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“This is really interesting. I never even thought about this.”ⁱ

Methodological strategies for studying invisible information work

Abstract

Significant information work (Corbin & Strauss, 1985; 1988) is often required to grapple with increasing quantities, types, and sources of information. Much of this work is invisible both to researchers and to the people undertaking it. As there are many axes along which informational work can be made invisible, researchers require flexible and creative methods in order to bring hidden information work to light. Each drawing on our own information practices research study, we introduce and reflect on four methodological strategies that have been effective in recognizing and revealing hidden aspects of informational work: (1) consider the local and the translocal; (2) attend to the material and the textual; (3) consider visual methods; and (4) (re)consider the participant’s role and expertise. We conclude by reflecting on the benefits and pitfalls of bringing visibility to invisible information work and conclude with a call for further research focused on the invisible.

Keywords: work, invisible work, information work, information practices, methodology, visual methods, institutional ethnography

Introduction

Many activities associated with information needs, seeking, creation, and use are “relatively obvious and codable into discrete units of work practice to be carried out on specific occasions” (Bowker &

Star, 1999, p. 233). Online searches, visits to the reference desk or online chat, filled-out forms, and citations of academic literature in a new article are all examples of informational activities that are visible and therefore straightforwardly counted, described, and analysed by researchers. However, many activities that are central to the enactment of information practices are less visible, to researchers and sometimes even to the people undertaking them. Attending to and making visible these otherwise invisible activities can reveal the aspects of information practices that become “black boxed” (Pilerot, 2014).

One strategy for making hidden informational activities visible is to recognise them as *work*: “Knowing how things work . . . is invaluable for those who often have to struggle in the dark” (Smith, 2005, p. 32). Feminist sociologist Dorothy Smith (Griffith & Smith, 2005, p. 124) employs a broad definition of *work* to include activities that are “done intentionally under definite material conditions and taking definite amounts of time,” regardless of whether these activities take place in workplace, domestic, or other settings. Defining work generously in this way brings into view *as work* activities that are otherwise invisible as work, even to those doing the activities (Smith, 2005). As there are many axes along which informational work can be made invisible (e.g., where the work is conducted, who is doing the work, or for whom), Library and Information Studies (LIS) researchers require methods with a certain degree of flexibility and ingenuity to bring invisible work to light. In this article, we describe methods that have revealed for us the invisible practices of information work in everyday life. We draw on two studies to show how methods that attend to the invisible can allow researchers to reveal and examine the full complement of work that comprises individuals’ information practices that might be intentionally or inadvertently hidden, erased, or neglected.

Literature Review

A number of scholars have sought to understand the invisible work associated with informational activities. Nardi and Engström (1999), Star and Strauss (1999), and Bowker and Star (1999) caution that workplace initiatives to describe, map, flowchart, quantify, measure, and rationalise work focus only on the work that is visible. In addition to work that is physically out of sight, Hatton (2017) notes that work may be invisible because it is ignored or overlooked, socially marginalised, economically or culturally devalued, or legally unprotected and unregulated. Empirical evidence shows that many aspects of informational work are essential to the success of paid work but are invisible to its evaluation systems. For example, secretaries’ chatting may be flagged as a non-work activity, despite the fact that the information exchanged through chit-chat may “smooth communication between bosses, speed up unusual requests by building a network of mutual cooperation and favor exchange, or screen out unnecessary interruptions by delaying a troublesome client at the door” (Star & Strauss, 1999, p. 14). Huvila (2009) and Pilerot (2014) argue that information plays a crucial role in all work practices, that all work “presumes some degree of information processing whether the work is manual labor or highly abstract decision making” (Huvila, 2009, p. 697).

As Suchman (1995) notes, “In the case of many forms of service work, we recognise that the better the work is done, the less visible it is to those who benefit from it” (p. 58). This is certainly the case for much information work. Ehrlich and Cash (1999) showed that many aspects of librarians’ work are invisible to their users, including question negotiation, searching skills, and the evaluation of information sources. They revealed how the invisibility of the work of information mediators such as journalists, editors, librarians, and customer support representatives may lead to their positions being targeted for elimination.

