Exploring the Internet as a medium for research: web-based questionnaires and online synchronous interviews

Introduction

It is widely acknowledged that information and communication technologies (ICT) open up new possibilities for research in terms of both adapting existing methodologies to a new medium and in creating new methodological possibilities. Several specialist textbooks on online research have recently been published to help researchers explore these new methodological possibilities (Chen and Hall, 2003; Coombes, 2001; Hewson *et al*., 2003; Jones, 1999; Mann and Stewart, 2000). Numerous general advantages of online research methods have been identified in this literature. They enable the researcher to communicate with a geographically dispersed population and so can be useful in internationalising research. They can be used to contact groups often difficult to reach, such as the less physically mobile (disabled/in prison/in hospital) or the socially isolated (drug dealers/terminally ill/ etc). They are also particularly appropriate for researching online communities and for discussing sensitive and embarrassing topics where anonymity is an advantage. Savings in costs are also to be recommended (for example, costs associated with travel, venue, data entry for questionnaires, transcription of interviews). Moreover, according to Denscombe (2003, 51), the quality of responses gained through online research is much the same as responses produced by more traditional methods, warranting `guarded optimism' about the validity of these new methods.

However, as Wakeford (2000, 32) correctly observes: `In thinking about which methodological frameworks we have at our disposal to study the web, it is advisable to bear in mind that what is considered as legitimate methodology is itself always in flux.' An example of this flux is the topic of this paper. Specifically, in this paper we intend to explore online research as a legitimate methodology, evaluating its limitations and assessing its potentials. A reflexive discussion of the usefulness of online research is important, for although it has been used as a methodological tool for some years, Hewson *et al*. (2003, 1) recently argue that `…many issues are just starting to be addressed and Mann and Stewart (2000, 4) observe that `…it is perhaps surprising that the suitability of the Internet for conducting research remains relatively unexplored.' In this paper we focus on two online methods we have used successfully in our research: web-based questionnaires and synchronous online group interviews. The bulk of the paper is devoted to an indepth exploration of two issues that can usefully contribute to the debate about the value of online research: access, sampling and identity verification with respect to web-based questionnaires and virtual engagement, interaction and communication with regard to synchronous online interviews. In the spirit of methodological flux, we also look to the future, with a short evaluation of the potential of `Blackboard' for furthering the efficacy of online interviews. The conclusions caution that while online methodological frameworks are in constant flux, change is not necessarily always progressive: there is a need for online researchers to practice their `craft' with reflexivity. Thus although online research holds promise, its potential should not be exaggerated: many of the issues and problems of conventional research still apply in the virtual venue.

Researching Online: the Cyberparents Example

Two online methods we have used successfully in our research are outlined below. These draw on the experience of a recent Internet–based Cyberparents research project (http://www.geog.le.ac.uk/baby/) which was initiated to examine how, why and in what ways new parents use the Internet as an information source about parenting and as a form of social support. The Cyberparents project focused on one pioneer UK parenting website: (http://www.babyworld.co.uk). `Babyworld', which is now a subsidiary of Freeserve Internet service provider, was started by Radcliffe Medical Press, a medical publisher '…determined to bring accurate and reliable advice to new parents' (http://www.babyworld.co.uk/aboutus/meet-the-team.asp Accessed January 2003). It was selected as the case study site because it was the first UK-based parenting website, launched in 1995, and advertised as `the mother of parenting websites'. Babyworld's mission is to support a community where '…new and expectant parents can share experiences and support, women can learn about their bodies, their baby, and childbirth and parents can celebrate the joy of a new life' (http://www.babyworld.co.uk Accessed May 2001). The site's slogan is 'Babyworld: be part of it'. There is a lively community where parents make friends, share experiences and support each other, augmented by an online `ask the expert' facility.

