The Email-diary A Promising Research Tool for the 21st Century?

Adam Jones, School of Sport and Service Management, University of Brighton, UK,

Email: aj48@brighton.ac.uk

Janet Woolley, School of Sport and Service Management, University of Brighton, UK,
Email: J.Woolley@brighton.ac.uk

The Emaildiary: A Promising Research Tool for the 21st Century?

Abstract

The global research community has identified that, as the population becomes ever more mobile, and society 24/7-oriented, data collection methods that reflect the day-to-day experiences of its participants need to be developed. This paper reviews the success and issues of using a solicited emaildiary, developed to investigate the impact on commuters of London hosting the 2012 Olympic Games. Research on the effectiveness of diaries as a method of data collection is limited, whilst there appears to be no analysis using email as a method of soliciting diary responses. The paper identifies the research opportunities for an emaildiary and the solutions it provides to a number of the problems and limitations experienced with a traditional pen-and-paper diary.

KEYWORDS : diaries, email, mobile society, mobile technology, recording of events

Introduction

The concept of recording information in a systematic and regular way has been in existence for centuries. Early examples of what we would classify as diaries include records of events produced for the 10th century Imperial Court in Japan (Morris, 1970), whilst during the same time period, monks in England were recording events 'whose entries were made year by year' (Blair, 2003:352). Samuel Pepys' diaries have gained canonical status in our understanding of the 17th century world (Dawson, 2000) and, in contemporary times, reading diaries is both a research and a leisure activity. The diary of Anne Frank provides an insight into a specific period of time whilst diaries of well-known people, including politicians and artists such as Joe Orton, allow for an understanding of

their thoughts, aspirations and anxieties. Fictional diaries - such as those of Bridget Jones, which 'present a perfect zeitgeist of single female woes' (Maddison and Storr, 2004:4) - written primarily to entertain, have raised the profile of diaries within contemporary culture. Alaszewski (2006:44) believed people wrote diaries 'to record events, experiences and feelings' whilst Moon (2006) felt that for some diarists, it is the process of reflection during writing that is a motivator.

The diaries in this research were created to record the impact of one of the largest, once-in-a-generation, events (Hendy 2011): the London 2012 Olympics. The research, to analyse travel disruption and restrictions on commuters during the Games, required participants to create a diary of their daily commute in and out of London. The diary was created by commuters replying to a daily email, sent by the researchers, requesting participants to reply with a response to specific questions. These responses create their emaildiary of events, thoughts, and views. Through the analysis of pre- and post-diary questionnaires, and the evaluation of the recruitment process and emaildiary responses, this paper presents the opportunities and limitations of using emaildiaries as a research method to respond to a 24/7 mobile society.

Diaries, Journals, Logs and Memoirs

Diaries can be regarded as a generic term that encompasses logs, journals and memoirs. Fothergill (1974 : 16) defined a log as a recording of specific limited information of events, without any comment on the occurrence, which is

'performed for its public usefulness'. These log entries are a record of something that has taken place without any qualitative or quantitative judgement. Journals, unlike logs, include a reflection on events, relationships and personal feelings, which Madge (1953: 87) believed were 'often the most revealing' as they clearly reveal actions the author deems significant at the time of occurrence. Elliot (1997) distinguished between journals that are intended primarily for the author themselves, and memoirs whose publication for posterity was one of the objectives for the record being made. Duck (1991: 150) stated that, to explain theories, social scientists needed diaries, journals or logs as a way to record 'detailed geographical and topographical knowledge of the everyday events'.

Mac Farlane (1970), however, thought that the motivation and reasons for keeping a diary may not always be known by the diarist when they start recording their activity and, unlike Elliot (1997), he was not convinced that the diarists were aware or in agreement that their entries, thoughts and reflections, would be made available for others to read.

Solicited Diaries

This paper is concerned with solicited diaries, which Bell (1998:72) describes as being 'those where an account is produced specifically at the researchers' request by an informant or informants'. Solicited diaries have become popular with academics as a 'method whereby the subjects themselves regularly recalled their own behaviour' (Duck, 1991:151). Recording people's feelings, thoughts, attitudes or reactions makes them interesting to researchers who are trying to

explore the complexity of the experience and the behaviour of a distinct or representative group.

Solicited diaries range from being totally structured, with specific guidelines limiting responses (Corti, 1993), to free-form, where content is decided by the diarist themselves (Thomson and Holland, 2005). The benefit of structure in diaries is that it allows the researcher to specify the area of information they are interested in and what they want recorded. Structured diaries lean towards a quantifiable data collection technique, which can produce enormous amounts of data for analysis by the researcher (Bolger et al, 2003). The less structured and more free-form, unstructured diary can provide rich and meaningful qualitative data (Elliott, 1997; Milligan et al, 2005).

