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QUALITATIVE INTERVIEWING IN INTERNET STUDIES
Playing with the media, playing with the method

This methodological paper addresses practical strategies, implications, benefits and drawbacks of collecting qualitative semi-structured interview data about Internet-based research topics using four different interaction systems: face to face; telephone; email; and instant messaging. The discussion presented here is based on a review of the literature and reflection on the experiences of the authors in performing completed research that used those four interaction systems. The focus is on functional effects (e.g. scheduling and other logistics, data transcription and data management), as well as methodological effects (e.g. ability to probe, collecting affective data, and data representation). The authors found that all four methods of data collection produced viable data for the projects they completed, but that some additional issues arose. Five themes emerged that form the organization of the paper: (1) interview scheduling and participant retention; (2) recording and transcribing; (3) data cleaning and organizing; (4) presentation and representation of data; and (5) the detection/ presentation of affective data.

Keywords   Qualitative methods; online interviewing; email interviewing; IM interviewing

Introduction

As researchers consider using qualitative interviewing for their research, they are increasingly likely to use Internet media such as email and instant messaging (IM) instead of, or in combination with, more traditional interaction settings like face to face and the telephone. This is particularly true if the research explores an Internet-based activity such as e-learning or online community, where the research participants are already comfortable with online

interactions. This paper will present several conceptual themes associated with media choice and qualitative interviewing. These conceptual themes, developed by the authors of this paper via a review of the literature and reflection on our research experiences, are important for researchers to consider if they are thinking about doing qualitative interviews using Internet media. By considering their media choices in light of the themes we discuss, researchers will be able to avoid both common and often unforeseen problems in performing interview research, and will understand clearly the trade-offs associated with their media selection.

Qualitative interviewing is discussed in this paper, and it is usually semi- or unstructured (Fontana & Frey 1998), although research interviews in general can be structured, semi-structured or unstructured, and can be quantitative or qualitative (Gubrium & Holstein 2002). As one of many qualitative data collection methods, interviewing provides the most direct, research-focused interaction between researcher and participant (Kvale 1996; Stroh 2000; Rubin & Rubin 2005). Semi-structured and unstructured interviews allow participants to share their experiences and allow researchers to explore the meaning(s) participants give to ideas and terms (Mishler 1986; Murray & Sixsmith 1998).

This paper presents practical strategies, implications, benefits and drawbacks of collecting qualitative semi-structured interview data about Internet-based research topics using four different interaction systems: face to face; telephone; email; and instant messaging. The discussion focuses on functional effects (e.g. scheduling and logistics, data transcription, and data management) and methodological effects (e.g. probing, collecting affective data, and data representation). This paper focuses on media choice and semi-structured or unstructured qualitative interviewing, not on structured quantitative interviewing (Steiger & Goritz 2006). It does not address recruiting (unknown) participants and problems of population sampling and representativeness in Internet interviewing (Young et al. 1998; Curasi 2001; Mann & Stewart 2002; Meho 2006). It does not address informed consent, which has been discussed in depth elsewhere, e.g. by Meho (2006) and Ess and AoIR (2002).

Technology-mediated interviewing

The medium chosen for interviewing affects data collection and analysis in ways we explore in more detail below, so this literature review begins with a brief orientation to the use of specific media. This section outlines the very basic features of performing technology-mediated interviews, including using the Internet as a mediated setting for interviewing and email, instant messenger and telephone interviewing. Throughout the paper, the terms

'Internet' or 'online' interviewing are used when referring to characteristics that apply to multiple Internet applications such as email, IM, MOOs, chat rooms, etc., as they are used for qualitative interviewing.

Computer-mediated communication (CMC) was seen early to have communicative power and has demonstrated ongoing potential as an interview venue (Hiltz & Turoff 1978; Davis *et al.* 2004; Stone 1995). Using specific applications of CMC, such as Internet-based communication media, brings specific features to the interview process. For instance, Internet interviews can be asynchronous or synchronous, public or semi-private (Mann & Stewart 2002). Internet interviews often include text, which is rare in face-to-face interviews, and which can change many aspects of data collection and analysis (see below). Internet media are best used for interviews when the researcher and participant find them mutually acceptable (Young *et al.* 1998). For research about Internet activities, Internet interviews can preserve more 'contextual naturalness' than does interviewing participants face to face (Mann & Stewart 2002, p. 604). Contextual naturalness means participants can use language the way they do in most of their everyday interactions (Shuy 2002, p. 541). If contextual naturalness is important, it implies that a research interview about an activity should take place in the same setting in which participants normally engage in that activity. For example, participants in an interview about Instant Messenger might feel as if they are interacting in a more natural environment if the interview takes place using IM rather than the telephone.