Online methods were considered the most appropriate research tools for investigating this online community. Two research methods were used to elicit information in the Cyberparents project: a web-based questionnaire survey was used to identify general patterns of use of Babyworld, while more in-depth data were gathered from the website users through semi-structured synchronous virtual group interviews conducted using a software conferencing technique - Hotline Connect. The survey was accessible to anyone who used the babyworld website over a 6-week period. The questionnaire was completed predominately by women (84%), the majority of whom were under 35 (76%) and lived in the UK (80%). Only 23% of the respondents were employed full-time, others defining themselves as part-time workers (31%), `houseperson' (28%), on maternity leave (6%) or `other' (student, unemployed etc, 12%). Most women were white (81%), married (63%), and had at least one child (89%), most commonly under 2 years of age (81%). Our sample thus replicated the uneven social and spatial distribution of the Internet (Warf, 2001). Four virtual group interviews were conducted with 16 self-selected women. These women were of a similar age (22-36) and there was an even mix of `full-time mums', part-time workers and full-time workers. All but one woman had one child only and most of these children were under one year (although the age ranged from 10 weeks to 3 years). Each interview lasted between one and two hours and was based on a semi-structured format recommended for investigating the `…personal significance of what has transpired in the lives of the respondents' (Coyne and Gottlieb, 1996, 985).

Web-based Questionnaire Survey

The first stage of the project involved setting up an online questionnaire survey with an associated project website to glean general information about usage patterns of Babyworld. This online method was selected for several reasons: it would rapidly reach a wide audience and thus enable the prospect of collecting large volumes of data; it was quicker and cheaper than postal mail, faxes and phone; and responses could be received around the clock and directly loaded into an automatic analytical package. Additionally, web-based surveys provide a far superior questionnaire interface to email surveys and it is possible to make them more user friendly and attractive, thus encouraging higher response rates. The web-based survey can also be included on a dedicated website which can be used as a platform to provide more

information about the project, the researchers and the affiliated institution.

The questionnaire survey (http://www.geog.le.ac.uk/baby/babyworldform.asp) was created using the html compiler 'Adobe GoLive 4.0' and followed a similar format to traditional self-completion postal questionnaires, the main difference being that the survey form was set up online. The questionnaire was designed to be simple (24 questions) and quick (10 minutes) to fill in and included tick box yes/no questions, ranking attitudinal questions and open-ended responses. The survey ended with a short message to thank the respondents and a request to email the researchers through the direct link if the respondent was willing to participate in a further detailed online interview. A response database was set up on the departmental server to collect the completed questionnaire data in Microsoft Access, directly ready for analysis. In order to administer the questionnaire a series of webpages were developed (http://www.geog.le.ac.uk/baby/). All pages included the University of Leicester crest to show institutional affiliation, to give the project credibility and ensure the participants could verify our status. The website included a homepage with a brief introduction to the project, which was linked to further pages entitled `meet the researchers' (http://www.geog.le.ac.uk/baby/meet.html) and `more about the project' (http://www.geog.le.ac.uk/baby/more.html).

Online Synchronous Group Interviews

The second stage of the research process involved semi-structured synchronous virtual group interviews to gain more detailed understanding of the key themes emerging from the questionnaire data. The first task was to find a convenient way to carry out these interviews. It was immediately apparent that face-to-face (FTF) interviews would be impractical, costly and time consuming because our respondents were geographically widely dispersed. Apart from the distance factor both the researchers and the respondents had young children and/or were pregnant, making the `traditional' interview unfeasible. As this research focused explicitly on Internet usage, our interviewees were already, by definition, Internet users and likely to be familiar with virtual communication methods. An Internet based interview forum seemed to be a logical, low cost, convenient and innovative research method.

'Hotline Connect' (http://www.bigredh.com) was selected to develop the `real time' interview forum. It is a user-friendly application, available for both Apple Macintosh and Microsoft Windows based platforms. It enables users to chat, either in groups or one-to-one, to others simultaneously logged on to a specified server address. The software allows the facilitator to have a high degree of control over the proceedings: it is not possible for anyone to `lurk'; users must identify themselves and the facilitator has the ability to disconnect those who are non-identified; and it is not possible to `drop in' to the sessions because they take place at specified times known only to those invited by the facilitator. Moreover, Hotline Connect does not have high power requirements and can be installed and used easily without the need for sophisticated hardware or a high level of technical ability. This was important to us because we were already reliant on the goodwill of the interviewees for modem live time and the motivation to install the software and so the process needed to be as simple as possible. Indeed, only one participant dropped out at the installation stage because, unexpectedly, her computer was not able to run the software. Overall there were few glitches in the use of the conferencing software, although one respondent in Malaysia had her link interrupted owing to transmission problems which disrupted the interview process. The final interview transcript was saved and immediately transferred to a Word file saving transcription time and cost. During the research

process the use of these online methods raised several important issues which are discussed below.