Corbin and Strauss (1985; 1988) identified *information work* as one of the many forms of work required to manage chronic illnesses in the home. A small number of LIS scholars have taken up the concept of *information work* in everyday life, particularly within the context of individuals and family

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care partners living with illnesses, including: HIV/AIDS (Hogan & Palmer, 2005), diabetes, hypertension, and kidney disease (Kaziunas, Ackerman, & Veinot, 2013), dementia (Dalmer, 2018), and multiple chronic conditions (Ancker *et al.*, 2015; Souden, 2008). Scholars have also studied related forms of work that may impact or inform individuals' information work, including: adherence work (Senteio & Veinot, 2014), knowledge work (Newell, 2015), document work (Trace, 2007), literacy work, and caring work (Stooke & McKenzie, 2009). An important type of work that can comprise information work is *articulation work*: "work that gets things back 'on track' in the face of the unexpected, and modifies action to accommodate unanticipated contingencies" (Star, 1991, p. 275). Importantly, this work that keeps workplaces "on track" may be undertaken in the workplace (Bowker & Star, 1999) *and* in the workers' homes (e.g., Griffith & Smith, 2005). For example, the care of a chronically ill relative may be invisible to the workplace and calculated and publicly defined as time *away from* paid work. It may also be invisible to friends and family. This work, however, entails significant and often hard physical and emotional labour that can stretch across time and place and affect both the home and the workplace (Star & Strauss, 1999; Hochschild, 1983).

Dalmer and Huvila (2020) suggest that emphasizing "work" in the study of informational endeavours can be helpful in highlighting aspects that are "otherwise at risk of remaining or becoming invisible" (p. 103). Highlighting what is potentially invisible requires LIS scholars to reflect carefully on "their focus of what is being studied, how they understand the analysed and observed actions, and where (and how) they are finding evidence and indications of, for instance, the investment of time and effort, conditions, tools and resources related to the information phenomena under study" (p. 103). Muller (1999) argued that work is not *inherently* visible or invisible, but is invisible *to an observer*, depending on the observer's perspective or point of view. As a result, LIS researchers who seek to understand invisible work need research methods that will allow them to adopt a point of view that brings that work into view. In this article, we take up Dalmer and Huvila's call by reflecting on methodological strategies that have been effective for us in recognizing and revealing informational work that was sometimes even invisible to the people who did it.

Analytic Approach

We each draw on one of our own studies to discuss and reflect on our use of different methods to make visible and analyse invisible information-related work.

In the *first* study, Pam analysed the work participants did in their workplaces, households, and other contexts to "keep track": coordinate people and resources in time and across physical and organisational settings and monitor and document the coordination processes. Like other forms of articulation work, keeping track is complex and is often overlooked, both by analysts and by those who do it. It transcends dichotomies of work and home; it involves people, physical and digital artefacts, and physical arrangements; includes both individual and collaborative activities; and operates across individual bureaucratic organisations and their associated physical spaces and temporal constraints.

Between 2010 and 2015, Pam and a team of research assistantsⁱⁱ conducted semi-structured interviews with 47 participants (31 identified as women and 16 as men) in two Canadian provinces. Participants represented a variety of household arrangements (living alone, with a partner and/or children, with roommates), work characteristics (home-based businesses, mobile work, shiftwork, full- and part-time work, multiple jobs, retired, unemployed), and of social roles they occupied in other domains (e.g., person with a chronic illness or disability, hobbyist, student). We interviewed participants in locations of their choosing: their homes (41, 7 of which contained work-from-home spaces), workplaces (2), and other locations such as coffee shops (4). We did not ask participants'

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ages, but one was a student in her first year of university, and several were retired; one volunteered that she was 84.

