"Can You *Really* See What We Write Online?" Ethics and Privacy in Digital Research with Girls

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Abstract

The use of digital technology, particularly cell phones, is growing as a medium for data collection in social research. However, there remains concern about our implementing appropriate ethical practice when we are conducting digital research with people, including girls, who are considered vulnerable. In this article, I will discuss some of the ethical considerations that emerged during an action research project I undertook with a community of secondary school girls in Nairobi, Kenya. These considerations are related to privacy in connection with surveillance as a means of cell phone-based data collection. My aim is to initiate a scholarly dialogue on creating a framework of ethical practice for digital research with girls—particularly those who are infrequently given a voice in the literature on girlhood studies.

Keywords

action research, cell phones, ethical practice, girls' education, Kenya, mobile learning, surveillance

Introduction

Alongside the growth in access to and the use of cell phones, there has been an increase in research on understanding how children interact with and through their cell phones (Pascoe 2012; Christensen et al. 2011; Mishna et al. 2009; Walsh et al. 2008). However, there are three major areas to which studies have infrequently ventured and which will frame this article: ethical practice in conducting research with cell phones; research about girls' cell phone use; and research about how girls of color from low socioeconomic backgrounds, particularly those in developing contexts, use cell phones.

First, there is a lack of research on ethical practice in researching children's cell phone use, regardless of the user's sex. In the aforementioned articles, for example, the ethical considerations are generally condensed into just a few lines. Authors (James 2014; Subrahmanyam and Šmahel 2011) who have explored ethics in digital research with youth have focused, usually, on digital technologies more broadly, and not specifically on cell phones. Making a distinction between children's cell phone use and their use of other technologies is important since the increasingly personalized and private nature of cell phone appropriation has come to be viewed as an extension of how people express themselves (Walsh et al. 2010; Turkle 2008; Pertierra 2005). Because of how cell phones are positioned in children's lives, conducting research into their use of these devices has implications for the protection of their privacy.

The second underexplored area of children's cell phone use is research that focuses on girls (for exceptions see Zelezny-Green 2014; Mokake 2009). The appropriation of technology by people is shaped by structural elements in the context of use (Wajcman 2007; Gurumurthy 2004). The gendered dimensions of women's access to cell phones has been documented (Murphy and Priebe 2011), and common barriers to usage include a lack of financial resources, negative discourses about why women use phones, control of their use by men, and their level of digital literacy. Yet girls are often subsumed into these discussions without regard for how their age or position in society is related to but still different from those of women.

Finally, there is a lack of research on cell phone use by girls of color from low socioeconomic contexts. In her article on transnational girlhood perspectives, Weems states, "It is not simply that there is limited scholarship on the experiences of 'Other' girls, but that analysis of 'Otherness' or 'difference' tends to focus on the U.S./U.K./Canadian based 'holy trinity' of race, class and gender in identity formation…" (2009: 58). Globally, there are approximately 1.2 billion females who own a cell phone—the vast majority of whom live outside North America

and Europe (GSMA & Altai Consulting 2015)[1]. Nevertheless, there remains a significant knowledge gap about how girls in the Global South use a technology that has come to pervade life in the twenty-first century.

With these three points in mind, I will explore the privacy-related ethical considerations of cell phone use during a 13-month action research project I undertook with teenage girls at a single sex school in Nairobi. First, I will share background information on the research site. Then I will outline why the project was undertaken and how it was implemented, and third, I will provide the rationale for an ethical framework I devised to help guide the action in this study. This will lead to discussions about the surveillance of the girls' online behavior and communications that focus on the ethical dilemmas that surfaced and how they were addressed. In the final part of the article, I will argue for a people-centered approach to enacting privacy protections when they are observing and collecting cell phone data from girls of color who may be marginalized in the society in which they live. The intention is to add new and diverse perspectives to the literature on girlhood studies, and gender, technology, and development so that future approaches to digital research with vulnerable populations might be more context- and girl-sensitive.

