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Surveillance as Information Practice

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Abstract

Surveillance, as a concept and social practice, is inextricably linked to *information*. It is, at its core, about information extraction and analysis conducted for some regulatory purpose. Yet, information science research only sporadically leverages surveillance studies scholarship, and we see a lack of sustained and focused attention to *surveillance* as an object of research within the domains of information behavior and social informatics. Surveillance, as a range of contextual and culturally based social practices defined by their connections to information seeking and use, should be framed as *information practice*—as that term is used within information behavior scholarship. Similarly, manifestations of surveillance in society are frequently perfect examples of information and communications technologies situated within everyday social and organizational structures—the very focus of social informatics research. The technological infrastructures and material artifacts of surveillance practice—surveillance technologies—can also be viewed as *information tools*. Framing surveillance as information practice and conceptualizing surveillance technologies as socially and contextually situated information tools can provide space for new avenues of research within the information sciences, especially within information disciplines that focus their attention on the social aspects of information and information technologies in society.

Surveillance as Information Practice

Information science and surveillance studies share a primary interest in issues of information, particularly as it relates to technology and people. On the one hand, information science is often explicitly framed by its interdisciplinary attention to questions involving “people, information, and technology” (Zuo, Zhao & Ni, 2019, p. 341). On the other hand, surveillance studies is a transdisciplinary field dedicated to studying surveillance as “a fundamental social-ordering process . . . [that] comprises the collection . . . followed by analysis and application of information within a given domain” (Lyon, Haggerty & Ball, 2012, p. 1), which often involves “the use of technical means to extract or create information” (Marx, 2012, p. xxv). In this article, I advocate for more cross-disciplinary dialogue between these two fields—information science and surveillance studies—by framing surveillance explicitly as an information problem. Specifically, I argue that surveillance, as a range of contextual and culturally based social practices defined by their connection to information seeking and use, should be framed as *information practice*—as that term is used within information behavior scholarship—and that manifestations of surveillance in society are frequently perfect examples of “information and communications technologies . . . bound up in everyday social and organizational structures” (Lamb & Sawyer, 2005, p. 9)—the very focus of social informatics research.

Surveillance, as a concept and social practice, is inextricably linked to *information*. The information field—or at least the portion of the field that Buckland (2017, p. 1) refers to as “*realistic information science*”—is often framed as being multidisciplinary, interdisciplinary, or transdisciplinary (e.g., Holland, 2008; Zhang & Benjamin, 2007; Zuo, Zhao & Ni, 2019). Yet, information science research only sporadically leverages surveillance studies scholarship, and we see a lack of sustained and focused attention to *surveillance* as an object of research within several relevant information science disciplines that focus their attention on the study of “information in society, in everyday human experience” (Buckland, 2017, p. 1). According to Bates (2010, p. 2385), “the entire discipline of information science has, in one sense, been the story of the successive absorption of a long series of IT innovations, followed, in each case, by research on the impacts of those innovations.” Based on this line of reasoning, it seems clear that surveillance practices, particularly those mediated or accomplished through the use of information technologies, ought to be a central concern of the full range of disciplines within the realistic information sciences, and certainly within the domains of information behavior and social informatics.

While information research “follows the information” (Bates, 1999, p. 1048), surveillance research often focuses on the practices and technologies (or tools) of surveillance—tools and practices whose very purpose is to extract, analyze, and otherwise use *information* about people.

As such, the technological infrastructures and material artifacts of surveillance practice—the so-called *surveillance technologies*—can also be viewed as *information tools* (see Nathan, 2012). Where information behavior research typically focuses on the information-seeking behaviors of individuals (with attention to the needs and motives of those seeking or using information), surveillance studies research has often focused on the results, impact, or regulation of surveillance and not on the surveillance as an information-seeking practice itself (or on the “needs” of the seeker). In the move from behavior to practice, “the analysis shifts from the cognitive to the social” (Savolainen, 2007, p. 122). In that light, information practice offers a more immediately salient perspective from which to examine surveillance as an information problem, as it is more concerned with social, cultural, and contextual factors and “the continuity and habitualization of activities affected and shaped by social and cultural factors” (Savolainen, 2007, p. 126).

Of course, many overlapping information science disciplines have attended to questions of surveillance to varying degrees of depth and engagement. Much of this scholarship focuses on the social aspects of surveillance and privacy or the ethical, policy, and regulatory issues implicated by surveillance. For example, information scholars have examined the social aspects of surveillance in the contexts of mobile contact tracing (Fox et al., 2022), public acceptance of government surveillance (Thompson et al., 2020), workplaces and employment (Stark, Stanhaus & Anthony, 2020), online privacy (Quan-Haase & Ho, 2020), immigration (Newell, Vannini & Gomez, 2020; Newell, Gomez & Guajardo, 2016, 2017), everyday use of digital and social media (Abokhodair, Hodges & Vieweg, 2017; Stark, 2016; Vieweg & Hodges, 2016), institutional use of mobile and location-based services (Shklovski, Troshynski & Dourish, 2015), and smart city projects (Kashef, Visvizi & Troisi, 2021). Information scholars have also offered critical perspectives on surveillance (e.g., Paris, Reynolds & McGowan, 2022; Mann et al., 2020).

Information behavior scholarship has addressed surveillance as a *source* of information and as a mechanism for enacting social control (Brown & Veinot, 2021, p. 69). Conversely, some information behavior can manifest as a *form* of surveillance enacted for purposes of social control (Brown & Veinot, 2021, p. 77). This body of research has found that surveillance can *influence* individuals’ information behavior (Abokhodair & Vieweg, 2016, p. 679; Baldwin & Rice, 1997, p. 676; Buchanan & Husain, 2022; Caidi & MacDonald, 2008; Kvasny & Payton, 2018; Newell, Gomez & Guajardo, 2016). Likewise, scholarship informed by the tenants of social informatics has also addressed issues of surveillance, including in studies of the use of information technologies within organizations (Walsham, 1998).

Within the domain of information ethics and policy, surveillance is often analyzed as a threat to individual rights such as privacy (e.g., Caidi & Ross, 2005; Doty, 2015; Gorham-Oscilowski & Jaeger, 2008; Jaeger, Bertot & McClure, 2003; Jaeger, McClure, Bertot & Snead, 2004; Jones et al., 2020; Jones, Rubel & LeClere, 2020; Mai, 2016a; Mai, 2016b; Mai, 2016c; Mathiesen, 2015; Moore, 2010; Moore & Martin, 2020; Newell, 2014; Rubel & Jones, 2016; Vannini, Gomez &

Newell, 2020; Zimmer, 2005). Likewise, researchers have examined privacy and surveillance—or “antisurveillance concerns” (Shilton, 2012b, p. 378)—within the Value Sensitive Design literature (see, e.g., Briggs & Thomas, 2015; Czeskis et al., 2010; Dechesne, Warnier & van den Hoven, 2013; Friedman & Hendry, 2019, pp. 143–150; Friedman et al., 2006; Friedman et al., 2008; Friedman, Kahn & Borning, 2002, 2008) and within social computing and human-computer interaction (e.g., Ackerman, Darrell & Weitzner, 2001; Brandtzæg, Lüders & Skjetne, 2010; Dourish & Anderson, 2006; Lau, Zimmerman & Schaub, 2018).

In several instances, information scholars have directly addressed the links between the fields of information science and surveillance studies (e.g., Paris, Reynolds & McGowan, 2022; Thompson et al., 2020), and several have examined surveillance as an *object of regulation* while also referencing surveillance studies literature (e.g., Young, Katell & Krafft, 2019; Katell, 2021; Shilton, 2012a; Mai, 2016c; Blanchette & Johnson, 2002). Surveillance has also been framed as an appropriate subject for research within the fields of critical information studies (Carter, Acker & Sholler, 2021) and crisis informatics (Reynolds et al., 2022). Likewise, library and information science literature has examined surveillance practices in a variety of contexts, including in the work of libraries (Fortier and Burkell, 2015; Gallagher, McMenemy & Poulter, 2015; Newell & Randall, 2013a, 2013b; Randall & Newell, 2014; Tummon & McKinnon, 2018; Zimmer, 2014), in connection with labor and as a tool for behavioral control (Floegel, 2021), as a prevalent theme in LIS journals (Dewey, 2020), as embedded within commercial scholarly communication platforms (Moore, 2021), as closely linked to documentation practices (Kosciejew, 2015), as an important ethical consideration that should be taken into account when conducting research (Barriage & Hicks, 2020), and in relation to the emergence of the broader information society (Weller & Bawden, 2005). Researchers have also used surveillance records as *objects* of study within archival studies (Carbone, 2020).

This body of research within the “realistic” information sciences underscores the close links between *surveillance* and *information*, both as targets of analysis and as fields of research. But it largely fails to recognize and examine how surveillance practices themselves are information practices. Surveillance is a rich concept with definitional ties to information, yet much of the surveillance-focused scholarship within information science frames surveillance simply as an opposing force to the interests of informational privacy or as a privacy-relevant concern or, in any event, fails to offer sustained theoretical engagement linking the concepts of surveillance and information. Even in the information research that engages more substantively with surveillance and surveillance studies literature, scholarship does not generally address—or directly operationalize—surveillance as an *information practice* (or as a set of information behaviors or practices) in a focused or sustained way.

Throughout this paper, I address the following research question: (How) Does framing surveillance as information practice inform the conceptualization of surveillance as a worthy object of information-based inquiry? In what follows, I examine the nature and definitions of contemporary surveillance. I unpack the concepts of *information* and *data* and how they have

been linked to the concept of surveillance within surveillance studies scholarship, particularly as essential characteristics of surveillance itself, and link these conceptions of surveillance to the information studies literature by framing surveillance itself as an *information practice*. I argue that framing surveillance in this way can help cement surveillance as a core area of concern for the information sciences, particularly research in the disciplines of social informatics and information behavior.

Perspectives on surveillance

Within surveillance studies scholarship, surveillance is often framed as having something to do with monitoring, attending to, or regarding people for purposes related to behavioral regulation and social control (Gilliom & Monahan, 2013; Haggerty & Ericson, 2006; Lyon, 2007; Lyon, Haggerty & Ball, 2012; Monahan & Murakami Wood, 2018; Monahan & Torres, 2009; Murakami Wood, 2009b; Stark, Stanhaus & Anthony, 2020). Frequently, scholars refer to the French roots of the word, “roughly translated as *watching from above*,” which “implies that the observer is in a position of dominance over the observed” (Gilliom, 2001, p. 3). Surveillance is “ubiquitous” but also “acquires different forms, functions, and meanings across social settings” (Monahan & Murakami Wood, 2018, p. xx).