Usefulness of Diaries in Research

Researchers have sought to develop methodologies to explore the complexity of human behaviour and experience (Harvey, 1993). Bell (1998) identified that diaries are a method that is particularly useful in recording and analysing the participant over time. Bolger et al (2003) identified three research goals that diaries could help researchers with: gaining information at a personal level, details of 'within person' changes over time and analysis of these within person changes. To these objectives could be added Jacelon and Imperio's (2005) belief that diaries help identify the level of importance placed on events and attitudes towards such events. It is this variety of uses, and flexibility of use, that makes

diaries such an interesting research method to investigate. Bolger et al (2003) urged researchers to use diaries as a method of studying temporal dynamics such as hours, days, weeks and diurnal cycles such as weekday versus weekend. They also believed that diaries were an excellent method to understand seasonal variations and answer questions such as, 'Is there a change in response depending upon the time of day, day of the week, month of the year?' (Bolger et al, 2003).

Diaries are a research method that is available for both quantitative and qualitative data collection, either in isolation, or as part of a mixed method approach. It is possible to combine the diary entry with survey, interview or focus group research methods. Zimmerman and Wieder referred to participants' diaries as an observation log that facilitated intensive interviewing later (1977). This use of a diary as a log supported Bolger et al's (2003) observation that solicited diaries are useful for logging the events of daily life that may otherwise have been forgotten, whilst providing for control of self disclosure.

Phenomena that range from travel habits (the National Travel Survey has been running continuously since 1988) to sexual behaviour (Coxon, 1996) have utilised the flexibility of solicited diaries. It is regarded as a trusted method that disciplines such as psychology, education and feminist studies (Patterson, 2005), nursing (Richardson, 1994) and health (Stone et al, 2003) have used. Diaries can be used to generate 'summary accounts' (Bolger et al, 2003:581) or provide the opportunity for 'reflective learning' (Moon, 2006:11), or a mixture of the two.

Characteristics of Diaries

In his definition of diaries, Alaszewski (2006:1) identified three main components that were essential for a record to be classified as a diary. He states that diaries should be created by individuals who have 'maintained a regular, personal and contemporaneous record'. This opportunity for recording a collection of regular, contemporaneous and personal data enables the research instrument to collect information at a detailed level 'about behaviour, events and other aspects of individuals' daily lives' Corti (1993:1).

The first requirement identified by Alaszewski (2006), and a key strength of using diaries as research method, is the contemporary nature of the data which 'mitigates the retrospective bias inherent in accounts of events that transpired weeks, months, or years earlier' (McLaren and Solomon, 2010:202). Most social science research methodologies suffer from the limitation that information is only accessed at one point in time and thus relies upon on memory (Alaszewski, 2006). Diaries provide an opportunity to investigate social, psychological and physiological processes during everyday situations within the context that they occur (Bolger et al, 2003). Keleher and Verrinder (2003:440) thought that the value of diaries lay in the fact that they are written using short-term memory, and, providing the entry is made contemporaneously, 'forgetting an event is unlikely'; they are therefore useful in overcoming the problems of memory recall and 'memory telescoping'. Memory telescoping creates problems for researchers as the record created can be inflated or deflated (Verbrugge, 1980). Problems of retrospective recall in health research led to the development of alternative

strategies for measurement, 'one of the most prevalent [of which] is the patient diary' (Stone et al, 2003). Referring to the contemporary attributes of a diary research method, Butcher and Eldridge (1990: 25) suggested that although more expensive than other data collection methods, the diary is useful for 'items that are easily forgotten, whether because they are insignificant (to the informant) or because they occur frequently'.

The regularity of diary entries - usually completed over a similar time period (such as daily or weekly) at either the same time of day or after a specific event - is the second of Alaszewski's (2006) requirements. This regularity provides a consistency of research data that enables the researcher to compare, contrast and analyse what is happening. Bell (1998) and Bolger et al (2003) believed that diaries were particularly useful in research that was intended to track the changes, similarities and differences between participant groups over a period of time. Bolger et al (2003) identified that the diary method of research was useful for researching the passage of time, as it enabled the investigation of phenomena as they unfold or allowed a focused examination of a specific event that may be unusual or one that rarely occurred. Diaries reveal emotions and attitudes as well as changes that occur during the day or day-to-day. They provide information that might not be readily available through other data collection methods, such as interviews and surveys.

The personal record, the third of Aleszewski's requirements, portrays events as they are, telling it like it is. This provides the opportunity for recounting not only what happened but associated feelings. Alaszewski (2006a) also held the opinion

that diaries offer their readers 'an honest and authentic account including the feelings associated with those events whether they are feelings of guilt, anxiety or elation'. This personal nature of the diary entry is extremely interesting to researchers as it provides the opportunity for deep and insightful analysis of the discourse on the processes that the respondents are going through. It provides an individual record that can be scrutinised and reviewed to identify patterns and ideas, which then could reflect precedents or temporal dynamics listed by Bolger et al (2003) above.

A fourth strength of diaries as a research method, but not a specific requirement, is the access to information that might not be easily available or recordable by the researcher through other research methods. Zimmerman and Wieder (1997) supported diary research as it allowed ethnographers to overcome some of the limitations of observation research. They believed that the presence of the ethnographer observer could cause the participant to 'alter appearance and many other matters which are to some degree optional or flexible'. The diary method, they advocated, provided a major resource in recording the 'view from within' without the disruption of the observer. Similarly, Alaszewski (2006) identified that diaries are able to facilitate access to hard-to-reach or hard-to-observe phenomena. Corti (1993) believed one the benefits of diary reaserach was that 'diaries can help to overcome the problems associated with collecting sensitive information by personal interview'. For young people, Lines (1998) advocates the use of diaries as a method as it allows their voice to be heard and affords insight into individual daily patterns of consumption and interpretation for a hard-to-access group.

