Ethical issues in researching young people's use of mobile devices.

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Abstract

A growing area of research concerns the increasing use of mobile phones by young people. Mobile phones are ubiquitous, and young people are gaining increased access to these tools. As a consequence researchers interested in exploring the lives and habitus of young people must also consider their engagement with mobile phones. However, this research can create a number of ethical dilemmas. These dilemmas include ones already discussed in literature on Internet use and ethics, but also include more specific ones related to mobile usage, such as the trail left by the data from mobile technologies, and the inclusion of third parties in research without explicit permission. The article discusses the ethical dilemmas concerning mobile usage arising in research with young people, indicating how these dilemmas may challenge current research ethics guidelines. It then provides some recommendations for ethical research in these situations.

Introduction

To understand young people it is essential to investigate their engagement with mobile devices. Recent developments in mobile technologies enable young people to collect, store, distribute and publish a vast array of data types which provide researchers with a unique opportunity to explore the activity and habits of young people. The data are more directly attainable than through traditional data collection methods, adding to their authenticity and verisimilitude. However, this very accessibility raises ethical issues.

This article will consider the issues that may arise in research involving youth of high school age who are not legally regarded as adults. We start by examining basic ethical guidelines and then discuss areas of research concerning youth mobile use, and the kind of data accessible in such research. We indicate where such research is subsumed into research regarding young people and the Internet and focus on the ethical issues particular to youth mobile use. The discussion then finishes with an analysis of questions regarding ethical research on youth mobile use.

Basic ethical principles for research with young people

All the major research associations around the world have produced broadly similar ethical codes to guide researchers in their endeavours (for example, AARE, 1993; BERA, 2011), and some of these apply specifically to research involving adolescents and young people (BERA, 2011). Recently, these codes have been modified to provide more general principles that are likely to be responsive to emerging situations (Traxler & Bridges, 2004). However, until recently there was little specific guidance for researchers investigating young people's use of mobile devices. As mobile devices become more commonly used, such guidance is essential, as it is clear that a number of issues and challenges arise in this research context that might be unique to such research.

This research context was the focus of a research workshop series held under the auspices of the Institute of Advanced Studies (IAS) which produced a series of useful principles for guiding research into the use of mobile devices, mainly by professional groups such as student teachers. Participants in the workshop (IAS, 2008 cited in Wishart, 2010, p. 305) concluded that researching the use of mobile technologies in these contexts raised numerous problems and dilemmas partly due to the manner in which these technologies 'seamlessly mix personal and work-based information' (p.318).

In her discussion of ethical issues related to research on mobile usage, Wishart (2010) identifies the following four broad principles which should underpin all ethical research:

- beneficence (doing good)
- non-maleficence (avoiding harm)
- autonomy (respecting choice)
- justice (equality of access to resource)

(Wishart, 2010, p.323)

Ethical concerns in researching young people are highlighted by BERA (2011). In addition to general principles such as those stated by Wishart, BERA suggests that young people should be able to express their views freely and in ways commensurate with their age and maturity, and they should be able to give fully informed consent as appropriate for their age. If their age precludes a full understanding of the research and their participation in it, alternative ways should be sought for their participation to ensure authentic input from them. Parental or guardian permission must also be sought where the participant is vulnerable or of an age too young to fully appreciate the study and its implications. Researchers must also be aware of any discomfort that might be experienced, minimise the sense of intrusion that participants might experience and terminate the research where it may cause harm.

Similarly, guidelines for researching mobile device use suggest that informed consent, confidentiality and awareness of power differentials are important considerations for ethical mobile research (Traxler & Bridges, 2004). Yet informed consent involving mobile usage can be problematic as the area is broad, identities more difficult to determine than in face-to-face encounters, consent in the traditional way of obtaining a signed form is difficult to achieve, and it is often difficult to ascertain the level of understanding of the impact of participation in the research. Confidentiality is also more difficult to maintain in a context where private and public often merge. Traxler and Bridges indicate that users of mobile devices are not aware of the 'trail' that their usage leaves and the accessibility of this trail to researchers. They also highlight the difficulties that arise from mobile activity occurring across countries and legal jurisdictions.

Furthermore, research associated with young people's use of mobile technologies has much in common with acknowledged ethical challenges associated with Internet-based research.

These include the remoteness or separation of the researcher from the young participant, which makes debriefing and certainly informed consent problematic; the unintended exposure of third party data without the third party's consent; the revelation of confidential information to unintended audiences (Gaiser & Schrernier, 2009; Roberts, Smith & Pollock, 2004; Stern, 2004).