Characterizing surveillance

Definitions of surveillance within the surveillance studies literature generally share three primary characteristics. First, the objects of surveillance are most commonly *human beings*, whether as individuals or groups—although this framing risks occluding references to surveillance of non-human creatures, such as birds, or to epidemiological surveillance focusing on viruses (Lyon, 2022, p. 3; Haggerty & Trottier, 2013). As such, we might refer to *human surveillance* (see Calzolari et al., 2012) to describe the surveillance practices that dominate within surveillance studies scholarship. Second, definitions either explicitly or implicitly imply that surveillance captures *information* or *data* related to these people. Third, most definitions include a *purposive element*, most frequently tied to regulating or governing human behavior. Surveillance is frequently framed as a form of watching, listening, or monitoring. For example, Marx (2015b), provides a broad definition of surveillance as watching, excluding any explicit purposive element, suggesting that surveillance is simply “regard or attendance to others (whether a person, a group, or an aggregate as with a national census) or to factors presumed to be associated with these” (Marx, 2015b, p. 734; see also Marx, 2012, p. xxv). Marx (2015b, p. 734) focuses squarely on personal data as the object of such attention, noting that “a central feature is gathering some form of data connectable to individuals (whether as uniquely identified or as a member of a category).”

However, in some contrast to Marx’s broader definition, surveillance is often seen as something more than merely watching, listening, or otherwise observing another person. On this more dominant view, surveillance “depends on some capacity to control, regulate, or modulate behavior” even when such manipulation is not perceived (Monahan & Murakami Wood, 2018, p.

xix). Thus, as framed by Monahan (2022, p. 6), surveillance is “focused observation fused with judgement and yoked to a purpose,” suggesting clear links between surveillance, on the one hand, and regulatory governance, on the other. Likewise, Lyon (2007, p. 14) defined surveillance as “focused, systematic and routine attention to personal details for purposes of influence, management, protection or direction” (for related definitions, see also Ball et al., 2006, p. 4; Haggerty & Ericson, 2006, p. 3), and Monahan and Murakami Wood (2018, p. xx) refer to surveillance as “any form of systematic monitoring that exerts an influence or has a tangible outcome.”

Surveillance as a mechanism of regulatory governance

Surveillance is frequently conceptualized, even by definition, as a regulatory mechanism for deliberately influencing the actions of individuals or groups. Regulation has been defined in a variety of ways, including as “the sustained and focused attempt to alter the behaviour of others according to defined standards or purposes with the intention of producing a broadly identified outcome or outcomes” (Black, 2002, p. 26; see also Bennett Moses, 2013, p. 4; Brownsword & Goodwin, 2012; Koops, 2010, p. 310). Regulation is often accomplished through the use of tools, crafts, or technologies “that people use to change or adapt to their environment” (Koops, 2010, p. 309–310), including “both the purposeful activity and results of the transformation or manipulation of natural resources and environments in order to satisfy human needs or goals” (Klang, 2006, citing Kroes, 1998).

From the perspective of *governance*, the extraction and analysis of information about populations (and the individual people present within those populations), provides states and other entities with data used to inform and “construct collective decision-making” (Chhotray & Stoker, 2009, p. 2). Governing may also be conducted through regulation, where one entity seeks “to shape the activities of another” (Chhotray & Stoker, 2009, p. 23). Likewise, Black’s (2014, p. 3) definition of regulatory governance as the “organised attempt to manage risks or behaviour in order to achieve a publicly stated objective or set of objectives” has been influential (see Yeung, 2018, p. 507; Ulbricht & Yeung, 2022). According to Black (2014, p. 3), “a regulatory system consists of the (sometimes shifting) set of interrelated actors who are engaged in such attempts and their interactions with one another and the dynamic institutional and organizational environment in which they sit.” And, as summarized by Ulbricht and Yeung (2022, p. 7),

regulation . . . is understood as a subset of governance, defined by its intentional orientation, seeking to attain and maintain the achievement of a pre-specified purpose and characterized by a triumvirate of cybernetic functions entailing mechanisms for (i) standard-setting, (ii) information gathering and monitoring, and (iii) intervention and sanctioning to align system behavior with the regulator’s overarching purpose.

The second function of regulatory governance—information gathering and monitoring (Black, 2002; Ulbricht & Young, 2022; Yeung, 2018)—is essentially a description of surveillance,

inherently linked to monitoring and the collection of information. This tracks with the Foucauldian notion that surveillance is “a central method for governance and the construction of modern subjects” (Monahan & Murakami Wood, 2018, p. xxii, citing Foucault, 1977).

Surveillance enacted for purposes of behavioral modification or control and accomplished through technological means—a significant focus of the surveillance studies literature—constitutes forms of *techno-regulation*. That is, surveillance is enacted through the use of normative technologies, or those “with intentionally built-in mechanisms to influence people’s behavior” (Koops, 2008, p 158), the use of which represent deliberate, conscious, or intentional efforts to regulate human behavior (Koops, 2011; Leenes, 2011). Frequently, surveillance is used by those in power as a tool to control, marginalize, and extract value from less powerful groups (Benjamin, 2019a, 2019b; Paris, Reynolds & McGowan, 2022). Scholars have identified how surveillance can lead to “diminished autonomy, curtailed rights, and political repression” (Monahan & Murakami Wood, 2018: xxi; Rule 1973). Surveillance also encompasses the practices of using data to sort and categorize people based on anticipated risk or value, and then treating them differently based on their categorization (Bigo, 2006, 2008; Floegel & Costello, 2022; Hamilton, 2020; Lyon, 2003; Monahan & Murakami Wood, 2018: xix).

Surveillance and information technologies

Whereas surveillance may once have been simply about “face-to-face surveillance, of people watching and controlling others” (Monahan & Murakami Wood, 2018, p. xiv), contemporary surveillance is often characterized in connection to the rise in information systems and other information technologies. Marx (2012, p. xxv) argued that “the *new surveillance*” generally “involves scrutiny of individuals, groups and contexts through the use of technical means to extract or create information.” This may be due, in part, to the fact that information technologies have “overcome historical limitations to vision” (Lyon, Haggerty & Ball, 2012, p. 1), allowing electronic databases to become “central tools of governance” (Monahan & Murakami Wood, 2018, p. xii; Rule, 1973). Concerns raised by these developments have also been a significant focus of information privacy scholarship. Privacy and data protection are often conceptualized as opposed, or as an antidote, to many forms of undue surveillance. Indeed, “privacy and the ‘private life’ remain both tactically and ideologically the dominant forms of response to surveillance” (Monahan & Murakami Wood, 2018, p. xxiii-xxiv).

The growth of modern, information-technology-based surveillance also highlights the links between surveillance practices, information, and information practices. In this view, surveillance is, at its core, about *information extraction and analysis* conducted for some regulatory purpose, usually one related to some form of social control or commercial exploitation. Scholars have described *monitoring* as about gathering *details* about people and *watching* in terms of collecting *data* about people (Lyon, Haggerty & Ball, 2012, p. 2), and have conflated the emergence of the information state and surveillance state, explicitly linking surveillance practices to information collection and information gathering (Weller, 2012, p. 56). Contemporary surveillance has become “more organized, formal and centralized” precisely because “states began to collect

information on their citizens with [more] regularity” (Weller, 2012, pp. 56–57). As such, surveillance has been referred to as “the dominant organizing practice of late modernity” (Lyon, Haggerty & Ball, 2012, p. 1).

Surveillance as an information problem

Shilton (2012a) has argued that surveillance practices ought to be examined “as an information science problem” (p. 1906). In so doing, Shilton recognized that long-standing areas of information science expertise, including “privacy, information accessibility and equity, and information management and preservation” (p. 1908), are relevant to studying surveillance. Surveillance scholars have also framed surveillance as an information problem. For example, Austin (2015, p. 296) directly referred to “state surveillance practices” as “information practices,” and Lee (2015) described “the informatic practice of surveillance” (p. 388, citing French, 2014). Surveillance is defined by its inherent links to the concepts of data and information. It is “about seeing things and, more particularly, about seeing people” (Lyon, 2007, p.1), a process that captures “personal data within certain coordinates” (p. 8). Surveillance studies emerged alongside development of the so-called “information society” (Webster, 1994) or “information age” (Castells, 1997)—that is, “from recognition of the ways in which pervasive information systems increasingly regulate all aspects of social life” (Monahan & Murakami Wood, 2018, p. xix). Information science, on the other hand, is defined as “the study of the gathering, organizing, storing, retrieving, and dissemination of information” (Bates, 1999, p. 1044). It is the

discipline that investigates the properties and behavior of information, the forces governing the flow of information, and the means of processing information for optimum accessibility and usability. It is concerned with that body of knowledge relating to the origination, collection, organization, storage, retrieval, interpretation, transmission, transformation, and utilization of information (Borko, 1968, p. 3).

The interrelated concepts of information and data

Information, as a term of art within the disciplines that make up the field of information science—what Buckland (2017) has referred to as *realistic* and *formal* information sciences—or what others have called *informatics* (Bygrave, 2015) has a rather complicated and contested meaning (Capurro & Hjørland, 2003; Gellert, 2020). Common usage suggests that *information* has a semantic nature; frequently defined—at least in the “realistic” information sciences, those invested in studying information in its social and cultural contexts—to mean something like “knowledge communicated” although differing disciplinary perspectives have led to many different conceptions and definitions of the term (Capurro & Hjørland, 2003; Gellert, 2020; see also Kitchin, 2022, p. 6). Buckland (1991) famously attributed three primary meanings to information: 1) information-as-process, 2) information-as-knowledge, and 3) information-as-thing. The first two forms are closely linked to the semantic theory of information as knowledge communicated or, as Buckland (2017, p. 2) frames it, “knowledge imparted.” Information-as-

process refers to the acts of communicating or receiving knowledge, while information-as-knowledge refers to that which has been perceived as part of such a process. Buckland's third type, however, refers to objects—or “things”—that “are regarded as being informative,” such as data, documents, or records. For Buckland (2017, p. 6), information has “two interrelated meanings: (1) what we infer from gestures, language, texts, and other objects; and (2) material forms of communication—bits, books, and other kinds of physical messages and records.”

