Seeing information: Visual methods as entry points to information practices

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Abstract

Recognising the importance of exploring multimodal experiences of information, this paper provides a detailed examination of the scope of visual research methods within information practices research. More specifically, the paper will use the examples from one completed study (Lloyd and Wilkinson, 2017) and one ongoing study (Hicks, in progress) to discuss and provide a detailed examination of the use, affordances and limitations of two research methods that centre upon participant-created photographs: photo-elicitation and photovoice. Demonstrating that the use of photographs helps to evoke and communicate complex meaning as well as to mediate between linguistic, temporal and spatial constraints, this study highlights the continuing need to develop research methods that privilege participants' understandings and perspectives.

Keywords: Visual research methods, photo-elicitation, photovoice, information practices, information literacy

1. Introduction

The increasing complexity and breadth of information experiences creates the need for a correspondingly sophisticated understanding of information practices across social, textual and corporeal modalities. It also requires Library and Information Science researchers to develop research methods that are flexible yet sufficiently robust enough to capture understandings about the variety of information sources and activities that are produced through an individual's academic, workplace and community-based interactions. Facilitating insight into the arrangements of everyday contexts, visual research methods, which refer to "the use of images to learn about the social world" (Hartel et al., 2012), provide the means through which researchers can respond to the growing complexity of today's information environments. In further helping to bridge the distance between research participants and researcher, visual methods are also positioned as highly accessible as well as enabling the creation of more representative narratives about the shape and meaning of information within everyday life.

This paper uses the examples of photo-elicitation and photovoice, two photographic-based qualitative research methods, to provide a detailed examination of the role of visual research methods within information practices research. The paper will start by providing an overview of visual research methods and how they have been used within Library and Information Science. The paper will then use the example of studies into the information literacy practices of refugees (Lloyd and Wilkinson, 2016, 2017) and language learners who are studying abroad (Hicks, in progress) to focus more concretely

on the affordances and limitations of photographic visual methods within information practices research. The paper will finish by discussing implications and recommendations for the future directions of visual methods within Library and Information Science.

2. Visual research methods

Focused on "the production, organization and interpretation of imagery" (Prosser, 2007: 13), visual research methods are employed in a variety of qualitative and quantitative approaches to research. Encompassing data as varied as illustrations, cartoons, multimedia and diagrams, as well as the more typical photographic images (Hartel et al., 2012), visual research methods are traced back to early ethnographic observational research that was used to record fieldwork and illustrate scholarly reports (Prosser and Loxley, 2008) in anthropology (Collier, 1967) and sociology (Wagner, 1979), Characterised by the desire to capture an accurate and truthful picture of reality, this positivist approach to visual research was, nonetheless, challenged in the 1960s by the development of more reflexive forms of scholarship as well as the growth of participatory methods of inquiry (Prosser and Loxley, 2008). Positioning visual data as "socially and technically constructed" (Hartel and Thomson, 2011: 2216) rather than as forming an objective snapshot of reality, the interpretive perspective marked a shift from a researcher to a participant-centred viewpoint. In further extending the scope of what constitutes an image, interpretive approaches to visual methods also opened the possibility of using images produced by research participants (Cox et al., 2014: 4). Since expanding to include multimodal visual approaches to research (Pink, 2011), visual methods have become more prominent within various disciplines, including psychology, geography and health care (Pain, 2012: 304) as well as in Library and Information Science.

The variety of image based methodologies that are used within Library and Information Science reflect the different origins and purposes of visual research methods. Ranging from traditional realist uses of photography to multi-modal elicitation activities that purposefully work to decentre the researcher, visual research methods can most simply be classified as taking either a participatory (emic) or a non-participatory (etic) approach (Pollak, 2017). Most typically, early Library and Information Science research tends to take a non-participatory approach to visual methods. Used to record the tools, spaces and documents that research participants employ within their everyday life, visual research methods centre almost exclusively upon still photography and researcher-generated images (Brennan and Kwiatkowski, 2003; Hartel, 2006; Julien and Hoffman, 2008; Malone, 1983; McKenzie and Davies, 2012; Pollak, 2015; Thomson, 2010), observational methods (see Case and Given, 2016 for an overview) as well as, most recently, researcher-generated video (Chalfen and Rich, 2010; Lundh, 2011; Given et al., 2016). Frequently analysed through arts-inspired analytical processes, inventory and documentary methods provide evidence of research findings while also serving as a reminder of field experiences (Pollak, 2017: 100).