Email has been used for qualitative interviewing and brings some specific features to the research process (Murray & Sixsmith 1998; Young *et al.* 1998; Meho 2006). First, email interviews are asynchronous and semi-private (Mann & Stewart 2002). Second, email interviews succeed most when the interviewer and participant are both comfortable communicating via email (Young *et al.* 1998). Finally, email lacks cues available in face-to-face interviews, e.g. facial expressions and body language, but provides cues not available face to face, such as spelling (Curasi 2001).

Instant messaging (or instant messenger; in either case, IM) can be used for interviewing and, like email, has some features that affect the research process (Luders 2004; Opdenakker 2006; Steiger & Goritz 2006). For example, IM allows synchronous and semi-private interaction and can automatically record the interaction text. The ad hoc conversational nature of IM interviews lets them resemble oral interviews. As a result, developing emergent probes in IM interviews can be easier than in email, as found by Luders (2004) during a study of IM-using youth in Norway. IM, like email, lets the researcher see how participants express themselves in writing (Luders 2004).

The *telephone* can also be used for mediated oral interviews, but unlike email or IM interviews which automatically record the interview content

in text form, telephone interviews require transcription from audio to text (Shuy 2002; Sturges & Hanrahan 2004). In contrast with using Internet media (email or IM) to study Internet activities, using the telephone usually does not preserve contextual naturalness, because it is unusual to study research settings in which participants' everyday interactions occur primarily by telephone (Shuy 2002). The literature on telephone interviews demonstrates conflicting advice about whether the researcher or the participant should select the medium for the interview. For example, Shuy's (2002) methodological review of telephone interviewing implies that the researcher should be the one to choose whether to use the telephone for interviews. By contrast, during their qualitative interview study of jail corrections officers and visitors, Sturges and Hanrahan (2004) found allowing participants to choose the medium (face to face or telephone) increased participation.

The preceding paragraphs have briefly identified some features associated with specific media that can be used to perform technologically mediated qualitative research interviews. Next is a brief description of the empirical research that the authors of this paper completed, and then an extended discussion of the major themes that emerged from the literature review of mediated qualitative interviewing. The discussion is situated in our experiences with qualitative interviewing, using a five-part scheme that emerged from the literature as an analytical lens. The discussion presents these five major themes or aspects of mediated qualitative interviewing: (1) interview scheduling and participant retention; (2) recording and transcribing; (3) data cleaning and organizing; (4) presentation and representation of data; and (5) the detection/presentation of affective data.

Authors' experience with qualitative interviews

This section briefly describes the research completed by the authors to provide context for the subsequent discussion. One author of this paper (Kazmer) completed two studies of online learners in two graduate degree programmes (Kazmer 2004, 2005a, 2005b, 2006, 2007a, 2007b). The first study comprised semi-structured interviews with 30 students and alumni of the LEEP distance education programme at the Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign. At the time of the research, LEEP combined online text and audio instruction with face-to-face orientation and semesterly face-to-face meetings. Interview questions guided participants to talk about their experiences at the end of their time in LEEP. Fifty-five interviews were conducted over the telephone, tape-recorded and transcribed.

The second study comprised semi-structured interviews with 45 students and alumni of the College of Information at Florida State University (CI-FSU).

CI-FSU's programme is fully online and does not include face-to-face meetings; at the time of this study classes met via text chat only (no audio). Fifty-five responses to a call for participants yielded 45 usable interviews. Participants chose telephone or email interviews. Eight interviews were completed by telephone and lasted 45–90 minutes. The telephone interview schedule included 21 questions and allowed the interviewer to pursue topics that emerged during the conversation. Thirty-seven interviews were pursued by email. Thirty email interviews comprised two exchanges. First, research participants responded to the same 21 questions used for the telephone interviews. Second, the researcher posed follow-up questions based on participants' first-round responses. The remaining seven email interviews comprised one exchange in which participants responded to the same 21 questions used for the other interviews, but did not respond to follow-up questions.

Between May 2004 and December 2005, the other author of this paper (Xie) completed a cross-cultural study of older adult Internet users in Chinese and American contexts (Xie 2003, 2005, 2006a, 2006b, 2007a, 2007b, 2007c). This study involved semi-structured, open-ended interviews with 45 Chinese and 44 Americans. Interviewees were recruited from members of two senior-oriented computer training organizations using the snowball technique. The interview questions guided participants to talk about their experiences learning to use computers and the Internet. Fifty-two interviews were completed face to face. Participants who could not meet with the researcher face to face were asked to choose telephone, IM or email interviews. Twenty-three interviews were completed by telephone, nine by IM and five by email. All face-to-face and telephone interviews were audio-recorded and transcribed. Each face-to-face, telephone or IM interview lasted approximately one hour. In interviews completed by these three means, the researcher used the same interview guide to cover key issues under investigation, and detected and pursued important topics as they emerged during interviews. The five email interviews included two rounds of exchanges. First, participants responded to the same set of questions used for face-to-face, telephone and IM interviews. Second, participants responded to follow-up questions the researcher posed based on their first-round responses.

