When (and when not to) use ethnography for designing the user experience in libraries

Alternative title: The why, what and how of using ethnography for designing the user experience in libraries (and a few pitfalls to avoid)

Bio

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1. Why ethnography is well-suited to designing the user experience in libraries

If you're reading this book, it's likely that you're engaged with creating a library user experience that is usable and convenient, pleasurable and meaningful. The drive to revamp or create services is laudable and it's tempting to begin brainstorming new services or changes to existing library spaces based on what we believe is usable, convenient, pleasurable and meaningful. Our professional understanding of what library users want from their experience, however, can differ vastly from what our users themselves want from their experience. Finding out what a user truly needs and truly wants can be deceptively difficult, as it's not a question of what we **think** our users will find usable, convenient, pleasurable or meaningful and we also can't necessarily rely on how our users **say** they will find usable, convenient, pleasurable or meaningful. In this chapter, I argue that we **can** rely on what their actions tell us about their experience in the library to get a truer understanding of what they want and need.

It's not as though we lack for user data in libraries. Librarians gather lots of data about users. Statistical data such as those gathered by SCONUL in the UK, ACRL in the USA, and die Deutsche Bibliotheksstatistik (DBS) in Germany are useful for tracking long-term trends and comparing institutions but they give frustratingly little context. They leave many of us asking questions such as: a book was checked out but did it fulfil the user's need or did they get it home and realise it was off-topic? Did they run out of time to read it? Ok, a user came in the door but did they use the restroom and leave immediately or were they there to ask a question or spend the day wrestling with

Heidegger? A user visited the website and closed the browser tab after 3 minutes. What did they plan to do or find on the site? Did they find it and leave quickly or did they get frustrated and close the browser tab?

Robust survey instruments like LibQual or a well-designed local survey that is well-analyzed can tell you bits and pieces about users but you will lack a full, rich explanation. The National Student Survey (NSS) of university students in the UK is a classic example of something that is generalizable, comparable, valid and reliable. Its 16th question asks whether a library's resources and services are good enough for students' needs. It does not probe the meaning of 'good enough', how and whether a user understands the words 'library resources and services' and whether they interpret them the same as those analysing the data. Quantitative data can be fine if you want to know more about a phenomenon that can be quantified but statistics and surveys aren't very useful when dealing with concepts such as 'usable', 'pleasurable', 'meaningful' or 'convenient', which are the goals of the user experience.

Ethnography helps you to collect data which closes that gap. It is the classic method for understanding culture, which doesn't sound entirely practical until you consider that ethnography is a translation of a study population's language, their worldview, their culture into a product (most often a text) that makes sense to outsiders. Because a user's cultural context determines work practices and library use, ethnographic understanding provides the piece of the puzzle that we so often lack from surveys and statistics: context, understanding, and insight (Greifeneder 2012). It is a valuable tool for triangulating (checking that the results you got with other methods hold true when tested in other ways), verifying and enhancing your understanding. The goal is not to understand the magnitude and distribution of a particular phenomenon as it is in quantitative methods but rather to gain a very deep understanding of the phenomenon in a particular setting (DeWalt and DeWalt 2002, p. 3). As Gabridge et al. describe their approach to triangulating with ethnography, 'the survey could not provide details about how and whether these resources and services were being used. We anticipated that seeing this complete context would help highlight the service gaps that the MIT [Massachusetts Institute of Technology] Libraries needed to fill.' (Gabridge, Gaskell and Stout 2008, p. 512) Librarians who have puzzling results or incomplete (if completely valid) results from their statistics or surveys might have a perfect area of ethnographic study.

Ethnography can also be used at another stage in user research: to inform future, more focused data collection and to design. Because ethnography is particularly helpful for understanding and translating language, understanding user's movements and practices, it can help to design better surveys or interview schedules, as well as to help create focus groups or experiments. In their

ethnographically inspired taskscape analysis, Delcore et al (2014) asked students to 'map' their days: drawing in their locations on printed maps at different times of the day. They discovered that many of their subjects had days that purposefully avoided the library; days that avoided the 'geographical centre' of the campus because they variously needed quiet, felt unwelcome, and felt that the library wasn't a place for them because of their learning disabilities or their age. Targeting nonusers can be really difficult, because they are not present in your gate count, circulation and website statistics, they don't ask questions, and they don't go the places that you go. This background knowledge on library non-users, a tremendously difficult group to conduct library research upon, gives valuable insight for planning should researchers ever want to gather a representative sample for a survey or interview. Despite its usefulness in helping inform future research, approaching ethnographic research with a fully open mind will lead to richer date. The more open you are, the more likely it is that you will find questions, behaviors, and explanations to probe that you never expected.