Most recently, researchers have started to adopt more participatory forms of visual research. Emphasising the creation and interpretation of participant-generated data, participatory visual methods are viewed as producing a more "holistic picture of information worlds" (Given et al., 2013) due to their focus on participant self-expression.

In further mediating the power relations that are often inherent within research interactions, participatory visual research is also understood to furnish a more "resonant" experience for study participants (Benson and Cox, 2014; Cox and Benson, 2017). Commonly focused on arts-based methodologies, which provide a lens through which individuals' experiences of information is both mediated and queried, research to date has predominantly centred on the drawing and mapping techniques that combine the rigour of qualitative methodologies with the creativity of artistic inquiry (Hartel, 2014: 1350).

One of the simplest visual research methods, drawing, which is also known as graphic elicitation (Copeland and Agosto, 2012), has been used in several studies within Library and Information Science research. Typically used to explore participant understanding of information concepts (Brier and Lebbin, 2015; Crow, 2009; Hartel, 2014, Hartel and Savolainen, 2016; Nomura and Caidi, 2013; Smith, 2010), student drawings have additionally been valued for their role as an "interactive thinking tool" in the classroom (Hartel, 2014: 364). In contrast, mapping tends to constitute a more complex arts-based research method that asks participants to create a diagram or a timeline (Guzik, 2014) of their most frequently used information sources. Linked to social network theory, mapping has its origins in Sonnenwald's (1999) information horizon methodology and has since been used with a variety of high school (Hultgren, 2009; Rivano Eckerdal, 2013) and college-aged students (Sonnenwald et al., 2001; Tsai, 2010, 2012) in Sweden and in the United States, public library users in the United States (Copeland and Agosto, 2012), immigrants to Canada (Allard, 2015) as well as in a modified version with internet users (Savolainen and Kari, 2004), environmental activists (Savolainen, 2007) and archaeological professionals in Finland and Sweden (Huvila, 2009). Since these early beginnings, information horizon methodology has also been extended to form the basis of the information world mapping framework (Greyson, 2013; Greyson et al., 2017; Martzoukou, 2017; Shankar et al., 2016). Combining photovoice (explored in the next section) with relational mapping and information horizons methods, information world mapping was designed to afford the young parents in Greyson's Canadian study greater control over their information source diagrams while also emphasising a broader range of information activities (Greyson et al., 2017). Coupled with Lingel's (2011, 2014) participatory mapping method, which she uses as a visual (and physical) complement to the critical incident technique in her study of transnational urban information practices in the United States, these studies demonstrate that visual research methods are particularly useful within hard to reach communities.

2.1 Visual elicitation methods

Visual elicitation methods, which use images to drive interview discussion, form another way to explore participant memories and experiences. Most commonly centred within Library and Information Science on researcher-generated images, visual elicitation methods incorporate photographs as well as diagrams, drawings and other artefacts. In sharing researcher-created modern and historic photographs of a local street, researchers in Orkney prompted an exploration of information interactions in a small island community (Baxter et al., 2015). Similarly, Rivano Eckerdal (2013) and St Jean (2014) used a deck of cards that detailed potentially relevant information sources to guide their interviews with research participants. Visual elicitation methods also include photographs that are created by study participants. Used to stimulate and focus participants' responses

(Prosser and Loxley, 2008), photo-elicitation methods, which include the use of photovoice, are most frequently used to explore participants' understandings of a specific situation. Driven by discussions of the photographs that participants take and share with the researcher, photo-elicitation methods have tended to be used for library community needs analyses within the field of Library and Information Science (Luo, 2017). Coinciding with the rise of interest in user experience research (Fried Foster and Gibbons, 2007) and emerging from the wish to address "unintentional misalignments between a library's services and user needs" (Gibbons, 2013), photo-elicitation is one of a suite of research methods that has been employed to inform the design of more responsive libraries. Providing a way for librarians to gather feedback about their patrons' perceptions and use of library space (Haberl and Wortman, 2012; Neurohr and Bailey, 2016; Newcomer et al., 2016; Pun et al., 2017) as well as student research habits and preferences (Buck, 2016; Click, 2014; Click et al., 2012), these studies provide insight into information needs within changing library environments. Most recently, photo-elicitation has been used in conjunction with the Pixstori app to explore the information experiences of three to six-year-old children (Barriage, 2016; 2017). Facilitating child-led tours of their daycare centre, photo-elicitation was seen to afford these young participants a sense of control over the research as well as to encourage communication with the researcher.