Triggers for diary entries are reliant on the purpose for which the research is taking place. Wheeler and Reis (1991) categorised three temporal periods for diary entries: interval, signal and event. Regular predetermined intervals are the oldest trigger, signal entries are generated by fixed or random time periods or a combination of the two, whereas specific events prompt a diary entry each time the specified event occurs. Bolger et al (2003) believed that event entries are the most distinct trigger for diary entries as it enables the research of rare or specialised occurrences that may not be captured by fixed or random intervals.

Types of Diary

Diaries have traditionally been paper and pen based, a simple technology that is easy to use. Researchers, however, have concerns that paper and pen diaries may be left, lost, or entries made retrospectively, which is especially significant in time and event-contingent research (Bolger et al, 2003). Studies comparing reported times of an event and actual diary entry reveal that the diarist may misreport the time of their diary entry. This difference can cause recall issues and limits the usefulness of diaries to those interested in automaticity, salience or certainty of response (Bolger et al, 2003; Keleher and Verrinder,2003).

To improve the effectiveness of time-contingent diaries, signal devices such as pagers, programmed wristwatches or telephone calls are used to augment the paper and pen diary (Dabbs et al, 1997; Litt et al, 1998, and Morrison et al, 1999). These interventions have problems of cost associated with purchasing,

programming and training respondents on the operation of such devices. They can also be disruptive to participants' usual routines (Bolger et al, 2003).

Since the 1990s, researchers have been developing electronic diary data collection (Barrett and Barrett, 2001), typically taking the form of hand-held computers with custom-designed diary programmes (Bolger et al, 2003). Bolger et al (2003) state these provide the advantage of signalling and time stamping, the flexibility of questions throughout the research period, and reduce the need for transcribing data input. However, this approach is expensive, with the costs of hardware, software development and training support being significantly greater than paper and pen diaries. Barrett and Barrett (2001) believed that wireless internet access would allow the development of diary updates (referred to as 'experience sampling studies') from hand-held computers using immediate transmission that would also allow changes to software. These developments would provide the opportunity to check on diary responses and assist in building a relationship with the diarist through electronic communication, without the need to visit them personally.

Problems with diaries

Diaries exhibit a number of advantages over other research methods, specifically producing a contemporary, regular, and personal record that, due to its flexibility, also allows researchers to access groups usually hard to reach. However, a number of problems and limitations have been identified.

Building a relationship with the diarist for either the recruitment or completion

of solicited diaries is an important consideration. Alaszewaski (2006:54) states

that completing a diary 'involves a rather longer-term relationship than

completing a questionnaire, or participating in a one-off interview'; therefore,

the longer-term commitment of the participant is required. This personal contact

during recruitment or fulfilment may not always be possible either, as a result of

the diarist not being easily contactable or because of the cost of communicating.

The recording of information on a regular basis, a key requirement of diaries,

places 'high demands' on participants (La Porte et al, 1985). This high

participatory requirement can make it difficult to engage a large number of

respondents. National government agencies, using all the resources that they can

deploy and the prestige of their research, experience problems on completion

rates. Of 10,314 eligible households that were selected for the 2010 UK National

Integrated Household Survey, just under half (5,160) completed the expenditure

diary (ONS, 2012). This problem of recruiting participants to research projects is

not limited to diary research, but the additional time required to complete a

diary entry, and the extended commitment, does add barriers to recruitment,

retention and completion.

The costs of the diary method are another concern for researchers. Corti (1993)

believed that research using diaries was usually more expensive than the

personal interview. Costs are created in many ways. Researchers require fully

completed diaries. Improving the user-friendliness of diaries can improve the

completion rate, but this can have cost implications (Kenyon, 2006). Diaries have

the advantage of producing a record (written, typed or even spoken) which allows the diarist to share their information with the researcher; however, the costs of intensive editing, coding and checking can be significant (Bolger et al, 2003). Personal delivery of the diary, and training on its usage, may create a personal relationship and thus lead to greater response rates (Alaszewski, 2006); unfortunately, this also increases operational costs, especially in comparison to other research methods. (Bolger et al, 2003)

The time of diary entry and the level of detail and honesty of the diarist can be a problem. Day and Thatcher (2009:250) identified one of the main limitations of diary research as reliance 'on participants to complete the diary entries at the appropriate time periods and with sufficient depth of detail'. La Porte et al (1985) stated that diarists may be unwilling to record all of their activities, or may reduce the burden of recording, by altering their activity. The higher completion rate of diary entries early in the process, referred to by Corti (1993) as the 'first day effect', has been observed in household expenditure diaries. Madge (1953:87), referring to personal journals, cautioned that diarists might exaggerate and over-dramatise, leave gaps or 'take much for granted'. In McLaren and Solomon's (2010:205) research of young people, they identified that 'people felt compelled to exaggerate experiences' and, because of this, they had to discount one of the diaries. Corti (1993:4) advocated that researchers visit diarists to spend time checking the diary inputs with respondents in order to 'preserve 'good' diary keeping to the end of the period'; however, such visits, like those for delivery and training, add costs. Stone et al (2003: 182), however, believed that these costs must be balanced against the superiority of the diary

method in obtaining more accurate data, particularly where they 'capture the experience close to the time of its occurrence'.