The Research Context

New Day Secondary School (NDSS)[2] is a girls' secondary school located in the east of Nairobi, Kenya's capital city. This part of the city is one of the most densely populated and many households in the area are working-class or impoverished, with subsistence employment prevalent. There are approximately 35 members of faculty and staff who work at NDSS. Since the school is generally open from about 06:30 until it closes at about 18:00, most of the learners spend most of their waking hours there.

School Demographics

The student body is comprised of approximately 400 girls, ranging in age from 14 to 20. NDSS draws its student population from Nairobi and its environs. The average grade earned by students across all subjects at this school is a C- so the school is not highly ranked academically when compared nationally to other schools. Approximately 20 percent of the learners reside on campus while the rest are day students who commute to and from school daily. The student population is relatively diverse and, according to the University of Pennsylvania African Studies Center (2010), it includes people from the five major ethnic groups: Kalenjin; Kamba; Kikuyu; Luhya; and Luo, as well as others from less populous groups such as the Taita and Embu. There are also at least five girls from Tanzania and Somalia. More than 95 percent of the girls who attend NDSS are from low socioeconomic status households. Some girls reside in child-headed households, some may live alone or have tenuous housing with relatives or guardians who sometimes view them as an additional financial burden. Despite these circumstances, NDSS's learners value educational participation for a variety of reasons including self-betterment and potential future employment.

Study Motivation

I had an interest in exploring cell phone use by girls at NDSS. During the period from May 2012 to December 2013, I built a relationship with the school community. I drew school access and research support from Julie, one of the longest-serving faculty members. However, the pursuit of my interest required me to undertake research only during after-school hours because of the government ban on pupils' use of the technology on school campuses. This policy was implemented in 2008 in the wake of the post-election violence.

Through surveys, participant observations, and semi-structured stakeholder interviews, I learned that the girls, parents and guardians, teachers, and even the school principal shared a collective aspiration to increase the learners' access to after-school educational content. This

ambition was influenced by the high costs of books—a minimum of 200 Kenyan shillings (KES) each in Nairobi. This sum might represent half of what the earners in the girls' households made each day. The cost of books, therefore, whether for school, informal learning, or leisure presented a major barrier to educational participation at NDSS. The school community believed that by increasing the girls' access to educational content after school, the learners could improve their academic performance. This, in turn, was thought very likely to establish a foundation for the achievement of greater post-secondary educational opportunities that would contribute to future social mobility. Given all this, I decided to investigate whether accessing and reading books on a cell phone (mobile reading) might present a cost-effective alternative to help realize increased access to after-school educational content.

Action Research Participants

Participant selection for the action research project was guided by the outcome of a survey. Participants had to meet three criteria: they had to be enrolled in year 2 or 3 of secondary school; they had to own their own cell phones, and they had to be day students. I chose girls in these years because they were not new to NDSS and because they would not be involved in extensive exit exam preparation each day after school. Cell phone ownership would help focus the impact assessment on the solution introduced and the novelty of owning a phone for the first time would not cloud the issue. Finally, because of the cell phone ban, it was necessary for the research to occur in after-school settings that would be inaccessible to students who boarded. When I had identified girls who met all three selection criteria, I then sought their consent and that of their parents or guardians to participate in the study. This process yielded 22 girls who participated in the study from January 2014 to January 2015.

Intervention Design

The study followed an action research (AR) design. Action research as an investigative process provides the opportunity to "bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people…" (Reason and Bradbury 2001: 2). Action research is increasingly used in sub-Saharan African contexts (Stuart and Kunje 1998; Kapoor and Jordan 2009). The action in this study was to introduce the girls to an educational cell phone app, designed for people living in developing country contexts, called biNu. It facilitates low-cost access to a suite of more than 20 apps. One app that biNu hosts is Worldreader that provides access to a library of more than 6,000 books free of charge. The only cost associated with access is the cell phone data used to download and read the books. Available book titles cover a range of formal learning topics such as biology, chemistry, and English literature, but also offer informal learning such as books on human sexuality, and leisure content including recipes. The cost of data to read a long form novel on Worldreader was no more than 5 KES, a savings of 195 KES compared to the purchase of a hard copy book.