Consequently, when ethical research with young people is merged with ethical research using mobile devices, it is clear that a number of ambiguous and problematic areas arise and need consideration. As this area is relatively new and untested, awareness needs to be raised about ethical implications of such research.

Current and potential domains of research

Research concerning mobile usage of youth emanates from a number of disciplines, contexts and domains. Researchers in these areas investigate cultural studies, education and educational technology perspectives. Some studies of mobile youth that might be of interest to researchers are discussed below.

Studies of communication patterns and of literacy (e.g. Attwell, 2005*)*: Such studies examine patterns of behaviour using mobile phones, the communication genres and interactions, and the types of literacies involved in such usage. Investigations of how literacies may change according to context, the group within which the communication occurs, and the formality of the learning are of interest in these studies. Potential data here might comprise mobile text messages, tweets, postings on social networks and images and videos.

Studies of Twitter use (e.g. Caronia & Caron, 2009): Such studies encompass discourse analysis of tweets, and how learning may occur through use of Twitter. Social commentary using Twitter and activism using Twitter are also of interest here. Who is followed and by whom is also of interest. Data here include tweets and re-tweets, dates of tweets, locations and indications of followers and those being followed.

Youth studies, cultural studies and media studies (e.g. Naismith &Smith, 2009; Oksman & Turtianinen, 2004)**:** Such studies consider identity construction, meaning-making by young people, and the nexus of the individual and collective. Data comprise tweets, usernames, status messages, social networking sites and comments, text messages, personalisation of devices, apps that have been downloaded.

Crime studies, deviancy studies (e.g. Rummler, 2009): Examination of riots (such as those occurring in London 2011), crimes, hate crimes that are facilitated by mobile communication are of interest here. Data consist of tweets, text messages and messages on social networking sites.

Studies of mobile learning (e.g. Bradley, et al., 2009; Pain, et al., 2005)*:* Use of mobile devices for learning informally, anywhere, any time and in formal situations are examined here. Apps, messages, podcasts, music are included here.

Mobility of youth studies (e.g. Porter, et al., 2010; Williams, Jones & Fleuriot, 2003)*:* These look at geographies of education, investigate what mobility of children tells us, explores where

youth collect, what places and spaces there are for youth. Data comprise geo-locations, sites that indicate where a person has visited, GPS usage, images or video.

Some of these research studies have as their goal, the direct study of patterns of use of mobile technology. Others investigate social and cultural phenomena, where the use of the mobile device is not the object of the study but the means to collect data relevant to the research questions. With the convergence of the Internet and the mobile phone (e.g. in the form of Smartphones) there is an emerging opportunity for the research community to access primary data related to all these areas concerning the habitus of young people without the artificial contexts which can characterise data collection methods in the social sciences (e.g. interviews and questionnaires). There has been considerable interest in research which involves young people directly, with a number of researchers observing how these traditional research methodologies are often inappropriate mechanisms for capturing young people's voices (Morrow, 2008).

Table 1 below lists a selection of the data types which researchers might be interested in accessing.

DATA TYPE	EXAMPLES	HOW RESEARCHERS MAY ACCESS THE DATA
Text-based data	- text-messaging (e.g. SMS) - chat messaging - tweets - social media postings (e.g. Facebook) - status lines - usernames	Collaboration with user. Inclusion in groups to whom messages are sent. As 'friends' or 'followers' of research participants with Facebook pages or twitter addresses.
Visual and audio data	- images or video captured on device and then uploaded (e.g. to Flicker, Facebook, YouTube) - images or video saved on mobile device - music and podcasts downloaded to device	Access to data through Internet sites available to public. As 'friends' or 'followers' Access to YouTube or web photo albums that do not have privacy set. Through collaboration of participant in research
Location based	- GPS data about location (e.g. Google Latitude) - data about places being visited (e.g. through Foursquare)	Through access to sites such as Foursquare, Google Latitude which inform others of location.
Meta-data	- QR codes (e.g. Microsoft Tag which provides owner of QR code with personal data) - Web visits conducted by user are accessed by social network sites e.g. Facebook	Data accessed from the company that gains the data initially.

Table 1: Data types and examples available to researchers of mobile technologies

As noted in Table 1, some of the data types can be accessed both through the Internet and mobile technologies. However, some of the data types are unique to mobile technologies. Researching with or through these data types can potentially be an ethical minefield.