Interviews ranged from 41 to 131 minutes in length, with an average of 73 minutes. We asked two central questions: 1. What do you have to keep track of in your life? 2. How do you do it? We did not define “keeping track” but allowed participants to interpret as appropriate for them. We used probes as appropriate for each interview, for example asking about failures and breakdowns (Star & Strauss, 1999), about how they learned to keep track, and asking their thoughts about what success in keeping track meant (Trace, 2007). We asked participants to show us the items they used to support them in keeping track. Interviews away from home and work were limited to the items participants had brought with them. At home or at work, participants moved around to show us things in different rooms or different parts of the room. Where possible, we photographed significant documents, objects, and spaces. The data set consists of over 56 hours of interviews (2200 transcribed pages) and 1175 photographs.

In the *second* study (Dalmer, 2018), Nicole responded to the finding that, despite many supportive interventions, dementia caregivers continue to be frustrated and overwhelmed when seeking, finding, and making sense of information in support of their care of their loved ones. This institutional ethnographic study included: in-person interviews; a scoping review to unpack how academic research and writing frame family caregivers’ information work; and an analysis of the degree to which policies acknowledge the work families do to support an older adult to age at home. The studies collectively reveal a fundamental disjuncture in the ways that different stakeholders construct, understand, and experience the role of information in family caregivers’ everyday lives.

For the interview study, I conducted in-person interviews in mid- to late-2017. First, I interviewed 13 family caregivers (ranging in age from 67 to 88 years of age) about their information work. I recruited the majority of these participants from a dementia care facility that hosts both adult day programs and weekly caregiver support meetings and education sessions. I interviewed participants in the location of their choosing, with the majority (eight) in their homes, two in coffee shops, one in a public library meeting room, and one in a meeting room on the university campus. Interviews were between 95 to 185 minutes in length. As one structuring device in the interviews, I asked caregivers to run through a typical day to construct and extract descriptions of the work they do in relation to caring for their aging family member. As another structuring device, I asked caregivers to think about when they first noticed changes in their family member, and where (and why) they decided to go to learn more about these changes. Following these 13 interviews, I interviewed five paid dementia care staff whom family caregivers had named, to identify their work processes that impact families’ information work. Four interviews took place at the care staff’s place of work and one at a teashop. Interviews were between 45 to 75 minutes in length.

Following these two interview studies, I undertook two text-based studies to further explicate the experiences brought to light in the interviews. First, I conducted a scoping review of 72 articles to document how scholarly research conceptualised informational components of family caregivers’ work and the degree to which these components were acknowledged as work. Second, I applied Carol Bacchi’s (1999) “What’s the Problem Represented to Be?” analytical tool to examine the degree to which aging-in-place policies acknowledge the work families do to support an older adult to age at home.

Data collection and analyses in both studies conformed to Canadian guidelines on ethical research on human subjects (Canadian Institutes of Health Research, Natural Sciences and Engineering Research

Council of Canada & Social Sciences and Humanities Research Council of Canada 2018). To maintain confidentiality, we identify participants by pseudonym.

Prompted by participant comments such as the one that serves as this article's title, we reflected on our research approaches, both individually and together (Barry, Britten, Barber, Bradley, & Stevenson, 1999). We shared reflections and curiosities regarding the data from our two studies and our presence and positioning as researchers (Gergen & Gergen, 1991). As we discussed emergent connections and linkages (Saldaña, 2016), we each identified and shared significant instances when our own study had revealed information work that had previously been invisible to us, to the participant, or both. We compared and reflected on these instances and grounded them in prior research. As a result of this iterative process, we identified and here offer four methodological strategies for recognising invisible information work and bringing it to light.

Methodological Strategies for Studying the Invisible

1. Consider the local *and* the translocal

Davenport and Cronin (1998) challenged LIS scholars to attend to “the interaction and intersection of the diverse texts that constitute work in a given domain” (p. 266). Frohmann (2004) similarly urged LIS scholars to focus on “the intertwined, institutionally disciplined, documentary and non-documentary practices from which ‘information’ emerges as an effect” (p. 198). Doing so involves considering both the local setting and its connections to its broader context.