Relatedly, *data* can also be seen as the building blocks for information and knowledge—or, perhaps more accurately, as elements created within institutional, political, and social contexts that serve as the “bricks and mortar” required for information, knowledge, and understanding (Kitchin, 2014, p. 1). They are abstractions of the world, elements that have been extracted (measured or recorded) and abstracted from phenomena that exist in the world and constructed into representational forms, such as “numbers, characters, symbols, images, sounds, electromagnetic waves, bits” (Kitchin, 2014, pp. 1–2). They “exist prior to argument or interpretation”—processes that generate information, facts, or evidence (Kitchin, 2014, p. 3, *citing* Rosenberg, 2013). They can be representative, implied, or derived; as measurements of some phenomena in the world, generated by implication, or derived from analysis of multiple pieces of data (Kitchin, 2014, p. 1). And just as the qualities and contours of bricks and mortar are contingent upon the factories, technologies, and procedures that produce them, “data do not exist independently of the ideas, instruments, practices, contexts, and knowledges used to generate, process, and analyse them” (Kitchin, 2014, p. 2).

As Kitchin (2014) and others have noted, the etymological origins of the word *data* in Latin can be translated as “to give,” although what we most commonly refer to as data is more closely aligned with the word “*capta*”—meaning “to take”—as common parlance refers to what “has been taken” from nature rather than what nature has to offer (Jensen, 1950: ix, cited in Kitchin, 2014, p. 2). In this sense, surveillance is a form of *taking* data from nature. And even though “data are inherently partial, selective and representative,” they are also different than, but constitutive of, “facts, evidence, information and knowledge” (Kitchin (2014, p. 3). In other words, “‘data’ is not a neutral resource reflecting what is ‘given’ but something that is both shaped and, in turn, does the shaping” (Austin 2022, p. 304). In the famous words of Bowker, “raw data is both an oxymoron and a bad idea; to the contrary, data should be cooked with care” (Bowker, 2005, p. 184; Gitelman & Jackson, 2013).

Information behavior and social informatics

Information behavior and social informatics are both particularly well-suited subdomains within information science from which to study surveillance as an information problem. Social informatics involves investigations into the social and organizational aspects of information technologies in society (Lamb & Sawyer, 2005; Kling, 2003; Rosenbaum, 2010, 2014; Sanfilippo & Fichman, 2014; Sawyer & Eschenfelder, 2002; Sawyer & Tapia, 2007; Sawyer, 2005). As often defined, it is “the interdisciplinary study of the design, uses and consequences of information technology that takes into account their interaction with institutional and cultural

contexts” (Kling 1998, p. 52, 1999; Sanfilippo & Fichman, 2014, p. 29). Social informatics research often prioritizes critical approaches to understanding the complex relationships that exist between people, technology, and context (Fichman & Rosenbaum, 2014, p. x), focusing on “the study of people, technologies and the contexts in which these technologies are designed, implemented and used” (Fichman & Rosenbaum, 2014, p. x). A social informatics perspective assumes that, among other things, information and communication technologies (ICTs)

are parts of sociotechnical systems that include technical artifacts (software, hardware, and infrastructure) and social components (people, organizations, norms and values, policies, social practices, etc.). . . . [and] that ICTs do not exist in social or technical isolation and are embedded in complex and dynamic networks of social, cultural, organizational, and institutional contexts” (Rosenbaum, 2014, p. 19).

And although information behavior research “can cast a very wide net, looking into both individual interactions as well as large-scale complex group and societal interactions with information,” Bates (2010, p. 2075) argues that “information behavior research is not communication, psychology, education, sociology, or social impacts of technology research . . . Rather, information behavior research actually studies – and largely limits itself to – information-related behavior.” In response, I argue that surveillance is itself, as defined, all about information-related behavior and is, thus, an appropriate object of information-behavior-based inquiry. Likewise, as an object of study within informatics, surveillance could be studied “from the information perspective,” foregrounding “the information concepts and methods” (Aspray, 2011, p. 233) that are so central to surveillance itself. In that sense, surveillance practices might be studied as information practices within information behavior research while technologically mediated surveillance practices would also easily fit into critical social informatics investigations focused on the social and cultural implications of surveillance and surveillance technologies. Within the related field of community informatics, surveillance could also be seen as an integral part of “the complex dynamic relations between technological innovation and changing social relationships” (Keeble & Loader, 2010, p. 3) and, thus, a ripe object of inquiry within “a multidisciplinary field for the investigation and development of the social and cultural factors shaping the development and diffusion of new ICTs and its effects upon community development, regeneration and sustainability” (p. 3). And within library science, as multiple scholars have argued, the methods, systems, and organization of the modern library—a central information institution—“is, at base, about surveillance, bureaucracy, and the control of information” (Black, 1998, p. 44; Mai, 2011, p. 718).

Against this backdrop, it seems uncontroversial to frame the study of surveillance as a form of inquiry that fits squarely within the umbrella of information science. We can see surveillance as a specific type of information problem. It envelopes a range of information practices, extracting data from the world and from peoples’ interactions with each other and with various technologies, as well as the subsequent ordering, classification, analysis, and other use of the

extracted data. If we require a purposive element, as much of the surveillance studies literature does, then surveillance involves these practices when conducted with a particular goal or purpose in mind, specifically one related to control, influence, management, or protection.

Surveillance as information practice

Information behavior and information practices are interrelated “umbrella concepts” and areas of research within the information field (Savolainen, 2007, p. 125). *Information behavior* has been described as “the totality of human behavior in relation to sources and channels of information, including both active and passive information seeking, and information use” (Wilson, 2000, p. 49; see also Brown & Veinot, 2021, p. 67). A large amount of information behavior research focuses on people “using new technologies for finding and communicating information” (Bates, 2010, p. 2385). Information behavior thus includes the study of “information needs, information seeking, information sharing, information gathering, information retrieval, and information use” (Kumar & Lund, 2022). Contemporary conceptions of information behavior are informed by how Krikelas (1983, p. 6) defined information-seeking behavior as “any activity of an individual that is undertaken to identify a message that satisfied a perceived need,” where information was defined as “any stimulus that reduces uncertainty.” Other information science research from that era defined “information-seeking behavior” as “specific actions performed by an individual that are specifically aimed at satisfying information needs” (Feinman et al., 1976, p. 3). Fisher (2018, p. 82) explains that,

Within the field of Information Science, the sub-field of Information Behavior is about understanding Information Worlds, recognizing the contextual factors that affect the interplay of people, place, and technology. Information Behavior addresses how people experience information in everyday contexts; it focuses on understanding the development and actualization of information needs (i.e., how information is socially created); how people seek, share, and build information; how information is managed, used and repurposed, and deemed useful in a myriad of ways.

Information behavior research can be distinguished by its attention to cognitive processes, including needs and motives, while information practice has been offered as an alternative paradigm for research more concerned with social, cultural, and contextual factors (Savolainen, 2007, p. 126; Nathan, 2012, p. 2256). Within the information behavior literature, *behavior* and *practice* are both conceptualized as related to “the ways in which people ‘do things’”—that is, they both focus on how people “deal with information” (Savolainen, 2007, p. 126). When McKenzie (2003, pp. 19) explains that “people frequently ‘discover’ information in everyday life while monitoring the world,” such monitoring can easily encompass individual surveillance practices. And, just like surveillance, information-seeking behavior can encompass “a continuum of information practices” (McKenzie, 2003, p. 25), ranging from “less-directed ‘information gathering’” to “more-directed ‘information seeking’” (p. 19, quoting Krikelas, 1983).

Information practices

Within information behavior scholarship, *information practice* has been conceptualized as a critical, social constructionist approach to information-seeking research (Savolainen, 2007), and has emerged as “a shaping paradigm for information behavior research” (Bates, 2017, p. 2081). Information practices have been defined as “ways that people locate, use, share, and evaluate information” (Lingel and boyd, 2013, p. 981; Newell, Gomez, Guajardo, 2016, p. 177), encompassing the activities of information seeking, information use, and information sharing (Savolainen, 2008; Tian et al., 2021) as well as “practices of information seeking, retrieval, filtering, and synthesis” (Talja & Hansen, 2005, p. 113). Dourish & Anderson (2006, p. 335) likewise defined information practices as “the ways in which we collectively share, withhold, and manage information; how we interpret such acts of sharing, withholding, and managing; and how we strategically deploy them as part and parcel of everyday social interaction.” Information practices include active information seeking as well as less directed “everyday life information seeking” (McKenzie 2003).

Within the information practices literature, *information tools* are viewed as sociotechnical constructs and are defined as “artefacts for creating, recording, organizing, storing, manipulating, and sharing information” (Nathan, 2012, p. 2256, citing Kling, Rosenbaum & Sawyer, 2005). Information systems, on the other hand, is a broader label for “the complicated array of social and cultural practices and the political and technical infrastructures required for information tools to ‘work’” (Nathan, 2012, p. 2256, citing Bijker, 1995; Latour, 1992; Suchman, 1987). Information practices can emerge from “our interactions with information tools,” by becoming “identifiable, discernable patterns of behavior,” and these tools and practices are “heavily interdependent” (Nathan, 2012, p. 2256).

Information practices are rooted in a variety of social practices, including work, and they “draw on the social practice of a community of practitioners, a sociotechnical infrastructure, and a common language” (Savolainen, 2007, p. 122; Talja & Hansen, 2005, p. 128). In work and everyday life, people routinely engage in information practices when they seek, receive, interpret, analyze, index, or organize information (Talja & Hansen, 2005, p. 125; Savolainen, 2007, pp. 122–123). Indeed, information practices involve the use of information in the “mundane, day-to-day practices” of people (Savolainen, 2007, p. 124).

Informatic practice

The related concept of “informatic practice” has also developed within the discipline of science and technology studies and is concerned, in part, with understanding “how information is enacted, or brought into being during the course of practice” (Mccarthy, 2017, p. 26). This framing is consistent with Dourish and Mazmanian’s (2013, p. 3) materialist approach to information, one that recognizes “the information that undergirds the ‘information society’” as represented in material objects and only ever “encountered . . . in material form, whether that is

marks on a page or magnetized segments of a spinning disk” (see also Tian et al., 2021, p. 1356). French (2014, p. 227) eloquently defined *informatic practice* as,

the sum of everyday activity, by assemblages of humans and non-humans, that makes information a material reality in quotidian life—it describes the work of scrawling a pencil across paper, the function of booting up a laptop, the artful composition of characters in a free-text field, the writing of data to discs, the transit of signals through a network, and a great deal of other everyday practices that cause information to manifest.