Though many librarians may not have the statistical skills or the training in quantitative research methods needed in order to create robust survey instruments, librarians **are** well suited to collecting ethnographic data about our users, have the classification skills needed to analyse the data and may have the writing skills needed to write up the finished project. Librarians are both involved and detached from the user communities that we work for, which is the key element for locating and entering and beginning to understand a research field (Powdermaker 1967; Robben and Sluka 2012).

Delcore argues that '[i]n the end, to know library users accurately is to know how to reach them effectively with core library values and services.' (Delcore et al. 2014). I believe that this idea can be extended to design as well: to know library users accurately is to know how to design effectively for them. To that end, this chapter describes why and when a designer who wants to create an engaging, efficient user experience in a library might like to use ethnographic methods, and what types of questions are best answered using these methods. This chapter also highlights some of the method's pitfalls and ways to avoid them. Rather than hoping (and failing) to write an exhaustive guide to ethnographic methods and research design, this chapter is meant to be a springboard and inspiration to those interested in trying the methods out, and points out relevant literature to read further. The budding librarian ethnographer is encouraged to consult the Methods Toolkit produced by the ERIAL research team (Asher and Miller [2011]). This toolkit is exceptionally well-written and easy to understand, in addition to pointing an interested reader to a solid range of further reading.

2. What has ethnography looked like in libraries?

This section describes how ethnography and its precursors have been used in library research from the end of the nineteenth century and up to the present[1] and outlines the methods that are most relevant. There are researchers who stretch the types of data collection you can subsume under the heading of ethnography, such as role play (Delcore et al. 2014), focus groups play (Gabridge, Gaskell and Stout 2008), or include structured (as opposed to ethnographic) interviewing. In this chapter, I focus solely on participant observation, cultural probes and thick description and how these techniques have been and could be used in library research.

Though the term 'ethnography' doesn't appear in the LIS literature until relatively recently, the desire to understand a user community in context and in all its complexity has a long history in libraries. In her review of ethnographic methods in LIS, Goodman points to the use of something called 'community analysis' which relies on a holistic understanding of a library's community with the goal of improving the service that library provides. The roots of community analysis are documented as early as 1896 with an essay advocating that librarians know their communities and understand users as individuals in order to provide better library service (Cutler 1896). This approach is carried throughout the 20th century. It can be argued that librarians who are interested in ethnography today should consider looking at the community assessment literature as well (McCleer 2013). Ethnography in libraries has received a considerable boost from Fried Foster and Gibbons' inspiring 2007 work on student work habits, 'Studying Students', a trend which has even been mapped but these types of highly qualitative research studies are still a tiny proportion of the library literature (Khoo, Rozaklis and Hall 2012).

Khoo et al.'s 2012 systematic review of ethnographic methods in LIS includes a review of useful readings for the beginning librarian ethnographer, both in LIS and in anthropology and traces the development of the method throughout the twentieth century to the present day. Those interested in the roots of the method and its use in LIS should refer to these two articles.

2.1 Participant observation and cultural probes in ethnographic research

In order to collect data for ethnographic research, you can conduct participant observation or you can use a cultural probe, where the study population gathers data on themselves at the request of

[1] This article is limited to my experiences and perceptions of academic libraries in the United States, the United Kingdom and Germany and things may be different in other types of libraries and other countries. The terms ethnography and anthropology are used interchangeably.

the researcher. The researcher will be using fieldnotes and memos in an effort to write a 'thick description' of the study population.

2.1.1 Participant Observation

Participant observation is a combination of entering the life world of the subject, understanding its logic as the subject understands it, feeling and thinking and hearing as the subject but ultimately as an observer, or as one distinct from the group who objectifies that world (Rock 2001). Emerson, Fretz and Shaw describe participant observation as 'establishing a place in some natural setting on a relatively long term basis in order to investigate, experience and represent the social life and social processes that occurs in that setting.... Producing written accounts and descriptions' (2001, p. 352). It is the ultimate form of 'being there' in the anthropologist Clifford Geertz' sense (Geertz 1973). It is the classic method of actually collecting data on study populations in ethnography. The process of participant observation is iterative and the research goals are guided by the subject.