Scheduling interviews and retaining participants

The literature indicates inconsistent findings about whether online interviews (e.g. via IM, chat rooms, MOOs or email) are easier to schedule and coordinate than face-to-face or telephone interviews. For example, Luders (2004), studying teens in Norway who were already IM users, found coordinating IM

interviews easy, providing limited evidence that coordinating online interviews is easy when participants are already heavy media users. Markham (1998) found the opposite, although she also was working with heavy users of virtual environments (e.g. chatrooms, MOOs) who were frequently available and accustomed to communicating online. Markham found that coordinating these online interviews was not easier than coordinating face-to-face or telephone interviews. She encountered problems of gaining technological access to the virtual environments, and of establishing dates, times and places for synchronous interviews. A recent meta-analysis of email interview research also supports the finding that coordinating online interviews is difficult (Meho 2006, pp. 1291–1293). Of the 13 suggestions for email interviews that emerge from the meta-analysis, four focus on coordination tasks, implying that scheduling interviews and retaining participants is a problem that needs active attention during research. (The four coordination tasks identified by Meho are inviting participants; making first contact with participants; providing clear instructions; and using deadlines and reminders.)

In our experience, scheduling can be quite complicated especially when the medium is synchronous, in which case two primary factors come into play: time zones and local scheduling conflicts. Mediated, synchronous interaction modes such as telephone and IM interviewing require the researcher to remember and accommodate time zone differences at the time of scheduling *and* throughout the reminder process and the interview. For face-to-face interviews, time zones need to be considered when researcher or participant must travel to a different time zone for the interview. All three synchronous media require the researcher to adapt to participants' work, family and activity schedules. These factors provide some explanations for many researchers' difficulties in scheduling interviews in synchronous interaction modes.

Email interviewing is asynchronous and not generally affected by these scheduling problems because researchers can send interview questions and participants can return their answers when convenient. However, this scheduling advantage can be a disadvantage for participant retention. In fact, according to the literature, participant attrition is apparently a bigger problem with mediated interviews than with face-to-face interviews (Mann & Stewart 2002; Meho 2006). For example, Young *et al.* (1998, p. 291) designed a study to 'develop guidelines for conducting interviews using electronic mail'. In interviewing six participants longitudinally over four months, they found email is susceptible to participant attrition for three reasons: some people stop using email at specific times (e.g. during the summer); some people use email inconsistently; and some disconnect from their service provider (subscription, employer or educational institution). As another example, Curasi (2001) designed a study specifically to compare face-to-face with email interview data quality as part of a larger study of consumer loyalty and electronic

commerce. Comparing 24 email with 24 face-to-face interviews, Curasi found attrition was higher for the email interviews between the time a participant agreed to participate and when questions were sent and answered, although once an interview began all email participants responded to follow-ups.

Our own experience generally supports the point that email interviewing is more susceptible to participant attrition as reported in the literature. However, different from Curasi's (2001) findings, we found that, because participants have not committed to a specific time to do the interview, email participants can be lost at multiple points – instead of one single point – of the interview process, even after the interview has begun. We discovered during our own research that participants can be lost when the researcher sends: the call for participation, the consent form, a list of initial interview questions, and the follow-up interview questions. In the CI-FSU (primarily email) study, five people volunteered in response to a recruitment email but did not respond to further inquiries; five people agreed to participate in email interviews but did not answer any interview questions sent to them; and seven participants did not respond to follow-up questions. The researcher had a target number of participants (as per an agreement with the entity funding the research) and had to account for this amount of attrition which was higher than that in the LEEP (telephone) study. It was also awkward to lose participants in the middle of an interview, which happens readily via email but almost never via telephone. It was awkward because the researcher had to decide how much to pester the vanishing participants (only a few times, because pestering someone to the point of irritation does not facilitate rapport and subsequent good data collection even if the participant finally responds), and what to do with partial data during the analysis and reporting of findings (the partial data were included in the analysis). Researchers must be aware of each of these potential points of participant loss so they can work to retain participants throughout the process and also make decisions about how to handle 'incomplete' data (Young *et al.* 1998; Meho 2006).

In comparison, when and how participants may be lost during the synchronous interview process differs from email. In the projects conducted by both authors, there were some people who volunteered for a study and never responded to further communication. Sometimes it was impossible to schedule a face-to-face, telephone or IM interview with a willing volunteer. However, in those three media, when the interviewer and participant were connected synchronously and questions were asked, participants usually answered and were less likely to quit mid-interview. Our own findings support – and expand – Curasi's (2001) finding: that is, compared with email interviews, there are fewer points of losing participants in face-to-face, telephone or IM interviews. This suggests a clear trade-off between synchronous and asynchronous mediums: while a synchronous medium can cause more trouble than an asynchronous medium during the scheduling stage, the

latter can be more challenging than the former when it comes to retaining participants.