Access, Sampling and Identity Verification in Web-based Surveys

Accessing respondents is a key concern in web-based surveys. In our research several hotlinks were created between the questionnaire, the Cyberparents website and Babyworld website. The links from Babyworld to the research webpages were made at the suggestion of the website providers and positioned strategically in prime locations on the Babyworld home page and the most used pages of the website. This was the only mechanism to elicit responses. It is significant to note that without the agreement and co-operation of the website providers to place these strategic hypertext links, the survey would most certainly not have been successful since it would have been impossible to recruit these specific online community members in any other way. Thus the issue of access to online communities and website providers is crucial when conducting online research. As Coomber (1997) has highlighted, there is little point in having a web page and setting up an online survey and passively `waiting' for eligible respondents to find the site: more active enrolment is needed to encourage users to complete an online survey. In this case the significance of having the site providers `on our side' cannot be underestimated. This access issue is liable to become increasingly important. As the use of the Internet increases in the general population, and the novelty of responding to online surveys wears off, getting online users to complete online questionnaires is liable to become more problematic. This is indeed the case as online users are becoming wise to the fact that they are paying for the privilege of being `over-surveyed (McDonald and Adam, 2003, 92). The result is that online users are intolerant of unsolicited communications and invitations to participate in research are increasingly considered `spamming' (Harris 1997), resulting in online surveys often having lower response rates than onsite surveys. Witmer *et al.* (1999), for instance, report response rates of 10% or lower being common for online surveys.

A further issue of concern when using web-based surveys is that they present serious sampling problems for a study based on the quantitative tradition. There is no access to a central registry, or master database, from which to create an accurate sampling frame nor is there any way of discerning how many users are logging on from a particular computer or how many accounts/memberships a particular individual might have. This means random sampling or gaining a representative sample is not possible. Internet surveys on the whole, therefore, attempt to select a sub-set of users to participate in the survey. This may be through attempts at non-probability sampling, or through self-selection. Coomber (1997) has suggested that online self-selection is suitable to use when researching a particular group of Internet users, especially when connecting with groups that are not bound in a particular area but that share a common interest (O'Lear, 1996, 210). This was the case in our research on one particular online parenting community where `traditional' surveying was not feasible owing to physical and mental exhaustion of many mothers after childbirth and the constant demands of caring for a new baby in its first few months of life. Indeed, the interviewees indicated that few would have been willing to participate in a survey that involved travelling and interrupting the immediate needs of their baby. Certainly in this research project cyberspace has provided a virtual social place where the researchers and participants have been able to meet and interact which, quite simply, may not have been possible in the `real world' owing to the space/time

limits of women with young children (both researchers and participants). Through this new social space created by the Internet a `community' (women with new-borns or young children) notoriously difficult to reach and hence habitually left out of research, has been contacted. So while self-selection may clearly limit the scope of the results where broad sample representativeness is required, it is important for reaching marginal groups or if the researcher is conducting an interpretive investigation. Moreover, it must be noted that self-selection occurs in many conventional surveying situations and is not unique to online research.