Ethnomethodologically-informed modes of inquiry such as Dorothy Smith's Institutional Ethnography (Smith, 2005) are helpful for following these suggestions for making information-in-action visible in particular settings and broader contexts. Smith's way of studying the everyday world includes considering both the local and the translocal to reveal “how people's everyday lives may be organized without their explicit awareness but still with their active involvement” (Campbell & Gregor, 2002, p. 43). Institutional ethnography starts with people's everyday, local information practices and then analyses these relationally to explore how the work done in households and family life (the local) “hooks in” to the organisational requirements and contingencies of workplaces, schools, hospitals, and other institutions (the translocal). It is this lens that constructively problematises LIS's persistent dichotomisation of “everyday” and “workplace” information or contexts (Dalmer & McKenzie, 2019). This consideration of both the local *and* the translocal in research supports information needs, seeking, and use scholars' turn toward taking up information practices in context (Courtright, 2007). The complex assemblage of individuals, organisations, policies, and texts (among others) that operate translocally but that coordinate and influence individuals' everyday, local information practices are crucial and rich contexts that require attention. This movement from the local to the translocal not only enables researchers to actively unearth “the socially and historically embedded nature of their research object” (Talja, Keso, & Pietiläinen, 1999, p. 751-752) but it contributes to an evolving understanding of context in LIS, supporting Dervin's (1997) assertion that “context is not usefully conceptualized as [an] independent entity” (p. 116).

As an example of the insights that arise in considering both the local and the translocal, Nicole's study started with the local, using interviews with family caregivers to understand the many activities that comprise their everyday (and every night) information work. For example, a number of family caregivers mentioned the information resources they received at an eight-week caregiver education series. For a number of caregivers, these sessions were a crucial source of information, not only from the social worker course facilitators but from the other caregivers in attendance. A number of caregivers noted, though, that the information they received would have been especially helpful earlier in their caregiving journey but that institutional barriers had prevented them from registering

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for the education series until recently. This study then branched out to the translocal, to more fully understand how and why “what actually happens” to family caregivers happens. Nicole spoke with dementia care staff, including the social worker facilitators mentioned by family caregivers. As these paid staff members were located outside of family caregivers’ local networks, they had access to information beyond what family caregivers could know. Staff members offered insights about the components of their work that either fostered or restricted their time with family caregivers, such as assessment scores, waiting lists, and room bookings. These interviews provided additional context and insights to understand why families experience information as scattered and fractured. For example, the social worker facilitators mentioned the many external mechanisms and decisions that precluded family caregivers from participating in earlier caregiver education series. The older adult receiving care had to have an official diagnosis of Alzheimer’s disease or a related dementia before they could be placed on a lengthy waiting list for admission in an adult day program. With a provincial shortage of psychogeriatricians, this diagnosis could take several months. Only once that older adult had received a diagnosis, had made it to the ‘top’ of the waiting list and was in the adult day program, could the family caregiver register to participate in the caregiver education series. By this point, a number of information needs covered in the education series were less applicable to caregivers’ contexts.

One of the findings of Pam’s study was that document genres such as lists and calendars that individuals created and used in everyday-life settings were socially, organisationally, and intertextually connected in larger genre systems of documents in institutions and organisations beyond the home (McKenzie & Davies, 2010). For example, a work shift written on a kitchen calendar is linked to the staff schedule in the workplace. A student’s lecture notes are connected to the professor’s course outline, which is in turn connected to academic policy documents such as those related to grade appeals, faculty workload, and promotion and tenure, and to the scholarly literature of the discipline. In both studies, these kinds of connections between the local and the translocal might be invisible to a thematic or content analysis, but attending to the relational makes them visible.

2. Attend to the material and the textual

Pilerot (2014) showed that attending to the sociomaterial dimensions of information-related activities brought to light activities that were otherwise invisible. Because participants who have not yet thought about the role of information in their everyday lives may have difficulty seeing and articulating activities such as these, it may be necessary for the researcher to observe the physical environment to identify relevant documents and artefacts in addition to interviewing. Conversely, because people may use multiple, physically and spatially distributed informational tools, and may use interpersonal sources in addition to material and digital artefacts, researchers must be prepared to go beyond what is immediately visible and ask questions to elicit accounts from participants.