It is worth mentioning that the process of scheduling an interview can generate research data. Markham (1998, p. 62) found that the extensive coordination required for online interviews generated so much of a record that she ended up 'trying and failing to separate artificially the "official" interview texts from myriad other texts'. Markham's experience highlights that scheduling interviews online can cause other problems with the research process: i.e. what to do with the resulting non-interview interactions that are recorded. Our own research experience not only supports Markham's finding but also provides a solution: In the CI-FSU research, interviews were coordinated via emails. One topic of the project was how people's home/work settings interacted with their online activities. When participants preferred email over telephone – to squeeze interviews between home and work, which they find easier in an asynchronous, quiet medium – those preferences related to the research. The researcher did not realize coordinating emails would produce relevant data until after completing some coordinating exchanges, and additional participant consent was needed to include the data.

Recording quality and recovery of transcripts

The literature indicates that, no matter the media, an interview recording depends on the context of the interview. Face-to-face and telephone interviews require additional recording equipment that is often affected by technological factors which most researchers are taught to prepare for: audio recorders fail and audiotapes break. Yet our research experience suggests that audio recordings can also be affected by environmental factors that are more likely to catch the researcher off guard: the data in the LEEP study (collected via telephone interviews) were adversely affected by lawn mowing, tree trimming and low-flying aircraft. Those noises were distracting during the interview and took the conversation off topic, and the noises also made accurate transcription hard. Face-to-face interviewing, because the researcher and participant are physically co-located, can be affected by noise and other environmental factors. In one of the author's (Xie) study, an older Chinese couple invited the researcher to their home to conduct an interview, which touched a sensitive subject in Chinese society: politics. While the husband was straightforward about the current political situation and social problems in China, the wife was uncomfortable with the subject and introduced local environmental factors into the conversation as a result. Several times she interrupted her husband by offering the researcher 'a cup of tea' or asking 'Are you cold? Would you like me to turn on the

heater?' (Xie 2006a). These kinds of seeming 'distractions' are not likely to occur in mediated interviews yet can reveal important information about participants' true feelings and thoughts, especially when the subject is sensitive or potentially risky (Xie & Jaeger, in press).

In mediated interviews, the participant and interviewer usually do not share a physical context because they are not co-located (Murray & Sixsmith 1998). Interacting from separate physical locations can be more convenient for both parties, letting each stay in a familiar and safe environment (Mann & Stewart 2002). The interviewer, however, has less control over – and less awareness of – the setting of the participant (Opdenakker 2006). Using IM or email means 'disturbing background noises' are not recorded as part of the data (Opdenakker 2006, n. p.), although local noises can still affect the contributions or concentration of the participant or interviewer. In this sense, the recording quality of interviews conducted via all four interaction methods, mediated or not, is subject to environmental noise.

A major feature of online interviewing is that it is self-transcribing (Foster 1994; Herring 1996; Curasi 2001; Mann & Stewart 2002; Meho 2006). As such, conducting interviews via email or IM removes the burden of doing time-consuming and labour-intensive transcriptions. This obvious benefit (to the researcher), however, comes at the expense of the participant: an online interview often takes longer than a face-to-face interview, moving part of the time cost of transcription from interviewer to participant (Markham 1998; Opdenakker 2006). In a recorded face-to-face interview, everything the interviewer does and says may be typed – but later, during transcription, when it does not take up the participant's time. In synchronous online interviews, both interviewer and participant incur time costs while the interviewer types. In other words, the transcription task is partially transferred to the participant rather than eliminated.

Nonetheless, this self-transcribing feature of email and IM interviewing also means that the interaction can be automatically double-documented on the researcher's and interviewee's computers. Both researcher and participant have a complete copy of the data, which is generally not true in other media. This is valuable should the researcher lose the interview document due to technical difficulties (or failure to save the file). For instance, during one of our own IM interviews, the researcher had a bad Internet connection and lost portions of the interview. The interviewee had a complete copy of the interview transcript and, upon the researcher's request, supplied the missing content. Thus, technical difficulties – here, the bad Internet connection – did not lead to a loss of data.

Our experience also shows that this dual-documentation feature of email and IM interviewing is not exclusively positive; in fact, it may cause trouble in an unexpected way that can irremediably damage the data collection. The reason is simple (yet often overlooked by researchers): the interviewee

may share the entire interview transcript with others who are potential
interviewees and thus affect research results. In one of our own IM interviews,
after the interview, the interviewee, Ms Y, uploaded the entire IM document
to her website, which was viewed by several people in line to be interviewed.
The researcher was unaware of its posting until, during a subsequent inter-
view, another interviewee mentioned that he 'knew what the researcher
was going to ask' because he 'had read the interview content posted on Ms
Y's website'. Our experience echoes that of Murray and Sixsmith (1998),
who also caution that privacy can be more easily breached in online interviews
because an electronic recording of the interview exists in multiple locations as
it is created. Questions arise about who owns the data (participant, inter-
viewer or Internet service provider) and can legitimately distribute it
(Murray & Sixsmith 1998), implying that use of online interview transcripts
for research purposes requires more coordination than transcripts created
from audio recordings.