Mobile culture and diary research

Murry (2009) considered that social scientists need to research methodologies that harness the mobile culture which Hagen et al (2005) believed should enable diarists to complete their entries either in the office, at home or on the move, using mobile technology. In his analysis of the use of Internet technologies such as Skype, Hanna (2012) suggested that further research was needed on the use of technology, whilst Evans et al (2008) believed that using the internet is a viable conduit to help overcome problems associated with distance and access.

The reference in the literature with regard to emails and dairies is limited to its use for providing advice to and/or recruitment of participants; the author has not identified any research conducted on, or using, email diaries *per se.* Emails are a ubiquitous communication tool for both business and pleasure. It is the second most popular method of communicating with business, face-to-face being number one. Forty seven per cent of adults communicate with friends and family at least once a week using email, with 30 per cent stating they email friends and family on a daily basis (Ofcom, 2012). Ofcom has also reported that 79 per cent of households have access to the World Wide Web at home and 39 per cent of adults have access to the Internet using a mobile phone. This near-ubiquitous usage of the Internet and the change to a mobile 24/7-oriented culture justify the evaluation of emaildiaries as a research method.

Methodology and methods

Day and Thatcher (2009:251) reflect that 'little is known about the effectiveness of using research diaries as a method of data collection', whilst Patterson (2005: 143) is surprised that 'diary-based research has not been given more attention'; Milligan et al (2005:1882) state that 'to date, solicited diaries have been relatively neglected as a social science research method'. This is surprising given that one of the stated benefits of diaries is to allow some control by the participant, which Rappaport and Stewart (1997) believe should be encouraged. Given this lack of empirical research on diaries generally, with nothing on emaildiary as a research method, this work is essentially exploratory in nature using a case study methodology.

To review the effectiveness of the emaildiary, a joint quantitative and qualitative approach was adopted: the quantitative approach provides 'the facts' whilst the qualitative provides the opinion (Easterby-Smith et al, 2002:133). The research processes occurred in four stages: recruitment, selection, participation by creating the emaildiary, and reflection by participants on the diary process. Analysis of the recruitment method, the response rate and depth of responses provides the quantitative aspect of this research. The qualitative aspect of the project was produced through analysis of the survey the diarists completed that provided the description, which Geertz believes should be used for narratives, that are salient for analytical interpretations (1973).

Emaildiarists were invited to take part using non-probability sampling, which has benefits of cost, ease of administration and accessibility (Lynn 2002). Non-probability sampling is a practical method of recruiting participants by asking readily available respondents to participate. The snowball technique was also used, asking colleagues and friends - personal snowball - and those that had agreed to take part - third party snowball - to identify possible candidates who could be approached. Fink (1995) argues that the snowball technique suffers from has little or no control over who is recruited. Initial invitation was through either face-to-face contact or email.

To ensure all respondents met the research criteria, they were requested to complete a pre-diary questionnaire. On each of the working days during the Olympics, the diarists received an email asking them to produce a log of their journey, detail anything they thought was different or significant, and to reflect on issues and news stories provided by the researchers. At the end of the diary period, diarists were emailed two open-question surveys, one asking them to reflect on the transport management and its impact, and the second, used qualitatively in this study, requesting participants to review the emaildiary process. Krosnick (1999) suggests researchers be aware of the problem of 'satisficing', where respondents do not complete each of the steps fully, or look for clues in the question to the type of answer required. As diarists had already completed ten diary entries and a pre- and post-Olympic survey, satisficing when completing the review survey was a concern for the researchers. The review of the diary method survey, therefore, only contained eight questions on their motivation for agreeing to complete the diary and their thoughts and reflections

on the process. The survey was sent one week after the conclusion of the

emaildiary period in order to allow for easy retrieval of the relevant memory.

(Krosnick, 1999).

This combination of review of the emaildiary entry, analysis of the recruitment

method and the diarist's own reflections on the emaildiary process provides an

opportunity to evaluate the email-dairy as a research method.

Results

Personal contact was the most successful recruitment method (table 1),

producing 82 per cent of those who agreed to participate. The failure of the

third-party snowball to recruit is not surprising as the diary method would

require commitment over a ten-day period, placing significant demands on the

diarist (La Porte et al, 1985). The nature of snowball recruitment results in the

researcher not knowing the identity or the quantity of people who have been

contacted (Fink, 1995), thus limiting statistical analysis of this recruitment

technique. Just under half of the participants were recruited through the

snowball technique, indicating its effectiveness in this study, especially when

recruited by those known personally to the researchers (nine personal snowball,

two third-party snowball). Not knowing who had been contacted was not

believed to impact the results of commuter research; however, it does limit the

analysis of the number of possible participants who did not agree to take part or

the reasons for them not being involved.