In her study, Pam found that the most effective strategy was to begin the interview with general “what” and “how” questions and to follow up with probes about failures and breakdowns (Star, 1999), and questions about how participants learned what kinds of informational and documentary practices are and are not acceptable (Trace, 2007). Attending to visual triggers and spoken references was crucial, as several participants used non-textual artefacts that we would not otherwise have recognised as informational objects. For example, a medication package set incongruously on a kitchen counter served as a reminder to renew a prescription.

My husband was leaving and he wanted me to refill a prescription for him. So instead of writing a sticky [note], because I couldn't find a sticky or where it was, I just put the box on my day timer— [laughing]—so that it would jog my memory.

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At the same time, observation was not sufficient on its own to reveal all aspects of informational work. It was important to both look and to ask and listen. For example, a participant revealed that an unremarkable book sitting on the edge of a table

has all my credit card numbers, professional, auto, passport numbers, everything. Here, I mean, if somebody broke in and saw this, they would have all my information.

Had Pam simply been observing without interviewing, the significance of this object would have been missed. Interviews also allowed participants to reflect on their practices. The participant quoted in the title of this article responded to the question: “How do you keep track?” by describing how acquiring an iPhone had occasioned a move away from paper records:

It's really really good because I used to have a bunch of assorted books, like random notebooks where I'd write down grocery lists and this and that and different things and then a schedule, and all these different pieces of paper to organise, and then client lists and blah blah blah. And now I can do everything on the phone.

As we looked around the participant's kitchen and talked, she reflected on her own work and was able to describe more than she had initially thought about, for example preserving concert tickets and wedding invitations and incorporating the memory of the event into the day-to-day ambiance of her kitchen:

I put magnets on them and they become my fridge magnets. Just as fun reminders. But yeah, any events, like invitations – we have a wedding invitation up there right now – that kind of gets up [on the refrigerator].

Discussing the textual and material objects in her kitchen prompted the participant to think about the physical means of keeping track that had been invisible in her response to the opening question: “I never really thought about how much weird storage we have for different organisational things. We've got a whole bunch of different ways of doing things.” Through this strategy, Pam was able to see how material objects, including documents, that participants created and used in their homes are embedded in deeply meaningful interpersonal relationships as well as in the structures of the organisations, such as concert promotion companies, with which individuals interact.

To push further into the translocal relations shaping caregivers' work, Nicole examined two different types of texts: academic articles and policy documents. Smith (1998) argues that “text-mediated relations are the forms in which power is generated and held in contemporary societies” (p. 79). Texts are replicable and can be read or heard in identical form across time and place. They therefore acquire the capacity to coordinate the actions and experiences of family caregivers, even if those individuals have no direct contact with them. To “look behind policy and procedure” (DeVault, 2014, p. 784), Nicole's scoping review (Dalmer, 2020) and critical policy analysis (Dalmer, 2019) analysed researchers' and policy makers' interpretations of families' information-based care work. They made visible the assumptions and the silences surrounding that work that are embedded within and travel between research and policy texts over time and across locations. Nicole's study revealed that research and policy texts ultimately created distinct knowable and governable categories and frameworks that, over time, legitimise what is or is not construed as “information.” For example, 29 of 72 articles in the scoping review sample sought, through an experimental intervention devised by the article's author(s), to change information delivery systems to mitigate caregiver burden. This technological, interventionist lens understands caregivers' interactions with information only in terms of information technology, and pathologises caregivers, positioning them as needing more

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information interventions in order to be more proficient and less burdened care providers. Scholarly researchers' construction of information solely as a technologically-delivered intervention overlooked the sense making, context, judgement, and interpretation that caregivers applied to the information they retrieved via the intervention. This construction also omitted the work needed to learn about, manipulate, or tend to the intervention itself. In this sample of articles, caregivers (and their many lines of work) were largely treated as secondary to the primacy of information or the information intervention itself. This relationship is in keeping with Barnes and Henwood's (2015) articulation of the *inform to care* approach, in which competent and "good" care is positioned as a result of the availability of "good" information, with no consideration to the work required to search, find, manage, understand, mediate, or communicate the information.