The phrase participant observation is contradictory because as a pure participant, you are too engaged to observe or reflect and as a pure observer, you are too detached to participate (Paul 1953 as cited in DeWalt and DeWalt 2002). The exact mixture of participation and observation will be dictated by the aims of the research and also by the individual nature of the subject community and the researcher. There may be limitations on the amount of participation that a researcher can have given barriers constructed by differences in gender, age, ethnicity or class. In the case of a librarian ethnographer studying students at a university, the most frequent barrier will be age (you could overcome this barrier by studying mature students or by employing an undergraduate research assistant). A librarian studying a scholarly community of researchers might encounter the barrier of a lack of disciplinary knowledge. A librarian studying a public library community might encounter barriers of age, class, or ethnicity.

The level of participation in participant observation can range from nonparticipatory observation, to passive participation, to moderate participation, to active participation to complete participation. Research goals should always determine the level of participation. Practical considerations such as ethical review, employment contracts, professional duties and many other factors may well conspire however, in taking this decision out of your hands.

Regardless of where the involvement level falls, the degree to which you participate and the degree to which you identify with the community must be clearly described in methodological notes, fieldnotes and diary entries. If you don't do this, you run the risk of ethical violations and invalid, unreliable findings. The literature on ethnographic ethics is vast, but a good starting point would be

Clifford and Marcus, 1986 or Murphy and Dingwall, 2001.

DeWalt and DeWalt describe the key elements of participant observation as:

- Living in the context for an extended period of time;
- Learning and using the local language and dialect
- Actively participating
- Using everyday conversation as an interview technique
- Informally observing during leisure (or 'hanging out')
- Recording observation in field notes.

Techniques for being a good observer include keeping in mind that you will need to describe this later and that there can never be too much detail. Naïve observers tend to see more than native observers, so try to return to the field each day with fresh eyes, never taking any observation for granted. It is surprising how much you will forget. Besides DeWalt, a highly readable guide to participant observation is Crang and Cook 2007.

2.1.2 Cultural probe:

Another data collection technique is the cultural probe, where a researcher commissions a study population to collect data on themselves. Researchers request participants with prompts such as 'take a photo of how you like to write your essay' or 'take a photo of a place you like to concentrate' and give them tools such as one-touch cameras, blank maps of a campus or building, or postage-paid postcards with prompts written at the top. Tools can be technical, such as audio or video recorders or as simple as large or small pieces of paper. These visual or audio artifacts are then used to jog the memories of students later in interviews or debriefing sessions and also as data for the researchers to interpret and analyze. If you had a students as researchers scheme, you could also have students assist with interpreting and analysing cultural probe data in order to reduce the aforementioned barriers to understanding. By nature, these are brief prompts, and the brevity makes barriers to participation very low. Completing the task should be easy and appealing, from the moment a participant is handed a neat package containing their prompts and tools[2].

This method was used with great success by Fried Foster and Gibbons, when they asked students to map their movements around their university campus during 24 hours and also to make photo documentaries of their study environments. They also asked students to draw and use other arts and crafts materials to design their ideal reading rooms in order to inform library space planning. Inspired by Fried Foster and Gibbons, cultural probes are popular in library research and have been

[2] Both Gaver and Fried Foster have published photographs of their cultural probes' appealing packaging.

copied extensively but most notably in 3 large-scale ethnographic studies in the USA by anthropologists at MIT (Gabridge, Gaskell and Stout 2008) and California State University Fresno (Delcore et al. 2014) and by the ERIAL team in Illinois (Asher and Miller various).

Because the cultural probe is usually visual, it can cut down on jargon, which leads to misinterpretation, the plague of many questionnaires, surveys and interview schedules. If a user does misunderstand the prompt and photographs or maps the 'wrong' thing, it can still give you valuable insight into how impenetrable and ambiguous library jargon and library thought can be outside of the library world. Because of the iterative nature of the method, if the prompt is misunderstood consistently, you might have a chance to clarify it on the fly. The cultural probe also gives access to places researchers might not normally be allowed, as well as allowing access to users 24 hours a day. Perhaps most importantly, it can make the data collection process fun.

Unlike participant observation, cultural probes do not have their roots in ethnographic literature. They are first described by Gaver, Dunne and Pacenti in the field of human computer interaction (1999). These authors conceived the cultural probe because they wanted to balance between researchers' authority and the participants' voices. They wanted a tool that 'wouldn't seem irrelevant or arrogant… but we didn't want the groups to constrain our designs unduly by focusing on needs or desires they already understood. We wanted to lead a discussion with the groups toward unexpected ideas, but we didn't want to dominate it.' (Gaver, Dunne and Pacenti 1999, p. 22).