Method	Number Contacted	Number Agreed	Actual participation
Personal face to face	7	6	6
Personal email	8	6	5
Personal snowball	Not known	9	8
3rd party snowball email	Not known	2	1

Table 1 Recruitment and participation (source author) about here

Emails to personal contacts either failed to elicit a response or, as Debbie explained, "Work is madly busy right now so apologies I won't get involved in the Olympics commuter research". Steve believed he could help recruit through an email "message to everyone [60 employees] so I'm sure you will get a number of returns". This snowball email did not elicit any participants, supporting Alsakwski's (2006) belief in the importance of personal contacts in the recruitment of diarists.

Twenty-three people agreed to take part and completed the initial selection questionnaire. Motivation to participate divided into three areas. Marcus stated it was "Partly obligation, partly just being helpful!", whilst Sam explained it as an interest in what it would entail. For the majority, as Lawrence explained, the subject was "Interesting and high profile subject area, about which there had been some alarming (alarmist?) warnings". This interest in the research topic

had not been identified as an important aspect of recruitment and the implications of this has not been previously investigated by academics.

Three of the participants who were recruited, who agreed to complete a diary and successfully completed the pre-dairy questionnaire, were unable to take part. Two, unfortunately, lost their jobs between completing the initial survey and the Olympics starting, whilst for Stephen, it was the level of commitment: "sorry - not going to be realistic with all the actual work pressures". The level of commitment, a concern of diary research identified by La Porte et al (1985), and the loss of diarists as a consequence of unforeseen circumstances early in the project highlights the importance of over-recruiting.

Once holidays, illness and days when respondents were not travelling in and out of London were taken into account, there was the possibility of 184 daily emaildiary entries. The researchers achieved an 85 per cent completion rate (157 entries received), with eight of the diarists achieving 100 per cent completion. This completion rate did tail off toward the latter part of the second week, from 100 per cent on the first day, to 75 per cent on the last day (day ten). This indicates that the emaildiary can also suffer from the higher completion rates early in the process or the 'first day effect' as categorised by Corti (1993). This completion rate suggests that emaildiary are capable of facilitating the collection of data from a number of people over an extended period of time, which could facilitate research into change over time and difference between people over time. (Bolger et al, 2003)

The daily email request sent out by the researchers to diarists had a maximum of four questions. The first two were repeated every day, requesting diarists to quantify any disruption to their commute and gauge its impact on their journey. The third and fourth questions asked the respondents for their thoughts, views and reflections on a variety of issues related to the transport network, specific press comments and musings on topics relating to the Olympics. The email was sent out daily (Monday to Friday) to prompt a response from the recipients and thus to encourage regular diary entry (La Porte et al, 1985). The format of the emaildiary response varied from being beneath the question or at the top of the reply email and, on occasions, these were in a different colours or fonts. Though all responses were typed, reducing the need for transcription, this flexibility of response would lead to costs in time of reformatting to assist in analysis (Bolger et al, 2003). The level of detail varied depending upon the amount of disruption to the journey of the email-diarists themselves, and their interest in the subject. There was less disruption on the transport network than anticipated, with the result that Jane reflected that the questions became "a bit repetitive". However, she still contributed fully to the research project with an emaildiary input every day. Emaildiary do not specifically reduce the unwillingness of diarists, to record all activities (La Porte et al, 1985) but the researchers, on receiving the diary entry on a daily basis, have the opportunity to identify omissions with the diary entry and answer any queries the participant may have. Open questions, such as requesting reflections on a press story of the Prime Minster using the underground network to get to the Olympic Games, elicited responses that varied from nine to 167 words in length. Emaildiary are, therefore, capable of

producing the same depth of data required for qualitative research (Elliott, 1997; Milligan et al, 2005) that traditional diaries are capable of producing.

The enthusiasms and motivation for completing the emaildiary mirror the reasons the participants had agreed to take part - obligation and interest in the research project. The request to reflect and comment on a specific aspect was identified by the diarists as the most significant motivator. Emma responded: "I was interested in the study and [it] also made me think about something that is usually a boring point of my day travel!", as or Mel explained "[I] partly felt obliged but it was also interesting to think about the questions".

To research the importance and impact of personalisation of the emaildiary request, halfway through the research period, a number of diarists received personalised feedback within their diary request email. This included both a reflection on their previous day's emaildiary entry and an informal comment: "Lawrence, thanks for all your responses. V informative also interested in your Olympic experience when we meet next". The diarists had mixed attitudes to the benefits of this personalising of the daily email they received. Marcus, who did not receive individual feedback, stated: "the generic responses were good enough", whilst Lawrence (who had received a personalised feedback, see above) suggested "it may subconsciously have meant that [his] replies continued to be fuller than might otherwise have been". For Mark, it "made [him] realise people were actually reading what I was sending which did impact positively on motivation". This personalisation builds on the relationship that is developed between the researcher and diarist (Alaszewski, 2006). James, who had also not

received personalised feedback, suggested "some feedback and further direction, as I had no idea if what I was submitting was correct, would have been useful". Personalisation encourages completion and allows for feedback from the researcher on concerns or issues such as contemporaneous time of response (Alaszewski, 2006), depth of detail (Day and Thatcher, 2009), and accuracy of responses (Bolger et al, 2003).