The intervention objective was to increase the choices that the girls had in accessing educational after-school content, with biNu's Worldreader as the mechanism for increasing their choice. The AR was divided into three phases: Pre-Intervention (January to the first week of April 2014); Intervention (second week of April to the second week of December 2014); and Evaluation (January 2015). The biNu app was introduced in April 2014, and I demonstrated its use and that of Worldreader to the research participants. While there were multiple points of triangulation in terms of the data collected, this article focuses on two sources—the mobile app usage statistics and the biNu messaging texts generated by the girls. The goal for collecting this data was to understand if, how, and why the girls used the apps and to see if their use met the intervention objective.

Each of the 22 research participants created a username and password for her unique biNu account. Whenever the girls logged into the app, their app usage data was stored by biNu, as well as information for Worldreader such as book titles read, the amount of time spent reading books, the days on which books were accessed, and whether or not a book was read in full. Additionally, the private messages the girls exchanged through the biNu messenger service were stored on their accounts, as were the written texts and media they shared on the biNu news feed. The items shared on the newsfeed were publicly viewable by anyone with a biNu account who was friends with them, but the girls' biNu messages were viewable only through their private inboxes. These two areas of data collection required me to make a complex set of ethical considerations with respect to protecting the privacy of their online behavior and their personal communications.

Framing Ethical Practice with Girls at NDSS and their Cell Phones

The digital dimension raised a number of questions about my ethical functioning in this project. While there have been researchers who have explored the ethical use of technology in research (see for instance Oosterlaken 2009), academic literature on digital research with girls of color in developing contexts is scant. Because of the interactions that I thought might arise during the study, I sought to foreground an exploration of ethics with the girls so that data collection could be enacted with explicit sensitivity towards them and their contexts.

With this in mind, I worked to capture possible ethical reflections on the interactions between and among the people, technology, and their contexts of use. As such, consideration of ethical practice for this study was operationalized with the help of the following framework.

<Please insert Figure 1 here>

In conceptualizing ethical digital research with this group, I combined three frameworks, one each from biomedicine (Beauchamp and Childress: 2001, 2011), technology (Wright 2011), and human development (Kleine 2013). The decision to integrate a biomedical framework was made based on the ethical principles it conveys. All four principles are people-centered in the approach to ethical consideration: respect for autonomy acknowledges people's ability to make informed choices about their lives while beneficence seeks to balance the potential benefits of an intervention against the potential harm. To practice nonmaleficence is to act in a manner that avoids harming people, while justice is viewed as a fair and similar distribution of the potential benefits and risks of an intervention. These four biomedical ethical principles share a common origin with the broader medical discipline whose concern with ethics dates back to antiquity.

Wright's framework aims to shape the planning phase for people who will implement an intervention that uses information technology. The goal is to provide "ethical tools and procedural practices" (2011: 199) that enable project implementers to reflect on the potential impact for the intended beneficiaries of a technology-based intervention. The majority of the ethical principles included in Wright's framework originate from the European context, and from Western philosophies. Wright groups his ethical principles for applying information technology into the four categories defined by Beauchamp and Childress (2001), and a series of questions meant to ground focused ethical reflection accompany his categorizations. Wright argues that project implementers have a responsibility to think about the impact made when the social and technical are commingled for the purpose of doing good.

Beauchamp and Childress (2001) and Wright (2011) collectively offer a basis for ethical reflection. Yet both their frameworks do not sufficiently consider ethics and the influence of the research participants' sex or the context in which research will occur. The research setting is particularly relevant when research is performed in the Global South and with people who are

vulnerable for reasons that are contextually linked. Kleine's (2013) Choice Framework (see the components in capital letters outside the circle in Figure 1) creates an ethical space in which context, sex, and gender may be holistically reflected upon. The added value of Kleine's Choice Framework is that it enables deep localization before and after an AR process is initiated by foregrounding structural elements, including gendered norms applied, in this case, to cell phone appropriation. By positioning structure in such a way that it encompasses the ethical considerations I would make, the lived experiences of girlhood in the context of NDSS were both a starting and an end point for my carrying out an ethical, girl-centered digital intervention.