There is, however, divergent opinion as to whether the Internet provides an inherently biased sample population for quantitative studies. Research has documented that in the early years of its inception, those using the Internet tended to be predominately male, white, first world residents under 35 years old while those with lower educational levels, lower incomes, living in rural areas and black or Hispanic were underrepresented (Curasi, 2001; Kaye and Johnson, 1999; Mann and Stewart, 2000). Some argue that access to the Internet is still highly unevenly distributed both socially and spatially (Janelle and Hodge, 2000; Warf, 2001). Indeed, according to Silver (2000), the digital divide has continued to grow in America, and this divide is fast becoming a `racial ravine', suggesting a biased Internet user sample population. Hewson *et al.* (2003) however, are more optimistic. They argue that overall the evidence suggests that the Internet user population now represents a vast and diverse section of the general population and that it is rapidly moving beyond the select group of technological proficient male professionals who were once largely predominant. Dodd (1998, 63), for example, argues that the Internet's broad scope can actually improve representativeness, as many population groups usually difficult to contact may be easier to access via the Internet while Litvin and Kar (2001) show that the sample characteristics of conventional methods and electronic methods are converging, with electronically solicited samples becoming more like random paper-based samples, as technological uptake of the Internet increases.

A final issue relating to web-based surveys involves verifying the identity of the participants and the reliability of their responses. In our research it was not possible to do so but the questionnaire was so specific to being a new parent and a user of the Babyworld website that it would have been difficult, if not impossible, to complete the questionnaire without a detailed working knowledge of the website. However, this does not diminish the possibility that some respondents may have been `spoofs' or indeed may have played with their online identity in completing the research (Roberts and Parks, 2001). Online research also does not enable the researcher to assess the reliability of responses. As Hewson *et al.* (2003, 44) state: `…when materials are administered via a computer terminal rather than in person, the researcher is less able to judge the extent to which the responses are sincere and genuine, the conditions under which the questionnaire was answered and the state of the participants at the time of participation (for example, intoxicated, distracted, and so on)…'. While being an irresolvable sampling issue of online research at present, again this is not unique to virtual methods: incorrectly completed questionnaires, unreliable responses and non-verifiable identities may also be a feature of conventional surveys. Moreover, in conducting online community research, how necessary is it to `prove' the offline identity of the participants anyway? Taylor (1999, 443) argues that this depends on the initial research question and that `…the acceptance of online life as a thing in itself' is important. Indeed, it is increasingly recognised that online textual persona cannot be separated from the offline physical person who constructs them and they are commonly based on offline identities in any

case (Valentine, 2001, 56). Additionally, recent research suggests that the anonymity of participants can play a positive role in the research process, reducing researcher bias and being particularly useful for embarrassing and sensitive topics (Hewson *et al.*, 2003).

It is clear therefore, that although the web-based survey has great potential in reaching specific population sub-groups difficult to access using conventional means, and in increasing the opportunity for having a very large worldwide pool of respondents, it also has the potential for supporting the views of those privileged with computer access. This is especially the case if the research is represented uncritically without reference to the sampling procedure. Findings from web-based surveys are indicative, should be read with caution and analysed with acceptance of the likely relative sample bias (although the degree of this cannot be measured). Thus according to Wakeford (2000, 33): `The quantity of information that may be generated, and the speed at which responses can be collected, can result in pleasing piles of data- but we should be wary of being seduced by sheer quantity; data is only useful if it is representative of the larger population.' This is clearly currently the case but recent research does hint that in the future the sampling issue may become a less significant issue in the virtual environment. Riva *et al.* (2003), for example, report no significant differences in responses gained from the same questionnaire from online participants compared to those completing a paper survey, even when the online sample is not controlled. In contrast, Harris (1997) argues that virtual focus groups or indepth online interviews, even more than survey research, will require careful attention to the challenges of the virtual environment.

Engagement, Interaction and Communication in Virtual Online Interviews

Selwyn and Robson (1998) have noted that in moving the traditional interview to an electronic arena, the interviewer requires a very different set of skills. This is because `…the use of communication media involves the creation of new forms of action and interaction in the social world, new kinds of social relationship and new ways of relating to others and to oneself' (Thompson 1995, 4 quoted by Crang *et al.* 1999, 11). Below we consider three important but related issues in the virtual interview process: engagement, interaction and communication. We consider whether the electronic interviewer requires different skills to engage the interviewees and build up rapport than the `real world' interviewer; if the disembodying quality of online research alters the interview process; and what impact the virtual setting has on the researcher's role in the research process.