Feedback from the participants on the diary process indicated that the shortest time for completing the diary entry was two minutes, whilst the longest was twenty. The longer response time reflects the depth of participants' diary entries. Emaildiary in this project produced the benefits of traditional paper and pen diaries without placing significant demands on the diarist, a problem identified by both La Porte et al (1985) and Bolger et al (2003). Many respondents answered the email request on receipt as "otherwise it would have got lost in all the emails of the day" (Mel), or in Nicholas's case, "as soon as the questionnaire arrived usually, because I was interested in the subject". Mark completed his "when [he] got [the] chance to catch up" and, for the more diligent, "I generally tried to complete the survey on the evening of receipt, before leaving the office on my journey home otherwise my replies would have been much abbreviated" (Lawrence). Through providing some degree of control over the research process, emaildiary facilitated a more equal relationship between participant and researcher, an attribute encouraged by psychologists (Rappaport and Stewart, 1997). Emaildiary encourage the fulfilment of a contemporaneous record demanded of diaries by Alaszewski (2006), thus reducing the incidents of

retrospection, (Bolger et al, 2003; Keleher and Verrinder, 2003) and memory

telescoping (Verbrugge, 1980)

There was no individual training given to the diarists other than instruction

through an email, yet all reported that they knew what was expected of them and

what they had to do. During the diary period, no diarist asked any questions and

the 157 diary updates that were received were completed successfully. The

simplicity of the method gained approval from many of the diarists, as James B

explained: "IT [information technology] is not my strong point, and the Q&A

format was easy to understand". Familiarity with emails worked to support

fulfilment: as James H comments, email may be "old-fashioned [and similar] in

the way I work, so this style worked well for me". The costs (associated with pen

and paper diaries) of design (Kenyon, 2006), transcription (Bolger et al, 2003),

and training (Corti, 1993) are thus limited with emaildiary research.

With regard to other electronic options for producing a daily report, Lawrence

believed that "emails provided the optimum medium for [him]". He stated: "had

the survey required a blog or wiki, then it is unlikely that [he] would have

participated". He also added: "it also meant [he] could read the questions easily

via [his] mobile phone ahead of completing [his] response later in the day". He

also believed that one further benefit of an email response was it "provides a

virtual opt-out if anyone did not want to answer more esoteric questions". This

opt-out may reduce the depth and amount of data, but does encourage

continuation rather than withdrawal and, as the researcher is receiving the

update on a daily basis, they can pick up on any issues or problems. Emma also

liked the email technology as it provided a "chance to personalise the answers".

This flexibility, similar to the problems identified with the format of responses

(identified above) may add cost (Bolger et al 2003), but does appear to

encourage qualitative data (Elliott, 1997; Milligan et al, 2005). Jane identified the

additional benefit of email being the "daily reminder to [her] inbox". She thought

that emails were better than blogs as "it would've been difficult to remember to

blog about this every day as I don't do this routinely". Emaildiaries thus have the

benefits of personal electronic diaries such as signalling, time stampin, and

flexibility of questions throughout the research period (Bolger et al, 2003),

without the associated cost and limitations of paper and pen diaries (Corti,

1993).

The positive response by the participants on being asked to diarise their

responses to specifics - such as press quotes and incidents - was a surprise to the

researchers, as this added to the demands placed on them (La Porte et al, 1985).

Mel thought it was a "good idea, made me think about what was happening",

whilst James believed that these questions provided an "opportunity to express

views on specific questions, issues of the day, not often asked for". A number of

the diarists considered that being asked to comment on contemporary issues

made them feel valued, that they had a voice, thus increasing the motivation to

continue with the diary entries. Emaildiaries can, therefore, provide what Madge

(1953: 87) believed were 'often the most revealing data as it provides an

opportunity for including a reflection on events, relationships and personal

feelings which is often most revealing'.

Discussion

The analysis of the empirical results from this project builds on the limited research conducted to date on diaries as a collection method (Day and Thatcher, 2009, Patterson, 2009, Milligan et al, 2005). The emaildiary method builds upon many of the advantages identified with solicited pen and paper diaries, whilst also reducing some of the negative components. The emaildiary facilitates Corti's (1993) requirements that diaries collect information about events, behaviours and other aspects of individuals' daily lives and fulfils Alaszewski's (2006) specification that they should be an individual's regular, personal and contemporaneous record. The emaildiary provides an opportunity to explore the complexity of human behaviour (Harvey 1993), including the differences and similarities created by temporal dynamics (Bolger et al, 2003) and tracking changes and similarities between participant groups over a period of time (Bell 1998). It is also a research method that harnesses and reflects the modern mobile culture (Murry 2009; Hagen et al, 2005), benefits from frequent updates (Barrett and Barrett, 2001), takes advantage of the research opportunities presented by the internet (Hanna, 2012), and allows for a more equal relationship between the researcher and the participant (Rappaport and Stewart, 1997).

The process of logging an activity, or responding to an incident, is one of the main uses made by researchers using solicited diaries; in this research, immediate response, were not requested or required. However, a number of

participants used the arrival of the email as a prompt to respond. The email request could, therefore, act as a trigger that could be sent at an interval, a signal or an event (Wheeler and Reis, 1991). It could be programmed into the training and the timing of sending the request email, and facilitate reporting on attitudes towards an event (Jacelon and Imperio, 2005). Due to the ubiquitous accessibility for many (emails being accessible at work, at home and on the move, Ofcom, 2012) an emaildiary will help accommodate Bolger et al's (2003) request that researchers use diaries as a method of studying temporal dynamics such as hours, days, weeks or diurnal cycles such as weekday versus weekend.