Based on what we learned from this incident, we propose that, when con-
ducting IM (and email) interviews, researchers should always ask the intervie-
wee in advance not to share the IM/email document with others and explain
why. This is especially necessary when the snowball technique is used, since
those most likely to read the interview document are the most likely potential
interviewees for the same research. Even if a researcher plans to share the
interview questions in advance, it may be ethically or practically problematic
for either party to share a complete record of the entire interaction – suppo-
sedly private because it occurred only between the researcher and intervie-
wee – with other people, potential interviewees or not (Murray &
Sixsmith 1998).

To formalize this precaution, we further suggest that researchers might
consider modifying their informed consent forms, specifically requiring inter-
viewees not to share the interview record with others. While consent forms
are usually designed to protect the interviewee's privacy, little attention is
normally paid to protecting the researcher's privacy. Before the use of
email and IM for interviews, typically only the researcher had documentation
of the interview. With face-to-face and telephone interviews, although inter-
viewees can share their recollection of the interview questions with others –
including potential interviewees – such sharing is limited and is unlikely to
reveal the entire interview instrument in the researcher's original words.

Data cleaning and organizing

Cleaning and organizing data from face-to-face and telephone interview tran-
scripts are generally simple, so simple that little attention is paid to the pro-
cesses when we learn qualitative research methods. The transcripts are

prepared in a clean, unified format by the researcher or paid transcriber and can be organized easily according to multiple criteria as the researcher determines is needed for the analysis (e.g. by participant number/name, interview date, and/or 'round' of data collection). Some researchers indicate that importing self-transcribed, electronic text data from online interviews into qualitative analysis software is just as easy (Curasi 2001; Mann & Stewart 2002). However, our own research experience suggests that ensuring that email and IM interview documents are complete and in order can be much harder than with audiotapes and transcripts. This is because, first, email interviews can comprise many multi-dated, multi-subject-lined emails (Murray & Sixsmith 1998; Davis *et al.* 2004; Meho 2006). In the CI-FSU study, sometimes the sender's (participant's) full name was nowhere in the email, or a single participant would use multiple email addresses/accounts/usernames. Compared with working with transcripts prepared in a standard way from audio recordings, it was difficult to organize the email data by participant name, interview date and/or 'round' of data collection.

Another factor that contributes to the difficulties of cleaning and organizing email interviewing data is that interview data may be in multiple forms (they can be embedded in or attached to email messages or, not uncommonly, both) and thus require significantly more time to manage (Dommeyer & Moriarty 1999; Curasi 2001; Meho 2006). Email questions in the CI-FSU study were provided as one email with questions embedded and attached, so the participant could choose how to respond. Some participants responded via attachments while others responded within the body of an email. Participant choice in this case makes the data format more heterogeneous and harder to work with, but allowed participants to work however they were most comfortable. One can assume that having the option improved response rate, but that assumption cannot be tested based on the completed research.

Some participants sent email responses in multiple parts or formats needing re-assembly (for example, one CI-FSU participant took six emails and four weeks to answer the initial 21 questions). The multiple responses and formats were actually facilitated by the researcher's decision to send the questions embedded in an email as well as attached; participants using attachments all submitted all their responses at once, but participants responding in the body of the emails were more likely to split their responses across multiple emails. Not only did the multiple emails need to be re-assembled, but the researcher had to decide how to preserve the original partitioning throughout the analysis process because the participants' need to break the interview into manageable time chunks was relevant to the research questions.

A not yet well-documented – but in our experience, not uncommon – phenomenon is that even synchronous interaction modes such as IM interviewing can also involve sending information/responses via attachments, in

addition to the body of the IM. In Xie's study of older adult Internet users, some IM interview participants attached pieces of their pre-written autobiography in response to questions about, for instance, their motivations for learning to use computers, or the role of computers in their daily lives. Furthermore, those pre-written autobiography attachments came in multiple formats: some in Microsoft Word, some in PDF and some in JPG (scanned files of their stories published in local newspapers, or Webpage screen shot images from their own homepages). The good side is that it saves time for both the researcher and the interviewee; yet, it also brings up the question of how best to incorporate those data into the analysis.

In short, preparing the email and IM interview data for analysis and publication – including anonymizing, importing into the analysis database and cleaning up the fonts to make them readable – requires handling both email/IM text and attachments (that may come in multiple formats). For IM interviews, anomymizing the data required replacing the user name – which was attached to each of a participant's contributions and could reveal the participant's real name – with a number or pseudonym. Fonts, quote levels (in email and IM texts), and header information (in email text and email/IM attachments) varied so much that preparing email and IM data was more complicated than handling transcripts from face-to-face and telephone interviews. Still, the savings of time and work as a result of not having to transcribe audio recordings significantly outweighed the extra time and work needed to prepare and manipulate the email and IM interviews.