Interestingly, Gaver et al. differentiate cultural probes from ethnographic studies and base them on fine arts, postmodern, surrealist and situationist methods. They do this in order to be open to what they call 'unscientific' impressions, sources and inspirations in addition to the data they get from classical methods. Though the cultural probe as such is not mentioned in the ethnographic literature, a similar approach, known as 'autophotography' does have a rich literature to inform it (Crang and Cook 2007; Dodman 2003; Kenney 1993; Worth and Adair 1972; Ziller 1990). In autophotography, 'the researcher encourages or commissions participants to take pictures of parts of their environment or activities, in order to learn more about how they understand or interpret their world and themselves within it' (Crang and Cook 2007, p. 111-112). How people photograph or draw their space is a rich source of social meaning.

Research design is as crucial for cultural probes or autophotographic projects as it is for any other type of user research. As Gaver et al put it: '[w]e believe the cultural probes could be adapted to a wide variety of similar design projects. Just as machine-addressed letters seem more pushy than

friendly, however, so might a generic approach to the probes produce materials that seem insincere, like official forms with a veneer of marketing. The real strength of the method was that we had designed and produced the materials specifically for those people and for their environments.' (p. 29).

2.1.3. Thick Description

The written product resulting from ethnographic research is a 'thick description' of the events, practices and other 'significant symbols' not just as you saw them happen but also the context in which they reside (Geertz 1973). This thick description is the 'translation' of a native culture into a form that makes sense to an outsider.

To aid understanding, Geertz gives us the example of a wink, which is a physiological motion that any human can make either involuntarily or in reaction to a physical stimulus. A wink can also be a form of communication. An ethnographer observing a wink would have to figure out, given the context, whether it was a physiological reaction or a method of communication. If it were a method of communication, the ethnographer must count on being able to understand both what the person winking was hoping to communicate and whether the intended meaning was understood by the person who was winked at.

From this section you may have gathered that data gathering, analysis and writing cannot be neatly separate tasks. You will need to consider all of them at the beginning of the project and revisit them throughout. Hence the idea of thick description has been included as part of the methods section. Data gathering, analysis and writing are not separable tasks in ethnography but happen continuously, which is why thick description is both method and research output.

2.2. The ongoing evolution of ethnography in LIS

'A set of core methodological commitments and common research settings has been described, suggesting that the studies reported form a coherent and emerging research genre that uses ethnographic methods to investigate libraries, their users, wider social contexts, and the relationships between these phenomena.' (Khoo, Rozaklis and Hall 2012, p. 86)

Because most ethnographic research that is conducted in library and information is done to inform a project or for the practical purpose of gaining insight into our user population, it does tend to stray quite far from a 'pure' academic ethnography which has no other purpose other than 'another country heard from.' (Geertz 1973, p. 23) It is, rather, applied ethnography—that is, 'ethnography pursued with the purpose of uncovering, understanding and addressing social problems' (Asher and Miller [2011]). It's possible that these 'quick and dirty' ethnographic methods are ok to use,

especially those that build upon the relationships and knowledge that someone experienced in a culture may already have (a researcher studying a familiar library community has several advantages over a researcher travelling to a remote village where she has never before been). Librarians are well-suited to doing this because we are familiar with our settings and do have allies among our study populations and work and live amongst them every day (Emary forthcoming). We cut down on the more time-consuming aspects of the rapport-building inherent in classic ethnography if we put these strengths into our research design. These methods may not exactly be a classic ethnography but rather be better subsumed under the qualitative or mixed method umbrella. You could also consider conducting what might be better called 'ethnographically-inspired' research, where your interest isn't simply academic. Those interested in rapid or applied ethnography will find resources in computer science and manufacturing literature such as (Sperschneider and Bagger 2003; Handwerker 2001; Forsythe 1999, pp.127-145; Anderson 1994)

Though there are exceptions, such as Asher and Delcore, LIS ethnographic research is not published in traditional ethnographic literature. In addition, Goodman points out that librarians have tended to ignore the original ethnographic thinkers, instead citing research within LIS. The popular cultural probe technique's root in human-computer interaction and the arts is further evidence that a certain kind of applied ethnography for LIS purposes is developing in its own right in LIS. Because the methods are becoming more popular and established, and also lack the disciplinary influence both in publication and in their bibliographies, it is incredibly important that they be well designed.

3. Selecting the research question

When designing research, the first thing a researcher should do is to determine that the question is important to answer and that answering it will add to existing knowledge. This accomplished by finding where it fits into the existing body of literature. It is of commensurate importance to match the research question to the main data collection method, making sure that the technique selected can answer the research question. Ethnography is always rooted in a time and a place so it's best used for understanding a snapshot of current practice in time rather than for explaining past events, changes, or future behaviour.