This framing of information (or “informatic”) practice provides a useful lens for thinking about information behavior beyond individual, human activities. For one thing, traditional information behavior research has often referred to the field as *human* information behavior, analyzing it “as an individual phenomenon” (Brown & Veinot, 2021, p. 67, citing Ellis & Haugan, 1997). This focus on the behaviors of *individuals* presents a hurdle to conceptualizing *some* surveillance practices as fitting squarely within an information practices research agenda. These may be either information practices carried out by machines—whether machine learning, artificial intelligence, or other forms of algorithmic processing—or those carried out by organizations. However, algorithmic processing, even without a “human in the loop” or when machine learning moves beyond intended boundaries, still owes its origins to human design and intervention. And organizations are simply groups of individuals, enacting *institutional* surveillance or information practices. French (2014, p. 240), argues that “studies of informatic practice must attend not simply to the work of humans, but also to the work of non-humans,” simply because,

the informatic practice of non-human actants can play a key role in the composition of the IT-mediated gaze. Accordingly, studies of informatic practice must forge into conceptual and actual spaces that other paradigms for studying IT have left largely unexplored. This includes theorizing the informatic practice of transacting machines (think of algorithmically determined decisions), the durational characteristics of data, and the materially manifest evolution of information itself. Only by examining informatic practice in all aspects of the “surveillant assemblage” will it be possible to more fully understand the range of mutations that might augment—or blur—the IT-mediated gaze.

Institutional information practices

Some information scholars have recognized or described *institutional* information practices. For example, Vannini et al. (2020) examined the information practices of humanitarian organizations working with undocumented immigrants. Wang and Buckland (2016, p. 4) described how “repeated behavior evolves over time into acceptable cultural and institutional practices which shape behavior within the society in which they operate,” organizing and classifying institutions into four categories based on the institutional document-related practices of “codification, abstraction, and diffusion.” Accordingly, they argued that these “modes of social information

processing . . . make the institutional arrangements, and institutions in turn shape and consolidate the information processing behavior and information environment” (p. 4). Elsewhere, Belarde-Lewis, Duarte, and Krebs (2010) have referred to “Indigenous Information Ecologies” as institutional information practices that manifest as “Indigenous praxis” informed by the implementation of “Indigenous solutions to information challenges” by tribal institutions. Maurel and Chebbi (2013) viewed organizational information governance and records management as institutional information practices. Through this lens, institutional information practices are forms of “governance that establishes itself on a day-to-day basis in the management of records generated through business processes” (p. 16). Maurel and Chebbi (2013, p. 16) also viewed employees as enacting these “individual and collective information practices” as part of their daily work, including “creating or capturing, organizing, indexing, retrieving, and assessing the values of records, maintaining, disposing of and preserving records, and controlling their access.”

Conceptualizing surveillance as information practice

Information behavior research has addressed questions of surveillance, but this scholarship rarely conceptualizes surveillance as an information practice. For example, Floegel & Costello (2022) note how surveillance tactics and technologies, such as the use of facial recognition software, *inform* people’s information practices, but they do not explicitly frame surveillance itself as such a practice. Other studies also recognize how surveillance can *inform* or *influence* information practices. For example, Newell, Vannini, and Gomez (2020) investigated the how information politics informed the “liminal information practices” of migrant-aid workers serving undocumented/irregular migrants in the US-Mexico borderlands—including surveillance practices and “decisions about what information to collect and what information to share (and with whom)” (p. 210). Caidi & MacDonald (2008) explored of how Muslim-Canadians’ information practices were impacted following the 9/11 terrorist attacks, finding that “being a member of a community that they perceive to be under attack or under surveillance . . . results in their heightened awareness about information and media consumption” (p. 368). Buchanan and Husain (2022) addressed “the social media related information behaviours of Muslim women within Arab society” (p. 817) and how those were affected by concerns about social surveillance, particularly intimate surveillance by male partners and family members (pp. 827–830), and gave rise to “self-protective information behaviours” (p. 832). Montesi (2021) focused on how peoples’ information behaviors were the *object* of online surveillance during the COVID-19 pandemic (see also Cleverley, Cousins & Burnett, 2021).

Potnis & Halladay (2022, p. 1625) framed “information control as a practice that is constituted through a constellation of information-related choices and activities,” and they explicitly recognized surveillance as a *mechanism* of information control, at least at the governmental level (p. 1624). They also linked surveillance to information practices involving informational gatekeeping, including the practices of “individuals, communities, organizations, and government agencies [who] act as gatekeepers when they control information” (Potnis &

Halladay, 2022, p. 1622, citing Adkins & Sandy, 2020; Agada, 1999; Liu & Zhao, 2020). Wu (2014, p. 150) refers to public-sector information practices as including “electronic surveillance and data collection.” Tian et al. (2021) investigated how “federal and local agents seek, share and use information for immigration enforcement” (p. 1355), categorizing information practices as either “passive information sharing [or] proactive information sharing” (p. 1358), practices that would easily fall within the definition of surveillance. Rubel & Jones (2016, p. 149) addressed the deployment of learning analytics within institutions of higher education as a “project of surveillance in the service of higher education learning outcomes” and as an example of “surveillance capitalism” (Rubel & Jones, 2020). And O’Brien, Freund, and Westman (2014) conceptualized “surveillance” as a category of *motivations* for information seeking behaviors.

Thus, whether surveillance is carried out using sophisticated information technologies or not, it clearly fits within the umbrella of information practice and information behavior. Indeed, the fact that “surveillance encompasses efforts to describe, classify, store, and recall information about people, their past behaviors and future intentions, and other phenomena bearing on social relations . . . [as well as] human efforts to organize techniques of prediction and to exercise social control” (Lauer, 2021, p. 790), makes surveillance a ripe target for information-based inquiry. Surveillance is, at its core, about the collection, analysis, sharing of data about people (Lyon, Haggerty & Ball, 2012, p. 2; Monahan and Murakami Wood, 2018: xx). Surveillance also highlights how practices of classification are “inseparable from power” (Lauer, 2021, p. 793). Information behavior scholars have also not paid enough attention to issues of power and how power relations impact information practices (Savolainen, 2020; but see Heizmann & Olsson, 2015; Mutsheva, 2007, 2010; Olsson, 2007; Olsson & Heizmann, 2015). Likewise, information behavior research examining issues of information control as information practice is rare (Potnis & Halladay, 2022, p. 1625). The fact that surveillance is all about power—centrally focused on the collection, analysis, use, and control of information to regulate human behavior—suggests that a focus on surveillance as information practice could also help fill this void within the literature. Likewise, surveillance studies and technology regulation scholarship that attends to how surveillance and other information technologies regulate human behavior would provide a rich source of empirical and conceptual foundations for information behavior scholarship.

Studying surveillance as information practice

If we view surveillance as a form of information practice with important social implications, often enacted through or resisted by the use of ICTs, surveillance itself becomes a prime target for information behavior and social informatics research. My argument here, in many ways, mirrors the argument by French (2014, p. 228) that the field of surveillance studies ought to pay greater attention to “informatic practice” (although French was drawing from STS and not information science). Indeed, these fields ought to speak to each other more frequently, and in greater detail. Information behavior clearly encompasses a broader range of information-related activity than those we might refer to as surveillance, but surveillance and surveillance practices fit easily within the information-behavior umbrella. Wilson’s (2000, p. 49) claim, also noted

earlier, that information behavior encapsulates “the totality of human behavior in relation to sources and channels, including both active and passive information seeking, and information use,” is evidence of the breadth of the concept. Savolainen (2007, p. 115) notes that this definition “would encompass face-to-face communication with others as well as the passive reception of information *without any intention to act on the information given*” (emphasis added), including forms of “information-seeking behavior, information-searching behavior, and information-use behavior.” Thus, information behavior would capture forms of *non-purposeful* observation covered by Marx’s (2012, 2015b) broader definition of surveillance, going beyond the more mainstream requirement that surveillance be enacted for some regulatory purpose.

Indeed, surveillance studies scholarship makes clear that “‘information societies’ are necessarily ‘surveillance societies’” (Monahan and Murakami Wood, 2018: xxiv). Surveillance focuses on “data collection, analysis, and intervention” (Monahan and Murakami Wood, 2018: xxiv), and supervision is essentially about “the management of information on citizens” (Weller, 2012, pp. 59) for regulatory or governance purposes. Likewise, Carbone’s (2020, p. 753) definition of a *record* as “a trace of living behavior left behind that someone deems important to save in a manner that stabilizes its structure and content so that the record remains reliable, authentic, and accessible over time and across space” also clearly implicates surveillance practices—i.e., extracting (saving) and using such records. As Carbone (2020, p. 753) argues, these “records bear witness to, serve as evidence and memory of, and reflect in some fashion the original activity and contexts that gave rise to them.” Because surveillance studies is also attuned so tightly to issues of regulation and governance, framing surveillance as information practice could also attend to the call within critical information studies to focus our research on “the ways in which culture and information are regulated, and thus the relationships among regulation to commerce, creativity, science, technology, politics, and other human affairs” (Vaidhyathan, 2006, p. 293, quoted in Burns et al., 2018, p. 658).

As Jaeger and Burnett (2010, p. 7) noted, “many other fields tend to ignore the links between their theoretical work and issues related to information, resulting in the centrality of information to their studies being insufficiently recognized. . . . When information is studied in other fields, far too often it is conflated with ICTs, as if the issues of content and method of transmission were interchangeable.” My argument here is that the realistic information sciences have also paid less attention to the important information-related concept of surveillance and its role and impact in society and culture. Understanding surveillance is a critical part of understanding our Information Worlds, wherein we “analyze and understand the myriad interactions between information, information behavior, and the many different social contexts within which they exist” (Jaeger & Burnett, 2010, p. 7; see also Fisher, 2018, p. 82). Indeed, understanding Information Worlds is about exploring “information behavior in terms of all of the intertwined levels of society—the small worlds of everyday life, the mediating social institutions, the concerns of an entire society, and the political and economic forces that shape society—which are constantly shaping, interacting, and reshaping one another” (Jaeger & Burnett, 2010, p. 8).