Privacy of Online Behavior and Personal Communications in Cell Phone Data Collection

It is important to examine here the ethical significance of two privacy-related elements from Wright's (2010) framework that were cause for reflection in the intervention—personal behavior and personal communications.

Privacy of Personal Behavior

Privacy of personal behavior refers to the surveillance of research participants' online activities (in this case, the girls' app usage statistics and messages shared via biNu), their awareness that surveillance is taking place, and how information gathered through surveillance is stored and used. The ethical dilemma I encountered was whether or not it was necessary to gather data on the girls' personal behavior from the app usage statistics in order to evaluate the intervention's effectiveness in increasing their access to after-school educational content. As I considered the study design, it occurred to me that there was an option to rely solely on the learners' self-reported app usage. This information could have been sought through anonymous surveys, focus group discussions, or participant observations conducted after school, and would have afforded them a high level of privacy for their personal behavior online as they appropriated the biNu and Worldreader apps. However, the weakness in adopting a purely qualitative approach was that, as

research elsewhere has found, self-reported technology use is often biased and incongruent when compared to actual usage (Devaraj and Kohli 2003; Straub et al. 1995). Relying on self-reported data could also mean that the data gathered was "subject to the fallibility of personal memories, idiosyncratic scale use, and even deliberate alteration by way of social desirability biases" (Bellman et al. 1999: 33). Therefore, details of self-reported usage would not be sufficient to assess whether the choices available to the girls increased, especially since a means of learning about their actual usage was available.

Once I decided that there was a need to collect data on actual usage, I thought about which data was required for me to understand if the two apps facilitated increased access to after-school educational content. As mentioned earlier, the activities I could monitor via the apps included book titles the girls accessed on Worldreader and the time spent reading a book. The next decision I had to make was whether or not I should ask the research participants' permission to observe this aspect of their online behavior. Despite securing overall permission from the girls and from their parents and/or guardians, and from the school principal for their participation in this research, I still had to consider if I needed additional permission to cover observation of their app usage statistics. If I sought consent, data accuracy could be negatively affected since when people know they are being observed, they may not always act in the same manner as they may in the absence of surveillance (Kawulich 2005). Issues of increased usage related to social desirability was another possible consequence. If I did not seek their consent for this specific aspect of data collection and used, instead, the blanket permission secured at the start of the AR process, the app usage statistics would likely be more precise in capturing the girls' apparently typical behavior online with biNu and Worldreader. This is because they would have been unaware that they were being surveilled and would probably act more naturally. The dilemma

that arose was whether or not I should sacrifice heightened data accuracy in favor of respecting the girls' rights to decide what information they were willing to share during the study. Wright's (2011) framework challenges us to consider dignity, purpose specification, and transparency (openness) when we are undertaking a technology intervention with people. Dignity relates to research participants' rights to be free from exploitation; purpose specification concerns informing people about the purpose(s) for which data is collected; and transparency (openness) is linked to maintaining an honest and trustworthy flow of communications with the research participants. If I had not sought the girls' permission to document their personal behavior online, it would mean that I would violate all these ethical principles. In light of this, I decided to ask the girls for permission over and above the consent already in place, to conduct surveillance of their online activities. Despite the implications for the quality of the data collected, it was important for the girls to have the choice to approve or decline this method of data collection.