The ease with which emaildiary entries could be completed reduces the 'high demands' on participants and encourages participation and completion. The task appears less onerous in time, and a lesser commitment than pen and paper or electronic diaries (La Porte et al, 1985; Day and Thatcher, 2009). Though Corti's (1993) 'first day' effect was evident, the daily receipt of the emaildiary entry by the researcher allows for such problems to be identified and resolved early in the research period. The emaildiary method used in this research did not attract the costs associated with pen and paper or electronic diaries (Kenyon, 2006; Corti, 1993; Bolger et al, 2003). The positive attributes of an emaildiary allow researchers to seriously consider using emaildiary as a research method when previous methods may have appeared to have had problems with recruitment, commitment, fulfilment and cost. The ease of the emaildiary research method provides more opportunities for the collection of structured data (Bolger et al 2003) and data that is free-form (Elliott, 1997; Milligan et al, 2005).

Although the majority of possible participants has access to email, this may not be the case during the research period, for example, if the diary is to be completed during a stay in hospital or prison. Traditional pen and paper diaries are a more viable option during such projects or for certain hard-to-access groups. Unlike pen and paper diaries, the emaildiary does not produce a physical book or log that respondents can use to reflect on entries from previous days, possibly limiting its use for some research projects. However, previous emaildiary entries can be accessed, if necessary, by the participant.

A key motivator for both recruitment and fulfilment, identified by the diarists themselves, was their interest in the subject area and a sense of obligation and commitment to the researchers as a result of personal contact. These 'motivators' could also be useful to the recruitment of participants and could encourage the completion of other forms of diary. The implications of the participants being interested in the research area, as a motivational aspect, have not been investigated by academics. Research into this, and its possible impact on the data provided, would add to the understanding of the limitations of using diaries, generally, as a research tool. The current study was for a non-interventionist research project. Further research is needed to quantify and qualify the possible benefits and drawbacks of an emaildiary in an interventionist research project.

Conclusion

The research has identified that the use of emails to create a diary of activities, events and thoughts is a research method that takes advantage of the mobile technologies available, makes use of the mobile social world that many respondents inhabit, and provides elements of control by the diarist. As a method, it also provides a solution to a number of the problems and limitations of traditional methods of diary production.

With the rise in the popularity of 'apps' (programs or applications that have been developed for use on a particular platform or device such as mobile phone or tablet computers), whereby access to the world wide web is greater through mobile technology than desktop computers (Flurry, 2011), app-diaries as a research tool may provide many of the benefits to the research community identified from using the emaildiary and require similar evaluation to the emaildiary.

Bibliography

Alaszewski A (2006) *Using diaries for social research.* London: Sage.

Alaszewski A (2006a) Diaries as a source of suffering narratives: A critical Commentary. *Health, Risk and Society*. 8(1): 43 – 58

Barrett L and Barrett D (2001) An Introduction to Computerized Experience Sampling in Psychology. *Social Science Computer Review* 19: 175–185.

Bell L (1998) Public and private meanings in diaries: Researching family and childcare. In Ribbens and Edwards (eds.), *Feminist dilemmas in qualitative research: Public knowledge and private lives*: London: Sage.

Blair P (2003) *An introduction to Anglo-Saxon England* (3rd Ed). Cambridge: University Press.

Bolger N, Davis A and Rafaeli E (2003) Diary methods: capturing life as it is lived, *Annual Review of Psychology* 54: 579-616.

Butcher R and Eldridge J (1990) The use of diaries in data collection*. The Statistician* 39 (1): 25–41.

Corti L (1993) *Using diaries in social research.* Available at: http://sru.soc.surrey.ac.uk/SRU2.html (accessed 8 December 2012).

Coxon A (1996) *Between the sheets: Sexual diaries of gay men's sex in the era of AIDS.* London: Cassell.

Dabbs J, Strong R and Milun R (1997) Exploring the mind of testosterone: a beeper study. *Journal of Research in Personality* 31: 577–87.

Dawson M (2000) Histories and Texts: refiguring the diary of Samuel Peps. *The Historical Journal* 43(2): 407-431.

Day M and Thatcher J (2009) 'I'm Really Embarrassed That You're Going to Read This ...': Reflections on Using Diaries in Qualitative Research, *Qualitative Research in Psychology* 6: 249–259.

Duck S (1991) Diaries and logs. In B. M. Montgomery and S. Duck (Eds.), *Studying interpersonal interaction*. New York: Guilford Press.

Easterby-Smith M, Thorpe R and Lowe A (2002) *Management Research: an Introduction.* London: Sage.

Elliott H (1997) The Use of Diaries in Sociological Research on Health Experience, *Sociological Research Online.* 2 (2). Available at: http://www.socresonline.org.uk/2/2/7 (accessed on 20 December 2012).

Evans A, Elford J and Wiggins D (2008) Using the internet for qualitative research. In: Willig C and Stainton-Rogers W (eds) *The Sage Handbook of Qualitative Research in Psychology*. London: Sage.