Studying surveillance from an information practices perspective would help achieve these aims and could be an especially interesting agenda for doing so due to the myriad actors engaged in surveillance practices, including contexts in which different parties simultaneously surveil each other, and the ways in which surveillance suggests a focus on power, regulation, and governance.

Conclusion

Academic scholarship is often bounded by field, taking place within disciplinary silos. Indeed, there is “a long-recognized issue that different disciplines of social science do not communicate well” (Jaeger & Burnett, 2010, p. 7). Even within multidisciplinary, interdisciplinary, or transdisciplinary fields such as information science and surveillance studies, connections between ideas, theories, and methods from other disciplines are often still wanting. Although surveillance, as an empirical phenomenon and social practice, is inextricably tied to concepts of information and data, it has not been a regular subject of research within several domains of research within information science, particularly within social informatics and information behavior research. Conversely, surveillance studies scholarship might also benefit from more sustained and thoughtful engagement with theories, concepts, and approaches from the information sciences. For example, regulating surveillance practices is, in essence, the regulation of information practices. Furthermore, because surveillance is centrally concerned with social control, it is not only an object of (potential) regulation but is also a form of (techno-)regulation itself; as a combination of practices—and, frequently, the use of technology—designed to purposively alter human behavior.

Framing surveillance as a particular sort of information problem can provide space for new avenues of research within the information sciences and, as a consequence, the application of theories and methods from the information field to surveillance problems can also enrich the understanding of surveillance within the discipline of surveillance studies. Framing surveillance as *information practice* and conceptualizing surveillance technologies as socially and contextually situated *information tools* makes surveillance a ripe object for study within information disciplines that focus their attention on the social aspects of information and information technologies in society, including social informatics and information behavior. In taking up this charge, information researchers could begin to map out model approaches for new research, identify other theories that would enrich this cross-disciplinary agenda, or identify how prior research would have been made richer or led to different conclusions by attending more directly to the informational aspects of surveillance. For example, applying information theories to various types and forms of surveillance identified in the surveillance studies literature such as, for example, sousveillance, counter-surveillance, dataveillance, and to infrastructural conditions of surveillance in society, may well lead to new perspectives about what surveillance *is*, whether it is *good or bad* (and in which cases either might be true), and how we can more critically *recognize* and *interrogate* surveillance as it evolves and continues to permeate our lives and the broader societies in which we live.

References

- Abokhodair, N., & Vieweg, S. (2016). Privacy & Social Media in the Context of the Arab Gulf. In *Proceedings of the 2016 ACM Conference on Designing Interactive Systems, 2016*, 672–683.
- Abokhodair, N., Hodges, A., & Vieweg, S. (2017). Photo Sharing in the Arab Gulf: Expressing the Collective and Autonomous Selves. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing, 2017*, 696–711.
- Ackerman, M., Darrell, T., & Weitzner, D. J. (2001). Privacy in Context. *Human–Computer Interaction, 16*(2-4), 167–176.
- Adkins, D., & Sandy, H. (2020). Information Behavior and ICT Use of Latina Immigrants to the U.S. Midwest. *Information Processing & Management, 57*(3), 1–14.
- Agada, J. (1999). Inner-City Gatekeepers: An Exploratory Survey of their Information Use Environment. *Journal of the American Society for Information Science, 50*(1), 74–85.
- Agre, P. E. (1994). Surveillance and Capture: Two Models of Privacy. *The Information Society, 10*(2), 101–127.
- Aspray, W. (2011). The History of Information Science and Other Traditional Information Domains: Models for Future Research. *Libraries & the Cultural Record, 46*(2), 230–248.
- Austin, L. (2022). From Privacy to Social Legibility. *Surveillance & Society, 20*(3), 302–305.
- Austin, L. M. (2015). Surveillance and the Rule of Law. *Surveillance & Society, 13*(2), 295–299.
- Baldwin, N. S., & Rice, R. E. (1997). Information-Seeking Behavior of Securities Analysts: Individual and Institutional Influences, Information Sources and Channels, and Outcomes. *Journal of the American Society for Information Science, 48*(8), 674–693.
- Ball, K., Lyon, D., Murakami Wood, D., Norris, C., & Raab, C. (2006). Introducing the Surveillance Society. In D. Murakami Wood (Ed.), *A Report on the Surveillance Society* (pp. 1–10). Surveillance Studies Network.
- Barriage, S., & Hicks, A. (2020). Mobile Apps for Visual Research: Affordances and Challenges for Participant-Generated Photography. *Library & Information Science Research, 42*(3), art. 101033. <https://doi.org/10.1016/j.lisr.2020.101033>.
- Bates, M. J. (1999). The Invisible Substrate of Information Science. *Journal of the American Society for Information Science, 50*(12), 1043–1050.
- Bates, M. J. (2010). Information Behavior. In M. J. Bates & M. N. Maack (Eds.), *Encyclopedia of Library and Information Sciences* (3rd edn., pp. 2381–2391). CRC Press.

- Bates, M. J. (2017). Information Behavior. In J. D. McDonald & M. Levine-Clark (Eds.), *Encyclopedia of Library and Information Sciences* (4th edn., pp 2074 – 2085).
- Belarde-Lewis, M., Duarte, M. E., & Krebs, A. (2010). Native Systems of Knowledge: Indigenous Methodologies in Information Science. In *Abstracts of the Proceedings of the 2010 iConference 2010*, 345–346. <https://hdl.handle.net/2142/14974>.
- Benjamin, R. (2019b). *Race after Technology: Abolitionist Tools for the New Jim Code* (1st ed.). Polity.
- Benjamin, R. (Ed.). (2019a). *Captivating Technology: Race, Carceral Technoscience, and Liberatory Imagination in Everyday Life*. Duke University Press.
- Bennett Moses, L. (2013). How to Think about Law, Regulation and Technology: Problems with “Technology” as a Regulatory Target. *Law, Innovation and Technology*, 5(1), 1–20.
- Bigo, D. (2006). Security, Exception, Ban and Surveillance. In D. Lyon (Ed.), *Theorizing Surveillance: The Panopticon and Beyond* (pp. 46–68). Routledge.
- Bigo, D. (2008). Globalized (in)Security: The Field and the Ban-Opticon. In D. Bigo & A. Tsoukala (Eds.), *Terror, Insecurity and Liberty: Illiberal Practices of Liberal Regimes after 9/11* (pp. 5 – 49). Routledge.
- Bijker, W. E. (1995). *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change*. MIT Press
- Black, A. (1998). Information and Modernity: The History of Information and the Eclipse of Library History. *Library History*, 14, 39–45.
- Black, J. (2002). Critical Reflections on Regulation. *Australian Journal of Legal Philosophy*, 27, 1–35.
- Black, J. (2014). *Learning from Regulatory Disasters*. LSE Law, Society & Economy Working Paper 24/2014. Available at https://eprints.lse.ac.uk/60569/1/WPS2014-24_Black.pdf.
- Blanchette, J-F., & Johnson, D. G. (2002) Data Retention and the Panoptic Society: The Social Benefits of Forgetfulness. *The Information Society*, 18(1), 33-45.
- Boisot, M. (1995). *Information Space: A Framework for Learning in Organizations, Institutions and Culture*. Routledge.
- Boisot, M., Child, J., & Redding, G. (2011). Working the System: Toward a Theory of Cultural and Institutional Competence. *International Studies of Management and Organization*, 41(1), 62–95.
- Borko, H. (1968). Information Science: What is It? *American Documentation*, 19(1), 3–5.
- Bowker, G. (2005). *Memory Practices in the Sciences*. MIT Press.

- Brandtzæg, P. B., Lüders, M., & Skjetne, J. H. (2010). Too Many Facebook “Friends”? Content Sharing and Sociability Versus the Need for Privacy in Social Network Sites. *International Journal of Human–Computer Interaction*, 26(11–12), 1006–1030.
- Briggs, P., & Thomas, L. (2015). An Inclusive, Value Sensitive Design Perspective on Future Identity Technologies. *ACM Transactions on Computer-Human Interaction*, 22(5), art. 23, 1–28.
- Brown, L. K., & Veinot, T. C. (2021). Information Behavior and Social Control: Toward an Understanding of Conflictual Information Behavior in Families Managing Chronic Illness. *Journal of the Association for Information Science & Technology*, 72(1), 66–82.
- Brownsword, R., & Goodwin, M. (2012). *Law and the Technologies of the Twenty-First Century: Text and Materials*. Cambridge University Press.
- Buchanan, S., & Husain, Z. (2022). The Social Media Use of Muslim Women in the Arabian Peninsula: Insights into Self-Protective Information Behaviors. *Journal of Documentation*, 78(4), 817–834.
- Buckland, M. (1991). Information as Thing. *Journal of the American Society for Information Science*, 42(5), 351–360.
- Buckland, M. (2017). *Information and Society*. The MIT Press.
- Burns, R., Hawkins, B., Hoffmann, A. L., Iliadis, A., & Thatcher, J. (2018). Transdisciplinary Approaches to Critical Data Studies. In *Proceedings of the Association for Information Science and Technology*, 55(1), 657–660.
- Bygrave, L. A. (2015). Information Concepts in Law: Generic Dreams and Definitional Daylight. *Oxford Journal of Legal Studies* 35(1), 91–120.
- Caidi, N., & MacDonald, S. (2008). Information Practices of Canadian Muslims post 9/11. *Government Information Quarterly*, 25(3), 348–378.
- Caidi, N., & Ross, A. (2005). Information Rights and National Security. *Government Information Quarterly*, 22(4), 663–684.
- Mosquito, Bird and Human Surveillance of West Nile and Usutu Viruses in Emilia-Romagna Region (Italy) in 2010
- Calzolari, M., Gaibani, P., Bellini, R., Defilippo, F., Pierro, A., Albieri, A., Maioli, G., Luppi, A., Rossini, G., Balzani, A., Tamba, M., Galletti, G., Gelati, A., Carrieri, M., Poglayen, G., Cavrini, F., Natalini, S., Dottori, M., Sambri, V., Angelini, P., & Bonilauri, P. (2012). Mosquito, Bird and Human Surveillance of West Nile and Usutu Viruses in Emilia-Romagna Region (Italy) in 2010. *PLoS ONE*, 7(5), art. e38058, 1–12.