In the case of observation, there are certain questions that are well-suited to the method, and they are ones which require description, interpretation, and explanation of what is currently happening for their answer. Observation is, however, limited to things that are *observable*.

It is impossible to observe an event which took place in the past, so using participant observation and cultural probes to explain behavior which took place in the past is complicated. It is possible to

gain, through participant observation, conversation, artifacts of material culture and documentary analysis an understanding of a cultural memory or a reconstructed life story (Crang and Cook 2007). Whether this type of analysis is appropriate should be driven by the research question but its utility for the user experience seems limited.

Likewise, you cannot use ethnography to predict the future because you cannot observe an event which has not yet taken place. This is deceptively complicated. Often, when we do research driven by strategic goals, we want to know what's going to happen so we can prepare for it. An understanding of current practices and cultural norms can help anticipate further actions. You can use ethnographic methods to inform future, more focused research such as the design of a Dan Ariely-style human behavior experiment (Ariely 2009) or to generate user requirements for a library management system. It's possible to construct a strong hypothesis based on your rich understanding of culture but you cannot rely on ethnographic data to create a model of what will happen in the future.

In the case of user experience it's useful to think about research questions which have events or practices that you might be able to observe. Events can be commonplace, routine, daily events or they can be rare and special events, though rare or special events can be, by nature, difficult because they either cannot or can only infrequently be observed. Both can be important, depending on the research question but be especially careful about discounting the importance of commonplace events.

3.2 Research questions and approaches

This section highlights some possible questions you might like to ask about the current user experience in your library and how you might use ethnography to build a strong user experience. The suggested approaches are just one of many that could be taken. Types of questions that might work best are ones that ask 'what is the nature of X in a particular setting?' and 'how does it fit?'

Research interest	Possible Approach
1. Users dislike the library's discovery tool and it doesn't seem to be helped by offers for additional training. You'd like to understand the nature of their discontent and what their problems are.	This would be great for participant observation. Ask if you can sit with users while they search for resources. Don't limit participants to using the discovery tool, even though you'd like to! If you were interested in how users responded to and used the discovery tool, consider the Think Aloud

	usability test.
2. What kind of furniture should we buy for our reading room? Or what kinds of spaces do we need in our renovated library?	Based on the atmosphere you'd like to create in your new library space (e.g. quiet concentration, co-operative work, convivial and welcoming, relaxing) have users take photographs of their favourite places for doing that activity. If there are spaces that you know of that have the atmosphere you'd like to recreate, go there and observe. Take photos of subjects sitting when they are concentrating on understanding a complicated print book. Are there differences when they concentrate on an ereader? How do they sit when reading a book on a desktop computer? When writing their essay or typing up research results? What do these photographs of concentrating people tell you about the way we should be designing study space? Counting and map drawing might be good places to start.
3. Your library ranks consistently low on user satisfaction surveys (such as the National Student Survey) but the library's collection usage and footfall statistics have never been higher. What do users really think of the library's services and resources? What are your users' true understandings of Question 16 in that survey?	Identify a library-research-intensive assignment such as an annotated bibliography. Ask participants to use a cultural probe such as a map or Lego bricks to model their ongoing use of the library during their assignment. Alternatively, have students keep an audio journal as they are searching. During debrief interview sessions, try to get at the nature of the terms 'good enough' and 'library services and resources' to find out if the user population understands these terms in the same way that you do.
4. The campus wireless network needs upgrading and you need to convince	Loan the target population digital cameras with precise locations and time stamps enabled. Ask

management to give you major funds to do so. How do staff members use wireless in their work? What happens when it fails them?	them to take photos of their devices in context when the wireless network drops. This might be a tutor in a classroom attempting connect a guest lecturers laptop to the projector, only to discover that the wireless doesn't work. Use these photographs to gather context and understanding of how your users rely on internet access at different locations across campus. You will be able to triangulate exact locations and times to find out where these events are taking place and whether your IT helpdesk is available for assistance during peak incident times. You could also approach this with participant observation by documenting the events when they lose their wireless connection. This would be well-triangulated by a paper trail.
5. What types of workarounds do your patrons use?[3] This 'misuse' of a service, equipment or space in the library can be a valuable example of actual user needs and gaps in the provision.	When you identify a workaround, try to observe it without judgment over a period of time. Try also to join in and experience what it is like to e.g. move the furniture or eat your lunch in the reading room. If you notice that patrons are using the library as a safe haven because they have nowhere else to 'hang out' during the day, abandon your desk but try to still accomplish your work.
6. Does the language you use on your webpage make sense to your user population?	The approach you use here might be similar to those you used for the discovery tool question (question 1). Use participant observation with students as they complete a research-intensive assignment. With the help of ethnographic