Fink A (1995) *How to sample in Surveys.* London: Sage.

Flurry (2011) *Mobile Apps Put the Web in Their Rear-view Mirror.* Available at: http://blog.flurry.com/bid/63907/Mobile-Apps-Put-the-Web-in-Their-Rear-view-Mirror. (accessed 12 January 2013).

Fothergill R (1974) *Private chronicles.* Oxford: Oxford University Press.

Hagen P, Robertson T, Kan M and Sadler K (2005) *Emerging research methods for understanding mobile technology use.* Proceedings of OZCHI 2005, Canberra, Australia.

Hanna P (2012) Using internet technologies (such as Skype) as a research medium: a research note. *Qualitative Research* 12(2): 239-242.

Hendy, P. (2012) Hosting a great Games and keeping London moving this summer. Available at ://www.tfl.gov.uk/assets/downloads/2012-games-hotspots.pdf (Accessed 14 March 2012)

Geertz C (1973) *The Interpretation of Cultures: Selected Essays.* New York: Basic Books.

Harvey A (1993). Guidelines for time use data collection. *Social Indicators Research* 30 (2-3): 197-228.

 Jacelon CS and Imperio K (2005) 'Participant diaries as a source of data in research with older adults'. *Qualitative Health Research* 15(7): 991–997.

Kenyon S (2006) The 'accessibility diary': Discussing a new methodological approach to understand the impact of Internet use upon personal travel and activity participation. *Journal of Transport Geography* 14: 123–134.

Krosnick J (1999) Survey Research. *Annual Review of Psychology* 50: 537-67.

Keleher HM and Verrinder GK (2003) Health diaries in a rural Australian study. *Journal of Qualitative Health Research* 13(3): 435–443.

La Porte R, Montoye H and Caspersen J (1985) Assessment of Physical Activity in Epidemiologic Research Problems and Prospects. Public Health Reports 100 (2): 131-146.

Litt M, Cooney N and Morse P (1998) Ecological momentary assessment (EMA) with treated alcoholics: methodological problems and potential solutions. *Health Psycholy* 17: 48–52.

Lines G (1998) A case study of adolescent media consumption during the summer of sport 1996, in: Merkel U, Lines G and McDonald I (eds) *The production and consumption of sport cultures. Leisure, Culture and Commerce.* Brighton: LSA publication.

Lynn P (2002) Principles of sampling, in Greenfield T (ed). *Research Methods for Postgraduates*. 2nd ed. London: Arnold.

MacFarlane A (1970) *The Family Life of Ralph Josselin: A Seventeenth-Century Clergyman: An Essay in Historical Anthropology*. Cambridge: Cambridge University Press.

Madge J (1953). *The tools of social science.* London: Allen and Unwin.

Maddison S and Storr M (2004) 'The Edge of Reason: The Myth of Bridget Jones. In Handsi J and Siapera E (eds) *At the Interface: Continuity and Transformation in Culture and Politics.* Amsterdam : Rodopi.

McLaren R and Solomon D (2010) Appraisal and Distancing Responses to Hurtful Messages II: A Diary Study of Dating Partners and Friends. *Communication Research Reports* 27 (3): 193–206.

Milligan C, Bingley A and Gatrell A (2005). Digging deep: Using diary techniques to explore the place of health and well-being amongst older people. *Social Science and Medicine* 61(9): 1882-1892.

Murry L (2009) Looking at and looking back: visualization in mobile research. *Qualitative Research* 9 (4): 469 - 488

Moon J (2006) *A handbook for reflective practice and professional development.* Routledge, London.

Morrison D, Leigh B and Gillmore M (1999) Daily data collection: a comparison of three methods. *Journal of Sex Research* 36: 76–81.

Ofcom (2012) Communication Market Report 2012.

ONS (2012) *Family Spending: A report on the 2010 Living Costs and Food Survey.* Newport: ONS

Patterson A (2005) Processes, relationships, settings, products and consumers: the case for qualitative diary research. *Qualitative Market Research: An International Journal* 8(2): 142-156.

Rappaport J and Stewart E (1997) A critical look at critical psychology: elaborating the questions. In: Fox D and Prilleltensky I (eds) *Critical Psychology: An introduction*. London: Sage.

Richardson A (1994) The health diary: an examination of its use as a data collection method. *Journal of Advanced Nursing* 19: 782-791

Stone A, Shiffman S, Schwartz J, Broderick J and Hufford, M (2003) Patient compliance with paper and electronic diaries. *Controlled Clinical Trials* 24(2): 182–199.

Thomson R and Holland J (2005) Thanks for the memory: memory books as a methodological resource in biographical research. *Qualitative Research* 5(2): 201–209.

Verbrugge L (1980) Health diaries. *Medical Care* 18: 73-95.

Voss C, Tsikriktsis N and Frohlich M (2002) Case Research in Operations Management. *International Journal of Operations and Production Management* 22(2): 195- 219.

Wheeler L and Reis HT (1991) Self-recording of everyday life events: origins, types, and uses. *Journal of Personality* 59: 339–54.

Zimmerman DH and Wieder DL (1977) The diary-interview method, *Urban Life* 5 (4): 479-498.