- Capurro, R., & Hjørland, B. (2003). The Concept of Information. *Annual Review of Information Science and Technology*, 37(1), 343–411.
- Carbone, K. (2020). A Collection and its Many Relations and Contexts: Constructing an Object Biography of the Police Historical/Archival Investigative Files. *Journal of Documentation*, 76(3), 753–767.
- Carter, D., Acker, A., & Sholler, D. (2021). Investigative Approaches to Researching Information Technology Companies. *Journal of the Association for Information Science and Technology*, 72(6), 655–666.
- Castells, M. (1997). An Introduction to the Information Age. *City*, 2(7), 6–16.
- Chhotray, V., & Stoker, G. (2009). Governance in Public Administration and Political Science. In *Governance Theory and Practice: A Cross-Disciplinary Approach* (pp. 16–52). Palgrave Macmillan.
- Cleverley, P. H., Cousins, F., & Burnett, S. (2021). Impact of COVID-19 on Search in an Organisation. *Journal of Information Science*. Advance online publication. <https://doi.org/10.1177/0165551521989531>.
- Czeskis, A., Dermendjieva, I., Yapit, H., Borning, A., Friedman, B., Gill, B., & Kohno, T. (2010). Parenting from the Pocket: Value Tensions and Technical Directions for Secure and Private Parent-Teen Mobile Safety. In *Proceedings of the Sixth Symposium on Usable Privacy and Security, 2010*, 1–15.
- Dechesne, F., Warnier, M., & van den Hoven, J. (2013). Ethical Requirements for Reconfigurable Sensor Technology: A Challenge for Value Sensitive Design. *Ethics and Information Technology*, 15, 173–181.
- Dewey, S. H., (2020). Foucault’s Toolbox: Use of Foucault’s Writings in LIS Journal Literature, 1990–2016. *Journal of Documentation*, 76(3), 689–707.
- Doty, P. (2015). U.S. Homeland Security and Risk Assessment. *Government Information Quarterly*, 32(3), 342–352.
- Dourish, P., & Anderson, K. (2006). Collective Information Practice: Exploring Privacy and Security as Social and Cultural Phenomena. *Human-Computer Interaction*, 21(3), 319–342.
- Dourish, P., & Mazmanian, M. (2013). Media as Material: Information Representations as Material Foundations for Organizational Practice. In P. R. Carlile, D. Nicolini, A. Langley & H. Tsoukas (Eds.), *How Matter Matters* (pp. 92–118). Oxford University Press.

- Ellis, D., & Haugan, M. (1997). Modelling the Information Seeking Patterns of Engineers and Research Scientists in an Industrial Environment. *Journal of Documentation*, 53(4), 384–403.
- Feinman, S., Mick, C. K., Saalberg, J., & Thompson, C. W. N. (1976). A Conceptual Framework for Information Flow Studies. In S. K. Martin (Ed.), *Proceedings of the 39th Annual Meeting of the American Society for Information Science* (pp. 1–10). American Society for Information Science.
- Fichman, P., & Rosenbaum, H. (2014). Introduction. In P. Fichman & H. Rosenbaum (Eds.), *Social Informatics: Past, Present and Future* (pp. x–xvii). Cambridge Scholars Publishing.
- Fisher, K. E. (2018). Information Worlds of Refugees. In C. F. Maitland (Ed.), *Digital Lifeline?: ICTs for Refugees and Displaced Persons* (pp. 79–112). MIT Press.
- Floegel, D. (2021). Labor, Classification and Productions of Culture on Netflix. *Journal of Documentation*, 77(1), 209–228.
- Floegel, D., & Costello, K. L. (2022). Methods for a Feminist Technoscience of Information Practice: Design Justice and Speculative Futurities. *Journal of the Association for Information Science and Technology*, 73(4), 625–634.
- Foucault, M. 1977. *Discipline and Punish: The Birth of the Prison*. Vintage.
- Fox, G., van der Werff, L., Rosati, P., Endo, P. T., & Lynn, T. (2022). Examining the Determinants of Acceptance and Use of Mobile Contact Tracing Applications in Brazil: An Extended Privacy Calculus Perspective. *Journal of the Association for Information Science and Technology*, 73(7), 944–967.
- French, M. (2014). Gaps in the Gaze: Informatic Practice and the Work of Public Health Surveillance. *Surveillance & Society*, 12(2), 226–243.
- Friedman, B., & Hendry, D. G. (2019). *Value Sensitive Design: Shaping Technology with Moral Imagination*. The MIT Press.
- Friedman, B., Höök, K., Gill, B., Eidmar, L., Prien, C. S., & Severson, R. (2008). Personlig Integritet: A Comparative Study of Perceptions of Privacy in Public Places in Sweden and the United States. In *Proceedings of the 5th Nordic Conference on Human-Computer Interaction: Building Bridges, 2008*, 142–151.
- Friedman, B., Kahn, P. H., Borning, A. (2002). Value Sensitive Design: Theory and Methods. Dept. Of Computer Science & Engineering, University of Washington, Technical Report 02-12-01 (December 2002).

- Friedman, B., Kahn, P. H., Borning, A. (2008). Value Sensitive Design and Information Systems. In K. E. Himma & H. T. Tavani (Eds.), *The Handbook of Information and Computer Ethics* (pp. 69–101). Wiley.
- Friedman, B., Kahn, P. H., Hagman, J., Severson, R. L., & Gill, B. (2006). The Watcher and the Watched: Social Judgments about Privacy in a Public Place. In S. Harrison (Ed.), *Media Space 20 + Years of Mediated Life* (pp. 145–176). Springer.
- Gallagher, C., McMenemy, D., & Poulter, A. (2015). Management of Acceptable Use of Computing Facilities in the Public Library: Avoiding a Panoptic Gaze? *Journal of Documentation*, 71(3), 572–590.
- Gellert, R. (2020). Comparing Definitions of Data and Information in Data Protection Law and Machine Learning: A Useful Way Forward to Meaningfully Regulate Algorithms? *Regulation & Governance*, 16(1), 156–176.
- Gilliom, J. (2001). *Overseers of the Poor: Surveillance, Resistance, and the Limits of Privacy*. University of Chicago Press.
- Gilliom, J., & Monahan, T. (2013). *SuperVision: An Introduction to the Surveillance Society*. University of Chicago Press.
- Gitelman, L., & Jackson, V. (2013). Introduction. In L. Gitelman (Ed.), *“Raw Data” is an Oxymoron* (pp. 1–14). MIT Press.
- Gorham-Oscilowski, U., & Jaeger, P. T. (2008). National Security Letters, the USA PATRIOT Act, and the Constitution: The Tensions between National Security and Civil Rights. *Government Information Quarterly*, 25(4), 625–644.
- Haggerty, K. D., & Ericson, R. V. (2006). The New Politics of Surveillance and Visibility. In K. D. Haggerty & R. V. Ericson (Eds.), *The New Politics of Surveillance and Visibility* (pp. 3–33). University of Toronto Press.
- Haggerty, K. D., & Trottier, D. (2015). Surveillance and/of Nature: Monitoring Beyond the Human. *Society & Animals*, 23(4), 400–420.
- Hamilton, A. M. (2020). A Genealogy of Critical Race and Digital Studies: Past, Present, and Future. *Sociology of Race and Ethnicity*, 6(3), 292–301.
- Heizmann, H., & Olsson, M. R. (2015). Power Matters: The Importance of Foucault’s Power/Knowledge as a Conceptual Lens in KM Research and Practice. *Journal of Knowledge Management*, 19(4), 756–769.
- Holland, G. A. (2008). Information Science: An Interdisciplinary Effort? *Journal of Documentation*, 64(1), 7–23.

- Introna, L.D. (1999). Context, Power, Bodies and Information: Exploring the ‘Entangled’ Contexts of Information. In T. D. Wilson & D. K. Allen (Eds), *Exploring the Contexts of Information Behaviour. Proceedings of the 2nd International Conference on Research in Information Needs, Seeking and Use in Different Contexts* (pp. 1–9). Graham Taylor.
- Jaeger, P. T., Bertot, J. C., & McClure, C. R. (2003). The impact of the USA Patriot Act on collection and analysis of personal information under the Foreign Intelligence Surveillance Act. *Government Information Quarterly*, 20(3), 295–314.
- Jaeger, P. T., McClure, C. R., Bertot, J. C., & Snead, J. T. (2004). The USA PATRIOT Act, the Foreign Intelligence Surveillance Act, and Information Policy Research in Libraries: Issues, Impacts, and Questions for Library Researchers. *Library Quarterly* 74.
- Jensen, H. E. (1950). Editorial Note. In H. Becker (Ed.), *Through Values to Social Interpretation*. Duke University Press.
- Jones, K. M. L., Asher, A., Goben, A., Perry, M. R., Salo, D., Briney, K. A., & Robertshaw, M. B. (2020). “We’re Being Tracked at All Times”: Student Perspectives of their Privacy in Relation to Learning Analytics in Higher Education. *Journal of the Association for Information Science and Technology*, 71(9), 1044–1059.
- Jones, K. M. L., Rubel, A., & LeClere, E. (2020). A Matter of Trust: Higher Education Institutions as Information Fiduciaries in an Age of Educational Datamining and Learning Analytics. *Journal of the Association for Information Science and Technology*, 71(10), 1227–1241.
- Kashef, M., Visvizi, A., & Troisi, O. (2021). Smart City as a Smart Service System: Human-Computer Interaction and Smart City Surveillance Systems. *Computers in Human Behavior*, 124, art. 106923, 1–14.
- Katell, M. A. (2021). An Equity View of Public Reason: Privacy and Surveillance Policy as Social Justice. In A.S. Duff (Ed.), *Research Handbook on Information Policy* (174–188). Edward Elgar.
- Keeble, L., & Loader, B. D. (2010). Community Informatics: Themes and Issues. In L. Keeble & B.D. Loader (Eds.), *Community Informatics: Shaping Computer-Mediated Social Relations* (pp. 1–10). Routledge.
- Kitchin, R. (2014). *The Data Revolution: Big Data, Open Data, Data Infrastructures & Their Consequences*. SAGE.
- Kitchin, R. (2022). *The Data Revolution: A Critical Analysis of Big Data, Open Data & Data Infrastructures* (2nd edn.). SAGE.
- Klang, M. (2006). *Disruptive Technology: Effects of Technology Regulation on Democracy*. Doctoral thesis, Goteborg University.