To ensure the privacy of the girls' personal behavior online while maintaining my ability to triangulate self-reported usage with actual usage, I created a set of parameters that directed my approach to collecting this data. First, I decided what would be absolutely necessary and what was possible to sacrifice in terms of assessing actual usage. For Worldreader, this meant knowing when and for how long the girls accessed which books, and if they completed reading the books accessed. Having this information would provide rich data about the educational content they chose to explore, and point to the breadth of this exploration. By focusing my surveillance efforts in this manner, I would be able to maintain respect for the privacy of their personal behavior while also collecting only the data necessary to triangulate their self-reported usage. Comparing the Worldreader app usage statistics with the data noted during anecdotes they shared in focus group discussions and semi-structured interviews, and responses given in surveys about how they used the apps, I found that their self-reports sometimes varied from the actual usage observed in

terms of frequency and the type of educational content accessed. For example, three girls reported in a one-on-one semi-structured interview that they used the apps every weekend. The reality was that this use was only the case when school was not in session; during term time, they accessed Worldreader approximately every other weekend. This was because they had commitments that took a lot of time on weekends, such as volleyball tournament participation. Another example of incongruence between self-reported and actual app usage was in the book types accessed. In a focus group discussion I led after the girls had had access to Worldreader for two months, they recounted reading books on biology, chemistry, religion, and self-help. When I probed for information about any other books they had read, they did not mention any further titles. Because I had done an initial review of the books accessed by that point, I knew that all 22 research participants had accessed and read in full an instructional book about male condom use and disposal within days of each other. This revelation confirmed that the self-reported data would not always be reliable. It also yielded insight into the type of educational content to which they sought access. In their context we must remember that there were no human sexuality courses taught at NDSS, and having conversations on this topic with a friend or family member might be embarrassing if not problematic or taboo. Worldreader then became a conduit for increasing their choice and undoubtedly supporting their efforts to be more informed about their health. I viewed both these outcomes as positive given the girls' circumstances.

Privacy of Personal Communications

When we are conducting digital research, the privacy of personal communications refers to whether or not research participants' online messages are monitored and recorded. There were a few areas where the issue of the privacy of personal communications raised ethical dilemmas in this study. Since two of these related to the girls' correspondence with me, other research participants, and people outside of this study, it is important for me to discuss these.

One functionality element of the biNu app is its built-in messaging system. biNu messenger enabled the girls to send and receive messages to other biNu users free of cost. Through the biNu messaging function, I could see the messages the learners shared with me, with other learners, and with the wider world. This was possible through a public news feed as well as through access to their unique messaging account. As with the issue of the surveillance of the girls' online behavior, I sought their consent to access the messages they exchanged on biNu messenger. This was because I realized that messages they shared with me and publicly on their news feed might provide insight into the educational content they found useful. I might also be able to learn whether and why they sought input from others on the type of educational content they should access. Information-seeking practices of this nature would demonstrate a degree of sophistication in the research participants' appropriation of the apps to increase the number of choices available to them to access educational content. An ethical dilemma that arose here was whether or not I needed to provide regular opportunities for the girls to decline continued study participation that permitted surveillance of their personal communications online throughout the AR process. On the one hand, if I offered permission to opt out, this would prevent me from collecting data that could serve an explanatory purpose when viewed alongside the app usage statistics I gathered. It might also cause the girls to end their study participation altogether. On the other, if I took their initial consent and did not provide the space for them to end this permission at a later date, change their minds, or reconsider their previous consent, they might eventually forget they were being observed. Once more, this would stimulate behavior that was seemingly more natural and increase the data quality, but it would also disempower the girls to choose the information they wanted to share about themselves.

Ultimately, as part of the ethical approach to conducting these particular monitoring activities, I sought consent from the girls at monthly intervals in order to continue with the online

surveillance of their personal communications. In June 2014, after the third time of seeking the research participants' consent to monitor their personal communications, one girl queried incredulously: "Can you *really* see what we write online?" When I answered in the affirmative, she still provided her permission but had been surprised that I was actually still monitoring. Nevertheless, there was no way for me to know with certainty if permission was given because of a sense of obligation or because of the differential power dynamics of age and nationality between them and me. Enacting ethical practice in this case was not straightforward, but still conveyed respect for the girls and their autonomy. This is important because most other adult stakeholders in the research context regularly assert their authority and control over the girls' communications. For example, all but one girl had rules created by their parents that shaped their cell phone use, including to whom they were permitted to speak.