Finally, another factor that contributes to the difficulty of cleaning and organizing electronic text data is that data collected via synchronous online media are more susceptible to conversational disorder (Opdenakker 2006), and online interchange may have less 'flow' (Murray & Sixsmith 1998, pp. 111–112). Mediated synchronous interactions may feature discontinuities and non-linear conversations in that they can be slowed down by 'the reading, reflection and typing skills' of the respondents (Davis *et al.*, 2004, p. 947). If participants (and interviewers) are familiar with the online medium, they may find it easier to handle discontinuities and non-linear conversation (Luders 2004, p. 7; Dickey *et al.* 2007). In our experience, however, even if participants are quite familiar and comfortable with the medium, they may still not be able to respond to each interview question as quickly for individual and technical reasons (Xie 2003; 2005, p. 192). Thus, the researcher may be sending the next interview question at the same time as the participant is sending back more texts to answer the previous question, which requires additional organizing work (i.e. to sort/re-group the responses into the right section) before the data can be imported into qualitative analysis software.

An important lesson we learned from our own research is that, when conducting email or IM interviews, researchers need first to be fully aware of the

possibilities of getting data in multiple formats and, further, to prepare a set of guidelines in advance to guide the data cleaning and organizing to ensure the consistency of data management and analysis. Also, researchers need to adjust their own speed accordingly – especially when interviewing participants who may not respond as fast – to ensure that respondents are given ample time to respond to each interview question. This will improve the quality of the interview data, and also reduce the amount of work needed to reorganize the data at a later stage.

Presentation and representation in different media

How interviewers and participants present themselves and represent their contributions to the interview is shaped by the medium and its social environment (Miller 1995; Kendall 1999). The literature indicates mixed conclusions about whether mediated interviews provide access to participants' thought processes and in-depth interview data. For example, Davis *et al.* (2004) completed 128 in-depth qualitative interviews with gay/bisexual men (35 online, 93 face to face) and found that depth and exploration of meaning are better in face-to-face interviews than in synchronous online interviews. Shuy's review of telephone interviewing (2002) indicates that the faster pace and lack of visual cues associated with telephone interviews leads to less thoughtful responses than in face-to-face interviews.

In contrast, other researchers conclude that mediated interviews *do* provide access to thought processes and in-depth data (James & Busher 2006). There is a long history (in Internet time) of literature to support this conclusion. Rice and Love (1987, p. 88) cited Hiltz and Turoff (1978) to support the idea 'that CMC is better thought out, better organized, and richer than natural conversation'; Murray and Sixsmith (1998) in turn cite Rice and Love (1987) to support the idea that email interviews are rich in content and better thought-out than unmediated interviews. Burton (1994) notes that emails give interlocutors more time to think through their responses. Online *asynchronous* interviews tend to generate transcripts that are better thought-out, more grammatically correct, and freer from noise (ums and ahs) than face-to-face interview transcripts (Curasi 2001).

Our own research suggests that asynchronous interviewing can produce thoughtful, in-depth data while at the same time does not seem to provide adequate access to thought processes. On the one hand, because email is asynchronous, participants in our studies generally sounded more fluent and thoughtful in emails, which they could edit, spell-check, grammar check, re-read and think about before sending. This made the data easier to understand for analysis and to incorporate into research papers. In fact, participants in our email interviews did present their thoughts in ways possible only in

writing, including the use of bulleted or numbered lists for a linear, cleanly divided presentation of thoughts. The following example from an email interview shows another mode of expression practically impossible to duplicate in a synchronous interview. Spoken or typed synchronously, the same content (without its careful parenthetical expressions) would be longer and more wandering.

> *For computer work, almost always in the same location, at the (until recently) one computer (a desktop, not a laptop) in the household. For paper writing, I still find I make my best start writing in longhand in a spiral notebook. I have done some of my best offline work (both writing and reading) in a favorite coffee shop. Speaking of reading, whenever possible, I always print out any readings provided electronically. In addition to being easier to read and take notes on, they are much more portable. I can (and do) read anywhere.* (italics in original)

On the other hand, this same feature also leads to a lack of hesitation and utterance repair in email interviews which gives the researcher less insight into participants' thought processes. For instance, the LEEP study (conducted via the telephone) examined students' preparations for departure from an online community, and some nuances of those preparations were discovered by hearing participants struggle to remember and ask for time to think about the question. Email responses often conceal the amount and type of thought. The following example indicates, through its content and how it was spoken, a thought process revealed in a telephone interview. Had this participant responded via email and edited her response to focus on the question, her answer would probably include details about the group project but the valuable data of her trying to remember the project would be absent.