- Kling, R. (1998). A Brief Introduction to Social Informatics. *Canadian Journal of Information and Library Science – Revue Canadienne des Sciences de l'Information et de Bibliothéconomie*, 23(1-2), 50–85.
- Kling, R. (1999). What is Social Informatics and Why Does it Matter? *D-Lib Magazine*, 5(1). <http://www.dlib.org/dlib/january99/kling/01kling.html>.
- Kling, R. (2003). Social Informatics. In M. A. Drake (Ed.), *Encyclopedia of Library and Information Science: Pub-Zoo* (2nd ed., 2656–2661). Marcel Dekker.
- Kling, R., Rosenbaum, H., & Sawyer, S. (2005). *Understanding and Communicating Social Informatics: A Framework for Studying and Teaching the Human Contexts of Information and Communication Technologies*. Information Today.
- Koops, B-J. (2008). Criteria for Normative Technology: An Essay on the Acceptability of “Code as Law” in Light of Democratic and Constitutional Values. In R. Brownsword & K. Yeung (Eds.), *Regulating Technologies* (pp. 157–174). Oxford University Press.
- Koops, B-J. (2010). Ten Dimensions of Technology Regulation – Finding Your Bearings in the Research Space of an Emerging Discipline. In M. Goodwin, B-J. Koops & R. Leenes (Eds.), *Dimensions of Technology Regulation* (pp. 309–326). Wolf Legal Publishers.
- Koops, B-J. (2011). The (In)Flexibility of Techno-Regulation and the Case of Purpose-Binding. *Legisprudence*, 5(2), 171–194.
- Kosciejew, M. R. H. (2015). Disciplinary Documentation in Apartheid South Africa: A Conceptual Framework of Documents, Associated Practices, and their Effects. *Journal of Documentation*, 71(1), 96–115.
- Jaeger, P. T., & Burnett, G. (2010). *Information Worlds: Behavior, Technology, and Social Context in the Age of the Internet*. Routledge.
- Krikelas, J. (1983). Information-Seeking Behavior: Patterns and Concepts. *Drexel Library Quarterly*, 19(6), 5–20.
- Kroes, P. (1998). Philosophy of Technology. In E. Graig (Ed.), *Routledge Encyclopedia of Philosophy* (pp. 284–288). Routledge.
- Kumar, V., & Lund, B. (2022). A Comparison of Information Behavior Studies in United States and India: Number of Publications, Authorship, Journals, Theories, Research Populations, and Methods. *Journal of Librarianship and Information Science*. Advance online publication. <https://doi.org/10.1177/09610006211069672>
- Kvasny, L., & Payton, F. C. (2018). Managing Hypervisibility in the HIV Prevention Information-Seeking Practices of Black Female College Students. *Journal of the Association for Information Science & Technology*, 69(6), 798–806.

- Lamb, R., & Sawyer, S. (2005). On Extending Social Informatics from a Rich Legacy of Networks and Conceptual Resources. *Information Technology & People*, 18(1), 9–20.
- Latour, B. (1992). Where are the Missing Masses? The Sociology of a Few Mundane Artifacts. In W. E. Bijker & J. Law (Eds.), *Shaping Technology/Building Society? Studies in Sociotechnical Change* (pp. 225–258). MIT Press.
- Lau, J., Zimmerman, B., & Schaub, F. (2018). Alexa, Are You Listening? Privacy Perceptions, Concerns and Privacy-seeking Behaviors with Smart Speakers. In *Proceedings of the ACM on Human-Computer Interaction – CSCW*, 2, art. 102, 1–31.
- Lauer, J. (2021). Surveilling. In A. Blair, P. Duguid, A. Goeing & A. Grafton (Eds.), *Information: A Historical Companion* (pp. 790–795). Princeton University Press.
- Lee, A. (2015). Integrating Subjects: Linking Surveillance Experiences to Social Patterns Using Ethno-Epistemic Assemblages. *Surveillance & Society* 13(3/4), 385–399.
- Leenes, R. (2011). Framing Techno-Regulation: An Exploration of State and Non-state Regulation by Technology. *Legisprudence*, 5(2), 143–169.
- Lingel, J., & boyd, d. (2013). “Keep it Secret, Keep it Safe”: Information Poverty, Information Norms, and Stigma. *Journal of the American Society for Information Science*, 64(5), 981–991.
- Liu, J., & Zhao, J. (2020). More than Plain Text: Censorship Deletion in the Chinese Social Media. *Journal of the Association for Information Science and Technology*, 72(1), 18–31.
- Lyon, D. (2003). Surveillance as Social Sorting: Computer Codes and Mobile Bodies. In D. Lyon (Ed.), *Surveillance as Social Sorting: Privacy, Risk, and Digital Discrimination* (pp. 13–30). Routledge.
- Lyon, D. (2007). *Surveillance Studies: An Overview*. Polity.
- Lyon, D. (2022). Surveillance. *Internet Policy Review*, 11(4), 1–18.
- Lyon, D., Haggerty, K. D., & Ball, K. (2012). Introducing Surveillance Studies. In K. Ball, K. D. Haggerty & D. Lyon (Eds.), *Routledge Handbook of Surveillance Studies* (pp. 1–11). Routledge.
- Mai, J-E. (2011). The Modernity of Classification. *Journal of Documentation*, 67(4), 710–730.
- Mai, J-E. (2016a). Three Models of Privacy. New Perspectives on Informational Privacy. *Nordicom Review*, 37(s1), 171–175.
- Mai, J-E. (2016b). Big Data Privacy: The Datafication of Personal Information. *The Information Society*, 32(3), 192–199.

- Mai, J-E. (2016c). Personal Information as Communicative Acts. *Ethics and Information Technology*, 18, 51–57.
- Mann, M., Mitchell, P., Foth, M., & Anastasiu, I. (2020). #BlockSidewalk to Barcelona: Technological Sovereignty and the Social License to Operate Smart Cities. *Journal of the Association for Information Science & Technology*, 71(9), 1103–1115.
- Marx, G .T. (2012). Preface. In K. Ball, K. D. Haggerty & D. Lyon (Eds.), *Routledge Handbook of Surveillance Studies* (pp. xx-xxx). Routledge.
- Marx, G. T. (2015a). Coming to Terms: The Kaleidoscope of Privacy and Surveillance. In Beate Roessler and Dorota Mokrosinska (Eds.), *Social Dimensions of Privacy: Interdisciplinary Perspectives* (pp. 32–49). Cambridge University Press.
- Marx, G. T. (2015b). Surveillance Studies. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences* (pp. 733–741). Elsevier.
- Mathiesen, K. (2015). Human Rights as a Topic and Guide for LIS Research and Practice. *Journal of the Association for Information Science and Technology*, 66(7), 1305–1322.
- Maurel, D., & Chebbi, A. (2013). Towards Negotiated Governance of Digital Records: Individual and Collective Information Practices in Organizations. *Comma 2013*(1), 15–28.
- Mccarthy, M. T. (2017). The Semantic Web and Its Entanglements. *Science, Technology & Society*, 22(1), 21–37.
- McKenzie, P. J. (2003). A Model of Information Practices in Accounts of Everyday-Life Information Seeking. *Journal of Documentation*, 59(1), 19–40.
- Monahan, T. (2022). *Crisis Vision: Race and the Cultural Production of Surveillance*. Duke University Press.
- Monahan, T., & Murakami Wood, D. (2018). Introduction: Surveillance Studies as a Transdisciplinary Endeavor. In T. Monahan and D. Murakami Wood (Eds.), *Surveillance Studies: A Reader* (pp. xix–xxxiv). Oxford University Press.
- Monahan, T., & Torres, R. (Eds). (2009). *Schools Under Surveillance: Cultures of Control in Public Education*. Rutgers University Press.
- Montesi, M. (2021). Human Information Behavior During the Covid-19 Health Crisis. A Literature Review. *Library and Information Science Research*, 43(4), art. 101122. <https://doi.org/10.1016/j.lisr.2021.101122>.
- Moore, A. D. (2010). *Privacy Rights: Moral and Legal Foundations*. Penn State University Press.

- Moore, A. D., & Martin, S. (2020). Privacy, Transparency, and the Prisoner's Dilemma. *Ethics and Information Technology*, 22, 211–222.
- Moore, S. A. (2021). Individuation Through Infrastructure: Get Full Text Research, Data Extraction and the Academic Publishing Oligopoly. *Journal of Documentation*, 77(1), 129–141.
- Mutsheva, A. (2007). A Theoretical Exploration of Information Behaviour: A Power Perspective. *ASLIB Proceedings*, 59(3), 249–263.
- Mutsheva, A. (2010). The Use of Information by Environmental Planners: A Qualitative Study Using Grounded Theory Methodology. *Information Processing and Management*, 46(2), 212–232.
- Nathan, L. P. (2012). Sustainable Information Practice: An Ethnographic Investigation. *Journal of the American Society for Information Science and Technology*, 63(11), 2254–2268.
- Newell, B. C. (2014). Technopolicing, Surveillance, and Citizen Oversight: A Neorepublican Theory of Liberty and Information Control. *Government Information Quarterly*, 31(3), 421–431.
- Newell, B. C. (2019). Privacy and Surveillance in the Streets: An Introduction. In B. C. Newell, T. Timan & B-J. Koops (Eds.), *Surveillance, Privacy and Public Space*, ed. (pp. 1–15). Routledge.
- Newell, B. C., & Randall, D. P. (2013a). A Retreat from the Panoptic: One Public Library's Experience with Video Surveillance. Paper presented at the *Special Workshop on Information Privacy, iConference 2013*. <http://dx.doi.org/10.2139/ssrn.2482722>.
- Newell, B. C., & Randall, D. P. (2013b). Video Surveillance in Public Libraries: A Case of Unintended Consequences? In *Proceedings of the 2013 46th Hawaii International Conference on System Sciences* (pp. 1932–1941). IEEE. <https://doi.org/10.1109/HICSS.2013.595>.
- Newell, B. C., Gomez, R., & Guajardo, V. E. (2016). Information Seeking, Technology Use, and Vulnerability among Migrants at the United States-Mexico Border. *The Information Society*, 32(3), 176–91.
- Newell, B. C., Gomez, R., & Guajardo, V. E. (2017). Sensors, Cameras, and the New “Normal” in Clandestine Migration: How Undocumented Migrants Experience Surveillance at the US-Mexico Border. *Surveillance & Society*, 15(1), 21–41.
- Newell, B. C., Vannini, S., & Gomez, R. (2020). The Information Practices and Politics of Migrant-Aid Work in the US-Mexico Borderlands. *The Information Society*, 36(4), 199–213.