To help ensure the learners' privacy of personal communications, I also placed limits on the types of messages I collected. I did not believe it was necessary to read and monitor their private messages between other research participants or biNu messenger users. The other correspondence I had access to served the same purpose while its collection was substantially less intrusive. By the end of the study, I received over 600 messages from the 22 participants. The messages they shared directly with me at times sought information about book availability in the Worldreader library, and at others communicated reasons why the girls had missed school. What the research participants shared on their news feeds illustrated a desire to express themselves: they shared information about how they were feeling; asked questions of other users; and shared images with messages such as good night and Happy Sunday! While not directly related to educational content, these personal communications indicated that they may have viewed the two apps initially as mechanisms for increasing their access to after-school educational content. But over time, they also derived social and leisure-related benefits that they found enjoyable.

While communication with me and among the girls in the study was encouraged, message exchanges with people other than research participants presented another multifaceted ethical dilemma. With this consideration, Beauchamp and Childress's (2001) principle of nonmaleficence—to do no harm or the least possible amount of harm—surfaced through the need to consider the most ethical approach to take to protect the girls online given that their personal communications might involve non-research participants. Prior to the intervention, every girl had been online at least once through her cell phone and/or through use of the NDSS school computer lab. Although they had had these experiences, their ability to navigate social interactions online was not informed by much guidance from the adult stakeholders in their lives: social literacy skills training for ICT use is not given much attention in the national secondary school curriculum in Kenya (Limo 2010), and the mobile policy ban positioned cell phones as negative and disruptive forces in children's lives. Conversations held in the focus group discussions also suggested that parent and/or guardian instruction in this area focused on the rules of when, how much, and where they could use their cell phones but not on how to interact with other people while online.

Given these circumstances, an additional ethical responsibility arose for me regarding the issue of the privacy of the girls' personal communications online. I had to consider what I needed to contribute towards promoting behavior that would be conducive to their online safety as they traversed the digital space accessible through biNu. To take no action could expose them to unwanted communications from other biNu users who were strangers. To instruct the girls about things they should and should not do online when they encounter new people was then the only alternative in this situation, irrespective of any impact it might have on the data collection.

Beginning two months prior to the Intervention phase, I discussed weekly online actions that were examples of safe cell phone use. These actions included not exchanging messages with

strangers or accepting friend requests from people they did not know, using pseudonyms, and avoiding the use of real photos of themselves. I also encouraged them to speak with me or Julie, the adult stakeholder mentioned earlier whom the girls trusted, if they ever experienced something online which made them uncomfortable. I cannot say with certainty if biNu exposed the research participants to further online risk than what was extant in their context. However, by applying the principle of nonmaleficence and raising online safety awareness, I worked to minimize any potential harm through my provision of information that had not been made available previously in this context.

Conclusion

Overall, my data showed that ethics cannot be considered in isolation when we are conducting digital research with girls. Attention to context is just as critical. This is because if an intervention is meant to increase the choices girls have to lead valued lives, it is imperative that they are not caused harm in the process, even if this may result in decreased quality of the data collected according to conventional research protocol. As new innovations open up different spaces in which digital research can take place with girls in the Global South at the nexus of these inquiries, we can see that the technology and international development landscape will require ongoing investigation into appropriate ethical approaches. This is because many people, including girls, often do not have a strong digital literacy foundation when interventions involving technology are implemented. Resultantly, further care should be exercised to help ensure girls fully understand the potential ethical implications of their involvement in digital development work.

Bio

Ronda Zelezny-Green is finishing a PhD in Information and Communication Technologies for Development in the Department of Geography at Royal Holloway, University of London. She

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[1] The GSMA is the global trade association for the mobile industry.

[2] All identifying names of people and places have been changed to protect the identity of the research participants.