As Oakley (1981, 41) has noted `…the goal of finding out about people through interviewing is best achieved where…the interviewer is prepared to invest his or her personal identity in the relationship'. We developed several ways of compensating for the fact we could not see the interviewees in order to build up rapport, for as Curasi (2001, 373) notes, online participants are more likely to divulge personal information about themselves if the interviewer initiates the disclosure process. First, we posted photographs and biographies of ourselves on the project website to `lay bare' our bodily identities. As part of the organisation of the interview process we then emailed the women individually, often sharing concerns about how we would deal with childcare arrangements during the interview hour. A personal relationship was initiated in preparation of the interviews in a similar manner to that which might have been used in conventional interviewing, the main difference being that the relationship was based on written rather than oral communication. This meant

that the participants had some degree of knowledge of the researchers prior to the interviews but to cement this development of rapport we also initiated each interview with personal profile details, in the hope the women would do the same. This was usually successful and gave `face' (or at least context) to everyone involved in the interview conversation. Although this degree of self-disclosure was similar to that which we would have invested in a FTF interview, we felt it did build up trust and aided candid and honest exchanges in our online interactions. As Paccagnella (1997, 3) has recorded, a stranger wanting to do academic research into online communities is often viewed as an unwelcome arbitrary intrusion. In this case our `insider' status as users of the website and our commonality of identity as new mothers certainly facilitated these mother-to-mother interviews, challenged our `expert status' and dispensed with the need for any cultural gatekeepers. Overall then, we did not need to develop radically new ways of building up rapport with the women, rather the engagement process was characterised by continuity of methods with `real world' techniques.

It was during the interview process, however, that some interesting differences emerged. The online interview is a process that removes the tangible presence of the researcher, so bodily presence (age, gender, ethnicity, hairstyle, clothes, accent) become invisible. According to Chen and Hinton (1999, 13.2) this results in the potential of the virtual interview to become the `great equaliser' with the interviewer having less control over the interview process and the researcher potentially becoming a `participant researcher' (Seymour, 2001). In our case we feel this is a rather utopian vision. For example, we posted photos of ourselves on our webpages and shared our background interests with the women, both important processes in creating rapport and breaking down the researcher/researched relationship, but giving distinct `clues' to our bodily identities. This may have influenced the interview process with white, 30-something women feeling more comfortable talking to us than other groups. Moreover, it is also likely that while the `lived body' is invisible during a virtual interview, mannered behaviours, pre-interpreted meanings and unstated assumptions are clearly `visible' during online conversations, influencing the nature of discourses and social interaction (cf Seymour, 2001). This is precisely because we do not leave the body, and all its material inequalities, behind when we enter cyberspace. Additionally, the `equaliser argument' glosses over the structural power hierarchies that enable researchers to set the agenda, ask the questions and benefit from the results of the interview process.

A further point to note is that in the situation of a virtual interview, the speed of typing dominates the interaction rather than the most vocal personality, which although having the potential to disrupt power relations amongst groups, has the possibility of marginalizing people with poor or slow keyboard skills. One of the benefits, however, of the use of the typed interview is that in an online interview it is much harder for someone to dominate the group. As Sweet (2001, 135) records `…an overbearing respondent does not have the same power or influence with words in the dialogue stream. All respondents are composing their responses simultaneously and not waiting for others to respond. The online environment can create a more even playing field.' This observation has recently been `proven' by Schneider *et al*., (2002) who, in a comparison of online and FTF focus groups, revealed that participation levels were more uniform online whereas a few participants dominated the FTF focus groups. There is also a tendency to be less inhibited online and respondents are more direct in stating their opinions, and less likely to edit their thoughts to give socially

desirable answers. This results in the potential of greater equality between respondents in an online interview situation.