　　　　Photovoice forms a specific type of photo-elicitation method. Often confused with photo-elicitation, photovoice is a participatory action research method that was developed by health education researchers in rural China (Wang and Burris, 1994). Noting that female perspectives were often overlooked and underrepresented within community needs assessment projects, Wang and Burris (1994) asked 62 women to take photographs relating to health issues within their community, environment and family. Subsequently shared and discussed locally as well as exhibited for regional policy makers, these photos facilitated collective organisation around health interests while also influencing priorities within rural development projects. Differentiated from photo-elicitation methods by the emancipatory focus, photovoice, which has its roots in feminist inquiry and the work of Freire, has since been defined a process "by which people can identify, represent and enhance their community through a specific photographic technique" (Wang and Burris, 1997: 369). Within Library and Information Science, photovoice has only been used in handful of studies. Positioning photovoice as a tool that can be used to uncover student worldviews, Julien, Given and Opryshko's (2013; see also Given et al., 2011) study of undergraduates was one of the first to use photovoice as a research method. Since then, two separate groups of researchers have used photovoice to explore the information activities of refugees in Australia (Khoir et al., 2014, 2015a, 2015b, 2015c; Lloyd and Wilkinson, 2016, 2017). Noting that photovoice provides a useful way to mediate the challenges of research with participants from culturally and linguistically diverse backgrounds, Lloyd and Wilkinson's (2016, 2017) use of photovoice also draws attention to the social practices that form the foundation of learning during re-settlement. Findings from Lloyd and Wilkinson's studies as well as from ongoing doctoral work into the information literacy practices of language-learners (Hicks, in progress) will be used as guiding studies to demonstrate these implications further.

3. Guiding studies

3.1 Information literacy practices of refugee youth

Photovoice technique was employed in an action research project that explored the everyday spaces of refugee youth (Lloyd and Wilkinson, 2016, 2017). The aim of the project was to identify the information needs, literacies and learning practices of refugee youth and to feed this information back to the government and community organisations who support young people outside of school. Photo-voice technique was justified as an appropriate technique because:

1. People are often challenged to describe the intangible aspects of their information literacy and learning practices, particularly when these occur in settings other than formal education (Lloyd and Wilkinson, 2016)
2. It accommodates variation in language and literacy levels of the participants involved in the study, allowing refugee youth to convey their understanding as represented in the photographs.
3. It enables participants to control the flow and delivery of information, empowering them to control what aspects of their experience were represented. This is particularly important when building relations of trust and social inclusion with vulnerable populations such as refugee youth.
4. It acts as the catalyst for deep discussions amongst participants in focus groups as well as with researchers and encourages a collaborative participatory approach.
5. It provides an appropriate method of data collection which could be used in presentations to the stakeholders.

As an inductive and participatory approach, photovoice encouraged engagement with the research process (Lloyd and Wilkinson, 2016) and allowed the researchers to develop a clear understanding of information seeking and learning practices from young people's viewpoints. Simultaneously, photovoice captured the viscerally and intangible aspects of these practices (Clark-Ibáñez, 2004).

Participants were recruited based on refugee status (their own or their parents' status) and each participated in a training workshop that addressed practical, ethical and safety issues prior to the project commencement. In the data collection phase, participants spent several weeks taking photos of the types of information and information sources that were important to them and the places where they went to obtain information. During data collection, researchers maintained contact with the participants through Facebook and text messages to remind them of the purpose of the project. At the end of the photography phase, participants reviewed their photos and selected the five that represented their experiences with information. In the ensuing workshop, participants were broken into smaller focus groups to explore both their photos and their reasons for taking them. Centring upon a series of pre-determined questions as well as questions that arose when photos were described and discussed by the group, this dialogic process emphasises the collaborative nature of the photovoice method as participants and researchers worked together to developed a shared understanding of the experience. At the conclusion, the three focus groups came together to view the photos. The three focus

groups and the larger combined group session were recorded. Photos and the transcripts of the focus groups and the combined group sessions created the data set that was analysed to identify common themes and perspectives. These were then mapped to aid further analysis.

