crawford, K. (2016). Departing glances: A sociotechnical account of ‘leaving’ Grindr. *New Media & Society*, 18(3), 373-390.
- Fuenfschilling, L., & Binz, C. (2018). Global socio-technical regimes. *Research policy*, 47(4), 735-749.
- Kling, R. (1980). Social analyses of computing: Theoretical perspectives in recent empirical research. *ACM Computing Surveys (CSUR)*, 12(1), 61-110.
- Lampland, M., & Star, S. L. (Eds.). (2009). *Standards and their stories: How quantifying, classifying, and formalizing practices shape everyday life*. Cornell University Press.
- Shankar, K., Jeng, W., Thomer, A., Weber, N. & Young, A. (in press). *Data Curation as Collective Action During COVID-19*. To appear in the *Journal of the Association for Information Science and Technology*.
- Sovacool, B. K., & Hess, D. J. (2017). Ordering theories: Typologies and conceptual frameworks for sociotechnical change. *Social studies of science*, 47(5), 703-750.

Weber, N., Fenlon, K., Organisciak, P., & Thomer, A. K. (2019). Conceptual models in digital libraries, archives, and museums. In *Proceedings of the 18th Joint Conference on Digital Libraries* (pp. 457-458).

Weber, N., Fenlon, K., Organisciak, P., Thomer, A. K. & Wickett, K. (2020). Conceptual models in digital libraries, archives, and museums (SIG-CM) 2020. In *Proceedings of the 19th Joint Conference on Digital Libraries*.