3. Consider visual methods

Work that is invisible to the people who do it poses particular challenges for data collection. Greyson and Johnson (2016) outline a number of activities that might comprise families' information work, such as accessing, assessing, avoiding, blunting, encountering, monitoring, recalling, processing, seeking, sense-making, and sharing. Both studies integrated visual methods; although the approaches were different, the combination of interviews and visual methods brought to light elements that we as researchers, and in many cases our participants, had not anticipated.

A variety of participatory and non-participatory visual methods have come into common use in the social sciences, and many are being taken up in LIS (see, for example, Pollak, 2017). Participatory visual methods allow research participants to make visible aspects of information work that are significant to them (e.g., Barriage & Hicks, 2020; Hicks, 2018; Hicks & Lloyd, 2018; Hultgren, 2007; Julien, Given, & Opryshko, 2013; Polkinghorne, 2018; Rivano Eckerdal, 2013). Nicole used participatory visual methods, embedding an information world mapping exercise within each interview. In this exercise, based on Sonnenwald's information horizons (1999; Hultgren, 2007; Rivano Eckerdal, 2013) and on Greyson, O'Brien, and Shoveller's (2017) information world mapping interview technique, family caregivers mapped out, by writing, doodling, and drawing, the information activities they had already described during the interview along with any other information-work-related resources or tasks that came to mind as they drew out their map. Caregivers were given the choice to draw out their information world from a blank sheet of paper or from a template that blocked out: a) where caregivers went for information, b) from or with whom caregivers sought or shared information, and, c) what resources families used. Participants therefore maintained a large degree of control over the design and interpretation of their information worlds. Maps considerably varied between caregivers, particularly in degree of detail. Alice's information world map (Figure 1) demonstrates how maps depicted differing constellations of items, places, mantras ("knowledge is strength", "fear is the unknown"), and formal and informal relationships that shaped and guided participants' information work. As these information world maps were not constrained to depicting one place or one particular point in time, a fuller complement of families' information work emerged. Alice's detailed map makes visible the many networks of places (including non-profit organisations and internet sites), social relationships (including friends and family and a myriad of health care professionals), and resources that jointly provide support for both her and her husband, who was diagnosed with early-onset Alzheimer's disease. Each of these relationships require work; to navigate the information received, to assemble that information into existing knowledge, and, in Alice's case, to determine how to translate this information to different family members, including her grandchildren. As a number of informational activities are often invisible even to those who perform them, such visual elicitation techniques allow for the mapping of individuals' work on many planes – in terms of the actual type or content of work and its spatial and temporal aspects. The act of filling out one of the circles, squares or diamonds would trigger Alice to draw in the next sequence in her care work, leading her to fill in another shape. This process made visible, for

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example, the effort needed to travel physically between different information resources (from a doctor's office to the local Alzheimer's Society). In completing her map, Alice was able to identify certain lines of information-related care work that were previously invisible to her. In the middle of her map, Alice noted both verbally and in writing that "you become an info source [therefore] must learn." In this way, these information world maps reveal instances of work transfer (Glazer, 1984), where tasks (such as equipping oneself to become an information intermediary [Abrahamson & Fisher, 2007] for family members, friends, and other caregivers) are shifted from paid workers to unpaid family members and are no longer counted as work and thus become invisible.