Ethical issues arising from the availability of these mobile data sets

      Some ethical issues pertinent to research involving mobile devices are similar to those experienced by researchers operating in virtual environments and while many issues have been identified, concerns and controversies remain (see e.g., Buchanan, 2004, Ess & the AoIR ethics working committee, 2002). As there are well established ethical guidelines to guide research in the social sciences the problem becomes "how to translate … (these) into ethical practice in virtual research" (Roberts, Smith & Pollock, 2004, p. 160). Critical issues include (Roberts et al. 2004; Gaiser & Schrernier, 2009):

- determining what is private and public in online environments;
- obtaining informed consent;
- the identification of researchers and the potential for overt and covert observation;
- protection of anonymity;
- 'ownership of words'.

      Each of these matters remains controversial. Roberts et al. (2004) point out that when online, the distinction between what is public and private may be unclear. It may be defensible to assert that if material is available in spaces open to all then it may be accessed by researchers but if a barrier such as an invitation or password prevents open access, then it could be regarded as private. Accessing such private spaces for research purposes would require informed consent. On the other hand, they note that it is evident that private conversations do occur in public spaces and that at times the public nature of some spaces may be "over-ridden in importance by respect for the expectation of privacy by … users" (p.162). Such challenges are not confined to virtual spaces. For example a private conversation in a public bus may be overheard but it is not ethical to use it as a data source simply because it occurred in a public place.

      The concern related to overt and covert observation arises in many settings but it is particularly problematic in virtual spaces. Roberts et al. (2004) explore the possibility that the need to identify the researcher-as-observer in an online setting may vary according to the nature of the data collected and judgements about the innocuousness of their presence. They note, however, that identity deception in online environments often gives rise to negative reactions from many users. Consequently, they recommend that the onus is on researchers to identify themselves and their roles in virtual settings.

      In reporting virtual interactions and citing sources there is a risk that online users may be identified and that online pseudonyms and offline identities may be linked (Roberts et al. 2004). Hence a recommendation is that both online pseudonyms and off line identities should be treated as confidential. On the other hand, 'ownership of words' and authorship needs to be respected. This results in a dilemma for researchers in that sources ought to be identified to ensure respect for and acknowledgement of creators. The default position in reporting is that identities are kept confidential. However, Roberts et al. suggest that unless anonymity is a condition of the obtained consent, then extracts from virtual spaces ought to be referenced by researchers. To balance the

need for anonymity with the need for rightful acknowledgement, they recommend seeking permission to clarify whether creators of online materials prefer to be anonymous or have their work attributed.

The general ethical challenges of research in virtual environments are exacerbated when the participants in these environments are children and adolescents. Stern (2004) has elaborated on ethical issues particular to studying adolescents online. Bassett and O'Riordan, (2002) have questioned whether Internet research constitutes research of human subjects if the material accessed consists of publicly available artifacts. Stern (2004) and Bassett and O'Riordan (2002) contrast this with online research in which there is interaction between researcher and adolescent in a virtual space. The latter unambiguously invokes the application of relevant ethical guidelines for research involving human subjects. The former is less clear cut.

The provision of consent, *per se*, is also identified by Stern as problematic in virtual research with adolescents. She notes the irony that many adolescents consider online spaces as private in that they do not want parents and family to be aware of their activities while at the same time much of their engagement with sites is public to networks ranging from friends through to anyone with Internet access. Stern notes that obtaining parental consent can be resented by adolescents, and is often impractical. The application of a set of strict ethical practices in virtual environments remains problematic in part because online spaces are highly varied but also because they are different in nature from offline environments in which ethical research guidelines have developed (Bassett & O'Riordan, 2002). The complexity and uncertainty inherent in ethical research in online settings is well captured by Bruckman (2002) in her advise to potential online researchers: "instead of thinking, 'beyond this you may not proceed,' many people may think instead 'beyond this, proceed with caution'".

While ethical concerns and principles for research involving the Internet have much in common with mobile research concerning young people, there are also points of difference. Research involving youth and their mobile technologies extend online-related ethical concerns and raise additional problems. Mobile device usage is replacing young people's use of desktops, and even laptops, for accessing the Internet and engaging in social networks. Social networks are often integrated with phone contact lists, giving access to status, photographs, and data on the mobile device. Phoning and texting usually includes these details as part of the identification of the network of contacts. For the researcher, a central difference is that investigating youth through their mobile devices permits access to spontaneous and naturalistic data generated as young people are out and about with others in a wide variety of settings. These data are generated through text messages, images sent by multimedia messaging services, GPS and apps indicating places being visited by the person. Ethical issues arise from researching young people's networks with others who have not agreed to be informants or perhaps have not had time to deliberate on whether they are happy to share these data.