We must also acknowledge that for the interviewees, the ability to mask their identity changed some accepted norms of behaviour and probably allowed them a more active voice in shaping the tone and atmosphere of the interview. Despite Gaiser's (1997, 142) warning that virtual interview discussion may be `…superficial and playful' with interviewers finding it more difficult to persuade participants to `…reconceptualise their behaviour…to participate in substantive discussion', we found that the relaxed and informal atmosphere created a platform for successful interviewing. Indeed, as is common in conventional situations when women interview other women, the interviews all provided high levels of self-consciousness, reflexivity and interactivity. Whether this was owing to the nature of the interviewees (self-selected, motivated, frequent online users), or owing to the nature of the subject manner, clearly very close to the hearts of the women involved, it is difficult to judge. In our virtual interviews and we did not encounter the much written about `…aura of suspicion' surrounding `…stranger-to-stranger communication in cyberspace' (Smith, 1997, 40).

The success of the interviews may also have been due to the fact that while all the women were in different locations, all but one chose `home' as the interview venue. As Mann and Stewart (2000) suggest this is one of the major advantages of online research in that women can be in a familiar, comfortable and physically safe environment, resulting in them feeling more in control of the interview process. As Dyck (1997) has revealed, in locations where interviewees feel exposed, powerless or ill at ease, they tend to withhold information thereby impeding the success of an interview. By interviewing the women at home, where much of their parenting knowledge and experience was practiced (although evidently in this case not necessarily from where it emanated), the balance of power shifted to the interviewees a bit more, putting them at greater ease and improving the interview process. The relationship between interview location and research power relations is clearly similar in both virtual and `real' settings. Thus although these virtual interviews did involve a few novel features of engagement and interaction specific to the virtual venue, other features were similar to that involved in more conventional interviews. This continuity was not, however, a feature of the actual computer mediated conversation to which we now turn.

Michaelson (1996, 58) notes that: `The relative anonymity that IT provides also changes the rules of discourse.' In virtual interviews it removes the ability of the interviewer to use and interpret paralinguistic communication and is dependent on written rather than spoken language (Chen and Hinton, 1999, 12.1). Certainly in this case the degree of abstraction that the virtual interview involved had impacts on the nature of the interview `conversation.' The lack of visual and tactile communication for example, was replaced by specific Internet language. Paralinguistic expressions such as lol (laugh out loud) and emoticons (emotional icons used to express feelings, for example ;-) which represents a wink) were used by the interviewees a lot to replace facial expressions and voice quality. It took us online novices a while to learn this new language! The absence of audio/visual cues (or clues) meant that often the empathy we held with the woman had to be explicit rather than through utterances and gestures. This level of abstraction was, at times, quite weird and there were occasions when we were `lost for words', taking some time to decide on what to send as a message, because we felt like our written comments sounded banal or our questions too direct and leading. Sweet (2001, 134) sees this as an advantage of the virtual

interview, suggesting that the absence of sight and sound strengthens the use of perceptual senses by not relying on subjective visual and vocal judgements and interactions. In other ways the degree of abstraction offered in the virtual arena was quite helpful as it was a means by which we could keep the interview flowing along the key themes and avoid being sidetracked too much. Interrupting a virtual conversation somehow felt more acceptable in the written word than in the spoken FTF context. On the whole this meant that the interviews flowed well, although it did also mean that the researchers dominated the research agenda (this was an active decision which could be altered given a different research remit).

There is now widespread recognition of the gendered nature of online communication with gender bias in dominance of discussions, misogynistic attitudes and language and message content (Herring, 1999). Herring (1996) has noted that online utterances tend to be male orientated and male dominated, with sexual harassment and flaming (abusive, rude or dismissive comments) being common. This was not the case in our interview process. The online interactions were supportive and sensitive with a high degree of trust and intimacy. This is probably partly owing to our sample population, being Babyworld users, which is predominately a woman-centred website based on knowledge sharing and support. As such, our findings contrasted with Soukup's (1999) virtual ethnography in which he discovered that female chatrooms (as well as male chatrooms) were characterised by masculine forms of interaction such as competitiveness, argumentativeness and sexual humour, because female chatrooms constantly faced the outside influence of males. Our interviews were permeated with `women's interactions' resulting in a style and sensitivity of communication characteristic of female dominated talk in other settings (Herring, 1996; Savicki and Kelley, 2000).