[3] This example is inspired by Goodman (2011).

	interviewing and observation of work practices, pay special attention to the words they use to describe their actions. Keep your ears open to familiar words used in ways that are new to you. Notice also which words are not used. It may be worth extending this to observing how to how tutors talk about the information search, as these are the people that they learn from. See also the approach described in Question 8.
7. Gabridge et al found that undergraduates tend to stop when they find information that is 'good enough' for their assignments and that graduate students move to a feeling that they can never find anything good enough. What is going on?	What is 'good enough' and how is it determined? A hands-on portion of an information literacy session is perhaps a chance to observe undergraduate searching behaviour. This might also be a place for ethnographic interviewing (for more on ethnographic interviewing see Heyl (2001) or Spradley (1979). Find a contrasting community of graduate researchers engaged in the literature review portion of their dissertation. With the help of a primary informant, see if you can accompany this community as they write their theses. What is the nature of the feeling that they can't ever find enough? Listen carefully to how they speak about their results and also what types of judgments they can't or won't articulate.
8. Students listen to tutors and to each other, rarely to librarians. You are hearing again and again from new users that a fellow student told them to come to the library to use a certain service or resource, despite the fact that you have been promoting this same resource or	Develop rapport and a primary informant in a faculty that you're interested in. Develop a participant observation research project that asks: what does communication look like from student to student? What is the nature of the relationship between students and tutor in that discipline; does it change throughout time? Who

service on social media, on the website, in printed form, in the VLE and in the lecture.	or what is excluded from that communication and relationship and what does that mean for the library? The location of the field might be: attending lectures, completing the assignments, observing and participating in the VLE, being a part of group work, and 'hanging out' with students. Keep an eye on the written course documentation and the structure of communication between tutor and student. What is said may be as important as is what is not said.
9. How can we integrate uploading to the institutional repository into research staff's workflow rather than creating an extra, onerous task?	Start by getting a holistic understanding of how they work, preferably over the course of 12 months so as to see whether/how practice and needs change depending on academic dates. Looking at work spaces, analyzing work processes such as version control, submission to a journal, archiving and sharing practices. Again, look at workarounds and mistakes and frustrations – how can you design the institutional repository in such a way that it flows with work practice or even improves its efficiency? What do you find when you literally sit in a participant's chair? What have they printed out? Do they use a keyboard or a mouse for their work? Do they have privacy and time or is their work environment rushed and cramped? Are there relationships and people they rely heavily upon for certain tasks? What is the language they use to talk about their research outputs? What do they value? What do they fear?

4. How to conduct ethnographic research in library settings: designing to maximise reliability and validity

After you have selected the question, it's crucial to design a research project that has feasible outcomes that can actually answer the question you are asking. Because ethnography casts its net so widely when looking for data and uses the researcher as the data collection instrument in many cases, it might be assumed that research design would be less important in ethnography than it would be in other areas of social science. DeWalt and others argue, however, that research design is of more central importance in ethnography than it is in other fields precisely because it is too easy to become vague and to collect irrelevant or overly biased data. Without proper design, it's not scholarly research; it's a collection of anecdotes, unreliable and invalid. For more on the dangers of poorly designed ethnographic research and the pitfalls and dangers to avoid, see Sandstrom and Sandstrom (1995).

Research design should optimize objectivity, which is composed of two parts:

- **Validity** – whether the description actually matches the phenomenon studied.
- **Reliability** - the likelihood that the results would be reproduced under the same conditions.

Validity is often challenged and transgressed in ethnography (Crang and Cook 2007) because the question of whether there is an objective reality is so complex. Researchers have a responsibility to be as scientific as possible but it's most often a case of striving to achieve rather than achieving validity. Because the researcher is main instrument for gathering data in ethnography, a certain amount of bias is inevitable. One way to improve validity is to be as explicit as possible about your own biases in fieldnotes and in the final write up so that others can evaluate findings in light of the bias. Triangulating data is also key for improving validity.