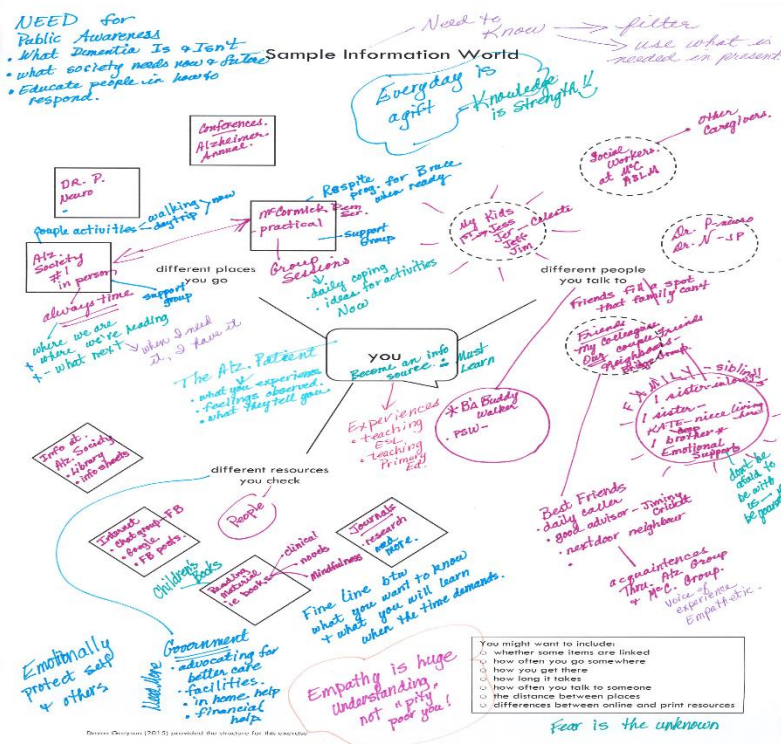


Figure 1. Alice's Information World
(Note: Identifying elements have been removed)

Non-participatory researcher-led visual methods can also make visible the elements of local information-rich settings such as offices or homes (Hartel & Thomson, 2011), particularly when photography is combined with interviewing (e.g., Thomson, 2018). In Pam's study, the photographs of the documents, objects, and places associated with keeping track provided a reminder to the researcher of the participant's context. More importantly, having high-resolution photographs afforded ongoing analysis, and the photographs revealed details that we did not discuss and were not able to observe during the interviews, such as the specific appointments on a calendar. Apart from attending to the material and textual during the interviews, taking and analysing photographs afforded new insights.

4. (Re)consider the participant's role and expertise

Certain aspects of people's work have a tendency to fade into invisibility. This may occur when the work is so routine as to be unremarkable or may be the result of the low social status of those conducting it (Star & Strauss, 1999). Star and Strauss (1999) point out that analyses of invisible work bring otherwise hidden expertise into view. Attending to participants' invisible information activities

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can expose previously-unknown or taken-for-granted lines of expertise about those activities. The integration of visual with interview methods, for example, can disembed that invisible, background work and prompt a reconsideration of the participant's role as an expert in the research interaction. Visual methods turned both studies into bidirectional experiences, with interviews becoming instances of data co-creation. As participants guided the interviewer through their homes (Pam's study) or chose the direction, the content, or the placement and distribution of their information mapping exercise (Nicole's study), power dynamics were more evenly distributed between participant and interviewer.

In Pam's study, the researchers asked participants' permission before taking photographs, so participants directed what the photographic data the researchers might and might not collect. In the creation of their information world maps, Nicole's participants dictated how the map would be made (detail, information, shape, colour, size, etc.) and consequently how the map would come to depict their experiences. The mapping exercise process and resulting map acknowledged and privileged caregivers' expertise about their information activities and made visible the sequencing of actions and activities along the caregiving trajectory that are often difficult to bring to focus when studying information practices. Perhaps as a result of this acknowledgement of their experiential ways of knowing, most caregivers were eager to participate in the mapping exercise, spending time and care in crafting the map and asking for a copy of their map at the conclusion of the interview. Furthermore, in making their information work visible (literally), family caregivers articulated their surprise and sense of validation when they saw for themselves the enormity their often-invisible care work drawn out and on display in front of them.