Overall, although the interviews progressed in a smooth manner, because questions and responses were posted in `rounds' with time lags, the final interview text is littered with interruptions and non-sequesters, resembling a conversation not a linear written word. Because of this, in tracing the genealogy of the interview, both the interviewers and the participants followed the main thread of conversation and ignored conversational side-tracks probably more effectively than would have been the case in a FTF encounter. `Silences' took on an added poignancy, as we needed to consider whether the silence was owing to the fact that the participant was thinking, was typing in a response and had not yet hit the return button, or had, in fact, declined to answer the question, or even left the interview. As such the data attained from this method is `…distinctly different from that of a transcribed conversation' (Chen and Hinton 1999, 9.1). In our case it was less structured and more interactive than one might expect from a FTF interview transcript. We concluded that the virtual interview bridged the oral/written divide. Although clearly in written format, the type of interventions were very oral in nature. The researchers and participants paid little attention to issues such as spelling and grammar, as the nature and meaning of the conversation took precedence over the correctly written word. As such, the transcript very much resembles a `written conversation'.

Chen and Hinton (1999, 12.6) distinguish three main differences between written and spoken language and discussion of these lends weight to our claim that the online interview bridges the oral/written divide. First, they state that there are no words in the written language indicating specific nuances of context. Clearly in our online interviews emoticons and paralinguistic expressions were used to replace these. Second, written text is more explicit and structured than spoken word. While we did find our transcripts to be very explicit, they often defied structure, and the lack of

attention to grammar and spelling certainly more closely resembled a conversation than a text. Finally, in the written text the individual becomes separated from the text, standing apart and objectifying their experiences and creating the opportunity for self-editing before pressing the return button. Again, we did not find this to be the case. Since our interviews were synchronous and conducted at the speed of the slowest typist, it was rare to find anything other than spontaneous interaction. If editing did occur, then it did so on screen as qualifying statements. To conclude then, the novel manner in which one converses online demonstrates tangible differences with FTF interactions.

The Future is Blackboard?

It is clear then that online research methods offer some very interesting methodological potentials to researchers. But what are the future prospects for online research methods? Communication technologies are constantly developing and changing, as are delivery devices, web interfaces and hardware and software tools. Indeed, Sweet (2001, 135) observes: `If the next five years bring the magnitude of changes as the last five years, there will be many more advancements unimaginable at this time.' It is therefore important to consider how changes in the digital design of virtual technologies will inform the types of online interaction that are possible and the consequent methodological tools available to researchers. Below we give one short example of how online methods are in flux owing to changes in communication technologies.

Since conducting the Cyberparents virtual interviews using Hotline Connect, the technology available for carrying out online synchronous interviews has developed further. 'Blackboard' (www.blackboard.com) is a virtual learning environment software (VLE) which was originally developed as an interactive online teaching tool. As such it is `…an integrated environment, all its tools are accessible within a single site and the "simple to use" tools have a consistent user interface. The availability of all its functionalities through a Web browser removes requirement for any dedicated user software and reduces access barriers in terms of time and geographical distance' (http://www.le.ac.uk/cc/www/tools/blackboard/index.html). Individuals can communicate on Blackboard by means of emails, discussion forums and in a virtual classroom. Both emails and discussion forums are types of asynchronous communication that do not require participants to be online at the same time. However the virtual classroom is a real time (synchronous) tool that requires all users to be online at the same time. It is this latter facility that is most useful to the online researcher.