- O'Brien, H., Freund, L., & Westman, S. (2014). What Motivates the Online News Browser? News Item Selection in a Social Information Seeking Scenario. *Information Research*, 19(3), art. 634. <http://informationr.net/ir/19-3/paper634.html>.
- Olsson, M. (2007). Power/Knowledge: The Discursive Construction of an Author. *The Library Quarterly*, 77(2), 219–240.
- Olsson, M., & Heizmann, H. (2015). Power Matters: Foucault's Pouvoir/Savoir as a Conceptual Lens in Information Research and Practice. *Information Research*, 20(4), at <http://InformationR.net/ir/20-4/paper695.html>.
- Paris, B., Reynolds, R., & McGowan, C. (2022). Sins of Omission: Critical Informatics Perspectives on Privacy in E-Learning Systems in Higher Education. *Journal of the Association for Information Science & Technology*, 73(5), 708–725.
- Potnis, D., & Halladay, M. (2022). Information Practices of Administrators for Controlling Information in an Online Community of New Mothers in Rural America. *Journal of the Association for Information Science & Technology*, 73(11), 1621–1640.
- Quan-Haase, A., & Ho, D. (2020). Online Privacy Concerns and Privacy Protection Strategies among Older Adults in East York, Canada. *Journal of the Association for Information Science & Technology*, 71(9), 1089–1102.
- Randall, D. P., & Newell, B. C. (2014). The Panoptic Librarian: The Role of Video Surveillance in the Modern Public Library. In *iConference 2014 Proceedings* (pp. 508–521). <https://doi.org/10.9776/14132>.
- Redding, G. (2013). The I-Space as a Key to History and to Culture. In J. Child and M. Ihrig (Eds.), *Knowledge, Organization, & Management – Building on the Work of Max Boisot* (pp. 199–204). Oxford University Press.
- Reynolds, R., Aromi, J., McGowan, C., & Paris, B. (2022). Digital Divide, Critical-, and Crisis-Informatics Perspectives on K-12 Emergency Remote Teaching During the Pandemic. *Journal of the Association for Information Science and Technology*. Advance online publication. <https://doi.org/10.1002/asi.24654>
- Rosenbaum, H. (2010). Social Informatics. In M. J. Bates & M. N. Maack (Eds.), *Encyclopedia of Library and Information Sciences* (3rd ed., pp. 4814–4819). CRC Press.
- Rosenbaum, H. (2014). The Past: Social Informatics as a Scientific and Intellectual Movement. In P. Fichman & H. Rosenbaum (Eds.), *Social Informatics: Past, Present and Future* (pp. 2–28). Cambridge Scholars Publishing.
- Rosenberg, D. (2013). Data before the Fact. In L. Gitelman (Ed.), *“Raw Data” is an Oxymoron* (pp. 15–40). MIT Press.

- Rubel, A., & Jones, K. M. L. (2016). Student Privacy in Learning Analytics: An Information Ethics Perspective. *The Information Society*, 32(2), 143–159.
- Rubel, A., & Jones, K. M. L. (2020). Computing Ethics: The Temptation of Data-Enabled Surveillance. *Communications of the ACM*, 63(4), 22–24.
- Rule, J. B. (1973). *Private Lives and Public Surveillance: Social Control in the Computer Age*. Allen Lane.
- Sanfilippo, M. & Fichman, P. (2014). The Evolution of Social Informatics Research (1984-2013): Challenges and Opportunities. In P. Fichman & H. Rosenbaum (Eds.), *Social Informatics: Past, Present and Future* (pp. 29–53). Cambridge Scholars Publishing.
- Savolainen, R. (2007). Information Behavior and Information Practice: Reviewing the “Umbrella Concepts” of Information-Seeking Studies. *The Library Quarterly*, 77(2), 109–132.
- Savolainen, R. (2008). *Everyday Information Practices: A Social Phenomenological Perspective*. Scarecrow Press.
- Savolainen, R. (2020). Manifestations of Expert Power in Gatekeeping: A Conceptual Study. *Journal of Documentation*, 76(6), 1215–1232.
- Sawyer, S. & Eschenfelder, K. (2002). Social Informatics: Perspectives, Examples, and Trends. *Annual Review of Information Science and Technology*, 2002, 427–465. Information Today.
- Sawyer, S. (2005). Social Informatics: Overview, Principles and Opportunities. *Bulletin of the American Society for Information Science and Technology*, 31(5), 10. <http://www.asis.org/Bulletin/Jun-05/sawyer.html>.
- Sawyer, S., & Tapia, A. (2007). From Findings to Theories: Institutionalizing Social Informatics. *The Information Society*, 23(4), 263–275.
- Shilton, K. (2009). Four Billion Little Brothers? Privacy, Mobile Phones, and Ubiquitous Data Collection. *Communications of the ACM*, 52(11), 48–53.
- Shilton, K. (2012a). Participatory Personal Data: An Emerging Research Challenge for the Information Sciences. *Journal of the American Society for Information Science*, 63(10), 1905–1915.
- Shilton, K. (2012b). Values Levers: Building Ethics into Design. *Science, Technology, & Human Values*, 38(3), 374-397.
- Shklovski, I., Troshynski, E., & Dourish, P. (2015). Mobile Technologies and the Spatiotemporal Configurations of Institutional Practice. *Journal of the Association for Information Science & Technology*, 66(10), 2098–2115.

- Stark, L. (2016). The Emotional Context of Information Privacy. *The Information Society*, 32(1), 14–27.
- Stark, L., Stanhaus, A., & Anthony, D. L. (2020). “I Don't Want Someone to Watch Me While I'm Working”: Gendered Views of Facial Recognition Technology in Workplace Surveillance. *Journal of the Association for Information Science & Technology*, 71(9), 1074–1088.
- Suchman, L. (1987). *Plans and Situated Actions: The Problem of Human-Machine Communication*. Cambridge University Press.
- Talja, S., & Hansen, P. (2005). Information Sharing. In A. Spink & C. Cole (Eds.), *New Directions in Human Information Behavior* (pp. 113–34). Springer.
- Thompson, N., McGill, T., Bunn, A., & Alexander, R. (2020). Cultural Factors and the Role of Privacy Concerns in Acceptance of Government Surveillance. *Journal of the Association for Information Science & Technology*, 71(9), 1129–1142.
- Tian, Y., Gomez, R., Cifor, M., Wilson, J., & Morgan, H. (2021). The Information Practices of Law Enforcement: Passive and Active Collaboration and its Implication for Sanctuary Laws in Washington State. *Journal of the Association for Information Science & Technology*, 72(11), 1354–1366.
- Tummon, N. & McKinnon, D. (2018). Attitudes and Practices of Canadian Academic Librarians Regarding Library and Online Privacy: A National Study. *Library & Information Science Research*, 40(2), 86–97.
- Ulbricht, L., & Yeung, K. (2022). Algorithmic Regulation: A Maturing Concept for Investigating Regulation of and through Algorithms. *Regulation & Governance*, 16(1), 3–22.
- Vaidhyathan, S. (2006) Afterword: Critical Information Studies. *Cultural Studies*, 20(2-3), 292–231.
- Vannini, S., Gomez, R., Lopez, D., Mora, S., Morrison, C., Tanner, J., Youkhana, L., Vergara, G., Moreno Tafurt, M. (2020). Humanitarian Organizations Information Practices: procedures and privacy concerns for serving the Undocumented. *The Electronic Journal of Information Systems in Developing Countries*, 86(1), art. e12109, 1–8.
- Vannini, S., Gomez, R., & Newell, B. C. (2020). “Mind the five”: Guidelines for Data Privacy and Security in Humanitarian Work with Undocumented Migrants and other Vulnerable Populations. *Journal of the Association for Information Science & Technology*, 71(8), 927–938.
- Vieweg, S., & Hodges, A. (2016). Surveillance & Modesty on Social Media: How Qataris Navigate Modernity and Maintain Tradition. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing, 2016*, 527–538.

- Walsham, G. (1998). IT and Changing Professional Identity: Micro-Studies and Macro-Theory. *Journal of the American Society for Information Science*, 49(12), 1081–1089.
- Wang, L., & Buckland, M. (2016) From Fief to Clan: Boisot's Information Space Model as a Documentary Theory for Cultural and Institutional Analysis. *Proceedings from the Document Academy*, 3(2), art. 10, 1–10. <https://doi.org/10.35492/docam/3/2/10>.
- Webster, F. (1994). What Information Society? *The Information Society*, 10(1), 1–23.
- Weller, T. (2012). The Information State: An Historical Perspective on Surveillance. In K. Ball, K. D. Haggerty & D. Lyon (Eds.), *Routledge Handbook of Surveillance Studies* (pp. 57–63). Routledge.
- Weller, T., & Bawden, D. (2005). The Social and Technological Origins of the Information Society: An Analysis of the Crisis of Control in England, 1830–1900. *Journal of Documentation*, 61(6), 777–802.
- Wilson, T. D. (2000). Human Information Behavior. *Informing Science: The International Journal of an Emerging Transdiscipline*, 3(2), 49–56.
- Wu, Y. (2014). Protecting Personal Data in E-Government: A Cross-Country Study. *Government Information Quarterly*, 31(1), 150–159.
- Yeung, K. (2018). Algorithmic Regulation: A Critical Interrogation. *Regulation & Governance*, 12(4), 505–523.
- Young, M., Katell, M., & Krafft, P. M. (2019). Municipal Surveillance Regulation and Algorithmic Accountability. *Big Data & Society*, 6(2), 1–14.
- Zhang, P., & Benjamin, R. I. (2007). Understanding Information Related Fields: A Conceptual Framework. *Journal of the American Society for Information Science and Technology*, 58(13), 1934–1947.
- Zimmer, M. (2005). Surveillance, Privacy and the Ethics of Vehicle Safety Communication Technologies. *Ethics and Information Technology*, 7, 201–210.
- Zimmer, M. (2014). Librarians' Attitudes Regarding Information and Internet Privacy. *Library Quarterly*, 84(2), 123–151.
- Zuo, Z., Zhao, K., & Ni, C. (2019). Standing on the Shoulders of Giants?—Faculty Hiring in Information Schools. *Journal of Informetrics*, 13(1), 341–353.