In keeping with the ethos of participation and empowerment, a final workshop was held prior to the presentations for community service providers and the refugee community. In this workshop, refugee youth participants were presented with and discussed the selected photos and the situational maps that reflected how participants had experienced learning, the enactment of information literacy, and key information sites and sources to ensure accuracy of representation. Researchers then worked with participants to develop a set of key messages that would be delivered in the community presentation. The findings of the community phase of the project were presented by the refugee young people and the researchers to the service provider community. Photos selected by the participants were displayed and then used as 'talking points' to initiate conversations between service providers and the participants. Research ethics clearance was obtained prior to the start of the study.

3.2 Information literacy practices of language-learners

The second study (Hicks, in progress) that informs this paper uses photo-elicitation methods to inform ongoing doctoral research into the information literacy practices of English-speaking undergraduate students who are learning a language abroad. Exploring how transition within a new cultural context is mediated through the enactment of information literacy practices, this study's focus on everyday experiences meant that photo-elicitation constituted a way to explore the nuances of student meaning-making as they established themselves within a new setting. More pragmatically, and given that data collection took place over an entire academic year as well as in 15 different countries, photo-elicitation also formed a useful method to gather data between interviews and to gain a sense of everyday life from a distance. In further enabling students to express themselves in their own terms, photo-elicitation also helped to build the rapport that was essential to work with research participants at a distance.

The study comprised 26 students who were studying a language other than English and who were studying, working or volunteering abroad for a period of at least three months. Photo-elicitation was introduced into the study after the initial online interview with each of the participating students. After explaining the purpose of the study as well as engaging participants in a discussion about the ethics of capturing media, students were offered the option of participating in photo-elicitation using either a smartphone app or email. The first option involved the use of students' personal mobile device and the EthOS Ethnographic Observation System (n.d.), which is a proprietary iOS and Android application (app) for smartphones or tablet computers. A simple to use project management application, EthOS enables participants to record, keep track and share photos with the researcher. The study's focus on everyday information activities as well as high levels of smartphone ownership (Pew Research Center, 2013) meant that a mobile app was appropriate for this research. The second option, which was designed for students who either did not have a mobile device or a data plan abroad, allowed students to email photographs. Students were instructed to take photos of anything that had helped them to learn about their new setting or that had helped them to settle in. The study

concluded with the pre-departure interview in which the students and the researcher discussed the meaning of each photograph as well as what it represented and why they recorded it. Discussions about images were then transcribed and analysed as part of the interview data. Research ethics clearance was obtained prior to the start of the study.

4. Visual research and information practices

The paper will now turn to demonstrate how photo-elicitation and photovoice methods contribute to the development of information practices research, with a specific focus on data collection and data quality.

4.1 Data Collection

One of the most important strengths of visual research methods lies in the ability to facilitate research with communities who may be hard to reach or who may not feel comfortable engaging with more traditional research methods. Refugee participant language and literacy, for example, was mediated in the photovoice study by both the simplicity of the method and the non-textual mediation of experience. In contrast, photo-elicitation was used to work more intensively with groups whose geographic location limited their research interactions. Employed in conjunction with a voice-over-internet-protocol (VOIP) videoconferencing service, the photo-elicitation study engaged with students who were residing abroad anywhere from two to 16 hours ahead of the researcher's timezone. Combined with VOIP services, photo-elicitation played a key role in mediating geographic remoteness and developing greater insight into participant lives. The use of photo-elicitation additionally enriched the interview process by building rapport with participants who were both recruited online and were not previously known to the researcher.