As indicated in Table 1, some data are collected directly from the participants' mobile devices (such as text threads, images sent through MMS and geo-spatial data such as location) and this generally entails getting direct permission from the owner of the phone. Informed consent can be gained in such cases. There are two ethical issues that might arise in such situations. One is the gaining of parental permissions, which might cause embarrassment, amongst other concerns, to the young person who does not necessarily want their parents to know about their mobile and social network activities. The other concerns the people with whom the participant is interacting. While the participant may have given permission to the researcher

to collect data, the other parties to the interaction may not have given permission and yet their data are also available in the conversation thread shared with the researcher.

There is also a large amount of data that can be gained directly from publicly available Internet sites but which was generated using mobile devices. Such data are often generated in contexts which could be potentially embarrassing to the youth involved, such as at parties or bars where inappropriate behaviour may be captured in a photo, video or tweet. Many of these data have been made freely available, either because the young person does not see the need to have strong privacy settings, or is unaware of the option to have these. Researchers have access to these data along with the general public, without needing to make contact with the data generator and this may be ethically challenging. Sometimes it is not possible to make contact with the owner of the data as they have used a pseudonym concealing the producer's or owner's identity. Other data may not be available to the researcher as they are restricted through privacy settings or through lack of agreement by the participant to share the data with the researcher. There is also a variety of situations that lie somewhere between those suggested above. These different situations provoke a number of questions of ethical significance.

Key questions

The discussion here centres on two types of data involving mobile devices. The first type is data collected and accessible only through the mobile device, such as data comprising texts and MMS. The other is data collected through mobile devices and then uploaded to the Internet. Both of these give rise to many ethical issues which the research community needs to discuss. In our view, accessing individual data from mobile devices requires informed consent from any of the parties contributing that data. The ethical area that is ambiguous, however, relates to data which are publicly available. There are many issues worthy of further discussion. Here we will limit ourselves to three questions. For researchers:

1. Is it ethical to use personal data of adolescents, perhaps captured without consent, simply because it has been intentionally made publicly available?
2. If digital capture with mobile tools, social media and virtual sites have combined to blur what is meant by public and private, is it ethical to use publicly available data in instances where it is uncertain whether the users in the community intend the data as public to all, or limited to a community, or private?
3. Is it ethical to access data about people who are unaware of the existence of such data, for example, meta and geolocation data, particularly when the information is revealed by others?

1. Is it ethical to use personal data of adolescents, perhaps captured without consent, simply because it has been intentionally made publicly available?

It could be argued that it is unethical to access and use such data because the creators might not have assessed the implications and potential consequences of making information about themselves and others public. Stern provides evidence that adolescents 'may not fully grasp the concept of "public" in the same way we might expect adults to do so' (p. 277). While

the creators of such data might not be thinking about the implications and risk at the time of posting the data, the longevity of the data's presence on the Internet means that there may be consequences in the future that have not been adequately considered. Some young people may not adequately assess risks arising from their behaviours (Galvan, et al., 2007; Steinberg, 2007). Consequently they may make poor decisions related to a range of matters as diverse as alcohol consumption, driving and mobile phone usage. In the long term, as adults they may regret the exposure they bring to themselves. There is no doubt, for example, that social network sites which include data created with mobile devices, can be used both to select and to deselect potential employees. The potential good and harm of such data is self evident. One key question for the researcher is whether the use of such data for research purposes increases or decreases the potential harm or benefit. On the one hand, reporting and thus further publicising data has the inherent risk of promoting greater access, increasing risk of harm for individuals. It may also alert those who do not currently access this information to do so, for a variety of benign and malevolent purposes. The use of data in research is likely to bring these data, and possibly their producers, to the attention of an audience that was never intended. On the other hand, without research, it may be difficult to accurately determine the actual risks to young people, to highlight these and to provide advice to inform young people of the long term risks of public exposure through careless use of mobile devices.

Mobile phones have been used to digitally capture the most immediate, intimate, compromising and spontaneous material. Such material, captured without the consent of the compromised individuals, has often been widely distributed and published. At face value it seems difficult for a researcher to consider the use of such material as data in research. It would appear to be fundamentally inconsistent with principles of avoiding harm and informed consent. Yet as researchers we might also consider the potential harm of not reporting the incidence of such uses of mobile technologies and the implications for understanding young people, their lives and their culture as well as their peculiar pressures, strains and tribulations. For example, how are researchers to generate the knowledge to address bullying, facilitated through mobile technologies and exacerbated through social media, if we do not access such data?

2. If digital capture with mobile tools, social media and virtual sites have combined to blur what is meant by public and private, is it ethical to use publicly available data in instances where the researcher is uncertain whether the users in the community intend the data as public to all, limited to a community or private?