Discussion

In this article, we have shared some of our methodological strategies for making visible information work that may otherwise be hidden. Our studies have shown that even "everyday life" information practices fit Smith's definition of work because they entail complex orchestrations of a number of actors' unnoticed time and effort to carry out leisure, domestic, and other everyday activities. Marjorie DeVault (1991) found that the vocabulary of work brought to light the "workful" character of providing sustenance, including cooking and feeding, which "is often unrecognized even by those who do it" (p. 228). As researchers, the language we use can impact the visibility of the activities we study, and thus our findings and their implications. So too, we argue, can the methods that we elect to use or not to use.

Using methodological strategies to bring visibility to invisible work can be a fraught process for researchers. Bowker and Star (1999) caution that making some aspects of work visible necessarily makes others invisible: "a light shining in the dark illuminates certain areas of ... work but may cast shadows elsewhere: the whole picture is a very complex one" (p. 254). In addition, making work visible may create undesirable opportunities for surveillance or may create even more work to document the work, as Suchman (1995) highlights. Scott (1987) has conceptualised invisibility as a potential "weapon of the weak", in that keeping certain lines of work invisible can provide opportunities for resistance or defiance.

Given that LIS scholars are attentive to work of librarians, archivists, and other information managers, we tend to make visible the kinds of informational activities overlooked by scholars from other disciplines (e.g., Muller, 1999; Ehrlich & Cash, 1999). For example, discussions of "serendipity" in the library or the archive ignore the work of cataloguers and appraisal and description archivists who place individual items into a broader collection context. A question for further discussion as a community is: What informational activities are invisible to us as LIS scholars and what methods might

we use to bring them into full view? What are the risks and potential consequences (both positive and unfavourable) of bringing those activities into view?

Both Nardi and Engeström (1999) and DeVault (2014) have offered their own strategies for the study of invisible work. Editors Nardi and Engeström outlined four categories in the articles comprising their *Computer Supported Cooperative Work (CSCW)* special issue on the structure of invisible work. Institutional ethnographer DeVault, in her investigation of the challenges deaf people grapple with in healthcare interactions, proposed four analytic strategies for studying invisible work. Though these authors take different approaches, we argue that their frameworks can be understood as relating to four common themes that we have labelled: invisible location, invisible activity, invisible worker, and structural invisibility. In Table 1, we bring these two frameworks together under the common themes and have added our reflections on how they might support LIS scholars seeking to make information work visible. We propose that our four methodological strategies can be helpful for information practices scholars in making information work visible across the four themes.

Theme	Categories of invisible work (Nardi & Engeström, 1999)	Analytic strategies for studying invisible work DeVault (2014)	Questions and reflections related to information work
Invisible location	Work done in invisible places		For example, informational work done in places outside of GLAMS (galleries, libraries, archives, museums) or white-collar workplaces, such as the home.
Invisible activity	Work defined as routine or manual that actually requires considerable problem solving and knowledge	Look at work that facilitates access Look at work that's done "under the radar"	The turn to embodiment is helpful in both workplace (e.g., Veinot, 2007) and everyday contexts (Lloyd & Olsson, 2019)
Invisible worker	Work done by invisible people	Look at everyone's work (and how it's divided)	What kinds of people have we not studied, or have studied but failed to count or acknowledge their work, and what might we learn from them?
Structural invisibility	Informal work processes that are not part of any job description but which are crucial to the functioning of the workplace	Look behind policy and procedure	With our focus on GLAMS, on published information sources and information systems, what aspects of articulation work are we missing? What work is required to get things done? For example, Stooke and McKenzie (2009) showed how participating in public library storytime programs required a great deal of work including getting small children out of the house and to the library. Such relational and care work is often overlooked by LIS scholars.

Table 1. Approaches for identifying and revealing invisible information work

McKenzie and Dalmer: *"This is really interesting. I never even thought about this."*

In closing, it is important to note that making different lines of invisible work visible is a necessary but insufficient part of the research process. DeVault (2014) notes that “as we see more of people’s invisible labors, we find more work that needs to be done—projects in which we can apply the tools of our discipline and our craft” (p. 788). Indeed, this paper is a starting point in reflecting how “the tools of our discipline”, including the methods researchers select and apply can impact which and what types informational activities (and the people doing those activities) are brought to the fore.

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