> Q: Could you please describe for me the last group project you did in LEEP?
> R: The last group project that I did [drawn out diiiiiid]. Did I do any last semester? I'm sorry, isn't it funny, I'm like wiping it from my mind. We had group discussions, but those don't quite count. Um, I had government pubs, I had adult services, um [sounds like she's really trying to think, this is drawn out and pause-y]. Oh! Okay, I had collection development, so we, we had to come up with a consortium plan, collection plan. Um, and um, we had to decide on, um, a group of databases that we were willing to share, or electronic products we were willing to share under a Consortium.

Compared with asynchronous interviewing, a *synchronous* online medium such as IM allows less editing of responses by the participant and the transcripts contain more errors than those from asynchronous media (Luders 2004).

Yet, compared with other synchronous (face-to-face or telephone) interviews, in IM interviews participants can still think about their answers and formulate their responses more carefully, and part of the interchange remains on-screen and can be reviewed (Luders 2004), which provides more clues to the thought process.

Our own research experience also calls for attention to a previously under-emphasized issue: that is, in audio recording transcripts and research publications, the researcher decides whether to include filler; in email and IM interviews, the participants decide. In general, in text-based media, participants have more control over the presentation of their contributions than they do in audio media. For example, one email participant used the phrase 'dot.com boom' and referred to the 'Mac' computer. Transcribing from an audio interview, the researcher or transcriber could represent either expression in many ways (e.g. 'dot com boom', 'dot-com boom', or 'dot.com.boom'; 'MAC', 'mac', or 'Mac [*sic*; short for Macintosh]'. Any of those transcription decisions would change the content of the data and readers' perceptions of the participant. In email and IM, participants have more control over how their thoughts are represented and how the data appear in analysis and subsequent publication.

Including affective data

Building rapport is important for qualitative interviewing, and can be accomplished online over time (Baym 1995). Exchanging affective information between participant and interviewer is key to developing rapport. Affect and rapport are important to data quality in interviews because they foster increased disclosure. Interviewers' self-disclosure in online interviews encourages participants' disclosure (Moon 2000; Curasi 2001). Alternatively, a benefit of mediated interviews is that their decreased sense of social presence introduces less bias and can help elicit more sensitive information from participants, improving data quality (Murray & Sixsmith 1998). Similarly, the visual anonymity afforded by text-based media promotes participants' self-disclosure (Opdenakker 2006).

Including affective data in the analysis and findings is important to interpreting and presenting the data accurately (Barker 1990; Murray & Sixsmith 1998). Markham (1998, pp. 70−71), doing interview research within immersive online environments such as chatrooms and MOOs, found she missed 'nonverbals, the paralanguage, the general mannerisms or demeanor of the participant' and was 'frustrated by lack of face-to-face cues' but acknowledges that 'many users . . . would disagree'. In Meho's (2006) meta-analysis of email interview research, he found that interviewees may be less comfortable in email than they would be face-to-face, and might not use emoticons and

other paralinguistic methods, leaving their affective contributions inaccessible to the researcher.

Contrary to these claims in the literature that the affective aspect of data is harder to collect online, in our own research we were able to collect this aspect of data via written forms of interaction (email and IM). In fact, what we found was that when participants explicitly include emotional indicators in their responses, their subsequent inclusion in data analysis and reporting is less susceptible to questions of accuracy than would be the inclusion of interviewer notations such as 'participant sounded like she was smiling' in a transcript of a recorded interview. Even good transcriptions of qualitative interviews are not objective records of the interaction, and difficulty representing affective data via text is not exclusive to mediated interviews (Mason 2002). An important difference between the automatically documented interviews (email and IM) and recorded/transcribed interviews (face-to-face and telephone) is not the presence and absence of affective data, but their representation in the data, analysis and publication.

For example, the participant in the following excerpt laughed during her audio-taped telephone interview, but it was up to the researcher to include the laugh (which could have been excluded from the transcript as a non-verbal utterance) and to try to characterize the laugh properly during analysis. '[Emphatic]: yes! [Laughs]. My last class, my husband kept saying, honey, take basket weaving, I go, they don't offer basket weaving, honey. If they did, I'd take it.' This participant also emphasized the first word (interjection) of her response and the researcher had to choose how to represent that emphasis. Compare that with the following extract from an email interview: 'I just graduated (YEAH!!!)' In this case the participant chose how to represent her emphasized interjection.

To the researcher, the next participant's laugh via telephone: 'Um, well, some of it was very evocative of high school in a way [laughs]' seemed similar in intent to this participant's emoticon via email: 'Um, I didn't tell them ;).' In both cases the participant was inviting the researcher into a shared understanding of a slightly inappropriate situation while indicating they know it is slightly inappropriate. The participant's inclusion of the emoticon in the email – or IM – data helps legitimize its inclusion in analysis and publication. Not everybody using a ;) or :) means exactly the same thing (Young *et al.* 1998; Mann & Stewart 2002; Opdenakker 2006) but such non-text in the data allows the reader to see the data in the way the participant presented it rather than how the researcher chose to present it.