This question raises a significant problem for researchers. There is enormous potential for young users of mobile devices to be unwittingly providing data. Often there is ambiguity regarding what constitutes public and private space. The problem for the researchers is that it is sometimes impossible to be certain whether public access is intended or accidental. It is arguable that the data is already public and use by researchers is unlikely to cause any additional harm. Yet, the same concerns remain (see question 1 above), regarding bringing the information to the attention of a different audience and exacerbating exposure. One way to address this problem would be always to seek informed consent. However, the nature of data sources is that many are artifacts without clear means of obtaining consent. Another alternative, of ignoring such data, could result in badly misinformed findings from research. This in itself could result in unintended consequences, poor policy (such as poor privacy guidelines), inadequate identification of risks and poor advice being given to young people about their use of mobile

devices. A more onerous but less satisfactory possibility would be to disguise and modify the sources to reduce the risk of further exposure. Stern (2004) argues that it is not so much whether material is public or private but rather whether it is intended to be public. This is further complicated by evidence that adolescents may intend materials to be public but only to a specific audience despite it being universally accessible. In contrast, the adolescent may intend the materials to be public but to people unknown to the user while the intention is for relatives, friends and offline acquaintances to remain unaware (Stern, 2004). Consequently, she recommends pilot studies with participants in virtual spaces under study to determine their perceptions of the private vs public nature of their products. This ensures that the researcher is accessing data sources that are generally perceived by the relevant community to be 'intentionally public', rather than that which is generally perceived as private. The researcher might then reasonably access the former without permission but only access the latter only after receiving informed consent.

3. Is it ethical to access data about people who are unaware of the existence of such data, for example, meta and geolocation data, particularly when the information is revealed by others?

Device settings can allow information to be obtained (e.g., the locations of an individual mobile phone user to be tracked) without the knowledge of the user. The covert and automated ways in which these data are collected make the ethical considerations ambiguous. The mobile app, *Pandora*, for example, provided trackers with information about users such as gender, geolocation, age, phone identifier. It is almost impossible to prevent these data from being transmitted (Thurm & Kane, 2010). For a researcher to make a decision about the use of such data the balance between potential harm and benefit would need to be thoroughly considered. The ethics governing this kind of research require further consultation and analysis within the research and wider community.

Conclusion

As with many ethical dilemmas there are no simple answers to these questions. Salient advice has been provided by Baker (quoted in Dutton, 2007) regarding the Internet. This advice applies equally to studies involving young people and mobile technologies.

> (It) is an environment, within which all kinds of human interaction take place. The nature of this environment allows people to interact in new and innovative ways, many of which provide interesting topics for research. However, it is important not to forget that, regardless of how they choose to present themselves …, the people that are behind the interactions are no less real than if you had bumped into them in the street and, as such, they deserve the same ethical treatment as everyone else.

If we are to conduct ethical research which involves young people's use of mobile devices then as a first step we need to recognise and be sensitive to the special nature of interactions in youth cultures that are facilitated by mobile devices.

Principles and practices for ethical research of young people in and through virtual environments also apply in mobile research. These include determining what is private and public, informed consent, the responsibility for researchers to identify themselves and their roles, as well as protecting anonymity and acknowledging creative ownership. However, mobile devices have increased the challenges for ethical research. In particular, the ubiquitous nature of mobile device usage among young people and the ability of such devices to capture data anywhere anytime have shifted many spaces that were once considered private into the public domain. The key question for the researcher is whether it is appropriate to enter this domain; with material of unknown origins, where consent is ambiguous and the researcher is uncertain about the intentions of creators and their human objects. Here the researcher needs to tread carefully. We suggest implementation of Stern's methodology (2004) of sampling a community of young people to determine how they regard researchers accessing their data, and proceed according to their advice.

Risks can be minimised through restricted reporting of data but this does not address the fundamental concerns related to ethical access. There is a need to balance the possibility of causing harm through research with the potential benefit of the research. If risks to young people can be eliminated through standard precautions, such as de-identifying data sources in reports to ensure no additional exposure of individuals to public scrutiny, and the research has clear benefits then in some instances the use of publicly available data arising from the use of mobile technologies may be ethical. In instances where informed consent is not practical, such de-identification could result in significant limitations in the publication and distribution of information including not revealing URLs and usernames, not displaying digitally captured materials, and not providing information that would render sources more accessible through Internet searches. Of course, such anonymous reporting raises other questions concerning the recognition of intellectual property and whether it is ethical to report without acknowledgement (Roberts et al. 2004). Perhaps the greatest safeguard lies in researchers being well informed about ethical principles as well as the potential harmful consequences of their research and taking steps to mitigate these. In some instances the only ethical course of action will be not to proceed. In all instances, care and caution are required.

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