Reliability is also problematic in ethnography, as 'the same researcher never enters the same river twice,' meaning that even the same researcher in the same location can never reproduce the same results because ethnography is rooted in a time period as much as it is rooted in a specific location (see section 3 for more on this idea). Despite this, reliability can be optimized with careful documentation of choices made, particularly as regards how and under which circumstances data were collected. This is typically accomplished by writing detailed memos and a high level of reflexivity (Clifford and Marcus 1986; Davies 2008).[4]

[4] A useful tool for managing and relating memos to other data you collect is a software tool like Nvivo.

The quality and usefulness of the research will be determined by the following factors which must be a part of the research design:

- how well the type of question can be answered with the data collection method selected
- the selection of the research site (are your users geographically dispersed? Can you find them all in a lab or classroom? In a virtual learning environment?)
- representativeness of the venues, activities and informants
- strategy for recording as completely as possible
- planning for ways in which data will be analysed and triangulated.

Though sampling functions differently in highly qualitative methodology than it does in quantitative, it is still tremendously important. The sample chosen should adequately address the question you are asking, which should not be about exact size and distribution e.g. 'how many times does X occur' but rather as was mentioned in the section 3, 'what is the nature of X in a particular setting' and 'how does it fit?' Sampling can work in a variety of ways in ethnography. One could use judgment sampling, which is selecting individuals and events to study because of the characteristics that they bring to the research or one could use convenience sampling, which could pose problems in that it seriously limits representativeness. When creating a sample, you must ask the question, 'what are the relevant sources of diversity within a group?' When looking at improving the user experience for a certain faculty, sources of diversity might include sub-discipline studied and stage in their career. Actual numbers of participants will be low compared to a survey method, because the volume of data collected on each participant will be high.

There are a number of fabulous texts on research design, both in ethnography and for other quantitative and qualitative methods; as ever, a good place for the librarian ethnographer to begin is the ERIAL Toolkit (Asher and Miller [2011]).

5. Conclusions

Ethnography offers a rich and flexible method for getting to know the users whose experience we'd like to improve. With notable exceptions, libraries and librarians have an over-reliance on surveys, questionnaires, and statistics for gathering information on our users' satisfaction with our collections and services.This is also true of the LIS literature as Khoo et al. (2012) discovered: 'a recent survey … of trends in information behavior research from 1999 to 2008, identified 749 articles, of which 528 were research studies; of these latter studies, seven (1.3%) were classified as “ethnographic.” A pilot study for the present study suggested that these previously reported figures are underestimates.'

(p.83) Recent ethnographic studies in libraries have proven that results can be useful for informing how we design for users and the tradition using 'community assessment' to understand our users shows that documenting user culture is a long-standing interest for librarians.

There is evidence that, especially given the applied nature of the research that librarians do, 'library ethnography' is developing in its own right. This is exciting, as library and information science is a discipline where we lack our own methodology and must borrow from other disciplines, often with uneven results. This development has its perils, however, and we must be careful to maintain rigorous design in order to achieve as much objectivity and reliability as possible. Quick and dirty ethnography may well result in a 'thin description' where you focus more on the surface facts than on the context and translation crucial to thick description. One should be wary of the professional or logistical pressures which may compromise reliability and validity of the research we conduct. Finally, if we are going to base our research on second-hand understandings of ethnographic literature and publish our work outside of the ethnographic literature and conference sphere, we must make sure we do it on purpose and not because we are unaware of the disciplinary underpinnings and the method's current developments. If you are familiar with the rules by which the game is played, the LIS research will be the better for it.

Anderson R.J. (1994) Representations and requirements: The value of ethnography in system design. *Human-Computer Interaction,* 9 (3), pp.151-182.

Ariely D. (2009) *Predicatably Irrational* Harpercollins.

Asher A.D. and Miller S. (various) *ERIAL Publications.* Available from http://www.erialproject.org/publications/ [Accessed 19/11/2014].

Asher A.D. and Miller S. ([2011]) *So You Want to do Anthropology in Your Library? Or A Practical Guide to Ethnographic Research in Academic Libraries.* Available from http://www.erialproject.org/publications/toolkit/ [Accessed 11/11/2014].

Clifford J. and Marcus G.E. (1986) *Writing Culture: The Poetics and Politics of Ethnography*. Berkeley, Calif., University of California Press.

Crang M. and Cook I. (2007) *Doing Ethnographies / Mike Crang and Ian Cook* Los Angeles, Calif. ; London : SAGE, 2007.

Cutler M. (1896) Two fundamentals. *The Library Journal,* 21 October, pp.446–449.

Davies C.A. (2008) *Reflexive Ethnography : A Guide to Researching Selves and Others*. 2nd ed ed. London, Routledge.