In essence the virtual classroom facility on Blackboard closely resembles Hotline Connect, but there are distinct advantages to this software which are particularly useful when applying it to the virtual interview situation. For example, the virtual classroom on Blackboard includes a 'whiteboard' area where facilitators can draw diagrams, include a PowerPoint presentation and display live webpages, increasing interactivity and multi-media interventions into the interview process. For example, the use of live webpages and web cams might significantly aid the rapport building process, help with identity verification and increase the potential of using verbal and visual cues to help interpret interview conversations. Another advantage is that the transcript of the `live chat' in the virtual classroom is also included in the chat window, so unlike Hotline Connect where those joining the interview can only view the conversation from the point they arrive, Blackboard allows latecomers to view

previous conversations. Additionally, since academic institutions are increasingly providing Blackboard centrally, with it being used daily by more than 2,000 organizations dedicated to teaching and learning (http://www.blackboard.com/highered/index.htm), access and distribution of software to interviewees should not be a problem. As academics increasingly routinely use Blackboard for teaching purposes, their expertise of the software will increase, enabling its successful application for use in the virtual interview situation.

However, it must be stated that whilst the technology of Blackboard is somewhat more advanced than Hotline Connect, many of the same limitations exist when applying it to the virtual interview situation. For example, users still often 'interrupt' each other by asking another question when the previous one has not been responded to, therefore changing the focus of the interview at inappropriate moments. Some users still worry about typing with grammatical and spelling accuracy, which can delay the sending of their contribution. Others will only press the return key when they have typed a complete sentence whilst other users press return every couple of words to speed up their contribution. This results in a fragmented transcript and in a thread of discussion ending prematurely with a possible loss of valuable data. It also means that the more `keypad confident' can potentially dominate the interview process.

Thus although the technology has progressed and there are significant advantages in using Blackboard, limitations still exist which are an inherent part of the online research medium.

Conclusions

The example of Blackboard is important because it illustrates how the digital design of online technologies will inform the types of interaction and methodological choices that are possible in future online research. Indeed, although online methods are essentially about electronic communication, as Wakeford (2000, 41) so rightly recognises: `…every component is also set within the social and economic infrastructure within which this communication/information network has emerged. This infrastructure, in turn, influences our methodological options.' It is likely that in the future we will see an increase in the use of `mixed method triangulation' with onsite and online methods both used to interrogate and verify the intersections between real and virtual infrastructures, enabling research to take place across a variety of online/offline domains. This may well challenge the boundaries of traditional fieldwork, which is usually located in a particular place (Wakeford, 2000). Additionally, the development of wireless technologies, such as mobile phones, for example, will separate the Internet from the computer and are likely to have, as yet, unforeseen methodological consequences, as will interactive television and speech recognition software.

Although Internet euphoria is past, in our market-orientated society it is likely online research methods will increasingly be used owing to their cost saving potentials. For example, in a survey of the Council of American Survey Research Organisations (CASRO), the majority (64%) of research professionals expected to conduct or commission online survey research in near future (Harris, 1997). Moreover, online research is expected to account for half of all marketing research revenue by January 2005, or approximately $3.1 billion based on current growth rates (Curasi, 2001, 362). Methodological fads and flux must, however, be treated with caution. Change is not always necessarily progressive: faster and cheaper is not

necessarily synonymous with `better'. As Dodd (1998, 60) argues, we must ensure that `…cheap entry costs and glowing attractiveness of Internet fieldwork do not result in shoddy `cowboy' research.' There is a need for online researchers to tread with caution and practice their `craft' with reflexivity. It is unlikely that online research is going to replace onsite research but rather it is another option in the researchers' methodological `toolkit'. Therefore the use of online research methods must themselves be carefully considered. As Denscombe (2003, 41) suggests: `A decision on whether it is appropriate to use `e-research' should be based on an. …evaluation of the respective advantages and disadvantages in relation to the specific topic that is to be investigated.' Indeed, although the data collected by online methods can be rich and valuable to the researcher, the potential of online research should not be exaggerated: many of the issues and problems of conventional research methods still apply in the virtual venue. Smith (1997, 4) aptly concludes: `The new technology offers a spate of problems layered over the old.' As Illingworth (2001, abstract) suggests, we should avoid the use of the Internet as an `easy option' and `…encourage a more developed focus on the justification, applicability and benefits of Internet research to a particular project. What has become apparent is that the effectiveness of CMC (computer mediated communication) is much dependent on who is being researched, what is being researched and why.' The long-term success of online research in the end will ultimately depend on the quality and credibility of the information that it generates.

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