Although some concerns about developing rapport and sharing affect in mediated (online) interviewing is well justified, researchers need to keep in mind that when too much concern focuses on relational aspects of mediated interviewing, attention is drawn from important technical and task (research topic) aspects. An interview is an exchange of information, not just a social

event (Rice & Love 1987). It is important for interviewers to use their online social skills to build rapport and also to focus on eliciting the information needed to answer the research questions of the study. Thus successful online interviewers are relational *and* technical experts, eliciting affective *and* content data (Myers 1987; Mann & Stewart 2002).

Implications

In this paper, we have reviewed the literature associated with conducting qualitative interviews using a variety of media and discussed five primary themes that emerged from the literature. These five themes were then used to examine the experiences of the authors of this paper in completing qualitative interviews via IM, email, telephone, and face to face. This section synthesizes the findings briefly, highlighting the issues associated with media selection in qualitative interviewing, especially summarizing the benefits and drawbacks that were unique to our analysis (i.e. they were not found in the literature review, or they contradict the literature). A researcher planning to study online activities using qualitative interviews should consider the following factors in selecting an interaction mode.

The researcher must decide whether to let the participant choose the medium thus to increase retention and rapport, or to match the medium with the activity being studied (i.e. IM interviews about IM activities) to preserve contextual naturalness. Our findings imply that one should let the participants choose as much as possible: let them choose the medium when possible, and within the medium let participants have as much choice as is methodologically feasible (e.g. a researcher might decide that a feasible choice is to offer email interview questions as both embedded and attached text, but that it is not feasible to allow IM or email participants to post their interviews publicly).

Researchers should be mindful that all media are susceptible to equipment or technology failure if a verbatim record (audio, video, or text) is to be kept. However, email and IM self-transcribe and double-document the interview on the researcher's and participant's computers, so equipment/technology failures can be mitigated by the double-documentation. Conversely, the double-documentation can cause a problem, because it is easier for participants to share whole interviews publicly than it is with telephone or face-to-face interviews. Researchers should temper their enthusiasm for self-transcribing media (email and IM) by being aware that the data can be hard to standardize and organize, so the time savings over having to do transcriptions from audio recordings is large but not as huge as we are tempted to think.

Email has some specific considerations. A participant's preference for email because of a need for asynchronous interaction may reflect sociotechnical factors important to research of Internet settings (for example, how participants blend online activity with offline activity, or how they manage their time online). Email self-transcribes, but transcripts are non-standard (the most non-standard compared with all other media discussed here) and require significant additional preparation before organization and/or analysis. More than other media, email requires planning for longitudinal participant retention and for the use of incomplete data because participants can easily leave mid-interview. We also found that email was the most likely to produce useful research data during interactions that occurred outside the formal interview, so informed consent should be designed accordingly.

Email lacks some cues such as facial expressions, body language and tone of voice, but it adds other cues such as spelling, grammar and the use of paralanguage. IM also includes cues about spelling and use of language but in a different way from email: because IM is synchronous, it is less edited and more like conversation. IM's similarity to conversation may make the researcher and participant more comfortable with the conversation, but only *if* they are comfortable with other conversational synchronous venues such as telephone or face to face.

Face-to-face and telephone interviews can make participants sound awkward once the data are transcribed because most people are not 100 per cent fluent when they speak, especially when they are thinking through a question they have just been asked. At the same time, audio or video recordings do not provide information about the participants' writing or spelling skills either. However, audio or video recordings can provide a way to examine participants' thought processes, through how they present their responses. Conversely, online interviews about online activities can let the researcher see how the participant presents thoughts within the medium being researched. Email especially allows participants to craft their thoughts for presentation, but that can hide important thought processes that show up in audio transcripts.

In all media, participants' or the interviewer's discomfort with the medium can be mistaken for discomfort with the interview topics, *or* vice versa: discomfort with the topic can be ascribed to discomfort with the medium. When participants and interviewer are comfortable in the interaction mode – online, via telephone or face to face – they have an easier time using their social skills to build the rapport needed to achieve the research goals of the interview. When rapport is established and both people are comfortable in the medium, they in turn find it easier to share affective data during the interview. Familiarity and comfort with the interaction mode and understanding the norms of affective communication also allow the researcher to interpret affective data appropriately as part of the overall data analysis.

We conclude that qualitative interviews can be completed successfully in all four of the modes discussed in this paper – face to face, telephone, email and IM – but that we identified some important issues through our experiences that were not highlighted in the literature we examined. Attention to these important factors will facilitate the interview process.

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