Delcore H.D., Mullooly J., Scroggins M., Arnold K., Franco E. and Gaspar J. (2014) *The Library Study at Fresno State*. Fresno, CA, Institute of Public Anthropology, California State University, Fresno.

DeWalt K.M. and DeWalt B.R. (2002) *Participant Observation: A Guide for Fieldworkers*. Walnut Creek, CA, Alta Mira Press.

Dodman D.R. (2003) Shooting in the city: an autophotographic exploration of the urban environment in Kingston, Jamaica. *Area,* 35 (3), pp.293-304.

Emary L.R. (forthcoming) Librarians are already in the field: how and why to begin ethnographic fieldwork. In: Greifeneder E ed. *[No Working Title]*. Berlin, De Gruyter.

Emerson R.M., Fretz R.I. and Shaw L.L. (2001) Participant Observation and Fieldnotes. In: Lofland PA, et al. ed. *Handbook of Ethnography*Sage Publications, pp. 352-368.

Forsythe D.E. (1999) "It's just a matter of common sense": Ethnography as invisible work. *Computer Supported Cooperative Work (CSCW),* 8 (1-2), pp.127-145.

Foster N.F. and Gibbons S. (2007) *Studying Students: The Undergraduate Research Project at the University of Rochester*. Chicago, Association of College and Research Libraries.

Fried Foster N. (2014) *Projects that Employ a Participatory Design Process to Build and Improve Academic Library Spaces, Services and Technology.* Available from http://goo.gl/maps/kVczQ [Accessed 27.06.2014].

Gabridge T., Gaskell M. and Stout A. (2008) Information Seeking through Students' Eyes: The MIT Photo Diary Study. *College & Research Libraries,* 69 (6), pp.510-523.

Gaver B., Dunne T. and Pacenti E. (1999) Design: Cultural probes. *Interactions,* 6 (1), pp.21 <last_page> 29.

Geertz C. (1973) *The Interpretation of Cultures*. New York, Basic Books.

Goodman V.D. (2011) Applying Ethnographic Research Methods in Library and Information Settings. 61 (1), pp.1-11.

Greifeneder E. (2012) *Does it Matter Where we Test? Online User Studies in Digital Libraries in Natural Environments.* PhD Thesis, Institut für Bibliotheks- und Informationswissenschaft, Humboldt Universität zu Berlin.

Handwerker W.P. (2001) *Quick Ethnography* Rowman Altamira.

Heyl B.S. (2001) Ethnographic Interviewing. In: Lofland PA, et al. ed. *Handbook of Ethnography* Sage Publications, pp. 369-382.

Kenney K. (1993) Using self-portrait photographs to understand self-concepts of Chinese and American university students. *Visual Anthropology,* 5 (3-4), pp.245-269.

Khoo M., Rozaklis L. and Hall C. (2012) A survey of the use of ethnographic methods in the study of libraries and library users. *Library & Information Science Research,* 34 (2), pp.82-91.

McCleer A. (2013) Knowing Communities: A Review of Community Assessment Literature. *Public Library Quarterly,* 32 (3), pp.263-274.

Murphy E. and Dingwall R. (2001) The Ethics of Ethnography. In: Atkinson, P. et al. ed. *Handbook of Ethnography* Sage Publications.

Powdermaker H. (1967) *Stranger and Friend: The Way of an Anthroplogist*. London, Secker and Warburg.

Robben A.C.G.M. and Sluka J.A. (2012) *Ethnographic Fieldwork : An Anthropological Reader* Malden, MA : Wiley-Blackwell, c2012; 2nd ed.

Rock P. (2001) Symbolic Interactionism and Ethnography. In: Atkinson P. et al. ed. *Handbook of Ethnography*. Thousand Oaks, CA, Sage Publications, pp. 26-38.

Sandstrom A.R. and Sandstrom P.E. (1995) The use and misuse of anthropological methods in library and information science research. *Library Quarterly,* 65, pp.161-199.

Sperschneider W. and Bagger K. (2003) Ethnographic Fieldwork Under Industrial Constraints: Toward Design-in-Context. *International Journal of Human-Computer Interaction,* 15 (1), pp.41.

Spradley J.P. (1979) *The Ethnographic Interview / James P. Spradley* Balmont, CA: Wadsworth Group/Thomson Learning, 1979.

Worth S. and Adair J. (1972) *Through Navajo Eyes*. Bloomington, IN, Indiana University Press.

Ziller R.C. (1990) *Photographing the Self: Methods for Observing Personal Orientations.* London, Sage.