Beyond opening the potential for research with new communities, visual methods also extend data collection to and within new spaces. While researchers often establish high levels of trust with the participants in their studies, there are still many personal or everyday spaces that an outsider cannot easily access. In relinquishing control of data generation to participants, visual methods provide an entryway to previously inaccessible locations and broaden the range of settings in which information research can take place. This was particularly visible in both the refugee and the language learner studies, which emphasised learning that takes place outside formal or institutional settings. Participants in both studies took photos in a variety of hard-to-reach settings, including their home and their school or workplace as well as in various locations around their new city or town. Similarly, the ubiquity and the portability of cameras and phones provided access to mobile spaces. Affording insights into information interactions of participants with, for instance, transportation systems as well as with public signage and everyday rules, participant photographs drew attention to the importance of capturing data gathered on-the-go from between settings as well as from more fixed locations. The use of smartphones also bridged digital and physical spaces. The considerable number of screen captures that were presented in the language learning study illustrated both the multimodal nature of student engagement with information abroad and the seamlessness of their digital and physical information interactions.

At the same time, visual research methods can limit or constrain data collection. The very visible nature of photovoice, for example, means that it becomes much harder to ensure the confidentiality of both the research participants and the people and places who may feature in their photos. While the structure of photovoice ensures that the research participants themselves have considerable control over the pictures that they choose to take and represent, they may unwittingly breach the confidentiality expectations of others by taking photographs of people or places without their consent. Similarly, the inherent focus on community action within photovoice makes it hard for the researcher to guarantee complete anonymity and confidentiality for either the participant or for family members whose home or other recognisable information may be represented very publically in an exhibit or as part of an attempt to effect community change. The use of digital photos extends these challenges in several ways. The continued development of facial recognition software runs the risk that individuals who are represented in photos may be able to be identified later if photos are not stored securely and in a safe location. Additionally, the metadata that is automatically recorded when digital photos are taken (for instance, a GPS location as well as time/date stamp) means that participants may be sharing more details about their lives than they realise. These issues should be weighed carefully when considering whether to use photovoice, particularly in relation to marginalised or stigmatised groups.

Clearly worded consent forms and the provision of enhanced training helped to counter these ethical issues. Prior to taking photos, every participant in the photovoice study participated in a training workshop that addressed the practical, ethical, personal safety and privacy issues related to data collection. In the photo-elicitation study, the ethics of taking photos in a location with different cultural norms was additionally discussed at the end of the initial interview and prior to the photography phase. A one page summary of recommendations was further sent to each participant after this discussion, with the explicit request that students ask any individual that featured in their photos for verbal consent to have their photo taken. This requirement was checked when the students discussed photos in the second interview. Photographic aspects of this research project were also highlighted in both the recruitment website and the participant information sheet that were sent to each student before they agreed to participate in the study as well as in the consent form, which further outlined student expectations for privacy and confidentiality. These safeguards were supplemented through a careful examination of guidelines for visual research ethics, which present useful considerations that should be explored before these methods are used (Cox et al., 2014).

The reliance on technology also served to both facilitate and constrain data collection. Providing the participants on the photovoice study with non-networked digital cameras ensured broad participation in the study while also preventing them from 'accidently' posting images related to the study online. However, the poor quality of these devices in comparison to that of most mobile phones proved to be frustrating. At the same time, the use of participants' own cameras in the photo-elicitation study was not without its issues. A lack of memory or storage often limited the number of photos that students could take with their phones, while a broken device as well as a crashed computer meant that some photos were lost before they could be shared.

4.2 Data Quality

Another important strength of visual research methods is the ability to generate and collect information that may not be easily captured when traditional qualitative methods such as interviewing are the sole means of data collection. Participants' ability to recognise the specific affordances of a setting that encourage meaning-making facilitates the representation of their own understandings and ideas about what constitutes information. Both complex and contested, the concept of information is notoriously hard to understand as well as to explain. The use of photographs, however, makes it far easier for research participants to portray the information sources and activities that they use in their everyday life rather than attempting to explain these ideas through descriptions. In turn, ensuing discussions can help to clarify and explore concepts while also giving access to viewpoints that might have otherwise been overlooked. As such, and crucially for the Library and Information Science field, one of the key benefits of participatory visual research methods is to empower participants to represent their own understandings of what information means to them.

The focus on participant meaning-making can also help to gain insights into the tacit and nuanced information that structures a setting. Although information research often captures the normative or institutionally sanctioned aspects of practice, it is much harder to capture informal ways of knowing. The focus on participant rather than researcher priorities as well as the opportunity to build upon the clues that are found within photos means that visual research methods help to explore the meaning of taken-for-granted information activities and objects. A photo of a statue, for example, led to a long discussion about way-finding and the importance of observing within the photo-elicitation study. The opportunity to discuss commonplace or seemingly unimportant information activities also means that participatory visual research methods can generate understanding about the contingent affordances of a site or information that is only available and visible in the moment. In surfacing stories about bodily engagement within a setting (for example, movement or the sound or traffic), photos further serve as a touchpoint for embodied recollection rather than merely providing a snapshot of the visual. Capturing the ambiguity and the complexity of a setting, photographic research methods expand the breadth and the scope of research data by drawing out social and corporeal forms of information as well as the textual. The inherently reflective nature of participatory research methods may also facilitate a more critical consideration of events.

At the same time, the question of representation means that the strengths of photographic research methods are also viewed as its weaknesses. Given that photographic data is an expression of the epistemology of the participants, it is important for researchers to acknowledge that images may equally be used to misrepresent as well as to capture a person's experience. It is therefore necessary to ensure that the use of participant photographs is combined with other methods such as focus groups or individual interviews rather than being employed on its own to safeguard the credibility and the trustworthiness of the analysis. Discussion also helps to ensure that participants' meaning is captured, particularly when photos do not represent standard (or scholarly) understandings of information. While a photo of one of the language learner's FaceTime sessions with her dog at home initially appeared to be inconsequential, it eventually helped to illustrate the importance of family connections within information activity and to round out one of the study's final analytical codes.

5. Future Directions

How might visual research methods develop in the future? The use of video provides one obvious yet largely unexplored path that visual research methods could take. While Lundh (2011) pioneered the use of video within her doctoral work, few researchers have explored these ideas further including examining how video could be used as a participatory rather than as a documentary method. The growing popularity of wearable cameras such as GoPro as well as the ongoing technological development of mobile devices mean that moving images have the potential to play an increasingly important role within information research. At the same time, the use of video will have to mediate numerous ethical considerations before it can be widely used within research settings, including the possibility of recording voices and the actions of others without their consent. In addition, various high-profile media cases mean that intercultural research may be hobbled by the varying laws about filming in public places around the world (Mok et al., 2015: 317). One innovative use of moving images that has emerged from outside Library and Information Science is Bhatt's and de Roock's (2013) use of video to carry out micro-analyses of digital literacy practices. Exploring how learners accomplish classwork, Bhatt's research design recorded and conflated a screencast of student computer usage with a video recording of their activities as they worked to complete an assignment (Bhatt and de Roock, 2013). Creating rich and dynamic multimodal data about the complex interplay between and across online and offline literacy practices within the classroom, Bhatt's research in a British further education college is technically challenging yet provides a close examination of student learning.

In turn, visual methods could also catalyse research that explores information literacy as a teaching practice rather than as a research object. While the recent growth in critical and radical information literacy has inspired greater interest in learner-centred classroom pedagogy (Hicks, forthcoming), there has been little corresponding interest in the development of learner-centred research methods within the information literacy classroom. However, given that critical information literacy, like photovoice emerges from feminist theory and Paolo Freire's emancipatory work, photovoice has the potential to align the theory of critical information literacy with both its practice and its research design. In further helping to redirect classroom research towards an exploration of student needs and strengths rather than their deficits, photovoice could also facilitate the ongoing development of more constructivist understandings of teaching and learning as well as positioning information literacy as the means through which community change can be effected.

6. Conclusion

As researchers continue to explore the embodied, multimodal and artefactual nature of information, this paper has demonstrated that visual research methods provide a useful way to mediate a more equitable and detailed exploration of information experiences. Helping participants to control the representation of information as well as to capture and express its intangible elements, both photovoice and photo-elicitation facilitate access to new communities and spaces as well as to the different information activities that these information modalities engender. Although the very nature of visual methods, coupled

with the ongoing challenges that are inherent within digital research environments, present several ethical and practical limitations that need to be addressed within a research design, the use of photographs affords considerable potential for the continued development of information practices research.

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